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HOW TO USE THIS MANUAL

APPLICATION NOTICE

Information

INFOID:0000000005195062

In this manual, “SONAR” means “PARKING SENSOR”.

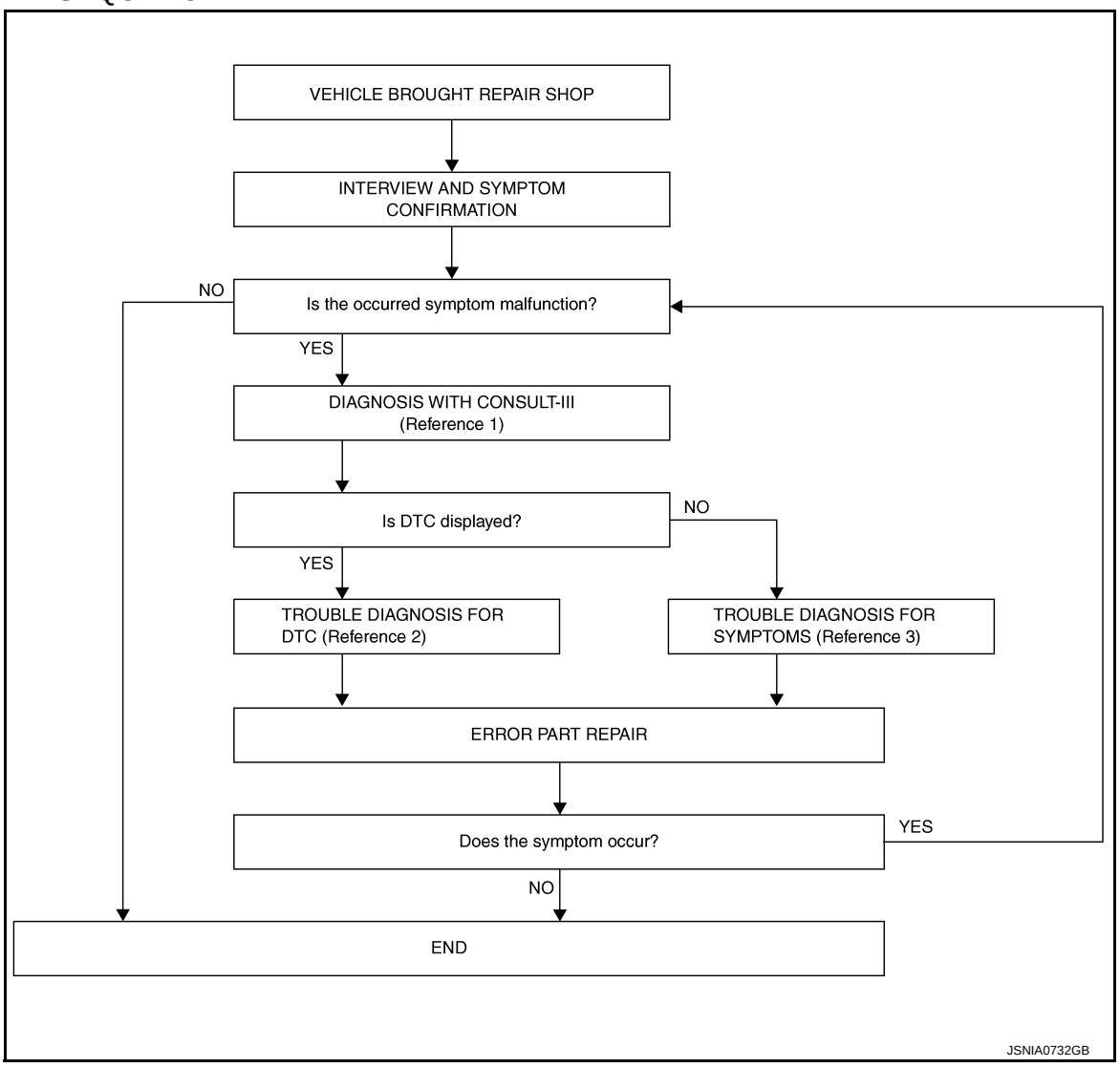
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000005403334

OVERALL SEQUENCE



- Reference 1··· Refer to AV-41, "CONSULT - III Function (MULTI AV)".
- Reference 2··· Refer to AV-94, "DTC Index".
- Reference 3··· Refer to AV-120, "Symptom Table".

DETAILED FLOW

1. INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.
NO >> INSPECTION END

2. DIAGNOSIS WITH CONSULT-III

1. Connect CONSULT-III and perform a self-diagnosis for “MULTI AV”. Refer to AV-41, "CONSULT - III Function (MULTI AV)".
   NOTE:
   Skip to step 4 of the diagnosis procedure if “MULTI AV” is not displayed.
2. Check if any DTC is displayed in the self-diagnosis results.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-94, "DTC Index".

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-120, "Symptom Table".

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “MULTI AV” with CONSULT-III.
   NOTE:
   Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000005222520

BEFORE REPLACEMENT

When replacing AV control unit, save or print current vehicle specification with CONSULT-III configuration before replacement.

AFTER REPLACEMENT

CAUTION:

When replacing AV control unit, you must perform “WRITE CONFIGURATION” with CONSULT-III.

- **Complete the procedure of “WRITE CONFIGURATION” in order.**
- **If you set incorrect “WRITE CONFIGURATION”, incidents might occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000005222521

1.SAVING VEHICLE SPECIFICATION

-CONSULT-III Configuration

Perform “READ CONFIGURATION” to save or print current vehicle specification. Refer to AV-24, "CONFIGURATION (AV CONTROL UNIT) : Description".

NOTE:

If “READ CONFIGURATION” can not be used, use the “WRITE CONFIGURATION - Manual selection”.

>> GO TO 2.

2.REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to AV-128, "Exploded View".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

-CONSULT-III Configuration

Perform “WRITE CONFIGURATION - Config file” or “WRITE CONFIGURATION - Manual selection” to write vehicle specification. Refer to AV-25, "CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement".

>> GO TO 4.

4.OPERATION CHECK

Check that the operation of the AV control unit and camera images (fixed guide lines and predictive course lines) are normal.

>> WORK END

CONFIGURATION (AV CONTROL UNIT)

CONFIGURATION (AV CONTROL UNIT) : Description

INFOID:0000000005222522

- Since vehicle specifications are not included in the AV control unit after replacement, it is required to write vehicle specifications with CONSULT-III.
- Configuration has three functions as follows.

Function	Description
READ CONFIGURATION	• Reads the vehicle configuration of current AV control unit. • Saves the read vehicle configuration.
WRITE CONFIGURATION-Manual selection	Writes the vehicle configuration with manual selection.
WRITE CONFIGURATION-Config file	Writes the vehicle configuration with saved data.

CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement

INFOID:0000000005222523

NOTE:
If “WRITE CONFIGURATION” is unsuccessful, perform “Accessory Number Initialization”. For details, refer to AV-32, "Diagnosis Description".
After performing “Accessory Number Initialization”, reboot the AV control unit to perform “WRITE CONFIGURATION”.

1.WRITING MODE SELECTION

CONSULT-III Configuration
Select “CONFIGURATION” of “MULTI AV”.

When writing saved data>>GO TO 2.
When writing manually>>GO TO 3.

2.PERFORM “WRITE CONFIGURATION-CONFIG FILE”

CONSULT-III Configuration
Perform “WRITE CONFIGURATION-Config file”.

>> WORK END

3.PERFORM “WRITE CONFIGURATION-MANUAL SELECTION”

CONSULT-III Configuration
Select “WRITE CONFIGURATION-Manual selection” to write vehicle specifications into the AV control unit. For data to write, refer to AV-25, "CONFIGURATION (AV CONTROL UNIT) : Configuration List".

>> GO TO 4.

4.OPERATION CHECK

Check that the operation of the AV control unit and camera images (fixed guide lines and predictive course lines) are normal.

>> WORK END

CONFIGURATION (AV CONTROL UNIT) : Configuration List

INFOID:0000000005222524

CAUTION:
Check vehicle specifications before servicing.

MANUAL SETTING ITEM	
Items	Setting value
STEERING	LHD
	RHD
CAMERA SYSTEM	NONE/AVM
	REAR CAMERA
	REAR+SIDE
SOUND SYSTEM	BASE
	BOSE

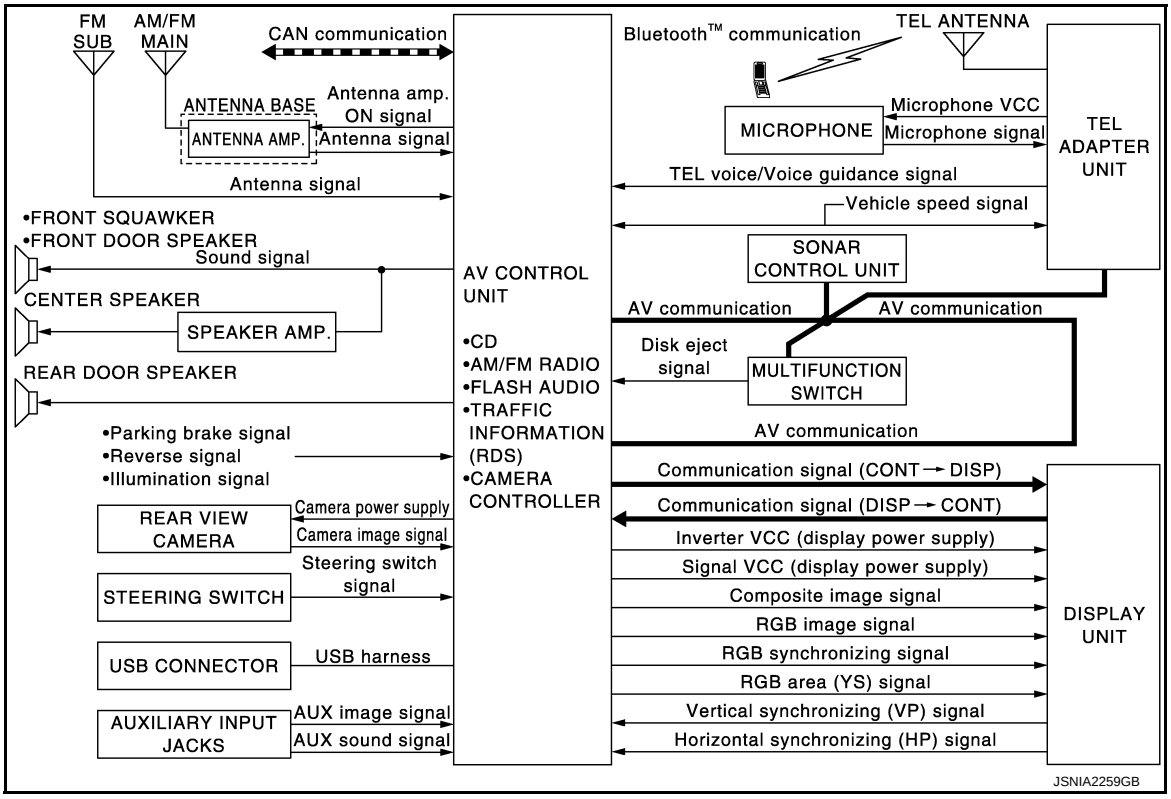
NOTE:
AVM: Around view monitor

SYSTEM DESCRIPTION

MULTI AV SYSTEM

System Diagram

INFOID:0000000005195064



NOTE:

- The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.
- An antenna base integrated with antenna amp. is adopted.

System Description

INFOID:0000000005195065

Multi AV system means that the following systems are integrated.

FUNCTION NAME
Audio function
Hands-free phone function
Auxiliary input function
Rear view monitor function
Vehicle information function
Sonar function

COMMUNICATION SIGNAL

- AV control unit function by transmitting/receiving data one by one with each unit (slave unit) that configures them completely as a master unit by connecting between units that configure MULTI AV system with two AV communication lines (H, L).
- Two AV communication lines (H, L) adopt a twisted pair line that is resistant to noise.
- AV control unit is connected by CAN communication, and it receives data signal from ECM, unified meter and A/C amp. It computes and displays fuel economy information value with the obtained information.
- AV control unit is connected with display and serial communication, and it transmits the required signal of display and display control and receives the response signal from display.

AUDIO FUNCTION

The audio system is equipped with the following functions. Each function is operated with multifunction switch, preset switch, steering switch. Operation status of audio is indicated at display.

FUNCTION
AM/FM radio
Traffic information (RDS)
CD
Music Box (flash memory)
USB connection

Operating Signal

Audio system operation can be performed with multifunction switch, preset switch or steering switch.

- Operating signal is transmitted to AV control unit with AV communication when it is operated by multifunction switch or preset switch. The disk ejection operating signal is performed by hardwire.
- Operating signal is transmitted to AV control unit with steering switch signal when it is operated by steering switch.

Screen Display

- Switching of display is performed with serial communication between display unit and AV control unit.
- The image signal to display operating condition is performed with RGB image signal, RGB area signal and RGB image synchronizing signal.

AM/FM Radio Mode

- AM/FM radio tuner is built into AV control unit.
- Audio signal is received by rod antenna, next it is amplified by antenna amp., and finally it is input to AV control unit.
- Audio signal is outputs to each speaker.

Traffic Information (RDS) Function

- Traffic information function is built into AV control unit.
- Traffic information is received by rod antenna, next it is amplified by antenna amp., and finally it is input to AV control unit.

CD Mode

- CD function is built into AV control unit.
- AV control unit outputs audio signal to each speaker when CD is inserted to AV control unit.

Music Box Mode

- Music CD data is stored on flash memory that is built into AV control unit, and it can be played.
- AV control unit outputs music (sound signal) that is stored on flash memory to each speaker.

USB Connection Function

- iPod® or music files in USB memory can be played.
- Sound signals are transmitted from USB connector to the AV control unit and to each speaker.
- iPod® is recharged when connected to USB connector.

iPod® is a trademark of Apple inc., registered in the U.S. and other countries.

NOTE:

Use the enclosed USB harness when connecting iPod® to USB connector.

HANDS-FREE PHONE SYSTEM

- TEL adapter unit is controlled with AV communication from AV control unit.
- The connection between cellular phone and TEL adapter unit is performed with Bluetooth™ communication.
- The voice guidance signal is input from the TEL adapter unit to the AV control unit to the front speaker and center speaker when operating the cellular phone.
- TEL adapter unit has the on board self-diagnosis function. Refer to AV-45, "Diagnosis Description".

When A Call Is Originated

- Spoken voice sound output from the microphone (microphone signal) is input to TEL adapter unit.
- TEL adapter unit outputs to cellular phone with Bluetooth™ communication as a TEL voice signal.
- Voice sound is then heard at the other party.

When Receiving A Call

- Voice sound is input to own cellular phone from the other party.
- TEL voice signal is input to TEL adapter unit by establishing Bluetooth™ communication from cellular phone, and the signal is output to front speaker and center speaker.

AUXILIARY INPUT FUNCTION

- Image and sound can be output from an external device by connecting a device with auxiliary input jacks.
- AUX image signals are transmitted to the display unit through AV control unit.
- AUX sound signals are transmitted to each speaker through AV control unit.

REAR VIEW MONITOR FUNCTION

Camera Image Operation Principle

- The AV control unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the display unit when power is supplied from the AV control unit.
- The AV control unit transmits a warning message, fixed guide lines, and predictive course lines to the display unit by RGB image signals. Rear view monitor images are displayed by combining the RGB image signals and the camera image signals from the rear view camera.
- Predictive course lines are controlled by a steering angle sensor signal received the AV control unit via CAN communication.

VEHICLE INFORMATION FUNCTION

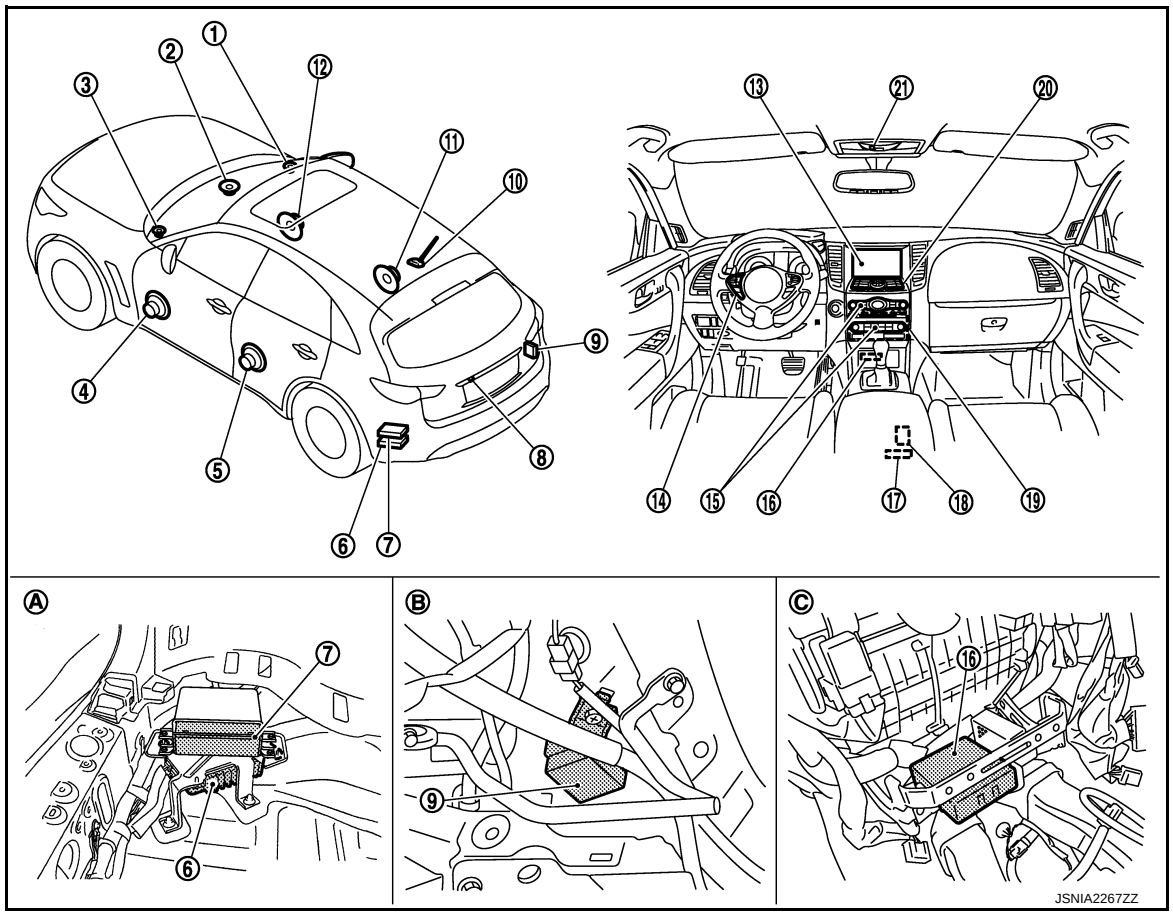
- Status of audio, climate control system, fuel economy and maintenance are displayed.
- AV control unit displays the fuel consumption status while receiving data signal through CAN communication from ECM, unified meter and A/C amp.

SONAR SYSTEM FUNCTION

For further information about the sonar system, refer to SN-7, "System Description".

Component Parts Location

INFOID:0000000005195066



1. Front squawker RH
2. Center speaker
3. Front squawker LH
4. Front door speaker LH
5. Rear door speaker LH
6. Speaker amp.
7. TEL adapter unit
8. Rear view camera
9. TEL antenna
10. Antenna base
11. Rear door speaker RH
12. Front door speaker RH
13. Display unit
14. Steering switch
15. Preset switch
16. Sonar control unit
17. Auxiliary input jack
18. USB connector
19. AV control unit
20. Multifunction switch
21. Microphone

A. Luggage floor (LH side)
B. Luggage side RH
C. Console pocket assembly removed condition

Component Description

INFOID:0000000005195067

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.
Display unit	• Display image is controlled by the serial communication from AV control unit. • It receives the power (signal VCC and inverter VCC) from the AV control unit and operates. • RGB image signal is input from AV control unit (RGB, RGB area and RGB synchronizing). • Composite image signals (auxiliary and camera images) are input from AV control unit. • Synchronizing signal (HP, VP) is output to AV control unit.
Speaker amp.	Output sound signal to center speaker.
Front door speaker	• Outputs sound signal from AV control unit. • Outputs high, mid and low range sounds.
Rear door speaker	• Outputs sound signal from AV control unit. • Outputs high, mid and low range sounds.
Front squawker	• Outputs sound signal from AV control unit. • Outputs mid range sounds.
Center speaker	• Outputs sound signal from speaker amp. • Outputs mid range sounds.
Multifunction switch	• Operation panel is equipped with the centralized switch where audio and auxiliary input, etc. operations are integrated. • Connected with preset switch via cable, and operation signal is transmitted to AV control unit via AV communication.
Preset switch	• Operation panel is equipped with the centralized switch where audio and air conditioner, etc. operations are integrated. • Connected with multifunction switch via cable, and operation signal is transmitted to AV control unit via AV communication. • The disk ejection operating signal is performed by hardwire.
Rear view camera	• Camera power supply is input from AV control unit. • The image of vehicle rear view is transmitted to AV control unit.
Steering switch	• Operations for audio and hands-free phone are possible. • Steering switch signal (operation signal) is output to AV control unit.

Part name	Description
Microphone	• Used for hands-free phone operation. • Microphone signal is transmitted to TEL adapter unit. • Power (Microphone VCC) is supplied from TEL adapter unit.
Auxiliary input jacks	Sound signal of auxiliary input is transmitted to AV control unit.
Antenna base	• An antenna base integrated with radio antenna amp. is adopted. • Radio signal received by rod antenna is amplified and transmitted to AV control unit. • Power (antenna amp. ON signal) is supplied from AV control unit.
TEL adapter unit	• Inputs the TEL voice signal from TEL antenna and outputs it to the AV control unit. • It is connected with the AV control unit via AV communication and controlled with the AV control unit.
TEL antenna	Receives the TEL voice signal and outputs it to the TEL adapter unit.
USB connector	Sound signal of USB input is transmitted to AV control unit.
Sonar control unit	• Controlled by AV communication transmitted from AV control unit. • Trouble diagnosis is supported with CONSULT-III (K-LINE).

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Diagnosis Description

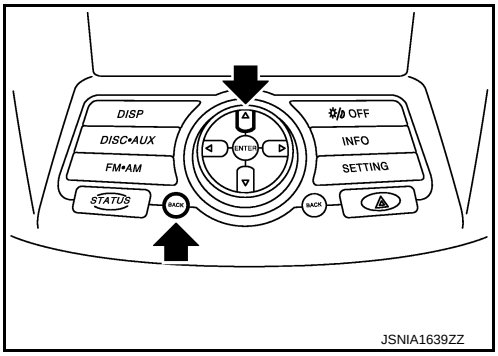
INFOID:0000000005195068

MULTIFUNCTION SWITCH AND PRESET SWITCH SELF-DIAGNOSIS FUNCTION

The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

Self-diagnosis Mode

- Press the “BACK” switch and the “UP” switch of the 8-direction switches within 10 seconds after turning the ignition switch from OFF to ACC and hold them for 3 seconds or more. Then the buzzer sounds, all indicators of the preset switch illuminate, and the self-diagnosis mode starts.
- The continuity of each switch at the ON position can be checked by pressing the switch. The buzzer sounds if the switch is normal.
  NOTE:
  The hazard switch and disk eject switch cannot be checked.



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Finishing Self-diagnosis Mode

Self-diagnosis mode is canceled when turning the ignition switch OFF.

MULTI AV SYSTEM ON BOARD DIAGNOSIS FUNCTION

- The AV control unit diagnosis function starts up with multifunction switch operation and the AV control unit performs a diagnosis for each unit in the system during the on board diagnosis.
- Perform a CONSULT-III diagnosis if the on board diagnosis does not start, e.g., the screen does not display anything, the multifunction switch does not function, etc.

ON BOARD DIAGNOSIS

Description

- The trouble diagnosis function has a self-diagnosis mode for conducting trouble diagnosis automatically and a confirmation/adjustment mode for operating manually.
- Self-diagnosis mode performs the AV control unit diagnosis and the connection diagnosis between each of the units that make up the system, and it indicates the results to the display unit.
- The confirmation/adjustment mode allows the technician to check, modify or adjust the vehicle signals and set values, as well as to monitor the system error records and system communication status. The checking, modifying or adjusting generally require human intervention and judgment (the system cannot make judgment automatically).

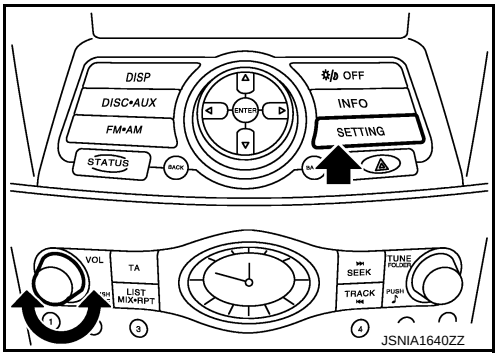
On Board Diagnosis Item

Mode	Description
Self Diagnosis	• AV control unit diagnosis. • Diagnoses the connections across system components, between AV control unit and each unit.

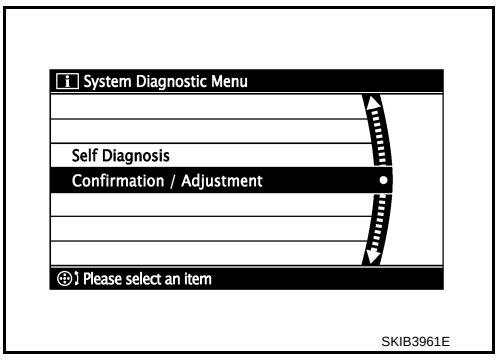
Mode		Description
Confirmation/ Adjustment	Display Diagnosis	The following check functions are available: color tone check by color bar display and white display, light and shade check by gray scale display.
	Vehicle Signals	Diagnosis of signals can be performed for vehicle speed, parking brake, lights, ignition and reverse.
	Speaker Test	The connection of a speaker can be confirmed by test tone.
	Climate Control	Start auto air conditioner system self-diagnosis.
	Error History	The system malfunction and the frequency when occurring in the past are displayed. When the malfunctioning item is selected, the time and place that the selected malfunction last occurred are displayed.
	Camera Cont.	• Guiding line position that overlaps rear view camera image can be adjusted. • Configuration stored in the AV control unit can be checked.
	Vehicle CAN Diagnosis	The transmitting/receiving of CAN communication can be monitored.
	AV COMM Diagnosis	The communication condition of each unit of Multi AV system can be monitored.
	Delete Unit Connection Log	Erase the connection history of unit and error history.
	Initialize Settings	Initializes the AV control unit memory.

STARTING PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “SETTING” button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   • Shifting from current screen to previous screen is performed by pressing “BACK” button.



4. The trouble diagnosis initial screen is displayed, and then the items of “Self Diagnosis” and “Confirmation/Adjustment” can be selected.

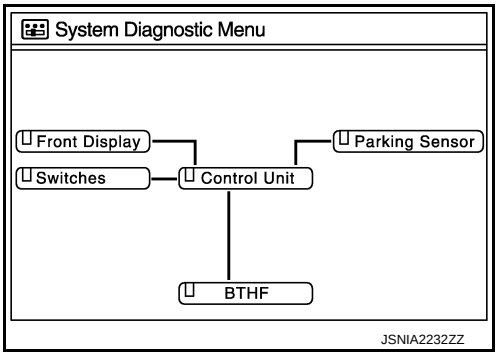


SELF-DIAGNOSIS MODE

1. Start the self-diagnosis function and select “Self Diagnosis”.

- Self-diagnosis subdivision screen is displayed, and the self-diagnosis mode starts.
- The bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis.

2. Diagnosis results are displayed after the self-diagnosis is completed. The unit names and the connection lines are color-coded according to the diagnostic results.



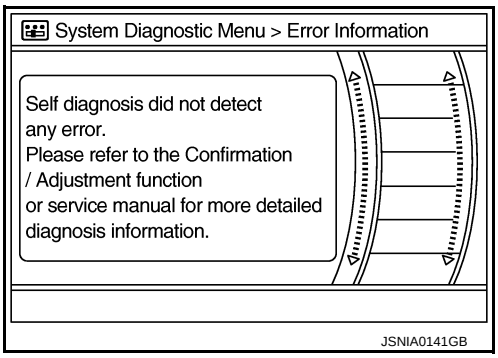
Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction Note	Red	Green

NOTE:

Control unit (AV control unit) and is displayed in red.

- Replace AV control unit if “Self-Diagnosis did not run because of a control unit malfunction” is indicated. The symptom is AV control unit internal error. Refer to AV-128, "Exploded View".
- If multiple errors occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > gray.

- The comments of the self-diagnosis results can be viewed with a component in the diagnosis result screen.



Detection Range of Self-diagnosis Mode

- The self-diagnosis mode allows the technician to diagnose the connection in the communication line between AV control unit and each unit and the internal operation of the AV control unit.
- Because the start condition of diagnosis function is a switch operation, the on board diagnosis function cannot be started up if any malfunction is detected in the communication circuit between AV control unit and multifunction switch.

SELF-DIAGNOSIS RESULTS

Check the applicable display at the following table, and then repair the malfunctioning parts.

Only Unit Part Is Displayed In Red.

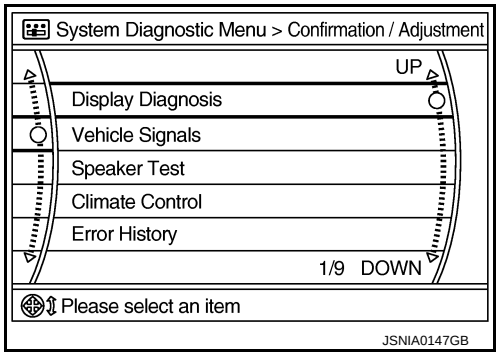
Screen switch	Description	Possible malfunction location / Action to take
Control unit	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.

A Connecting Cable Between Units Is Displayed In Yellow.

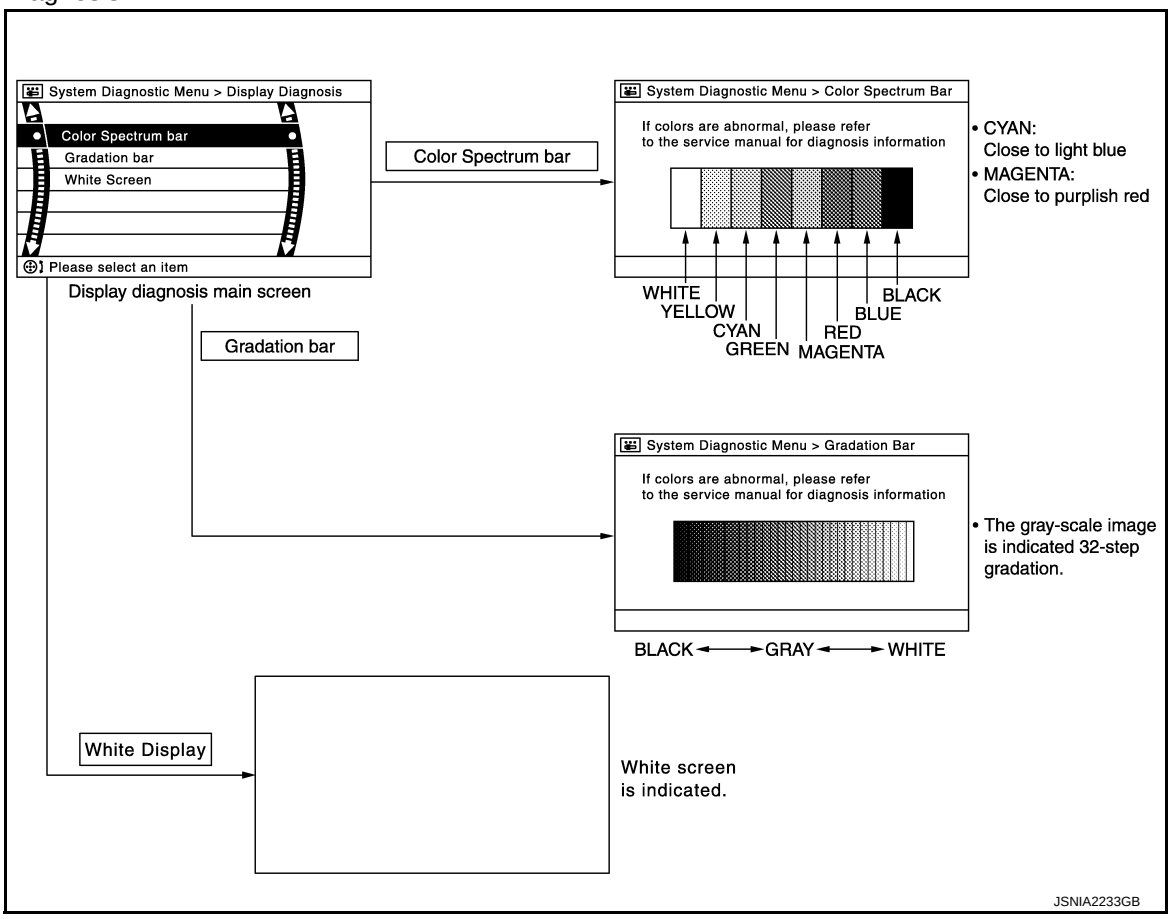
Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control unit ⇔ Front Display	Malfunction is detected in serial communication circuits between AV control unit and display unit.	Serial communication circuits between AV control unit and display unit.
Control unit ⇔ Parking Sensor	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between multifunction switch and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between multifunction switch and sonar control unit.
Control unit ⇔ BTHF	When either one of the following items are detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between sonar control unit and TEL adapter unit are malfunctioning.	• TEL adapter unit power supply and ground circuits. • AV communication circuits between sonar control unit and TEL adapter unit.

CONFIRMATION/ADJUSTMENT MODE

1. Start the diagnosis function and select “Confirmation/Adjustment”. The confirmation/adjustment mode indicates where each item can be checked or adjusted.
2. Select each switch on the “Confirmation/Adjustment Mode” screen to display the relevant trouble diagnosis screen. Press the “BACK” switch to return to the initial Confirmation/Adjustment Mode screen.

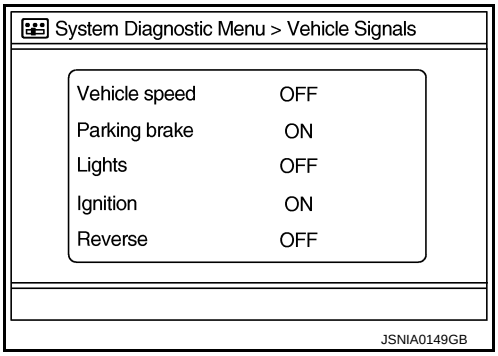


Display Diagnosis



Vehicle Signals

A comparison check can be made of each actual vehicle signal and the signals recognized by the system.

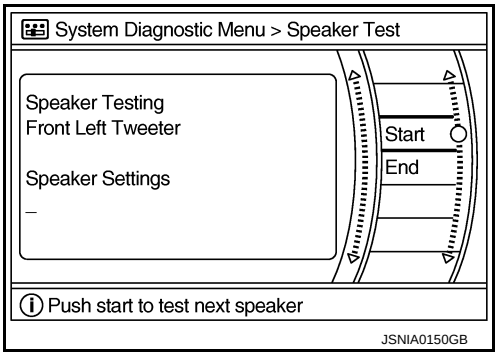


Diagnosis item	Display	Vehicle status	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
Parking brake	ON	Parking brake is applied.	
	OFF	Parking brake is released.	
Lights	ON	Light switch ON	—
	OFF	Light switch OFF	
Ignition	ON	Ignition switch ON	—
	OFF	Ignition switch in ACC position	

Diagnosis item	Display	Vehicle status	Remarks
Reverse	ON	Shift the selector lever to “R” position	Changes in indication may be delayed. This is normal.
	OFF	Shift the selector lever other than “R” position	

Speaker Test

Select “Speaker Test” to display the Speaker Diagnosis screen. Press “Start” to generate a test tone in a speaker. Press “Start” again to generate a test tone in the next speaker. Press “End” to stop the test tones.



Climate Control

Refer to “HEATER & AIR CONDITIONING CONTROL SYSTEM” for details.

Error History

The self-diagnosis results are judged depending on whether any error occurs from when “Self-diagnosis” is selected until the self-diagnosis results are displayed.

However, the diagnosis results are judged normal if an error has occurred before the ignition switch is turned ON and then no error has occurred until the self-diagnosis start. Check the “Error Record” to detect any error that may have occurred before the self-diagnosis start because of this situation.

The error record displays the time and place of the most recent occurrence of that error. However, take note of the following points.

The frequency of occurrence is displayed in a count up manner. The actual count up method differs depending on the error item.

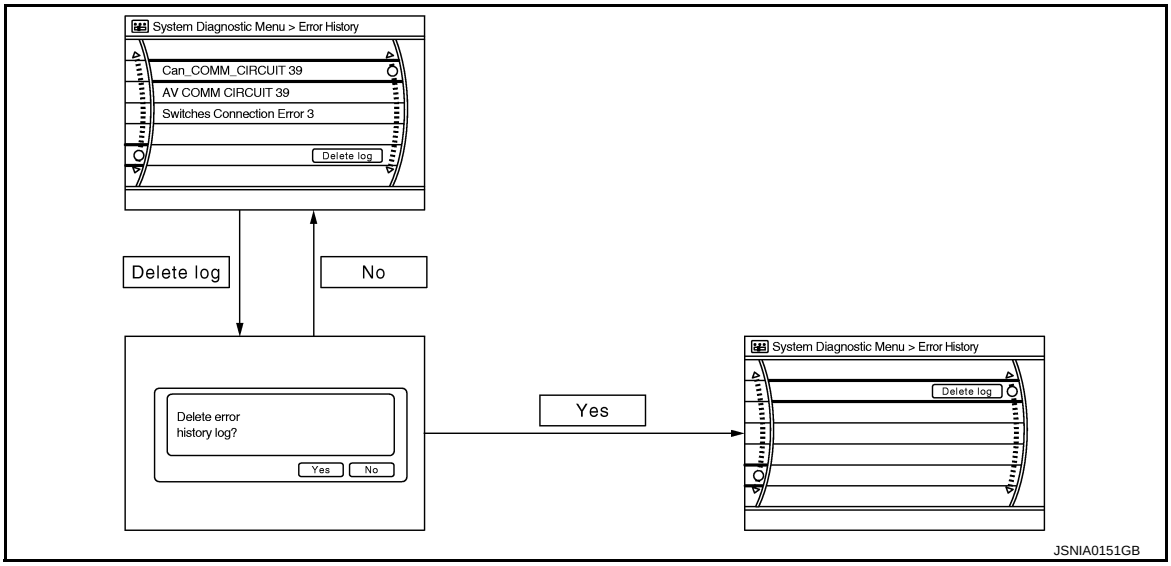
Count up method A

- The counter resets to 0 if an error occurs when IGN switch is turned ON. The counter increases by 1 if the condition is normal at a next IGN ON cycle.
- The counter upper limit is 39. Any counts exceeding 39 are ignored.“ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT-III.

Count up method B

- The counter increases by 1 if an error occurs when IGN switch is ON. The counter will not decrease even if the condition is normal at the next IGN ON cycle.
- The counter upper limit is 50. Any counts exceeding 50 are ignored. “ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT-III.

Display type of occurrence frequency	Error history display item
Count up method A	CAN communication line, control unit (CAN), AV communication line, control unit (AV)
Count up method B	Other than the above



Error item

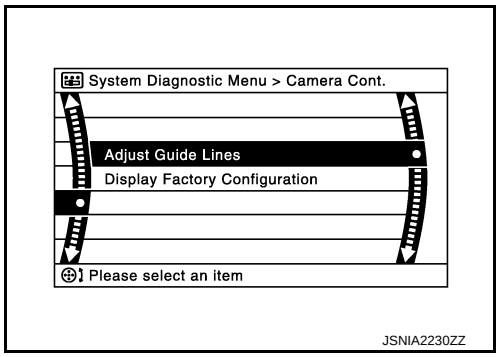
Some error items may be displayed simultaneously according to the cause. If some error items are displayed simultaneously, the detection of the cause can be performed by the combination of display items

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT	CAN communication malfunction is detected.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-41, "CONSULT - III Function (MULTI AV)".
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	
FLASH-ROM Error Of Control Unit	AV control unit malfunction is detected.	
CAN Controller Memory Error		
Sub CPU Connection Error		
iPod authentification chip error		
Audio connection error		
DSP Connection Error	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
DSP Communication Error		
Unfinished configuration	The writing of configuration data is incomplete.	Write configuration data with CONSULT-III.
USB Controller Communication Error	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.
Steer. Angle Sensor Calibration	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.
Front Display Connection Error	When either one of the following items are detected: • display unit power supply and ground circuits malfunction is detected. • malfunction is detected in communication circuits between AV control unit and display unit.	• Display unit power supply and ground circuits. • Communication circuits between AV control unit and display unit.

Error item	Description	Possible malfunction factor/Action to take
USB electric current Error	Detection of overcurrent in USB connecter.	Check USB harness between the AV control unit and USB connector.
• AV COMM CIRCUIT • Switches Connection Error	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT • Sonar Connection Error	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between multifunction switch and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between multifunction switch and sonar control unit.
• AV COMM CIRCUIT • H/F Unit Connection Error	When either one of the following items are detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between sonar control unit and TEL adapter unit are malfunctioning.	• TEL adapter unit power supply and ground circuits. • AV communication circuits between sonar control unit and TEL adapter unit.
• AV COMM CIRCUIT • Switches Connection Error • Sonar Connection Error • H/F Unit Connection Error	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

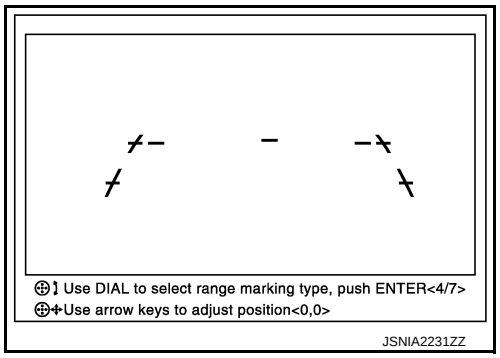
Camera Cont.

The two functions of “Adjust Guide Lines”, “Display Factory configuration” are available.



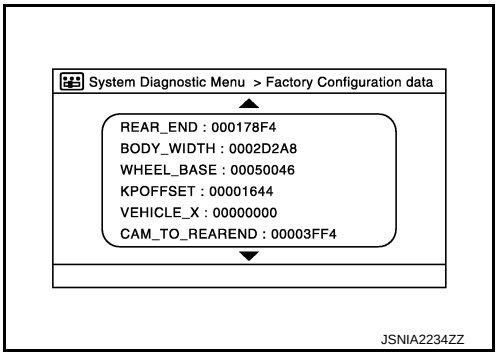
Adjust Guide Lines

- Use this mode to adjust the guide line display position of the rear-view monitor if necessary after removing the rear view monitor camera.



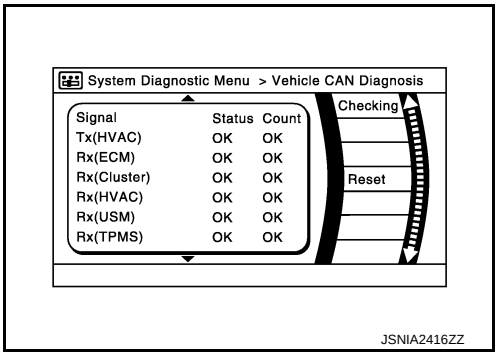
Display Factory configuration

- Configuration stored in the AV control unit can be checked.



Vehicle CAN Diagnosis

- CAN communication status and error counter is displayed.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if “Reset” is pressed.

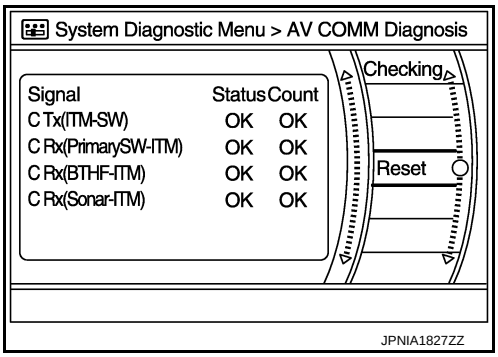


Items	Display (Current)	Malfunction counter (Past)
Tx(HVAC)	OK / ???	OK / 0 – 39
Rx(ECM)	OK / ???	OK / 0 – 39
Rx(Cluster)	OK / ???	OK / 0 – 39
Rx(HVAC)	OK / ???	OK / 0 – 39
Rx(USM)	OK / ???	OK / 0 – 39
Rx(TPMS)	OK / ???	OK / 0 – 39
Rx(STRG)	OK / ???	OK / 0 – 39

NOTE:
“???” indicates UNKWN.

AV COMM Diagnosis

- Displays the communication status between AV control unit (master unit) and each unit.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if “Reset” is pressed.

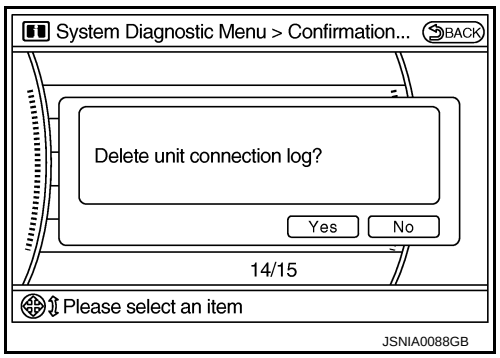


Items	Status (Current)	Counter (Past)
C Tx(ITM-PrimarySW)	OK / ???	OK / 0 – 39
C Rx(PrimarySW-ITM)	OK / ???	OK / 0 – 39
C Rx(BTHF-ITM)	OK / ???	OK / 0 – 39
C Tx(Sonar-ITM)	OK / ???	OK / 0 – 39

NOTE:
“???” indicates UNKWN.

Delete Unit Connection Log

Deletes any unit connection records and error records from the AV control unit memory. (Clear the records of the unit that has been removed.)

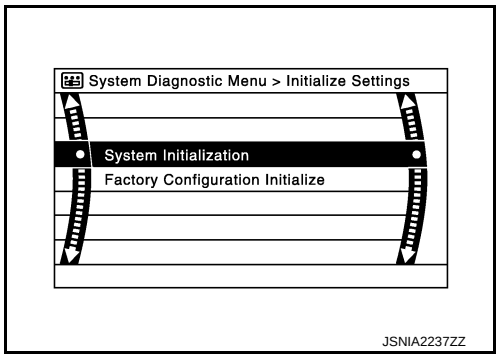


Initialize Settings

"User Data Initialization" and "Accessory Number Initialization" are possible.

CAUTION:

- **Never perform Accessory Number Initialization except when configuration is unsuccessful.**
- **Accessory Number Initialization requires configuration. For details, refer to AV-24, "CONFIGURATION (AV CONTROL UNIT) : Description".**



CONSULT - III Function (MULTI AV)

INFOID:0000000005195069

CONSULT-III FUNCTIONS

CONSULT-III performs the following functions via the communication with the AV control unit.

Diagnosis mode	Description
Ecu Identification	The part number of AV control unit can be checked.
Self Diagnostic Result	Performs a diagnosis on the AV control unit and a connection diagnosis for the communication circuit of the Multi AV system, and displays the current and past malfunctions collectively.
Data Monitor	The diagnosis of vehicle signal that is input to the AV control unit can be performed.
Work Support	Steering angle sensor can be adjusted.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing AV control unit.

AV COMMUNICATION

When "AV communication" of "CAN Diag Support Monitor" is selected, the following function will be performed.

AV communication	AV&NAVI C/U	Displays the communication status from AV control unit to each unit as well as the error counter.
	AUDIO	Displays the AV control unit communication status and the error counter.

ECU IDENTIFICATION

The part number of AV control unit is displayed.

SELF DIAGNOSIS RESULT

- In CONSULT-III self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates "CRNT". The past malfunction indicates "PAST".
- The timing is displayed as "0" if any of the error codes [U1000], [U1010], [U1300] and [U1310] is detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.

Self-diagnosis Results Display Item

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detected.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-47, "Diagnosis Procedure".
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	
Cont Unit [U1200]	AV control unit malfunction is detected.	
CAN CONT [U1216]		
SUB CPU CONN [U1228]		
iPod CERTIFICATION [U1229]		
Built-in AUDIO CONN [U122E]		
USB CONTROLLER [U1225]	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.
DSP CONN [U121D]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
DSP COMM [U121E]		
ST ANGLE SEN CALIB [1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.
CONFIG UNFINISH [U122A]	The writing of configuration data is incomplete.	Write configuration data with CONSULT-III.
FRONT DISP CONN [U1243]	When either one of the following items are detected: • display unit power supply and ground circuits malfunction is detected. • communication circuits between AV control unit and display unit.	• Display unit power supply and ground circuits. • Communication circuits between AV control unit and AV display unit.
USB OVERCURRENT [U1263]	Detection of overcurrent in USB connector.	Check USB harness between the AV control unit and USB connector.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between multifunction switch and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between multifunction switch and sonar control unit.

Error item	Description	Possible malfunction factor/Action to take
• AV COMM CIRCUIT [U1300] • HAND FREE CONN [U1256]	When either one of the following items are detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between sonar control unit and TEL adapter unit are malfunctioning.	• TEL adapter unit power supply and ground circuits. • AV communication circuits between sonar control unit and TEL adapter unit.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • SONAR CONN [U125C] • HAND FREE CONN [U1256]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

DATA MONITOR

ALL SIGNALS

- Displays the status of the following vehicle signals inputted into the AV control unit.
- For each signal, actual signal can be compared with the condition recognized on the system.

Display Item	Display	Vehicle status	Remarks
VHCL SPD SIG	On	Vehicle speed >0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed =0 km/h (0 MPH)	
PKB SIG	On	Parking brake is applied.	
	Off	Parking brake is released.	
ILLUM SIG	On	Block the light beam from the auto light optical sensor when the light SW is ON.	—
	Off	Expose the auto light optical sensor to light when the light SW is OFF or ON.	
IGN SIG	On	Ignition switch ON	
	Off	Ignition switch in ACC position	
REV SIG	On	Selector lever in R position	Changes in indication may be delayed. This is normal.
	Off	Selector lever in any position other than R	

SELECTION FROM MENU

Allows the technician to select which vehicle signals should be displayed and displays the status of the selected vehicle signals.

Item to be selected	Description
VHCL SPD SIG	The same as when “ALL SIGNALS” is selected.
PKB SIG	
ILLUM SIG	
IGN SIG	
REV SIG	

WORK SUPPORT

Adjusts the neutral position of the steering angle sensor.

CAUTION:

For vehicles with ESP, adjust the steering angle sensor neutral position on the ABS actuator control unit side.

Item	Description
ST ANGLE SENSOR ADJUSTMENT	Adjusts the neutral position of the steering angle sensor.

CONFIGURATION

Configuration has three functions as follows.

Function	Description
READ CONFIGURATION	• Reads the vehicle configuration of current AV control unit. • Saves the read vehicle configuration.
WRITE CONFIGURATION-Manual selection	Writes the vehicle configuration with manual selection.
WRITE CONFIGURATION-Config file	Writes the vehicle configuration with saved data.

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

Diagnosis Description

INFOID:0000000005195070

HANDS-FREE PHONE SYSTEM ON BOARD DIAGNOSIS

During on board diagnosis the diagnosis function of TEL adapter unit starts with the operation of the steering switch and performs the diagnosis when ignition switch ACC.

ON BOARD DIAGNOSIS ITEM

The on board diagnosis has 3 modes: the self-diagnosis mode that performs the trouble diagnosis, the speaker adaptation data deleting mode and the hands-free phone system initialization mode.

CAUTION:

- **Perform the diagnosis with the vehicle stopped.**
- **Perform STEP2 if necessary.**

STEP	MODE	Description
STEP1	Self-diagnosis	The self-diagnosis mode performs the microphone test and the diagnosis of TEL adapter unit, TEL antenna and steering unit, and then reads out the results with the sound and indicates them on the display.
STEP2	Speaker adaptation data deleting	The speaker adaptation data deleting mode can delete the speaker adaptation data.
	Hands-free phone system initialization	Hands-free phone system initialization mode can perform the initialization of hands-free phone system.

Self-diagnosis results

Self-diagnosis mode reads out the self-diagnosis results.

NOTE:

- Error count is read out simultaneously when reading out the DTC name.
- The errors are read out continuously when some errors occur at the same time.

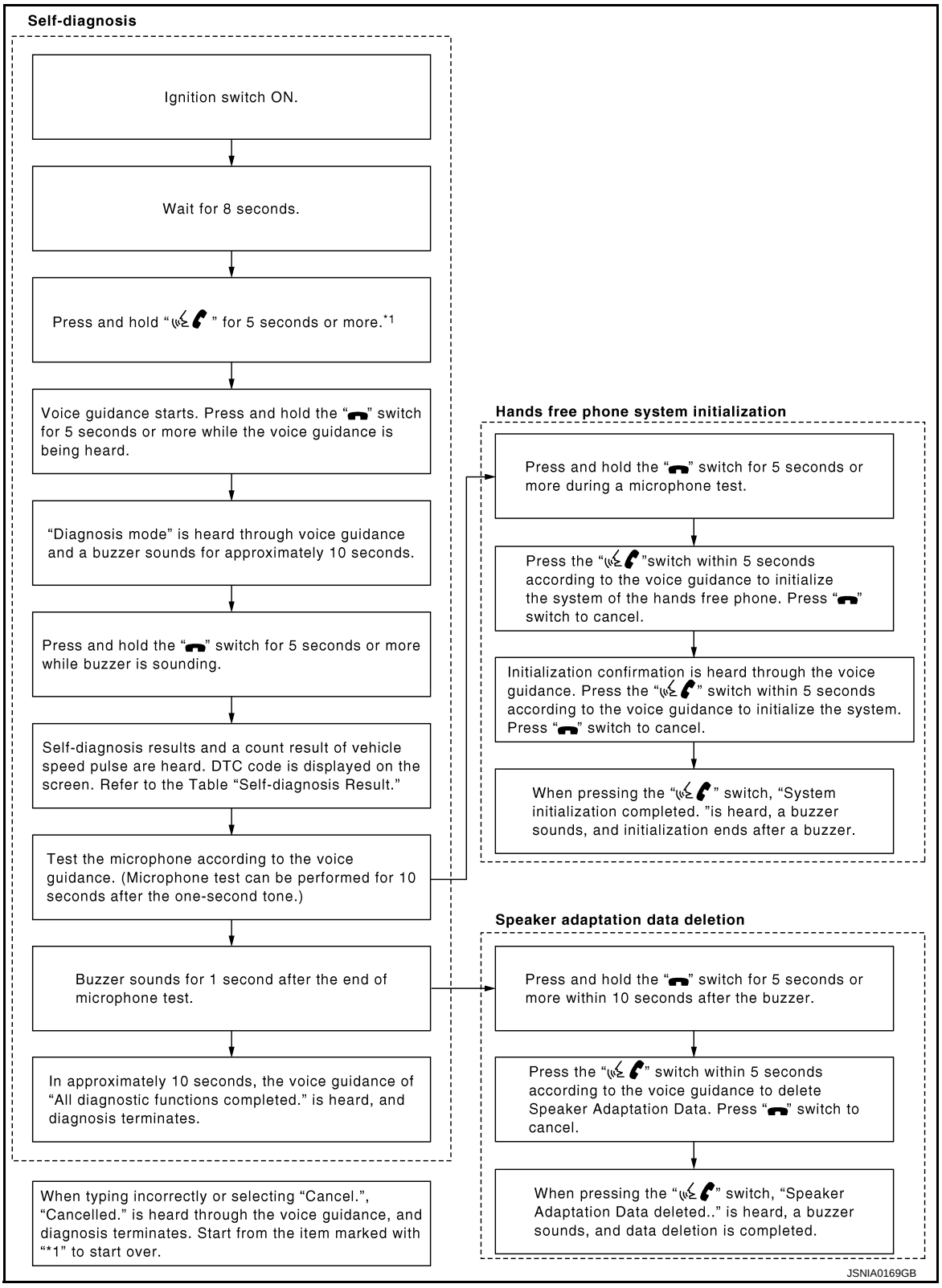
Self-diagnosis results

DTC	DTC name	Possible causes
DTC 10000	INTERNAL FAILURE	TEL adapter unit
DTC 01000	ANT. SHORT TO BATT OR OPEN	TEL antenna
DTC 00100	ANT. SHORT TO GROUND	
DTC 00010	STEERING REMOTE BUTTON STUCK A	Steering switch
DTC 00001	STEERING REMOTE BUTTON STUCK B	
DTC 00000	THERE ARE NO FAILURE RECORDS TO REPORT	—

The Details of Error Count

The error count guides “0” when the error occurs. The next time it counts up “1” if it is normal with the ignition switch ON. It continues the count up unless the initialization of hands-free phone system is performed.

FLOW CHART OF TROUBLE DIAGNOSIS



DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000005369455

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-39, "CAN Communication Signal Chart".

DTC Logic

INFOID:0000000005369456

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Probable malfunction location
U1000	CAN COMM CIRCUIT [U1000]	AV control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

Diagnosis Procedure

INFOID:0000000005369457

1. PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of “MULTI AV”.

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to LAN-29, "Trouble Diagnosis Procedure".
NO >> Refer to GI-34, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000005369459

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-128, "Exploded View".

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005369460

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Probable malfunction factor
U1010	CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1200 AV CONTROL UNIT

Description

INFOID:0000000005369461

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-128, "Exploded View".

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005369462

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1200	Cont Unit [U1200]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1216 AV CONTROL UNIT

Description

INFOID:0000000005369463

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-128, "Exploded View".

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005369464

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1216	CAN CONT [U1216]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U121D AV CONTROL UNIT

Description

INFOID:0000000005369465

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005369466

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121D	DSP CONN [U121D]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005369467

1.CHECK PLAYBACK OF A DISK (CD)

Can a disk (CD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-128, "Exploded View".

U121E AV CONTROL UNIT

Description

INFOID:0000000005369468

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005369469

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121E	DSP COMM [U121E]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005369470

1.CHECK PLAYBACK OF A DISK (CD)

Can a disk (CD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-128, "Exploded View".

U1225 AV CONTROL UNIT

Description

INFOID:0000000005369471

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005369472

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1225	USB CONTROLLER [U1225]	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.

U1228 AV CONTROL UNIT

Description

INFOID:0000000005369473

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-128, "Exploded View".

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005369474

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1228	SUB CPU CONN [U1228]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1229 AV CONTROL UNIT

Description

INFOID:0000000005369475

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-128, "Exploded View".

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005369476

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1229	iPod CERTIFICATION [U1229]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U122A AV CONTROL UNIT

Description

INFOID:0000000005369477

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005369478

DTC	Display contents of CONSULT-III	DTC detection condition	Action to take
U122A	CONFIG UNFINISH [U122A]	The writing of configuration data is incomplete.	Write configuration data with CONSULT-III.

Diagnosis Procedure

INFOID:0000000005369479

1.PERFORM THE SELF-DIAGNOSIS

When U122A is detected, write configuration data with CONSULT-III.

>> Write configuration data with CONSULT-III. Refer to AV-25, "CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement".

U122E AV CONTROL UNIT

Description

INFOID:0000000005369480

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-128, "Exploded View".

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005369481

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U122E	Built-in AUDIO CONN [U122E]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1232 STEERING ANGLE SENSOR

Description

INFOID:0000000005369482

Part name	Description
Steering angle sensor	It is connected to the AV control unit and transmits the steering angle signal via CAN communication.

DTC Logic

INFOID:0000000005369483

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1232	ST ANGLE SEN CALIB [1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.

Diagnosis Procedure

INFOID:0000000005369484

1.ADJUST THE PREDICTIVE COURSE LINE CENTER POSITION OF THE STEERING ANGLE SENSOR

When U1232 is detected, adjust the predictive course line center position of the steering angle sensor.

>> Adjusts the steering angle sensor neutral position on ABS actuator and electrical unit (control unit) side. Refer to BRC-11, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".

U1243 DISPLAY UNIT

Description

INFOID:0000000005369485

Part name	Description
Display unit	• Display image is controlled by the serial communication from AV control unit. • It receives the power (signal VCC and inverter VCC) from the AV control unit and operates. • RGB image signal is input from AV control unit (RGB, RGB area and RGB synchronizing). • Composite image signals (auxiliary and camera images) are input from AV control unit. • Synchronizing signal (HP, VP) is output to AV control unit.

DTC Logic

INFOID:0000000005369486

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1243	FRONT DISP CONN [U1243]	When either one of the following items are detected: • display unit power supply and ground circuit malfunction is detected. • communication circuit between AV control unit and display unit.	• Display unit power supply and ground circuit. • Communication circuit between AV control unit and display unit.

Diagnosis Procedure

INFOID:0000000005369487

1.CHECK DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check display unit power supply and ground circuit. Refer to AV-64, "DISPLAY UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M194	11	M202	51	Existed
	22		39	

4. Check continuity between display unit harness connector and ground.

Display unit		Ground	Continuity
Connector	Terminals		
M194	11		Not existed
	12		

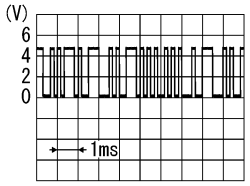
Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK COMMUNICATION SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.

3. Check signal between display unit harness connector and ground.

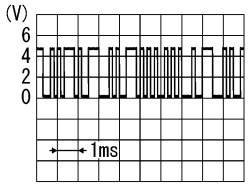
(+)		(–)	Condition	Reference value
Display unit				
Connector	Terminal			
M194	11	Ground	When adjusting display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-128, "Exploded View".

4. CHECK COMMUNICATION SIGNAL

Check signal between display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Display unit				
Connector	Terminal			
M194	22	Ground	When adjusting display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace Display unit. Refer to AV-130, "Exploded View".

U1263 USB

Description

INFOID:0000000005369488

Part name	Description
USB connector	Sound signal of USB input is transmitted to AV control unit.

DTC Logic

INFOID:0000000005369489

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1263	USB OVERCURRENT [U1263]	Detection of overcurrent in USB connecter.	Check USB harness between the AV control unit and USB connector.

Diagnosis Procedure

INFOID:0000000005369490

1.CHECK USB HARNESS

Visually check USB harness.

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-128, "Exploded View"
NO >> Replace USB harness.

U1300 AV COMM CIRCUIT

Description

INFOID:0000000005369491

U1300 is indicated when malfunction occurs in communication signal of multi AV system. Indicated simultaneously, without fail, with the malfunction of control units connected to AV control unit with communication line. Determine the possible malfunction cause from the table below.

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
U1300 U125C	• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between multifunction switch and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between multifunction switch and sonar control unit.
U1300 U1256	• AV COMM CIRCUIT [U1300] • HAND FREE CONN [U1256]	When either one of the following items are detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between sonar control unit and TEL adapter unit are malfunctioning.	• TEL adapter unit power supply and ground circuits. • AV communication circuits between sonar control unit and TEL adapter unit.
U1300 U1240 U125C U1256	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • SONAR CONN [U125C] • HAND FREE CONN [U1256]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

U1310 AV CONTROL UNIT

Description

INFOID:0000000005369492

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-128, "Exploded View".

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005369493

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1310	CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace the AV control unit if the malfunction occurs constantly.

POWER SUPPLY AND GROUND CIRCUIT

AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000005369620

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34*1
	74*2
Ignition switch ACC or ON	19

- *1: Gasoline engine models
- *2: Diesel engine models

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M201	19	OFF	Battery voltage
ACC power supply	M201	7	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between AV control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connectors.
3. Check continuity between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M201	20	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

DISPLAY UNIT

DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000005369624

1.CHECK POWER SUPPLY CIRCUIT (DISPLAY SIDE)

Check voltage between display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Inverter VCC	M194	2	ACC	9.0 V
Signal VCC		3		

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

1. Turn ignition switch OFF.
2. Disconnect the harness connector between display unit and AV control unit.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	2	M202	48	Existed
	3		36	Existed

4. Check continuity between display unit harness connector and ground.

Display unit		Ground	Continuity
Connector	Terminal		
M194	2		Not existed
	3		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK POWER SUPPLY CIRCUIT (AV CONTROL UNIT SIDE)

1. Connect the AV control unit harness connector.
2. Turn ignition switch ACC.
3. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Ignition switch position	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M202	48	Ground	ACC	9.0 V
	36			9.0 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replacement of AV control unit.

4.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector.
3. Check continuity between display unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M194	1	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

MULTIFUNCTION SWITCH

MULTIFUNCTION SWITCH : Diagnosis Procedure

INFOID:0000000005369621

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between multifunction switch harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
ACC power supply	M72	3	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between multifunction switch and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect multifunction switch connector.
3. Check continuity between multifunction switch harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M72	1	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

SPEAKER AMP.

SPEAKER AMP. : Diagnosis Procedure

INFOID:0000000005369622

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between speaker amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
ACC power supply	B35	9	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between speaker amp. and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect speaker amp. connector.
3. Check continuity between speaker amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B35	7	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

TEL ADAPTER UNIT

TEL ADAPTER UNIT : Diagnosis Procedure

INFOID:0000000005369623

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34*1
	74*2
Ignition switch ACC or ON	19

- *1:Gasoline engine models
- *2: Diesel engine models

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between TEL adapter unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B87	1	OFF	Battery voltage
ACC power supply	B87	2	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between TEL adapter unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector.
3. Check continuity between TEL adapter unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B87	4	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

RGB (R: RED) SIGNAL CIRCUIT

Description

INFOID:0000000005369500

Transmit the image displayed with AV control unit with RGB image signal to the display unit.

Diagnosis Procedure

INFOID:0000000005369501

1.CHECK CONTINUITY RGB (R: RED) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	17	M202	43	Existed

4. Check continuity between display unit harness connector and ground.

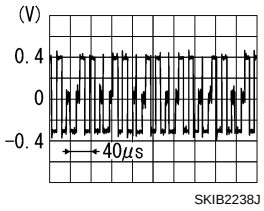
Display unit		Ground	Continuity
Connector	Terminal		
M194	17		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (R: RED) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Display unit				
Connector	Terminal			
M194	17	Ground	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	

SKIB2238J

Is inspection result normal?

YES >> Replace display unit. Refer to AV-130, "Exploded View".
NO >> Replace AV control unit. Refer to AV-128, "Exploded View".

RGB (G: GREEN) SIGNAL CIRCUIT

Description

INFOID:0000000005369502

Transmit the image displayed with AV control unit with RGB image signal to the display unit.

Diagnosis Procedure

INFOID:0000000005369503

1.CHECK CONTINUITY RGB (G: GREEN) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	6	M202	44	Existed

4. Check continuity between display unit harness connector and ground.

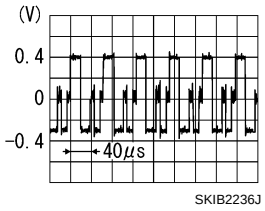
Display unit		Ground	Continuity
Connector	Terminal		
M194	6		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (G: GREEN) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+) Display unit		(–)	Condition	Reference value
Connector	Terminal			
M194	6	Ground	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	

SKIB2236J

Is inspection result normal?

YES >> Replace display unit. Refer to AV-130, "Exploded View".
NO >> Replace AV control unit. Refer to AV-128, "Exploded View".

RGB (B: BLUE) SIGNAL CIRCUIT

Description

INFOID:0000000005369504

Transmit the image displayed with AV control unit with RGB image signal to the display unit.

Diagnosis Procedure

INFOID:0000000005369505

1.CHECK CONTINUITY RGB (B: BLUE) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	18	M202	45	Existed

4. Check continuity between display unit harness connector and ground.

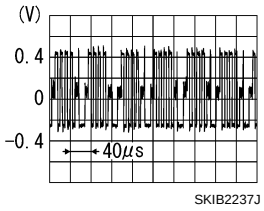
Display unit		Ground	Continuity
Connector	Terminal		
M194	18		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (B: BLUE) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+) Display unit		(–)	Condition	Reference value
Connector	Terminal			
M194	18	Ground	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	

SKIB2237J

Is inspection result normal?

YES >> Replace display unit. Refer to AV-130, "Exploded View".
NO >> Replace AV control unit. Refer to AV-128, "Exploded View".

RGB SYNCHRONIZING SIGNAL CIRCUIT

Description

INFOID:0000000005369506

Transmit the RGB synchronizing signal to the display unit so as to synchronize the RGB image displayed with AV control unit.

Diagnosis Procedure

INFOID:0000000005369507

1.CHECK CONTINUITY RGB SYNCHRONIZING SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	19	M202	42	Existed

4. Check continuity between display unit harness connector and ground.

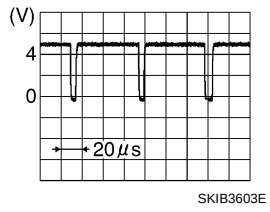
Display unit		Ground	Continuity
Connector	Terminal		
M194	19		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB SYNCHRONIZING SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(–)	Reference value
Display unit			
Connector	Terminal		
M194	19	Ground	

SKIB3603E

Is the inspection result normal?

YES >> Replace display unit. Refer to AV-130, "Exploded View".
NO >> Replace AV control unit. Refer to AV-128, "Exploded View".

RGB AREA (YS) SIGNAL CIRCUIT

Description

INFOID:0000000005369508

Transmits the display area of RGB image displayed by AV control unit with RGB area (YS) signal to display unit.

Diagnosis Procedure

INFOID:0000000005369509

1.CHECK CONTINUITY RGB AREA (YS) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	9	M202	40	Existed

4. Check continuity between display unit harness connector and ground.

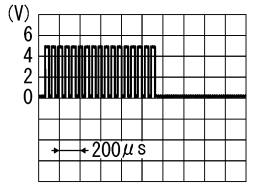
Display unit		Ground	Continuity
Connector	Terminal		
M194	9		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB AREA (YS) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+) Display unit		(–)	Condition	Reference value (Approx.)
Connector	Terminal			
M194	9	Ground	At RGB image is displayed.	5.0 V
			At AUX image is displayed.	

PKIB4948J

Is the inspection result normal?

YES >> Replace display unit. Refer to AV-130, "Exploded View".
NO >> Replace AV control unit. Refer to AV-128, "Exploded View".

COMPOSITE IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000005369510

AV control unit that inputs the camera image signal and AUX image signal transmits the composite image signal to the display unit.

Diagnosis Procedure

INFOID:0000000006081229

1.CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M202	47	M194	15	Existed

4. Check continuity between AV control unit harness connector and ground.

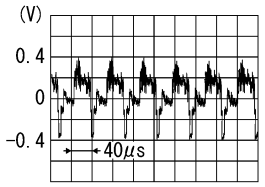
AV control unit		Ground	Continuity
Connector	Terminal		
M202	47		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AUX COMPOSITE SIGNAL

1. Connect AV control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between auxiliary input jacks harness connector and ground.

(+) AV control unit		(–)	Condition	Reference value
Connector	Terminal			
M202	47	Ground	At rear view camera image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace display unit. Refer to AV-130, "Exploded View".
NO >> Replace AV control unit. Refer to AV-128, "Exploded View".

HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

Description

INFOID:0000000005369512

In composite image (AUX image), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from display unit to AV control unit so as to synchronize the RGB images displayed with AV control unit such as the image quality adjusting menu, etc.

Diagnosis Procedure

INFOID:0000000005369513

1.CHECK CONTINUITY HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	8	M202	38	Existed

4. Check continuity between display unit harness connector and ground.

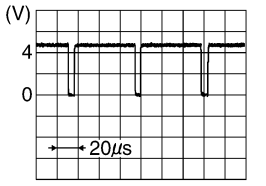
Display unit		Ground	Continuity
Connector	Terminal		
M194	8		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HORIZONTAL SYNCHRONIZING (HP) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(–)	Reference value
Display unit			
Connector	Terminal		
M194	8	Ground	

SKIB3601E

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-128, "Exploded View".
NO >> Replace display unit. Refer to AV-130, "Exploded View".

VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

Description

INFOID:0000000005369514

In composite image (AUX image), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from display unit to AV control unit so as to synchronize the RGB images displayed with AV control unit such as the image quality adjusting menu, etc.

Diagnosis Procedure

INFOID:0000000005369651

1.CHECK CONTINUITY VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	20	M202	50	Existed

4. Check continuity between display unit harness connector and ground.

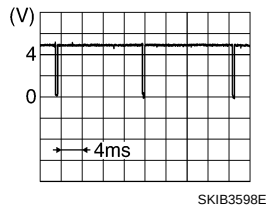
Display unit		Ground	Continuity
Connector	Terminal		
M194	20		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VERTICAL SYNCHRONIZING (VP) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(–)	Reference value
Display unit			
Connector	Terminal		
M194	20	Ground	

SKIB3598E

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-128, "Exploded View".
NO >> Replace display unit. Refer to AV-130, "Exploded View".

AUX IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000005369516

- Transmits the image signal of AUX device from auxiliary input jacks to AV control unit.
- AV control unit transmits the image signal that is input to the display unit.

Diagnosis Procedure

INFOID:0000000005369517

1.CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect auxiliary input jacks connector and AV control unit connector.
3. Check continuity between auxiliary input jacks harness connector and AV control unit harness connector.

Auxiliary input jacks		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M196*1	7	M203	61	Existed
M325*2				

- *1: A/T models
- *2: M/T models

4. Check continuity between auxiliary input jacks harness connector and ground.

Auxiliary input jacks		Ground	Continuity
Connector	Terminal		
M196*1	7		Not existed
M325*2			

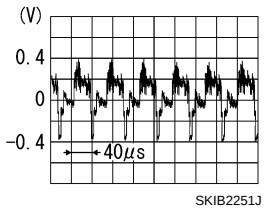
- *1: A/T models
- *2: M/T models

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AUX IMAGE SIGNAL

1. Connect auxiliary input jacks connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between auxiliary input jacks harness connector and ground.

(+)		(–)	Condition	Reference value
Auxiliary input jacks				
Connector	Terminal			
M196*1	7	Ground	At AUX image is displayed.	
M325*2				

SKIB2251J

- *1: A/T models
- *2: M/T models

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-128, "Exploded View".
NO >> Check that there is no malfunction in the external device.

CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000005369518

- AV control unit outputs camera power supply to rear view camera and inputs rear view camera image signal from rear view camera when the reverse signal is input.
- The AV control unit that inputs the camera image signal transmits the camera image signal to the display unit.

Diagnosis Procedure

INFOID:0000000005369519

1.CHECK CONTINUITY CAMERA POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and rear view camera connector.
3. Check continuity between AV control unit harness connector and rear view camera harness connector.

AV control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M203	73	D121	1	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M203	73		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE CAMERA POWER SUPPLY

1. Connect AV control unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to “R”.
4. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M203	73	Ground	Shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace AV control unit. Refer to AV-128, "Exploded View".

3.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and rear view camera connector.
3. Check continuity between AV control unit harness connector and rear view camera harness connector.

AV control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M203	62	D121	3	Existed

4. Check continuity between AV control unit harness connector and ground.

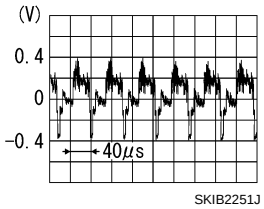
AV control unit		Ground	Continuity
Connector	Terminal		
M203	62		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK CAMERA IMAGE SIGNAL

1. Connect AV control unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to “R”.
4. Check signal between AV control unit harness connector and ground.

(+)		(–)	Condition	Reference value
AV control unit				
Connector	Terminal			
M203	62	Ground	At rear view camera image is displayed.	

SKIB2251J

Is inspection result normal?

YES >> Replace AV control unit. Refer to AV-128, "Exploded View".
NO >> Replace rear view camera. Refer to AV-144, "Exploded View".

DISK EJECT SIGNAL CIRCUIT

Description

INFOID:0000000005369520

The eject signal is output to AV control unit when the eject switch of multifunction switch is pressed.

Diagnosis Procedure

INFOID:0000000005369521

1.CHECK CONTINUITY CD EJECT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect multifunction switch connector and AV control unit connector.
3. Check continuity between multifunction switch harness connector and AV control unit harness connector.

Multifunction switch		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M72	14	M204	96	Existed

4. Check continuity between multifunction switch harness connector and ground.

Multifunction switch		Ground	Continuity
Connector	Terminal		
M72	14		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Connect multifunction switch connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M204	96	Ground	Pressing the eject switch	0 V
			Except for above	5.0 V

Is the inspection result normal?

YES >> Replace preset switch. Refer to AV-138, "Exploded View".
NO >> Replace AV control unit. Refer to AV-128, "Exploded View".

MICROPHONE SIGNAL CIRCUIT

Description

INFOID:0000000005369522

Supply power from TEL adapter unit to microphone. The microphone transmits the sound/voice to the microphone.

Diagnosis Procedure

INFOID:0000000005369523

1.CHECK CONTINUITY BETWEEN TEL ADAPTER UNIT AND MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector and microphone connector.
3. Check continuity between TEL adapter unit harness connector and microphone harness connector.

TEL adapter unit		Microphone		Continuity
Connector	Terminals	Connector	Terminals	
B87	7	R17	1	Existed
	8		2	
	29		4	

4. Check continuity between TEL adapter unit harness connector and ground.

TEL adapter unit		Ground	Continuity
Connector	Terminals		
M87	7		Not existed
	29		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE MICROPHONE VCC

1. Connect TEL adapter unit connector.
2. Turn ignition switch ON.
3. Check voltage between TEL adapter unit harness connector.

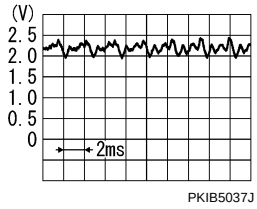
(+)		(–)		Voltage (Approx.)
TEL adapter unit		TEL adapter unit		
Connector	Terminal	Connector	Terminal	
B87	29	B87	8	5.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace TEL adapter unit. Refer to AV-146, "Exploded View".

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.
2. Check signal between TEL adapter unit harness connector.

(+)		(–)		Condition	Reference value
TEL adapter unit		TEL adapter unit			
Connector	Terminal	Connector	Terminal		
B87	7	B87	8	give a voice.	

PKIB5037J

Is the inspection result normal?

YES >> Replace TEL adapter unit. Refer to AV-146, "Exploded View".
NO >> Replace microphone. Refer to AV-142, "Exploded View".

STEERING SWITCH SIGNAL A CIRCUIT

Description

INFOID:0000000005369524

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000005369525

1.CHECK STEERING SWITCH SIGNAL A CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M201	6	M36	24	Existed

3. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M201	6		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit		AV control unit		
Connector	Terminal	Connector	Terminal	
M201	6	M201	15	3.3 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-128, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-82, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to SR-16, "Exploded View".

Component Inspection

INFOID:0000000005369526

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

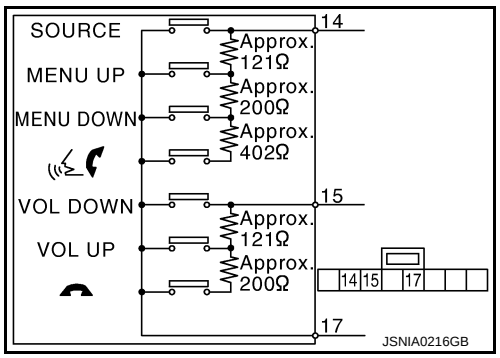
Standard

Between terminals 14 and 17

switch ON	: Approx. 716 – 730 Ω
MENU DOWN switch ON	: Approx. 318 – 324 Ω
MENU UP switch ON	: Approx. 120 – 122 Ω
SOURCE switch ON	: Approx. 0 Ω

Between terminals 15 and 17

switch ON	: Approx. 318 – 324 Ω
VOL UP switch ON	: Approx. 120 – 122 Ω
VOL DOWN switch ON	: Approx. 0 Ω



STEERING SWITCH SIGNAL B CIRCUIT

Description

INFOID:0000000005369527

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000005369528

1.CHECK STEERING SWITCH SIGNAL B CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M201	16	M36	31	Existed

3. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M201	16		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit		AV control unit		
Connector	Terminal	Connector	Terminal	
M201	16	M201	15	3.3 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-128, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-84, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to SR-16, "Exploded View".

Component Inspection

INFOID:0000000005369529

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

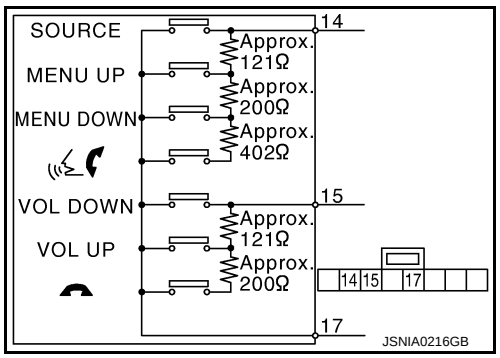
Standard

Between terminals 14 and 17

switch ON	: Approx. 716 – 730 Ω
MENU DOWN switch ON	: Approx. 318 – 324 Ω
MENU UP switch ON	: Approx. 120 – 122 Ω
SOURCE switch ON	: Approx. 0 Ω

Between terminals 15 and 17

switch ON	: Approx. 318 – 324 Ω
VOL UP switch ON	: Approx. 120 – 122 Ω
VOL DOWN switch ON	: Approx. 0 Ω



STEERING SWITCH GROUND CIRCUIT

Description

INFOID:0000000005369530

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000005369531

1.CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M201	15	M36	33	Existed

3. Connect AV control unit connector.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK GROUND CIRCUIT

1. Connect AV control unit connector.
2. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M201	15		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-128, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-86, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to SR-16, "Exploded View".

Component Inspection

INFOID:0000000005369532

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

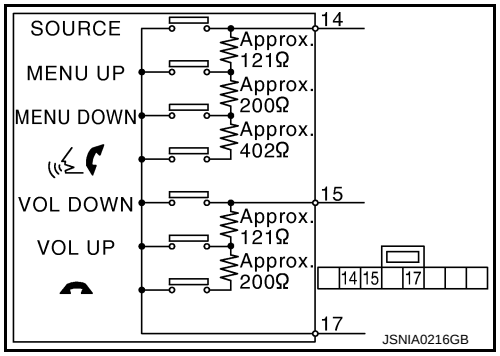
Standard

Between terminals 14 and 17

switch ON	: Approx. 716 – 730 Ω
MENU DOWN switch ON	: Approx. 318 – 324 Ω
MENU UP switch ON	: Approx. 120 – 122 Ω
SOURCE switch ON	: Approx. 0 Ω

Between terminals 15 and 17

switch ON	: Approx. 318 – 324 Ω
VOL UP switch ON	: Approx. 120 – 122 Ω
VOL DOWN switch ON	: Approx. 0 Ω



ECU DIAGNOSIS INFORMATION

AV CONTROL UNIT

Reference Value

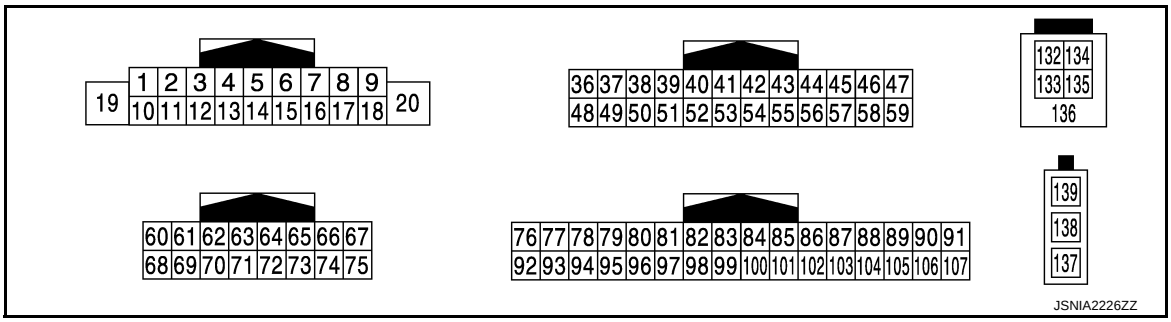
INFOID:0000000005195153

VALUES ON THE DIAGNOSIS TOOL

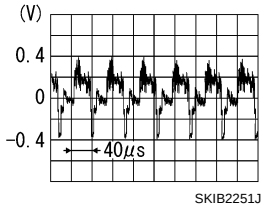
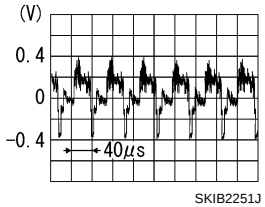
CONSULT-III MONITOR ITEM

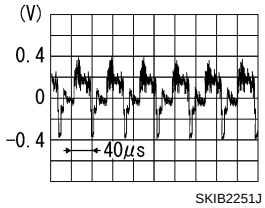
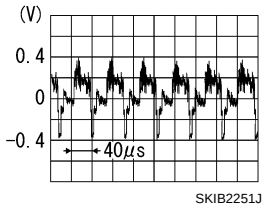
Monitor Item	Condition		Value/Status
VHCL SPD SIG	Ignition switch ON	Vehicle speed > 0 km/h (0 MPH)	On
		Vehicle speed = 0 km/h (0 MPH)	Off
PKB SIG	Ignition switch ON	Parking brake is applied.	On
		Parking brake is released.	Off
ILLUM SIG	Ignition switch ON	Light switch ON	On
		Light switch OFF	Off
IGN SIG	Ignition switch ON	—	On
	Ignition switch ACC	—	Off
REV SIG	Ignition switch ON	Selector lever in R position	On
		Selector lever in any position other than R	Off

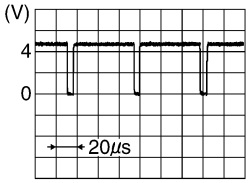
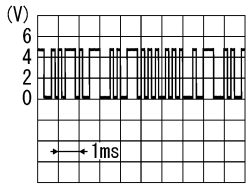
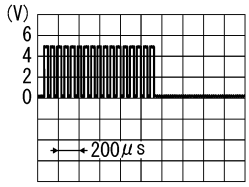
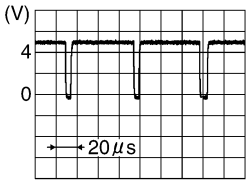
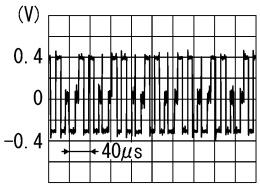
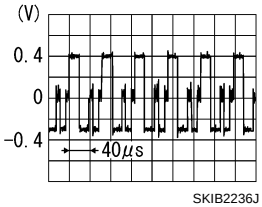
TERMINAL LAYOUT

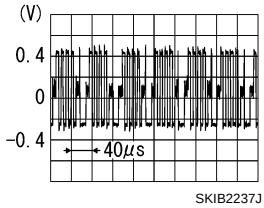
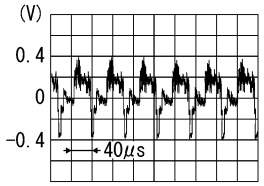
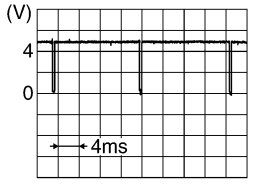
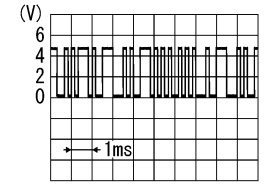
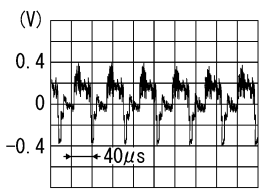


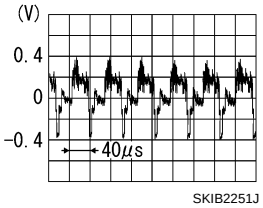
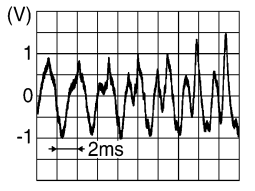
PHYSICAL VALUES

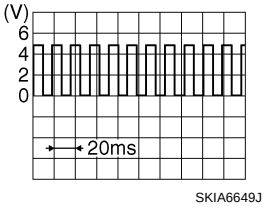
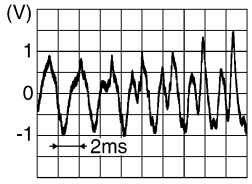
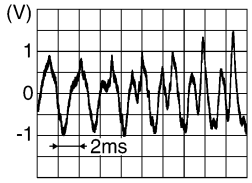
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
2 (P)*1 (BR)*2	3 (L)*1 (R)*2	Sound signal front LH and center speaker LH	Output	Ignition switch ON	Sound output	 SKIB2251J
4 (LG)*2 (SB)*3 (V)*4	5 (V)*3 (LG)*4 (P)*5 (L)*6	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output	 SKIB2251J

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
6 (P)	15 (B)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing MENU UP switch.	0.7 V
					Keep pressing MENU DOWN switch.	1.3 V
					Keep pressing switch	2.0 V
					Except for above.	3.3 V
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
9 (R)	Ground	Illumination signal	Input	Ignition switch OFF	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12.0 V
11 (R)*1 (L)*2	12 (G)*1 (W)*2	Sound signal front RH and center speaker RH	Output	Ignition switch ON	Sound output	 SKIB2251J
13 (BR)*1 (L)*2	14 (Y)*1 (P)*2	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	 SKIB2251J
16 (L)	15 (B)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	0.7 V
					Keep pressing switch.	1.3 V
					Except for above.	3.3 V
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
20 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
36 (O)	Ground	Signal VCC	Output	Ignition switch ACC	—	9.0 V
37 (LG)	Ground	Signal ground	—	Ignition switch OFF	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
38 (G)*5 (R)*7	Ground	Horizontal synchronizing (HP) signal	Input	Ignition switch ON	—	 SKIB3601E
39 (G)*4 (BR)*8	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
40 (B)*3 (R)*5 (G)*9	Ground	RGB area (YS) signal	Output	Ignition switch ON	At RGB image is displayed.	5.0 V
					At AUX image is displayed.	 PKIB4948J
41	—	Shield	—	—	—	—
42 (G)*3 (W)*5 (B)*9	Ground	RGB synchronizing signal	Output	Ignition switch ON	—	 SKIB3603E
43 (B)*3 (G)*10	Ground	RGB image signal (R: red)	Output	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2238J
44 (W)*3 (L)*10	Ground	RGB image signal (G: green)	Output	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2236J

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
45 (R)*3 (P)*10	Ground	RGB image signal (B: blue)	Output	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2237J
46 (V)*1 (O)*2	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
47 (SB)	Ground	Composite image signal	Output	Ignition switch ON	At rear view camera image is displayed.	 SKIB2251J
48 (Y)	Ground	Inverter VCC	Output	Ignition switch ACC	—	9.0 V
49 (Y)*4 (BR)*8	Ground	Inverter ground	—	Ignition switch OFF	—	0 V
50 (B)*5 (W)*7	Ground	Vertical synchronizing (VP) signal	Input	Ignition switch ON	—	 SKIB3598E
51 (R)*4 (Y)*8	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
52 (SB)*2	—	Shield	—	—	—	—
57	—	Shield	—	—	—	—
58	—	Shield	—	—	—	—
61 (Y)*1 (BR)*2	Ground	AUX image signal	Input	Ignition switch ON	At AUX image is displayed.	 SKIB2251J

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
62 (W)	Ground	Camera image signal	Input	Ignition switch ON	At rear view camera image is displayed.	 SKIB2251J
63 (B)*2	—	Shield	—	—	—	—
69 (BR)*1 (Y)*2	Ground	AUX image signal ground	—	Ignition switch ON	—	0 V
70	—	Shield	—	—	—	—
72 (B)*1 (W)*2	Ground	Camera ground	—	Ignition switch ON	—	0 V
73 (R)	Ground	Camera power supply	Output	Ignition switch ON	At rear view camera image is displayed.	6.0 V
76 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
77 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
78 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
79 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
80 (P)	—	CAN–L	Input/ Output	—	—	—
81 (L)	—	CAN–H	Input/ Output	—	—	—
82 (BR)*3 (B)*10	Ground	Switch ground	—	Ignition switch ON	—	0 V
86	—	Shield	—	—	—	—
87 (L)	88 (P)	TEL voice signal	Input	Ignition switch ON	During voice guide output with the switch pressed.	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
92 (R)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** Maximum voltage may be 12.0 V due to specifications (connected units).  SKIA6649J
93 (V)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake is ON.	4.5 V
					Parking brake is OFF.	0 V
94 (O)	Ground	Reverse signal	Input	Ignition switch ON	R position	12.0 V
					Other than R position	0 V
95 (G)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
96 (SB)*3 (Y)*10	Ground	Disk eject signal	Input	Ignition switch ON	Pressing the eject switch.	0 V
					Except for above.	5.0 V
103 (W)	102 (B)	AUX sound signal LH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E
104 (R)	102 (B)	AUX sound signal RH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E
132 (G)	—	USB ground	—	—	—	—
133 (R)	—	USB D− signal	Input/ Output	—	—	—
134 (W)	—	V BUS signal	Output	—	—	—
135 (L)	—	USB D+ signal	Input/ Output	—	—	—
136	—	Shield	—	—	—	—
137	—	FM sub	Input	—	—	—
138	—	AM - FM sub	Input	—	—	—
139	—	Antenna amp. ON signal	Input	Ignition switch ON	—	12.0 V

- *1: With gasoline engine
- *2: With diesel engine
- *3: LHD models with gasoline engine
- *4: RHD models with gasoline engine
- *5: LHD models with diesel engine
- *6: RHD models with diesel engine
- *7: Except LHD models with diesel engine
- *8: Except RHD models with gasoline engine
- *9: RHD models
- *10: Except LHD models with gasoline engine

DTC Index

INFOID:0000000005195156

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

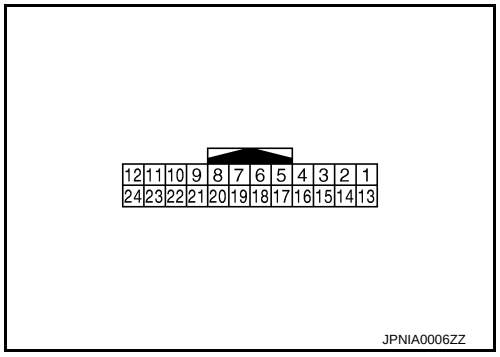
DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	AV-47, "Diagnosis Procedure"
U1010	CONTROL UNIT (CAN) [1010]	AV-48, "DTC Logic"
U1200	Cont Unit [U1200]	AV-49, "DTC Logic"
U1216	CAN CONT [U1216]	AV-50, "DTC Logic"
U121D	DSP CONN [U121D]	AV-51, "Diagnosis Procedure"
U121E	DSP COMM [U121E]	AV-52, "Diagnosis Procedure"
U1225	USB CONTROLLER [U1225]	AV-53, "DTC Logic"
U1228	SUB CPU CONN [U1228]	AV-54, "DTC Logic"
U1229	iPod CERTIFICATION [U1229]	AV-55, "DTC Logic"
U122A	CONFIG UNFINISH [U122A]	AV-56, "Diagnosis Procedure"
U122E	Built-in AUDIO CONN [U122E]	AV-57, "DTC Logic"
U1232	ST ANGLE SEN CALIB [1232]	AV-58, "Diagnosis Procedure"
U1243	FRONT DISP CONN [U1243]	AV-59, "Diagnosis Procedure"
U1263	USB OVERCURRENT [U1263]	AV-61, "Diagnosis Procedure"
U1310	CONTROL UNIT (AV) [U1310]	AV-63, "DTC Logic"
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	AV-62, "Description"
U1300 U125C	• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	AV-62, "Description"
U1300 U1256	• AV COMM CIRCUIT [U1300] • HAND FREE CONN [U1256]	AV-62, "Description"
U1300 U1240 U125C U1256	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • SONAR CONN [U125C] • HAND FREE CONN [U1256]	AV-62, "Description"

DISPLAY UNIT

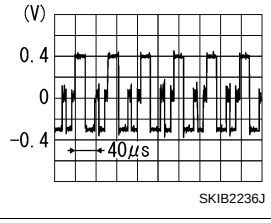
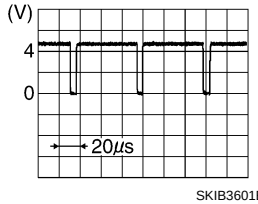
Reference Value

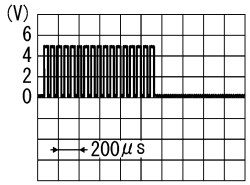
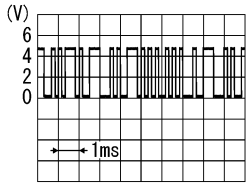
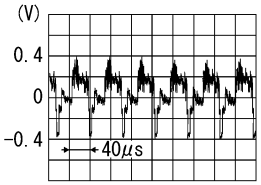
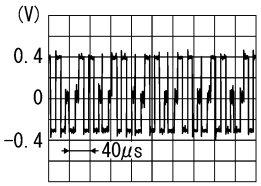
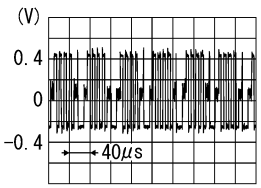
INFOID:0000000005195157

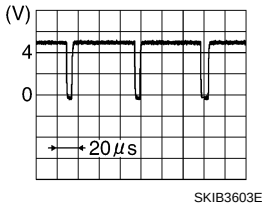
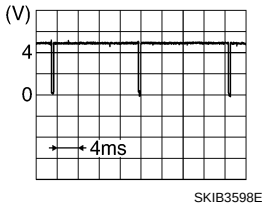
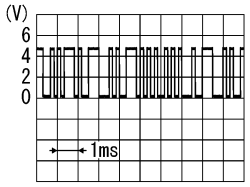
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y)	Ground	Inverter VCC	Input	Ignition switch ACC	—	9.0 V
3 (O)	Ground	Signal VCC	Input	Ignition switch ACC	—	9.0 V
4 (V)*1 (O)*2	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
5	—	Shield	—	—	—	—
6 (W)*3 (L)*4	Ground	RGB image signal (G: green)	Input	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2236J
7	—	Shield	—	—	—	—
8 (G)*5 (R)*6	Ground	Horizontal synchronizing (HP) signal	Output	Ignition switch ON	—	 SKIB3601E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
9 (B)*3 (R)*5 (G)*7	Ground	RGB area (YS) signal	Input	Ignition switch ON	At RGB image is displayed.	5.0 V
					At AUX image is displayed.	 PKIB4948J
11 (R)*8 (Y)*9	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
13 (Y)*8 (BR)*9	Ground	Inverter ground	—	Ignition switch ON	—	0 V
14 (LG)	Ground	Signal ground	—	Ignition switch ON	—	0 V
15 (SB)	Ground	Composite image signal	Input	Ignition switch ON	At rear view camera image is displayed.	 SKIB2251J
17 (B)*3 (G)*4	Ground	RGB image signal (R: red)	Input	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2238J
18 (R)*3 (P)*4	Ground	RGB image signal (B: blue)	Input	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2237J

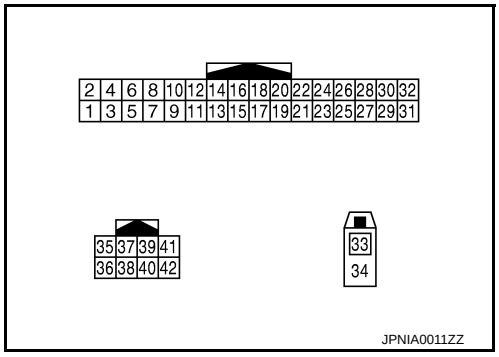
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
19 (G)*3 (W)*5 (B)*7	Ground	RGB synchronizing signal	Input	Ignition switch ON	—	 SKIB3603E
20 (B)*5 (W)*6	Ground	Vertical synchronizing (VP) signal	Output	Ignition switch On	—	 SKIB3598E
21	—	Shield	—	—	—	—
22 (G)*8 (BR)*9	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
23 (SB)*2	—	Shield	—	—	—	—

- *1: With gasoline engine
- *2: With diesel engine
- *3: LHD models with gasoline engine
- *4: Except LHD models with gasoline engine
- *5: LHD models with diesel engine
- *6: Except LHD models with diesel engine
- *7: RHD models
- *8: RHD models with gasoline engine
- *9: Except RHD models with gasoline engine

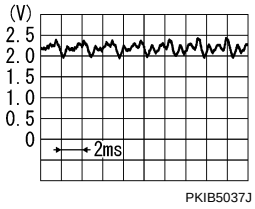
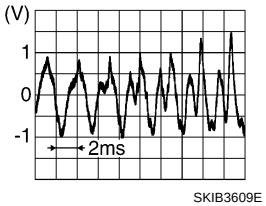
TEL ADAPTER UNIT

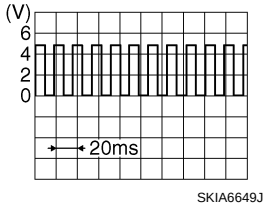
Reference Value

INFOID:0000000005195160



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (Y)*1 (GR)*2	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
2 (LG)*3 (V)*4	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
3 (W)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
4 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
5	—	Shield	—	—	—	—
7 (L)	8	Microphone signal	Input	Ignition switch ON	Give a voice	 PKIB5037J
9 (Y)	10 (G)	TEL voice signal	Output	Ignition switch ON	During voice guide output with the switch pressed.	 SKIB3609E
20 (B)	Ground	Control signal	Input	Ignition switch ON	—	0 V
23 (B)	Ground	Control signal	Input	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
24 (B)	Ground	Control signal	Input	Ignition switch ON	—	0 V
28 (V)*5 (P)*6	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** Maximum voltage may be 12.0 V due to specifications (connected units).  SKIA6649J
29 (P)	8	Microphone VCC	Output	Ignition switch ON	—	5.0 V
33	—	TEL antenna signal	Input	—	—	—
34	—	Shield	—	—	—	—
35 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
36 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—

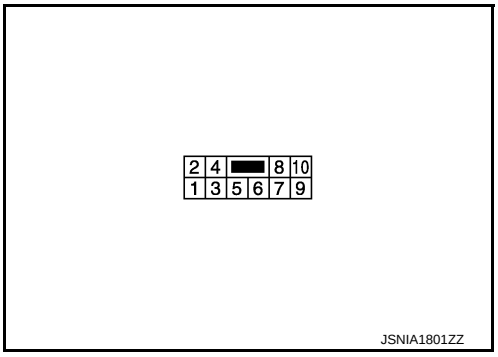
- *1: RHD models with gasoline engine
- *2: Except RHD models with gasoline engine
- *3: LHD models
- *4: RHD models
- *5: With gasoline engine
- *6: With diesel engine

SPEAKER AMP.

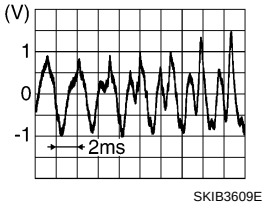
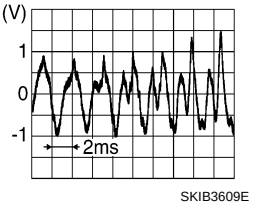
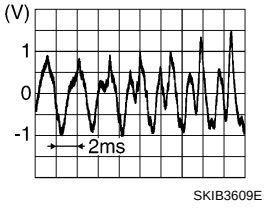
Reference Value

INFOID:0000000005280011

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
2 (Y)*1 (BR)*2	1 (G)*1 (R)*2	Sound signal center speaker LH	Input	Ignition switch ON	Sound output	
4 (V)*3 (L)*4	3 (LG)*3 (W)*4	Sound signal center speaker RH	Input	Ignition switch ON	Sound output	
7 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
9 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
10 (O)*3 (L)*4	8 (W)	Sound signal center speaker	Output	Ignition switch ON	Sound output	

- *1: With gasoline engine
- *2: With diesel engine
- *3: RHD models with gasoline engine
- *4: Except RHD models with gasoline engine

WIRING DIAGRAM

BASE AUDIO WITHOUT NAVIGATION

LHD MODELS

LHD MODELS : Wiring Diagram

INFOID:0000000006106625

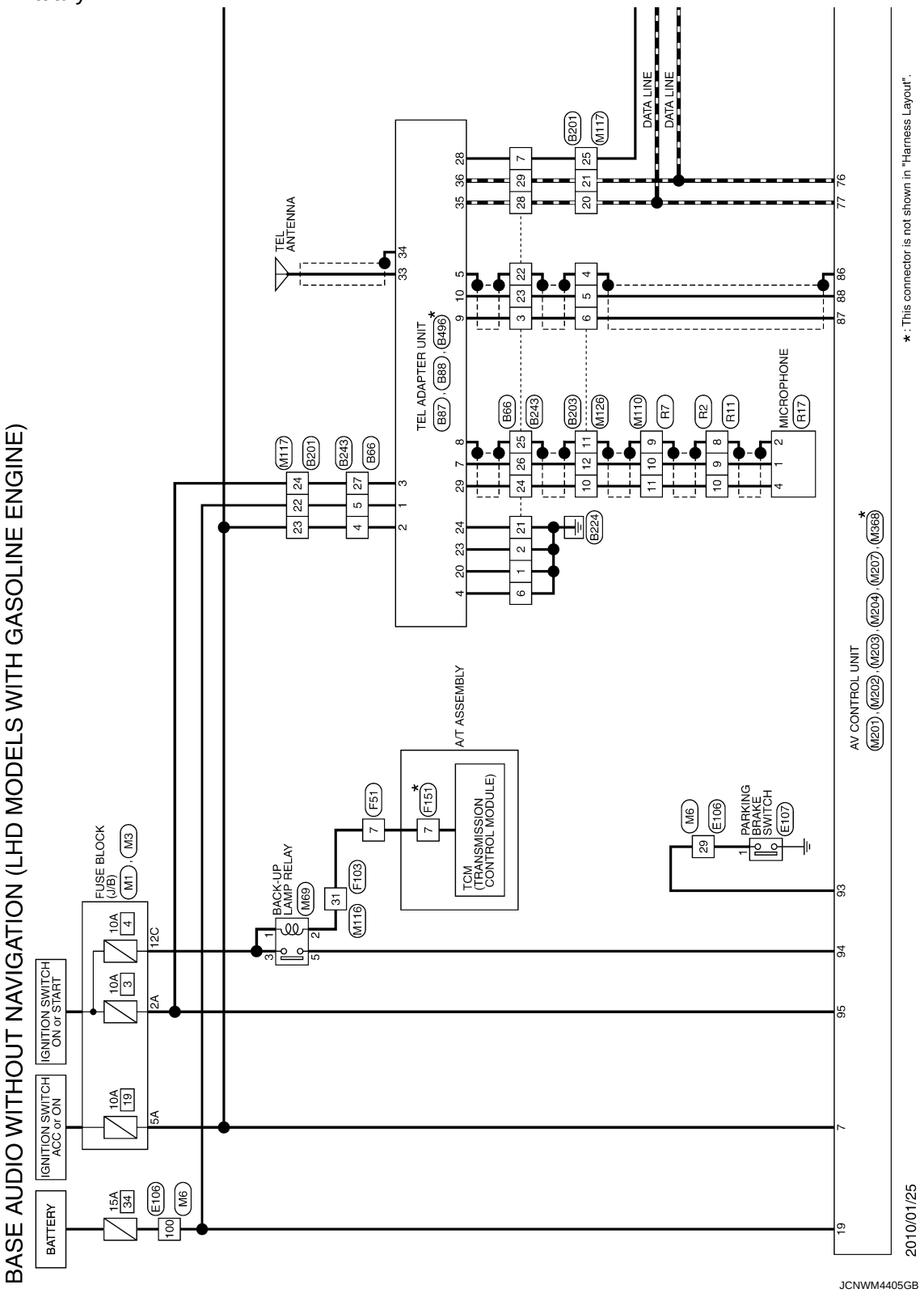
GASOLINE ENGINE MODELS

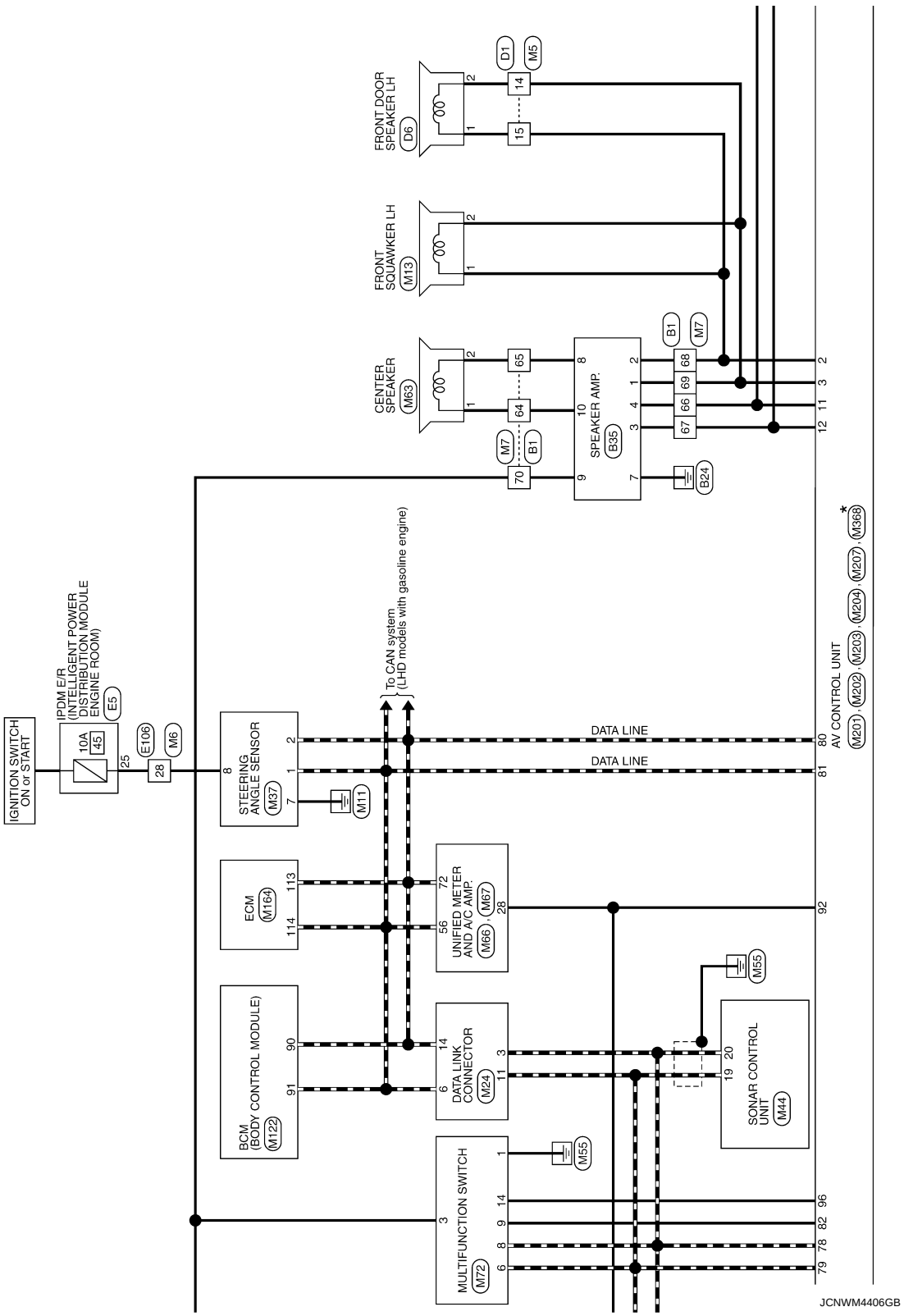
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

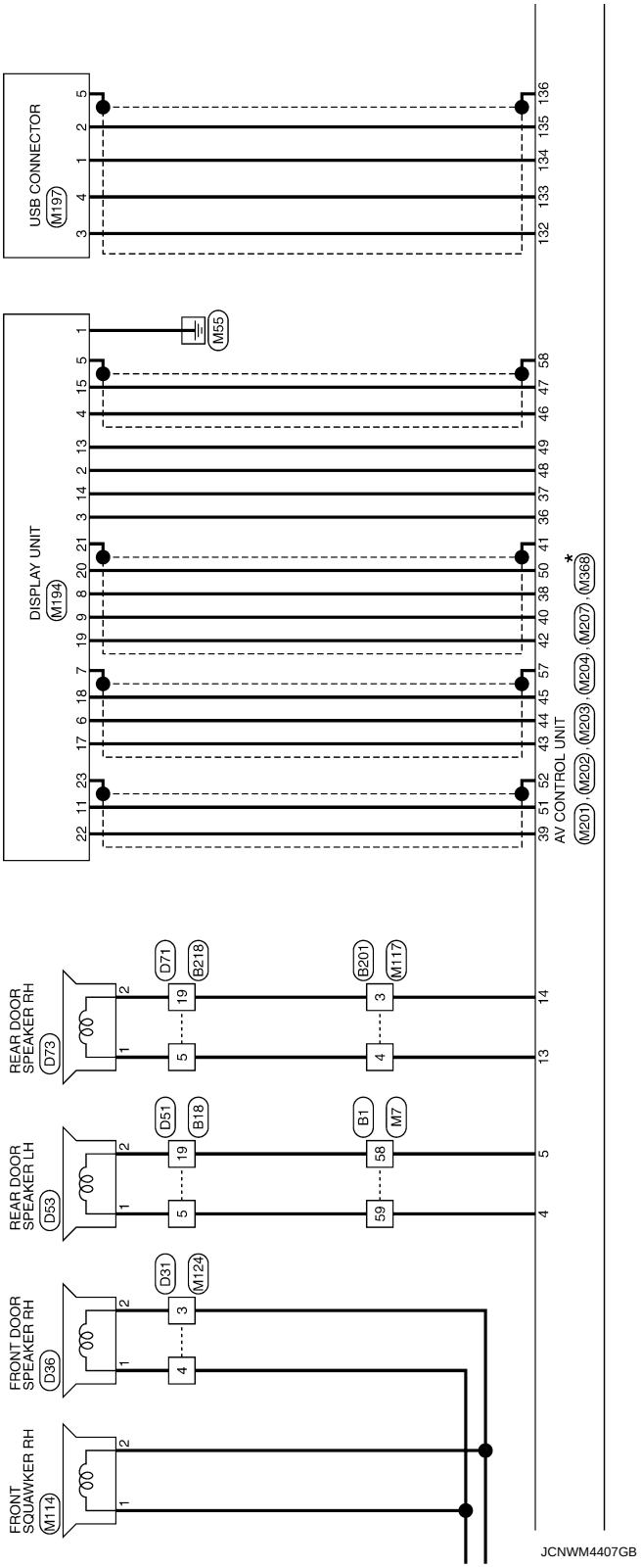
NOTE:

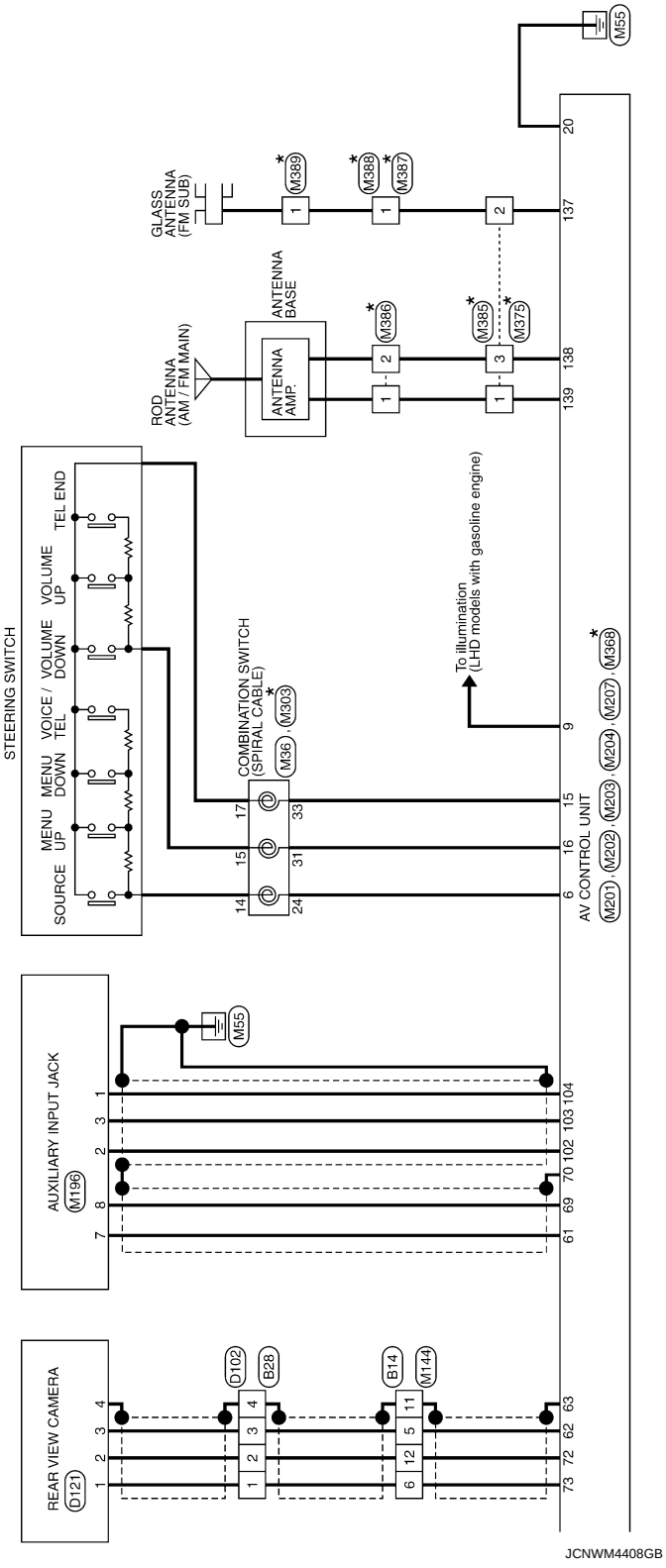
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

BASE AUDIO WITHOUT NAVIGATION (LHD MODELS WITH GASOLINE ENGINE)




IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E5
10A 45
25
E106
28
M6
STEERING ANGLE SENSOR M37
M11
To CAN system (LHD models with gasoline engine)
DATA LINE
DATA LINE
AV CONTROL UNIT (M201), (M202), (M203), (M204), (M207), (M368)*
ECM M164
UNIFIED METER AND A/C AMP. M66, M67
BCM (BODY CONTROL MODULE) M122
DATA LINK CONNECTOR M24
SONAR CONTROL UNIT M44
M55
MULTIFUNCTION SWITCH M72
FRONT DOOR SPEAKER LH D6
FRONT SQUAWKER LH M13
CENTER SPEAKER M63
SPEAKER AMP. B35
B24
D1
M5
B1
M7
JCNWM4406GB


USB CONNECTOR
M197
DISPLAY UNIT
M194
M55
AV CONTROL UNIT
M201, M202, M203, M204, M207, M368
REAR DOOR SPEAKER RH
D73
REAR DOOR SPEAKER LH
D53
FRONT DOOR SPEAKER RH
D36
FRONT SQUAWKER RH
M114
D71
B218
B201
M117
D51
B18
B1
M7
D31
M124
JCNWM4407GB

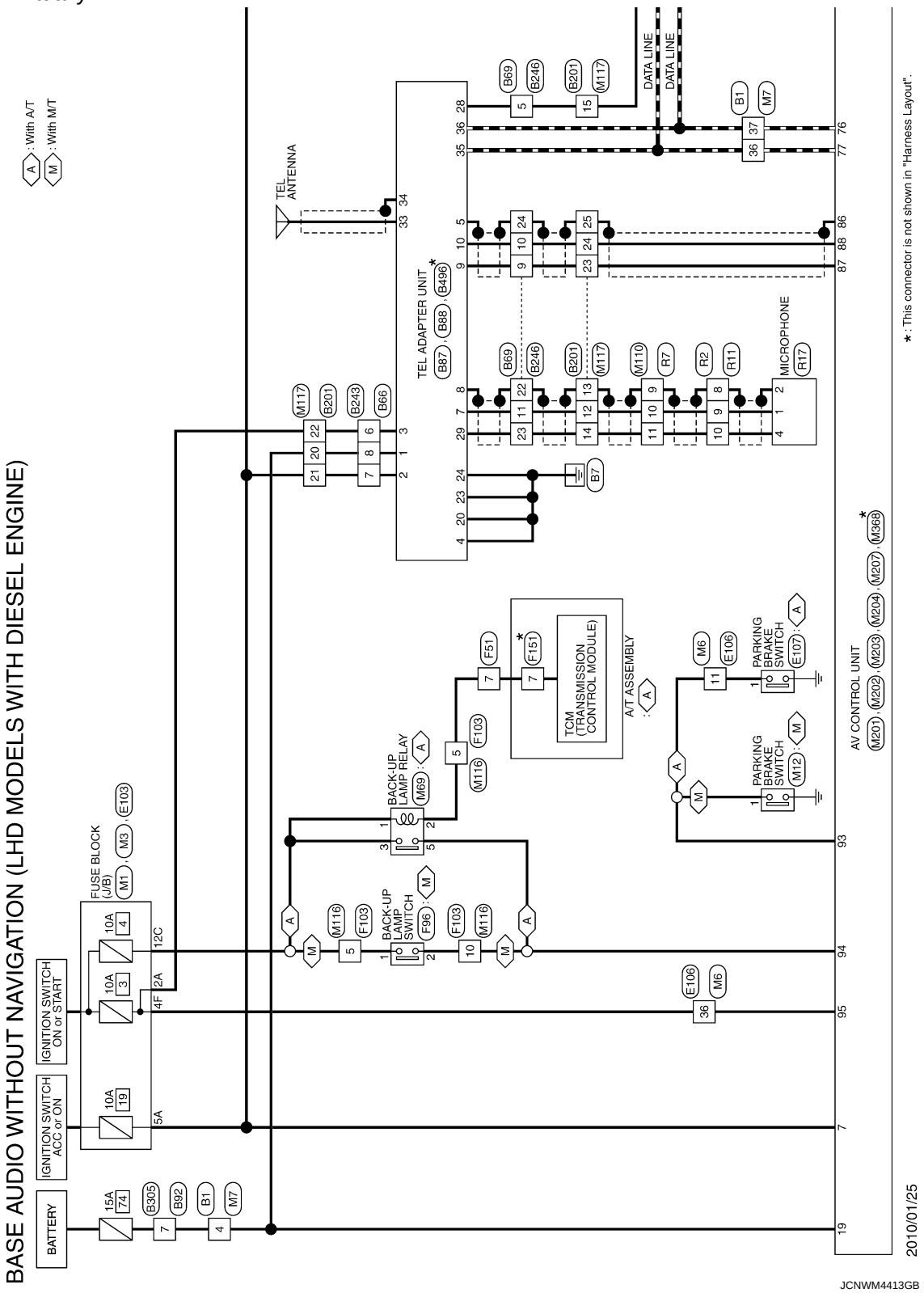


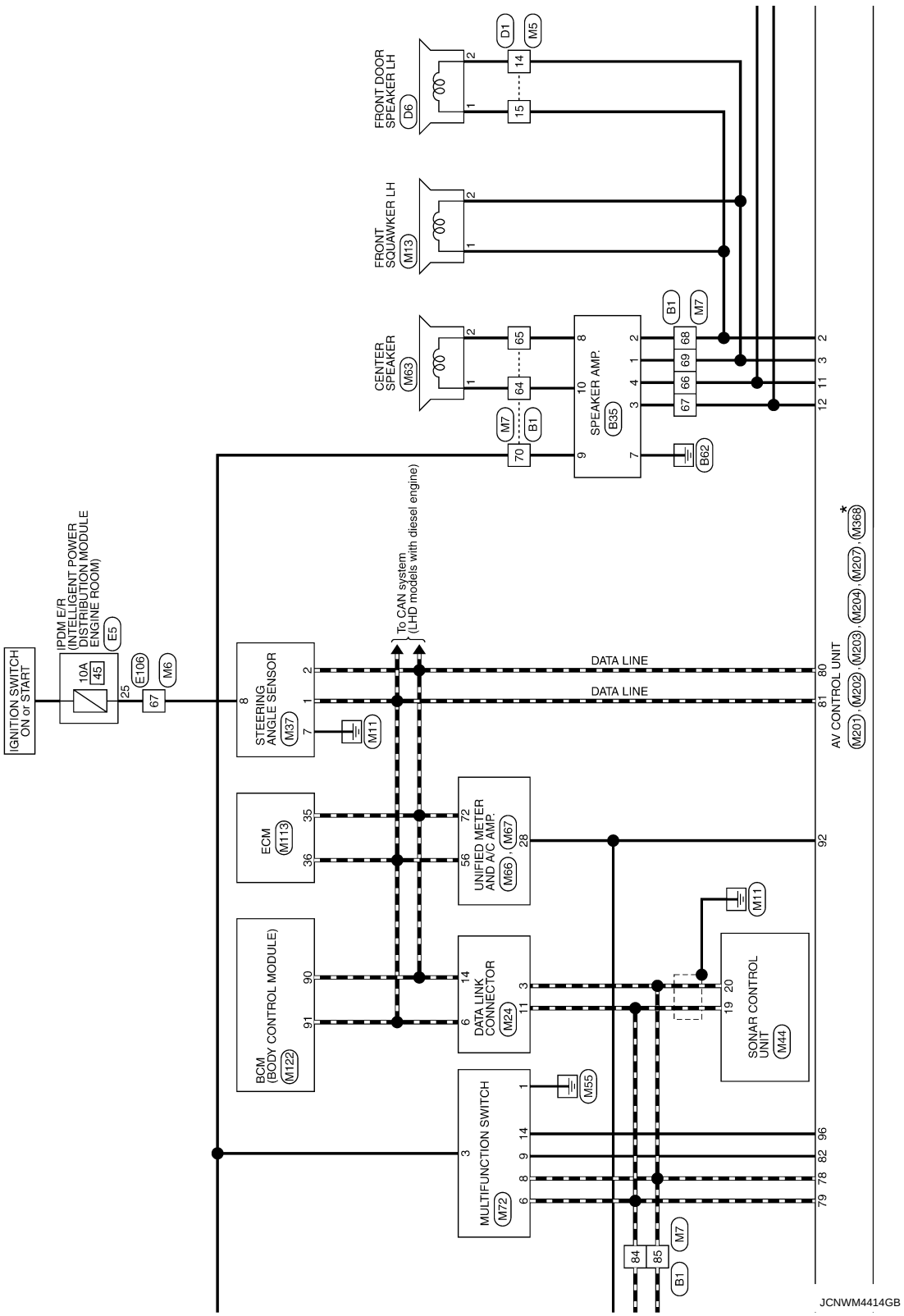
DIESEL ENGINE MODELS

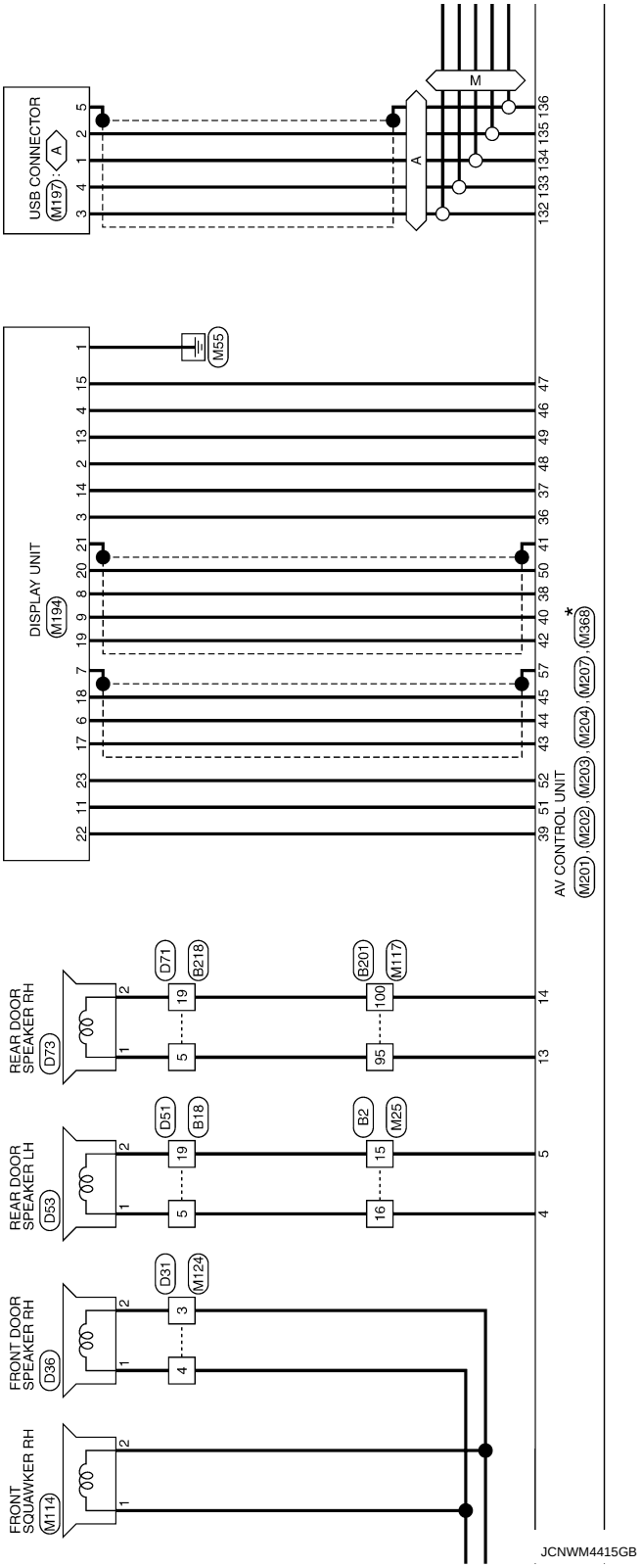
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

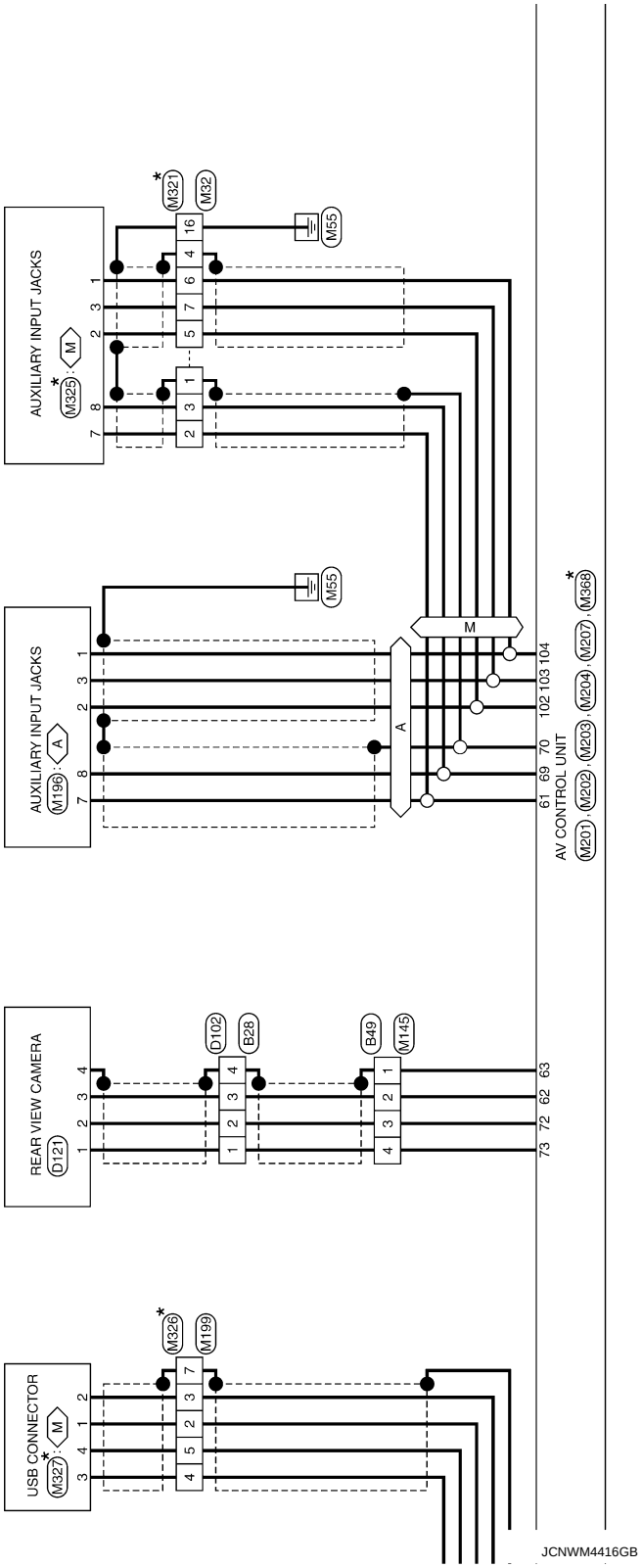
NOTE:

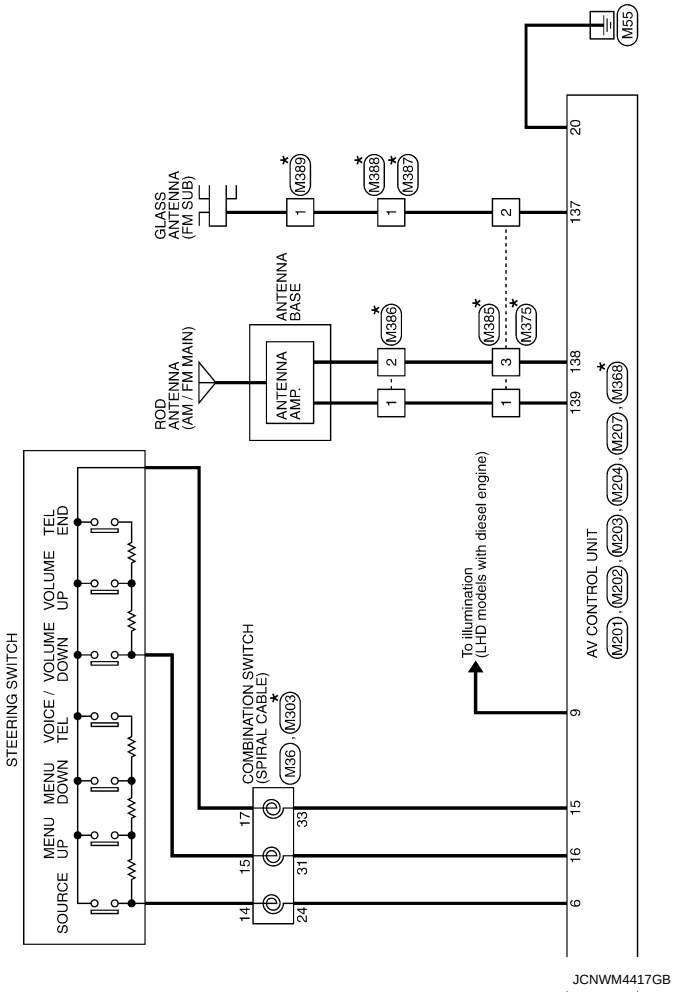
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.




FRONT DOOR SPEAKER LH
D6
FRONT SQUAWKER LH
M13
CENTER SPEAKER
M63
SPEAKER AMP.
B35
IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
10A 45
E106
M6
67
25
To CAN system (LHD models with diesel engine)
STEERING ANGLE SENSOR
M37
M11
DATA LINE
DATA LINE
AV CONTROL UNIT
M201, M202, M203, M204, M207, M368
ECM
M113
UNIFIED METER AND A/C AMP.
M66, M67
BCM (BODY CONTROL MODULE)
M122
DATA LINK CONNECTOR
M24
SONAR CONTROL UNIT
M44
MULTIFUNCTION SWITCH
M72
M55
JCNWM4414GB


USB CONNECTOR
M197
A
DISPLAY UNIT
M194
M55
AV CONTROL UNIT
M201, M202, M203, M204, M207, *M368
REAR DOOR SPEAKER RH
D73
REAR DOOR SPEAKER LH
D53
FRONT DOOR SPEAKER RH
D36
FRONT SQUAWKER RH
M114
D71
B218
B201
M117
D51
B18
B2
M25
D31
M124
M
JCNWM4415GB


AUXILIARY INPUT JACKS
M
M321
M32
M325
M55
AUXILIARY INPUT JACKS
A
M196
M55
M
A
AV CONTROL UNIT
M201, M202, M203, M204, M207, M368
61 69 70 102 103 104
REAR VIEW CAMERA
D121
D102
B28
B49
M145
63 62 72 73
USB CONNECTOR
M
M327
M326
M199
JCNWM4416GB



RHD MODELS

RHD MODELS : Wiring Diagram

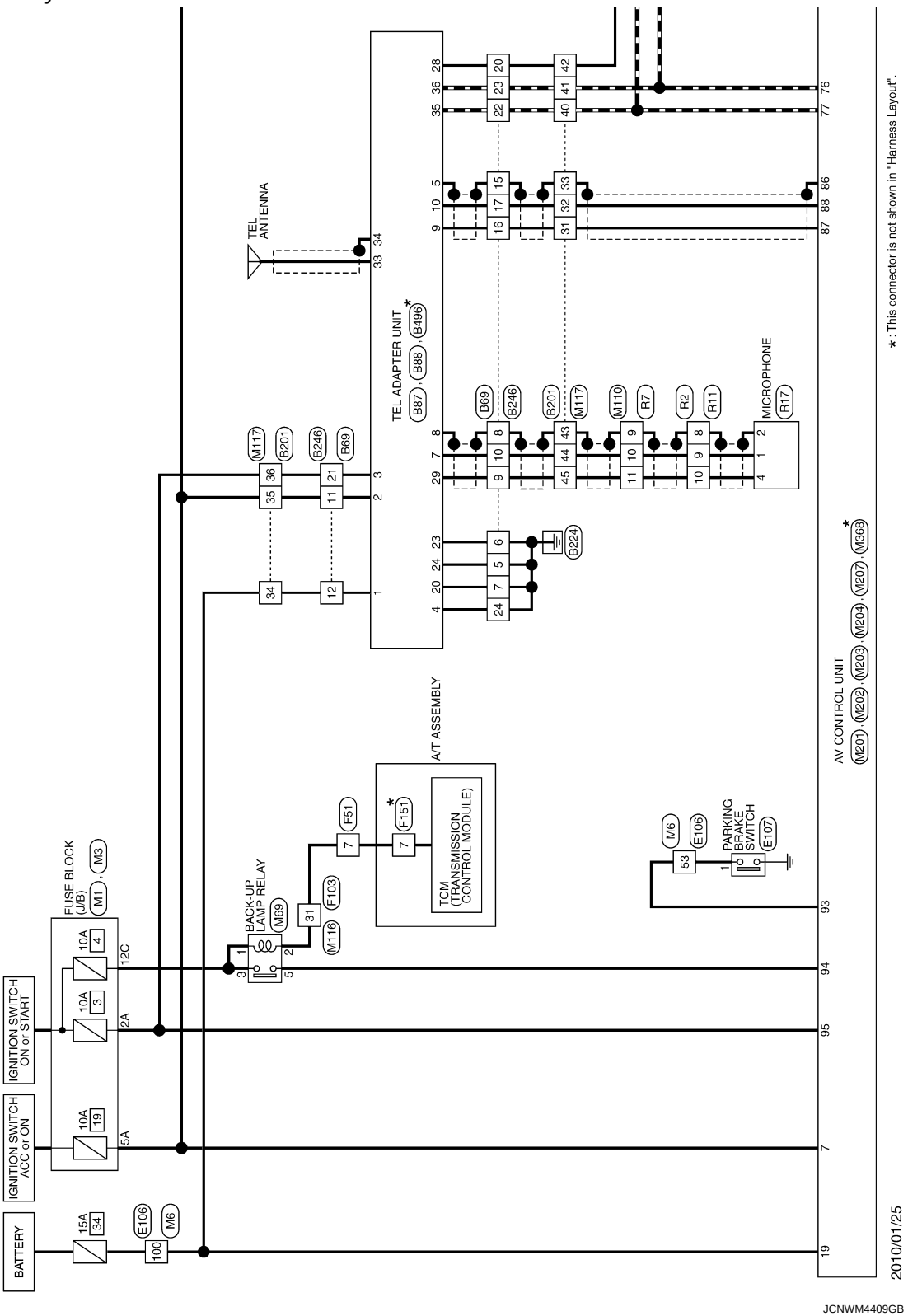
INFOID:0000000006106626

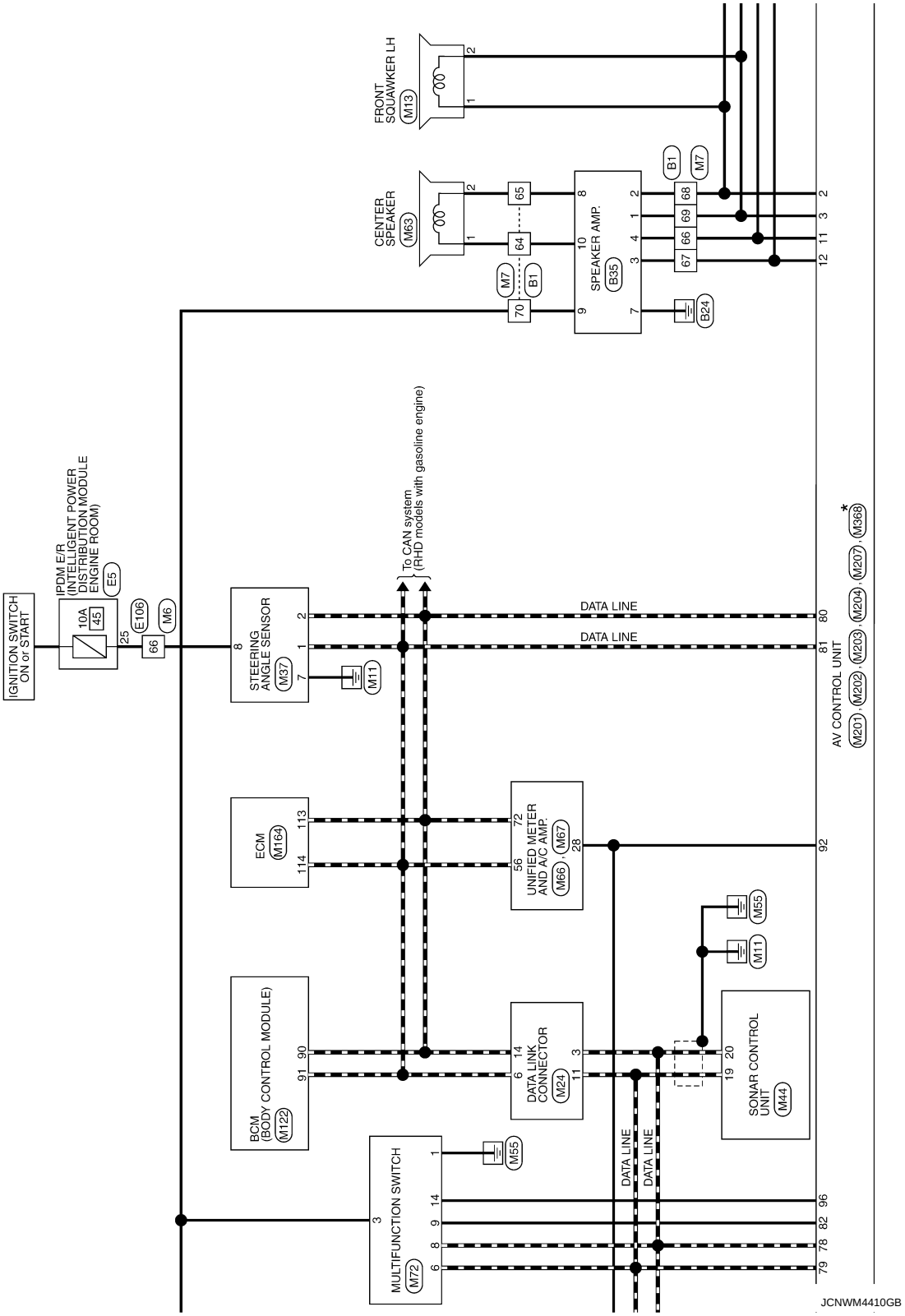
GASOLINE ENGINE MODELS

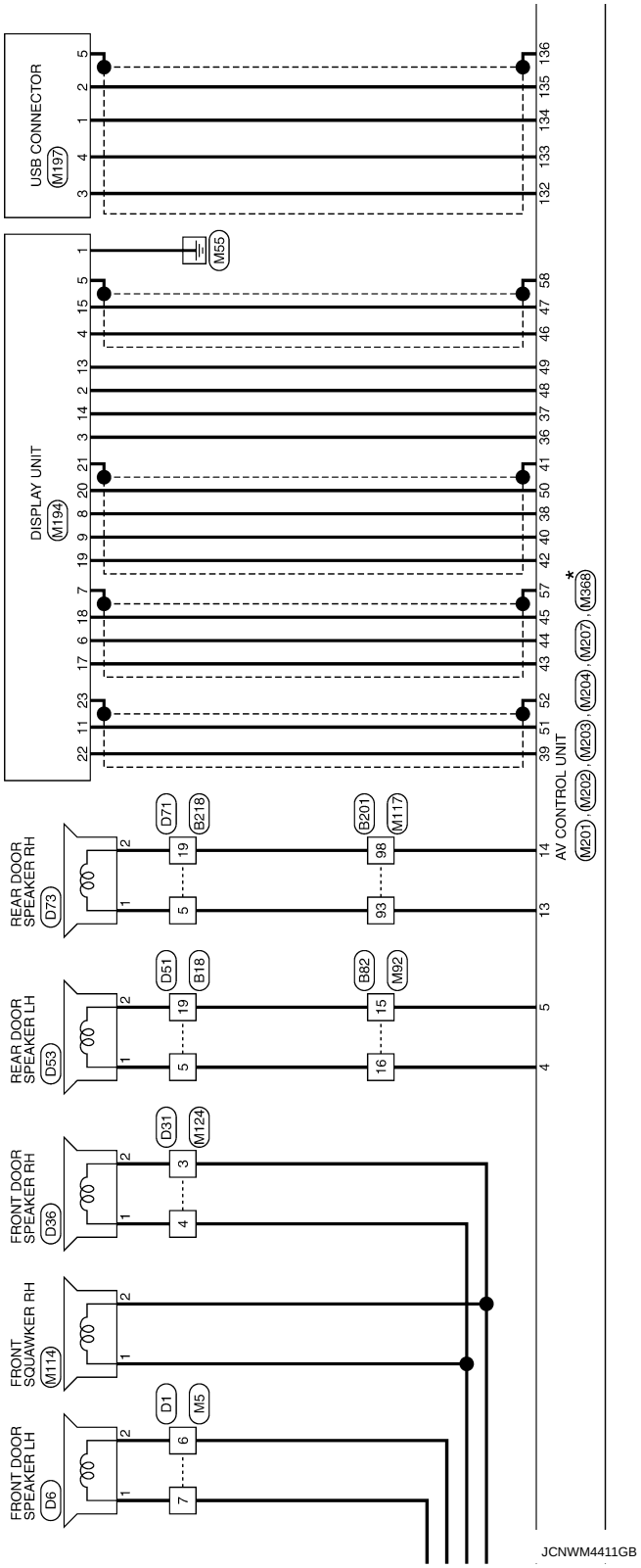
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

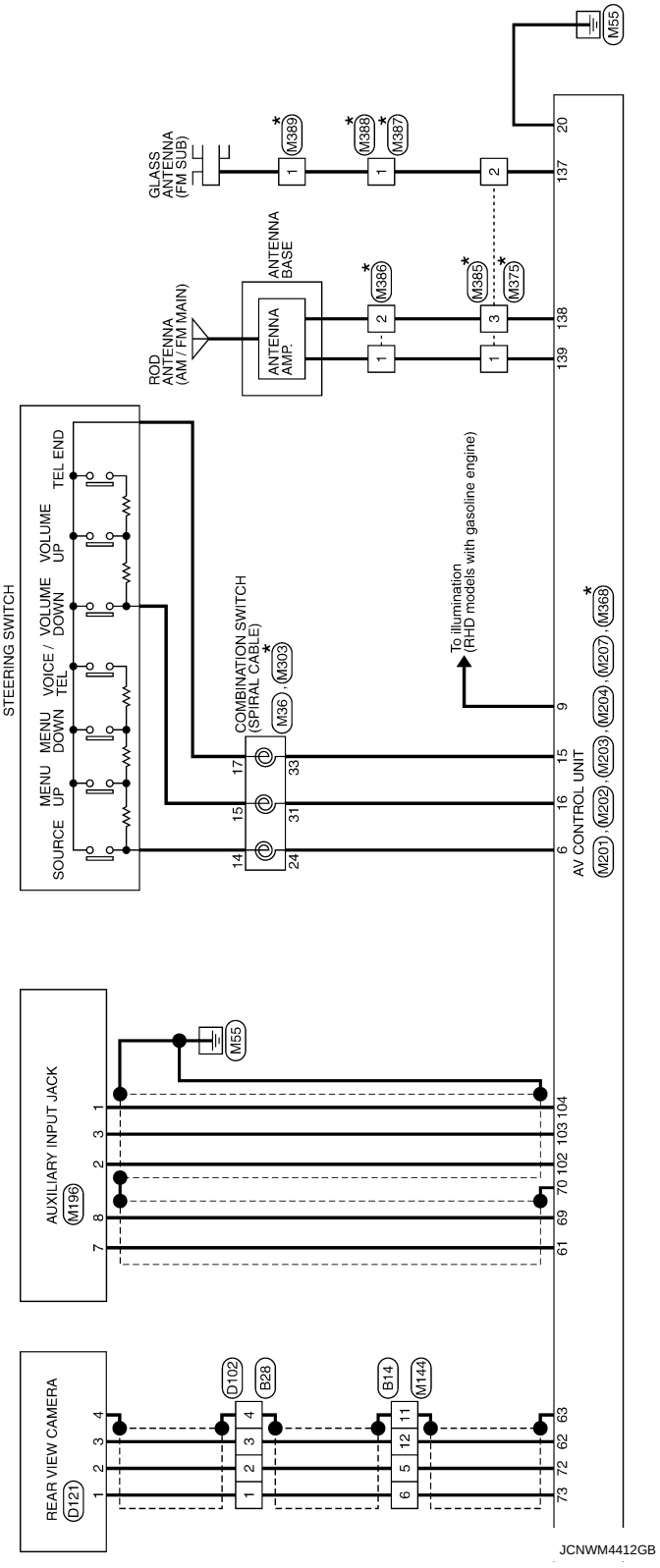
NOTE:
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

BASE AUDIO WITHOUT NAVIGATION (RHD MODELS WITH GASOLINE ENGINE)




FRONT SQUAWKER LH (M13)
CENTER SPEAKER (M63)
SPEAKER AMP. (B35)
B1
M7
B24
IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E5
10A 45
E106
M6
To CAN system (RHD models with gasoline engine)
STEERING ANGLE SENSOR (M37)
M11
DATA LINE
DATA LINE
AV CONTROL UNIT (M201), (M202), (M203), (M204), (M207), (M368)*
ECM (M164)
UNIFIED METER AND A/C AMP (M66), (M67)
M55
BCM (BODY CONTROL MODULE) (M122)
DATA LINK CONNECTOR (M24)
SONAR CONTROL UNIT (M44)
MULTIFUNCTION SWITCH (M72)
JCNWM4410GB


USB CONNECTOR
M197
DISPLAY UNIT
M194
M55
AV CONTROL UNIT
M201, M202, M203, M204, M207, M368
REAR DOOR SPEAKER RH
D73
REAR DOOR SPEAKER LH
D53
FRONT DOOR SPEAKER RH
D36
FRONT SQUAWKER RH
M114
FRONT DOOR SPEAKER LH
D6
D71
B218
B201
M117
D51
B18
B82
M92
D31
M124
D1
M5
JCNWM4411GB

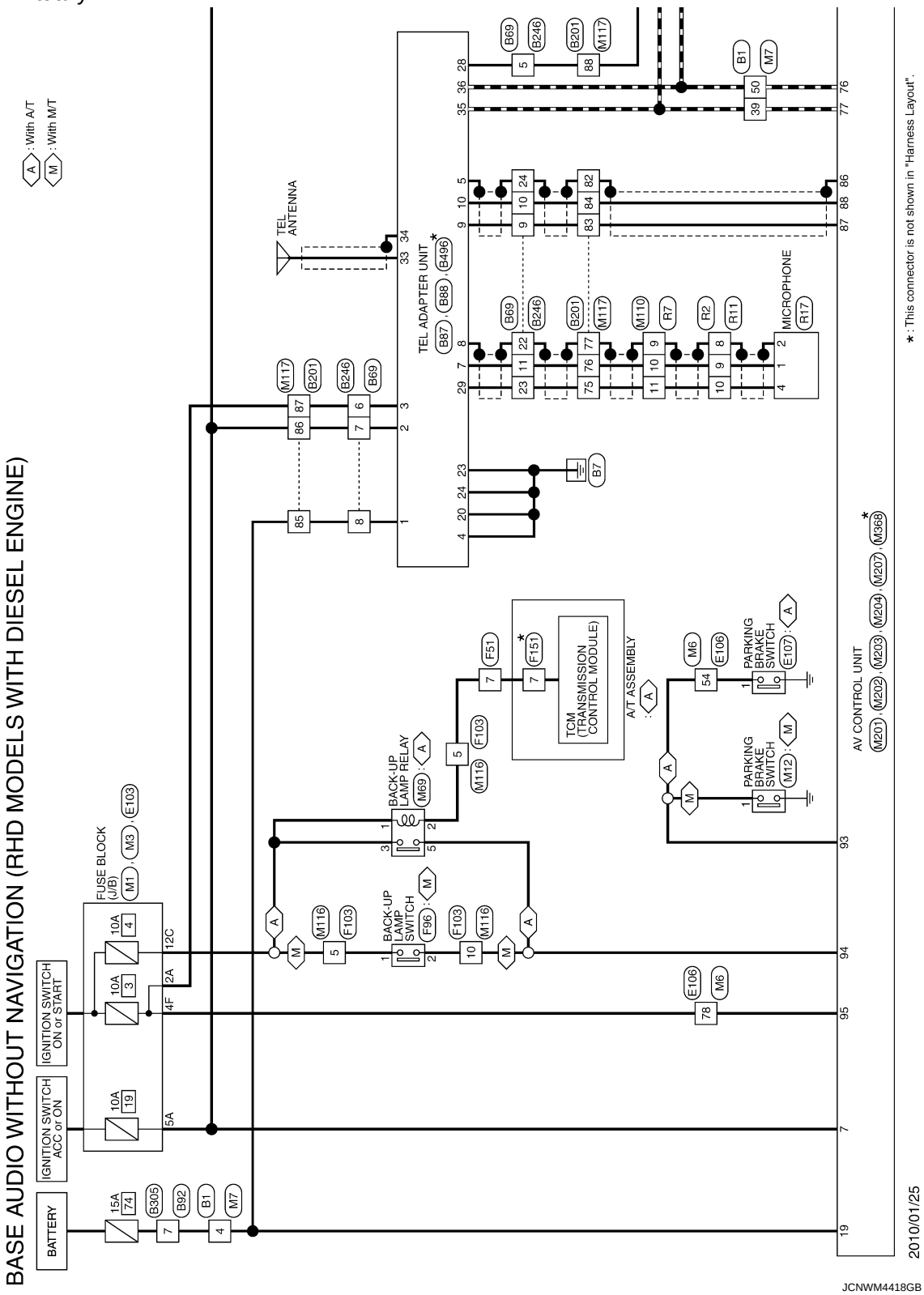


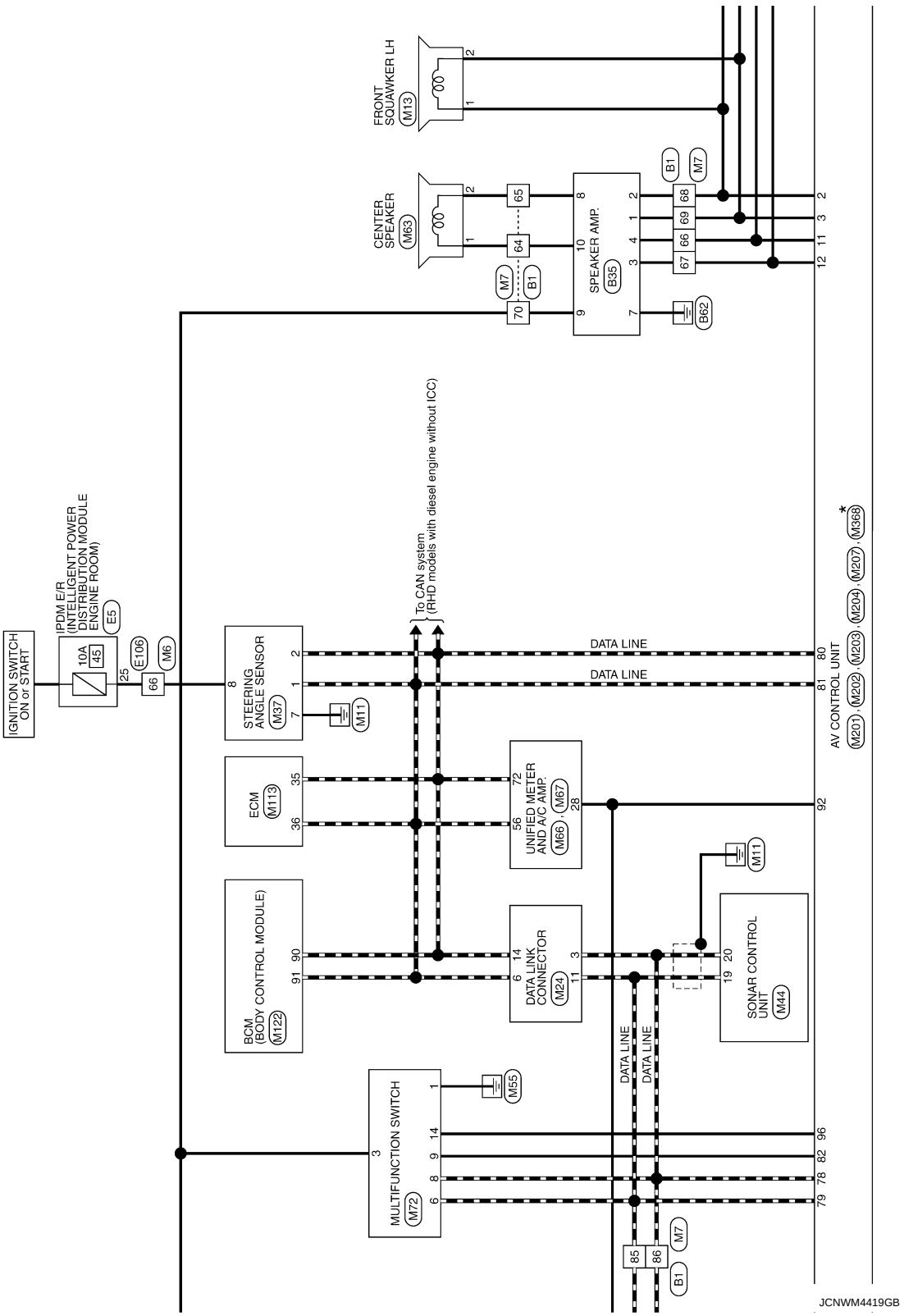
DIESEL ENGINE MODELS

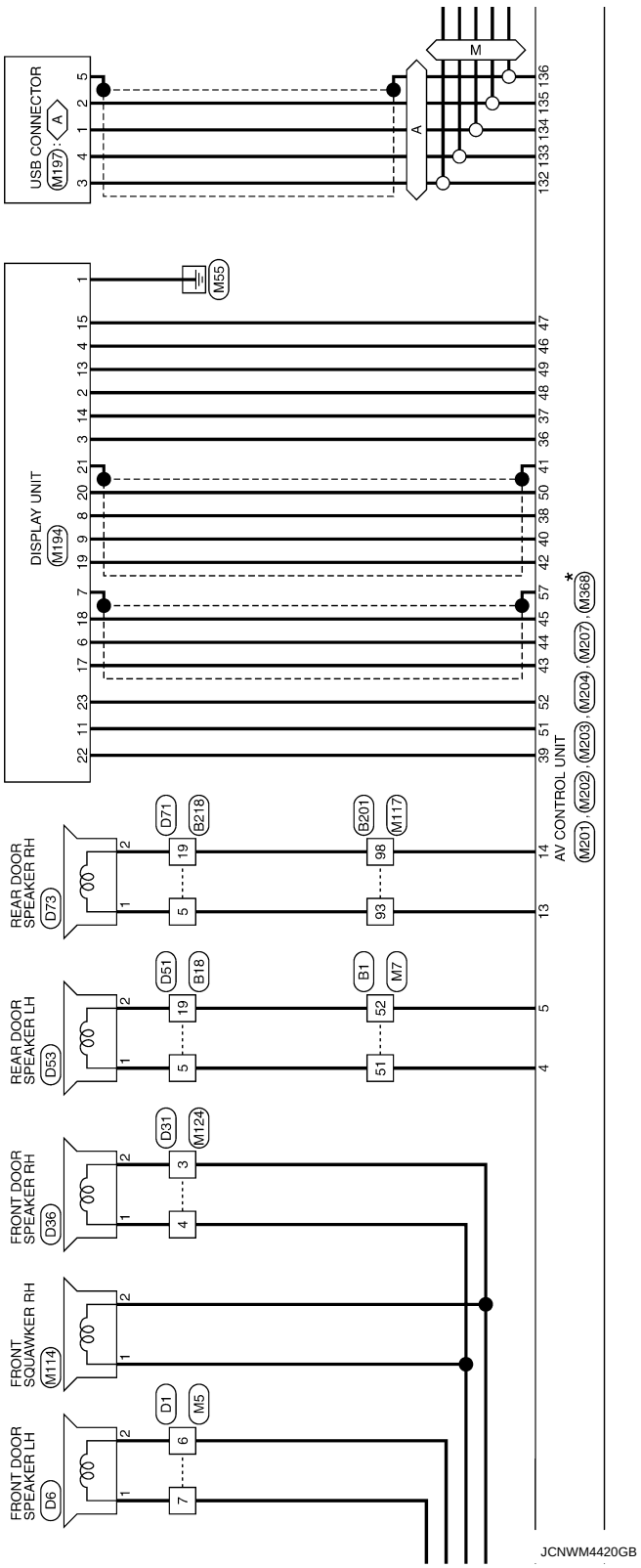
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

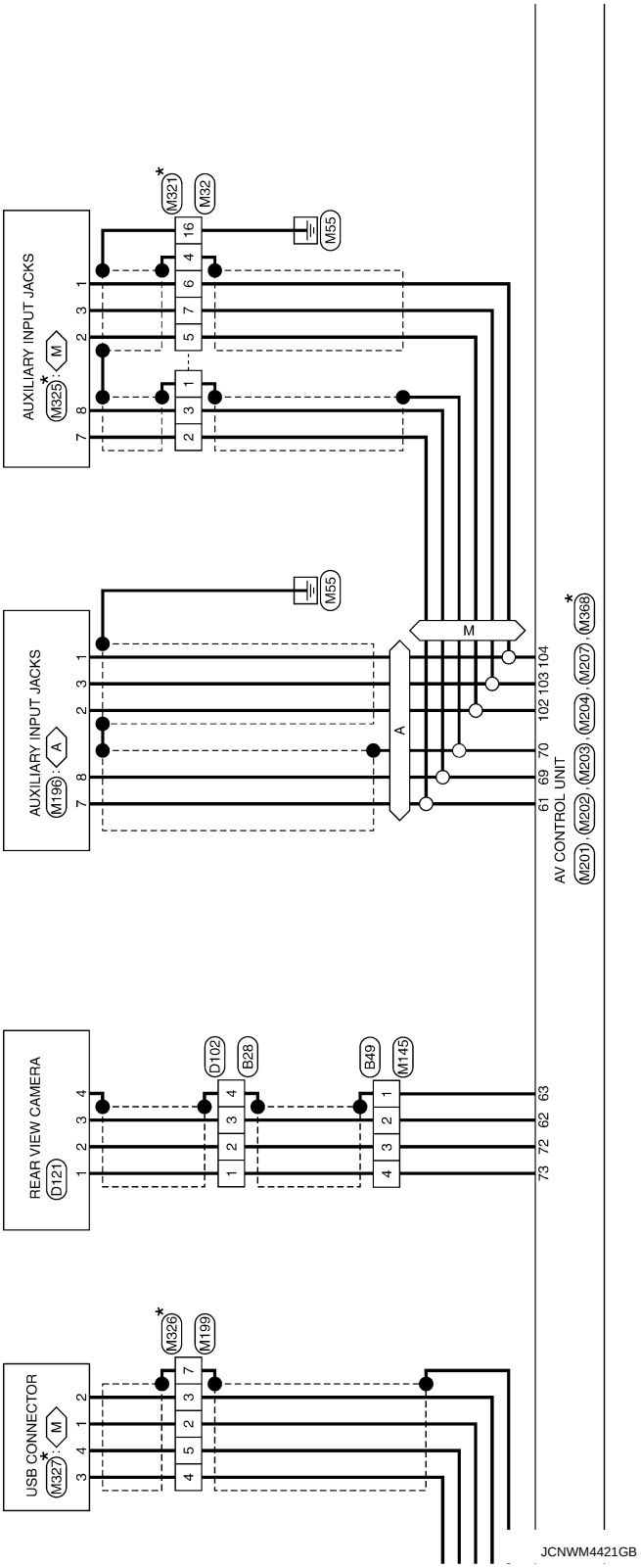
NOTE:

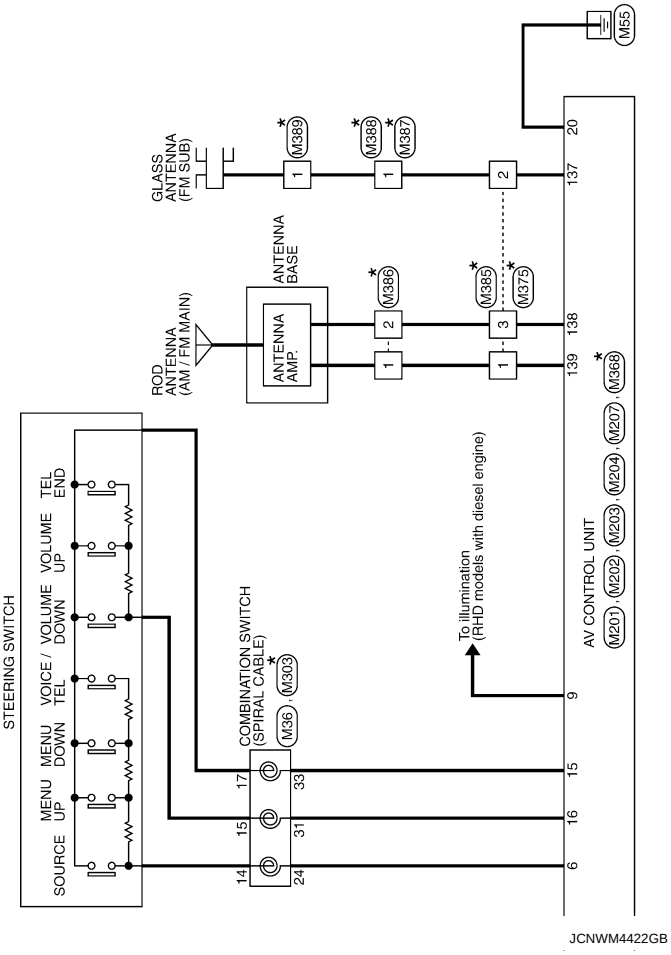
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.




FRONT SQUAWKER LH (M13)
CENTER SPEAKER (M63)
SPEAKER AMP. (B35)
B1
M7
B62
IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E5
10A 45
E106
M6
To CAN system (RHD models with diesel engine without ICC)
STEERING ANGLE SENSOR (M37)
M11
DATA LINE
AV CONTROL UNIT (M201), (M202), (M203), (M204), (M207), (M368)*
ECM (M113)
UNIFIED METER AND A/C AMP. (M66), (M67)
BCM (BODY CONTROL MODULE) (M122)
DATA LINK CONNECTOR (M24)
SONAR CONTROL UNIT (M44)
MULTIFUNCTION SWITCH (M72)
M55
JCNWM4419GB


USB CONNECTOR
M197
A
M
A
DISPLAY UNIT
M194
M55
AV CONTROL UNIT
M201, M202, M203, M204, M207, M368
REAR DOOR SPEAKER RH
D73
REAR DOOR SPEAKER LH
D53
FRONT DOOR SPEAKER RH
D36
FRONT SQUAWKER RH
M114
FRONT DOOR SPEAKER LH
D6
D71
B218
B201
M117
D51
B18
B1
M7
D31
M124
D1
M5
JCNWM4420GB


AUXILIARY INPUT JACKS
M
M321
M32
M55
M325
AUXILIARY INPUT JACKS
A
M196
M55
M
A
AV CONTROL UNIT
M201, M202, M203, M204, M207, M368
REAR VIEW CAMERA
D121
D102
B28
B49
M145
USB CONNECTOR
M
M326
M199
M327
JCNWM4421GB


M55
GLASS ANTENNA (FM SUB)
M389
M388
M387
ANTENNA BASE
ROD ANTENNA (AM / FM MAIN)
ANTENNA AMP.
M386
M385
M375
STEERING SWITCH
SOURCE
MENU UP
MENU DOWN
VOICE / TEL
VOLUME DOWN
VOLUME UP
TEL END
COMBINATION SWITCH (SPIRAL CABLE)
M36
M303
To illumination (RHD models with diesel engine)
AV CONTROL UNIT
M201, M202, M203, M204, M207, M368
JCNWM4422GB

SYMPTOM DIAGNOSIS

MULTI AV SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000005195166

OPERATION

Symptoms	Check items	Probable malfunction location
Multifunction switch and preset switch operation does not work.	• All switches cannot be operated. • “MULTI AV” is displayed on system selection screen when the CONSULT-III is started.	• Multifunction switch power supply and ground circuit. Refer to AV-65, "MULTIFUNCTION SWITCH : Diagnosis Procedure". • AV communication circuit between AV control unit and multifunction switch. Perform CONSULT-III self-diagnosis. Refer to AV-41, "CONSULT - III Function (MULTI AV)".
	• All switches cannot be operated. • “MULTI AV” is not displayed on system selection screen when the CONSULT-III is initialized.	AV control unit power supply and ground circuit malfunction. Refer to AV-64, "AV CONTROL UNIT : Diagnosis Procedure".
	Only specified switch cannot be operated.	Multifunction switch or preset switch malfunction. Perform multifunction switch and preset switch self-diagnosis function. Refer to AV-32, "Diagnosis Description".
Fuel economy display is abnormal.	There is malfunction in the CONSULT-III “self-diagnosis result” of “MULTI AV”.	Perform detected DTC diagnosis. Refer to AV-94, "DTC Index".
	There is no malfunction in the CONSULT-III “self-diagnosis result” of “MULTI AV”.	Ignition signal circuit malfunction. (AV control unit)

RELATED TO HANDS-FREE PHONE

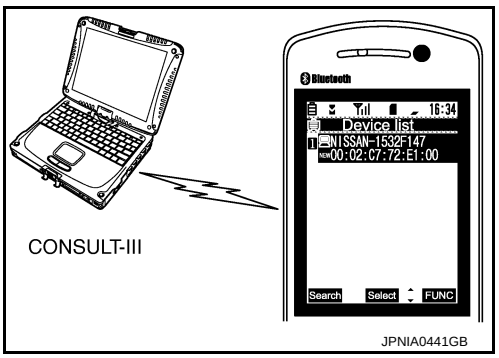
- Check that the cellular phone is the corresponding type (Bluetooth™ enabled) and Bluetooth™ turns ON.
- Malfunction may occur due to the version change of the phone type, etc. even though it is the corresponding type. The cellular phone must support at least hands-free profile V1.0 and object push V1.0. Refer to cellular phone instruction manual.
- When customers contact concerning Bluetooth™ compatible cellular phone malfunction for the first time, always suggest customers to update cellular phone software if possible.
- Check that customer cellular phone is compatible on the published list. The dealer should contact its RBU/NSC for the list.
- Take note of any exceptions that the list may detail, i.e. no ringing tone or no phonebook transfer etc. If the customer phone is not listed then its full function cannot be guaranteed. NISSAN should not replace the TEL adapter unit if the cellular phone does not appear on the list or the cellular phone is operating as described on the list e.g. no ringing tone, no phonebook transfer etc.
- Take note of any exceptions to other phones made by the same manufacturer as the customers. Any exceptions on one model by a specific manufacturer may be common to all models made by that manufacturer.

Simple Check for Bluetooth™ Communication

If cellular phone and TEL adapter unit cannot be connected with Bluetooth™ communication, following procedure allows the technician to judge which device has malfunction.

1. Turn ON cellular phone, not connecting Bluetooth™ communication.
2. Start CONSULT-III, then start Windows®.
3. Set CONSULT-III near a cellular phone.

4. When operated Bluetooth™ registration by cellular phone, check if CONSULT-III* would be displayed on the device name.
(If other Bluetooth™ device is located near cellular phone, a name of the device would be displayed also.)
NOTE:
*:Displayed device name is “NISSAN-********”.



- If no device name is displayed, cellular phone is malfunctioning. Repair the cellular phone first, then perform diagnosis.
- If CONSULT-III is displayed on device name, cellular phone is normal*. Perform diagnosis as per the following table.

*: There is no 100% guarantee that cellular phone operates all functions on AV control unit. Different phone manufacturers implement Bluetooth™ in different ways. Phones on Supported Phone List are tested and any minor exceptions are listed.

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection. (No connection is displayed on the display at the guide.)	Repeat the registration of cellular phone.	TEL adapter unit malfunction. Refer to AV-146, "Exploded View".
Hands-free phone cannot be established.	Both the reception and the speech cannot be performed	• Perform CONSULT-III self-diagnosis. Refer to AV-41, "CONSULT - III Function (MULTI AV)". • No malfunction. TEL adapter unit malfunction. Refer to AV-146, "Exploded View". • Malfunction is detected. Perform detected DTC self-diagnosis. Refer to AV-41, "CONSULT - III Function (MULTI AV)".
The other party's voice cannot be heard by hands-free phone.	The operation of the “ ” switch can be performed.	TEL voice signal circuit malfunction between TEL adapter unit and AV control unit.
	The operation of the “ ” switch cannot be performed.	Control signal circuit.
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	TEL adapter unit. Refer to AV-146, "Exploded View".
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-80, "Diagnosis Procedure".
The system cannot be operated.	• The retractable hard top is fully closed. • “SOURCE”, “MENU UP”, and “MENU DOWN”, but “ ” switches is not operated.	Steering switch malfunction. Replace steering switch. Refer to SR-16, "Exploded View".
	• The retractable hard top is fully closed. • “SOURCE”, “MENU UP”, “MENU DOWN” , and “ ” switches of steering switch are not operated.	Steering switch signal B circuit malfunction. Refer to AV-84, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-86, "Diagnosis Procedure".

RELATED TO CAMERA

Symptoms	Check items	Probable malfunction location
Camera image is not shown. (Vehicle width and possible route line is displayed.)	AUX image is displayed.	Camera image signal circuit. Refer to AV-77, "Diagnosis Procedure".
	AUX image is not displayed.	Composite image signal circuit. Refer to AV-73, "Diagnosis Procedure".

Symptoms	Check items	Probable malfunction location
Camera image is not shown. (displayed in black and nothing can be displayed)	—	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-74, "Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-75, "Diagnosis Procedure".
Camera image does not switch.	“Reverse” is not turned ON on “VehicleSignals” screen of “Confirmation/Adjustment”.	Reverse signal circuit malfunction.
	“Reverse” is turned ON on “Vehicle Signals”screen of “Confirmation/Adjustment”.	AV control unit malfunction. Replace AV control unit. Refer to AV-128, "Exploded View".

RELATED TO RGB IMAGE

Symptoms	Check items	Possible malfunction location / Action to take
RGB image is not shown.	There is malfunction in the CONSULT-III “self-diagnosis result” of “MULTI AV”.	Perform detected DTC diagnosis. Refer to AV-94, "DTC Index".
	There is no malfunction in CONSULT-III “self-diagnosis results” of “MULTI AV”.	Vertical synchronizing (VP) signal circuit. Refer to AV-75, "Diagnosis Procedure".
Color of RGB image is not proper.	Light blue (Cyan) tint.	RGB signal (R: red) circuit. Refer to AV-68, "Diagnosis Procedure".
	Purple (Magenta) tint.	RGB signal (G: green) circuit. Refer to AV-69, "Diagnosis Procedure".
	Screen looks yellowish.	RGB signal (B: blue) circuit. Refer to AV-70, "Diagnosis Procedure".
RGB screen is rolling.	—	RGB synchronizing signal circuit. Refer to AV-71, "Diagnosis Procedure".
Fuel economy display is malfunctioning.	There is malfunction in the CONSULT-III “self-diagnosis result” of “MULTI AV”.	Perform detected DTC diagnosis. Refer to AV-94, "DTC Index".
	There is no malfunction in CONSULT-III “self-diagnosis results” of “MULTI AV”.	Ignition signal circuit malfunction. (AV control unit)

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to AV-79, "Diagnosis Procedure".
Audio sound is not heard.	No sound from all speakers.	AV control unit malfunction. Replace AV control unit. Refer to AV-128, "Exploded View".
	Sound is not heard from center speaker.	• Speaker amp. power supply and ground circuit malfunction. Refer to AV-66, "SPEAKER AMP. : Diagnosis Procedure". • Sound signal center speaker circuit malfunction.
	Sound is heard only from specific places.	Sound signals circuit of suspect system.
AM/FM radio is not received.	Other audio sounds are normal.	• Antenna amp. ON signal circuit. • Antenna feeder.

RELATED TO USB

NOTE:

Check that there is no malfunction of USB equipment main body before performing a diagnosis.

Symptoms	Check items	Possible malfunction location / Action to take
iPod® or USB memory can not be recognized.	—	• USB harness malfunction. • USB connector malfunction.

iPod® is a trademark of Apple inc., registered in the U.S. and other countries.

RELATED TO STEERING SWITCH

Symptoms	Probable malfunction location
None of the steering switch operations work.	Steering switch ground circuit malfunction. Refer to AV-86, "Diagnosis Procedure".
Only specified switch cannot be operated.	Steering switch malfunction. Replace steering switch. Refer to SR-16, "Exploded View".
“SOURCE”, “MENU UP”, “MENU DOWN”, “ ” switches of steering switch are not operated.	Steering switch signal A circuit. Refer to AV-82, "Diagnosis Procedure".
”VOL UP“, “VOL DOWN”, “ ” switches of steering switch are not operated.	Steering switch signal B circuit. Refer to AV-84, "Diagnosis Procedure".

RELATED TO AUXILIARY INPUT

NOTE:

Check that there is no malfunction of AUX equipment main body before performing a diagnosis.

Symptoms	Check items	Probable malfunction location
No voice sound is heard when AUX mode is selected.	Voice sound is heard when other modes are selected.	AUX sound signal circuit.
Image is not displayed when AUX mode is selected.	Camera image is displayed.	AUX image signal circuit malfunction. Refer to AV-76, "Diagnosis Procedure".
	Camera image is not displayed.	Composite image signal circuit malfunction. Refer to AV-73, "Diagnosis Procedure".

NORMAL OPERATING CONDITION

Description

INFOID:0000000005195167

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The systems in the video mode.	Press “DISC-AUX” to change the mode.
	The display is turned off.	Press “☀/◗ OFF” to turn on the display.
Screen not clear.	Contrast setting is not appropriate.	Adjust the contrast of the display.
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the multi AV system.

RELATED TO VOICE RECOGNITION

Related to Telephone

The system should respond correctly to all voice commands without difficulty. If problems are encountered, try the following solutions.

Where the solutions are listed by number, try each solution in turn, starting with number 1, until the problem is resolved.

Symptom	Solution
System fails to interpret the command correctly.	1. Ensure that the command is valid.
	2. Ensure that the command is spoken after the tone.
	3. Speak clearly without pausing between words and at level appropriate to the ambient noise level in the vehicle.
	4. Ensure that the ambient noise level is not excessive (for example, windows open or defroster on). **NOTE:** If it is too noisy to use the phone, it is likely that the voice commands will not be recognized.
	5. If more than one command was said at a time, try saying the commands separately.
	6. If the system consistently fails to recognize commands, the voice training procedure should be carried out to improve the recognition response for the speaker. See “Speaker adaptation (SA) mode” earlier in this section. Refer to “OWNER’S MANUAL”.
The system consistently selects the wrong voicetag	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the “List Names” command.
	2. Replace one of the names being confused with a new name.

RELATED TO AUDIO

- The majority of the audio malfunctions are the result of outside causes (bad CD/cassette, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and then determine the cause.

NOTE:

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA, AAC) or could be incorrectly mastered by the customer on a computer.
- Check if the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the “red book” Compact Disc Standard and may not play.

Symptom	Cause and Counter measure
Cannot play	Check if the CD was inserted correctly.
	Check if the CD is scratched or dirty.
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.
	If there is a mixture of music CD files (CD-DA data) and MP3/WMA/AAC files on a CD, only the music CD files (CD-DA data) will be played.
	Files with extensions other than ".MP3", ".WMA", "AAC", ".mp3", ".wma" or ".aac" cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format, This may occur depending on the variation or the setting of MP3/WMA/AAC writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the disc.
	Check if the CD is protected by copyright.
	Disks recorded in live file system format are not supported. (For Microsoft Windows Vista, check the settings.)
Poor sound quality	Check if the CD is scratched or dirty.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA/AAC CD, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.
Move immediately to the next song when playing	When a non-MP3/WMA/AAC file has been given an extension of ".MP3", ".WMA", "AAC" ".mp3", ".wma" or ".aac" or when play is prohibited by copyright protection, the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.

Noise resulting from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources, is not a malfunction.

NOTE:

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000006018382

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the “SRS AIR BAG”.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

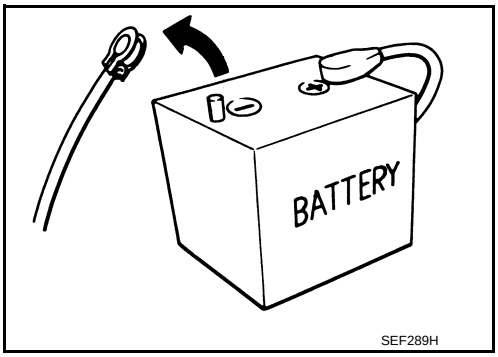
- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precaution for Battery Service (for V9X Models)

INFOID:0000000006081198

When disconnect the battery cable, pay attention to the following.

- Always use a 12 volt battery as power source.
- Do not attempt to disconnect battery cables while engine is running.
- **Before disconnecting battery cables, turn ignition switch OFF and wait at least 4 minutes.**
- **After high-load driving, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery cable.**
  NOTE:
  Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.



SEF289H

Precaution for Trouble Diagnosis

INFOID:0000000005195169

AV COMMUNICATION SYSTEM

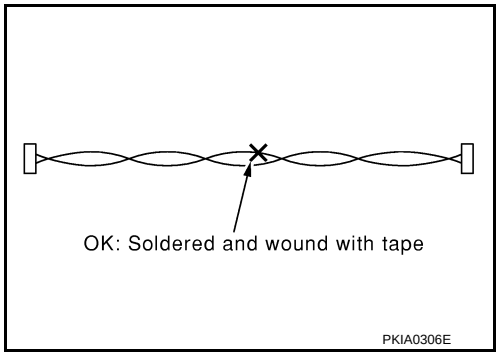
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

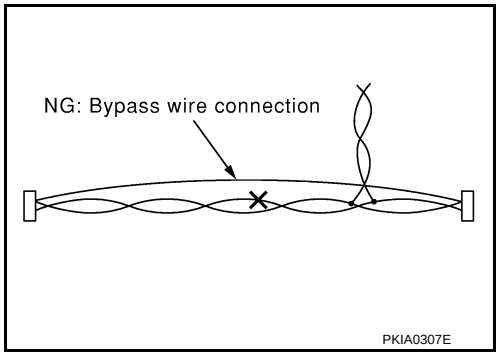
INFOID:0000000005195170

AV COMMUNICATION SYSTEM

- Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]



- Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)



REMOVAL AND INSTALLATION

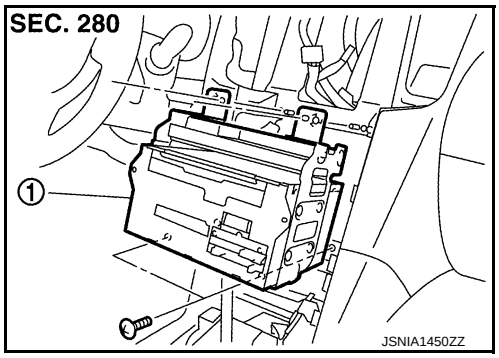
AV CONTROL UNIT

Exploded View

INFOID:0000000005198610

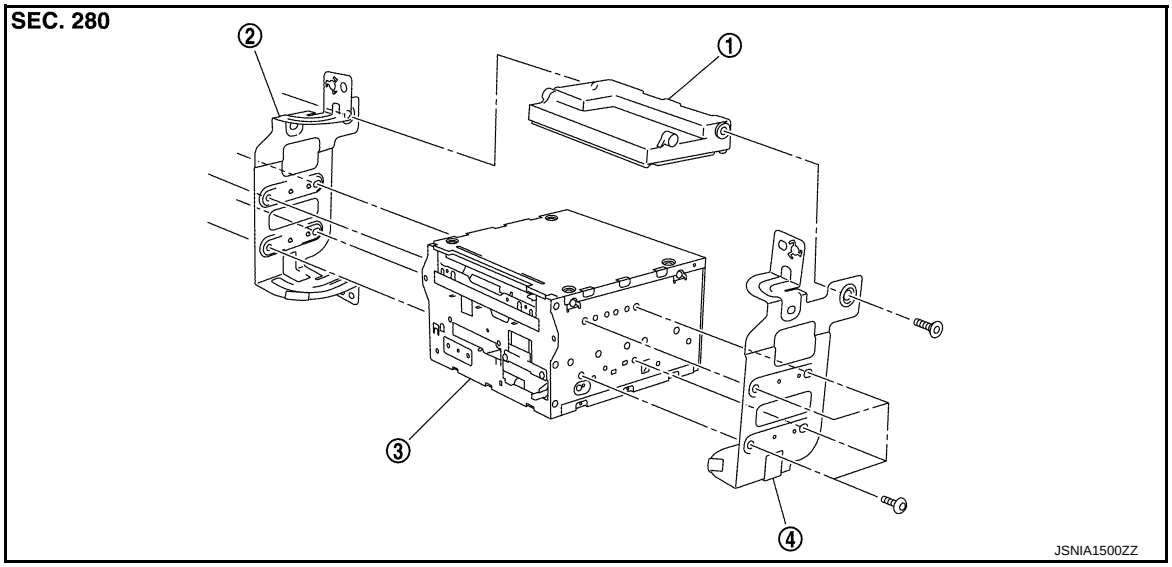
CAUTION:
Before replacing AV control unit, perform “READ CONFIGURATION” to save or print current vehicle specification. For details, refer to AV-24, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description".

REMOVAL



1: AV control unit

DISASSEMBLY



1. Unified meter and A/C amp.
2. Bracket LH
3. AV control unit
4. Bracket RH

Removal and Installation

INFOID:0000000005198611

REMOVAL

CAUTION:
Before replacing AV control unit, perform “READ CONFIGURATION” to save or print current vehicle specification. For details, refer to AV-24, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description".

1. Remove display unit. Refer to AV-130, "Exploded View".
2. Remove AV control unit with a unified meter and A/C amp. as a single unit from the body.
3. Remove bracket screws, and then remove AV control unit.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

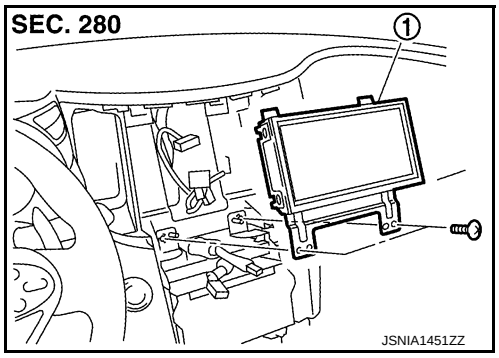
Be sure to perform “WRITE CONFIGURATION” when replacing AV control unit.

DISPLAY UNIT

Exploded View

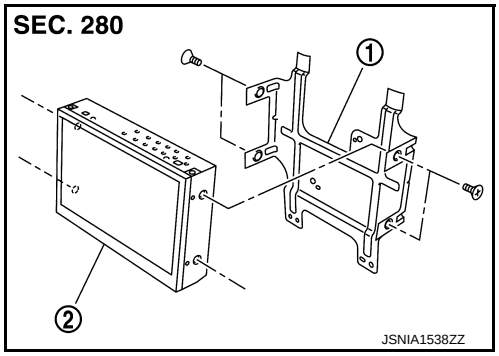
INFOID:0000000005198612

REMOVAL



1. Display unit

DISASSEMBLY



1. Bracket
2. Display unit

Removal and Installation

INFOID:0000000005198613

REMOVAL

1. Remove cluster lid D. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove display unit mounting screws.
3. Disconnect connector, and remove display unit.

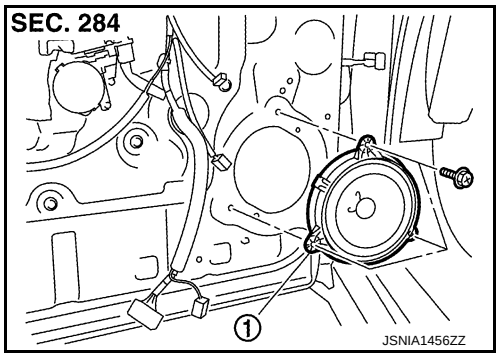
INSTALLATION

Installation is the reverse order of removal.

FRONT DOOR SPEAKER

Exploded View

INFOID:0000000005198614



1. Front door speaker

Removal and Installation

INFOID:0000000005198615

REMOVAL

1. Remove front door finisher. Refer to INT-13, "Exploded View".
2. Remove front door speaker mounting bolts.
3. Disconnect connector and remove front door speaker.

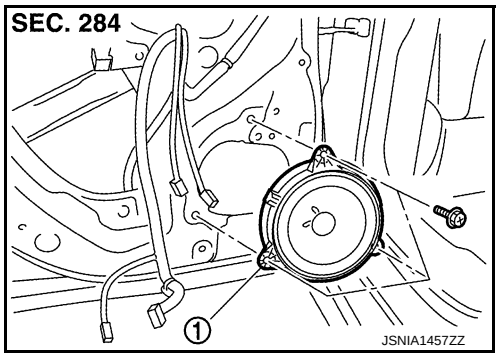
INSTALLATION

Installation is the reverse order of removal.

REAR DOOR SPEAKER

Exploded View

INFOID:0000000005198616



1. Rear door speaker

Removal and Installation

INFOID:0000000005198617

REMOVAL

1. Remove rear door finisher. Refer to INT-16, "Exploded View".
2. Remove rear door speaker mounting bolts.
3. Disconnect connector and remove rear door speaker.

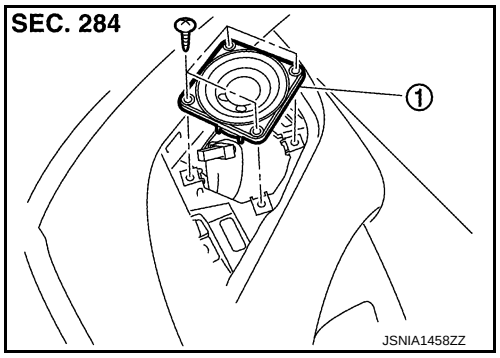
INSTALLATION

Installation is the reverse order of removal.

FRONT SQUAWKER

Exploded View

INFOID:0000000005198618



1. Front squawker

Removal and Installation

INFOID:0000000005198619

REMOVAL

1. Remove speaker grille. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove front squawker mounting screws.
3. Disconnect connector and remove front squawker.

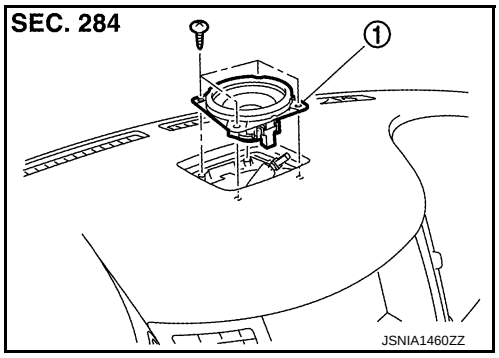
INSTALLATION

Installation is the reverse order of removal.

CENTER SPEAKER

Exploded View

INFOID:0000000005198622



1. Center speaker

Removal and Installation

INFOID:0000000005198623

REMOVAL

1. Remove center speaker grille. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove center speaker mounting screws, lift up the center speaker and disconnect connector.
3. Remove center speaker.

INSTALLATION

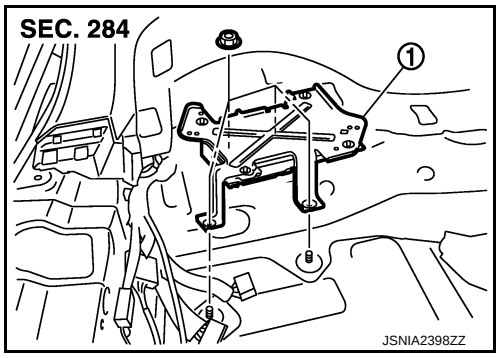
Installation is the reverse order of removal.

SPEAKER AMP.

Exploded View

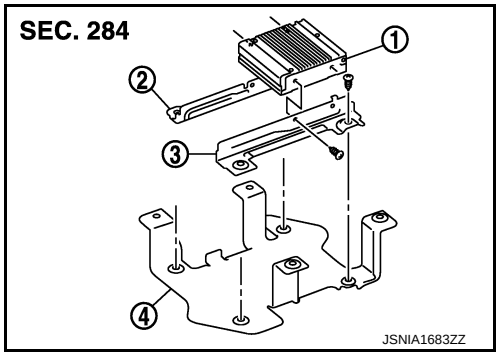
INFOID:0000000006128198

REMOVAL



1. Speaker amp.

DISASSEMBLY



1. Speaker amp.
2. Bracket LH
3. Bracket RH
4. Bracket

Removal and Installation

INFOID:0000000005198730

REMOVAL

1. Remove TEL adapter unit. Refer to AV-146, "Exploded View".
2. Remove speaker amp. mounting nuts.
3. Disconnect connector and remove speaker amp.

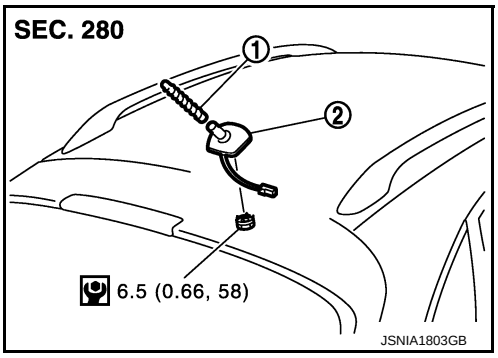
INSTALLATION

Installation is the reverse order of removal.

ANTENNA BASE

Exploded View

INFOID:0000000005198628



1. Antenna rod
2. Antenna base

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000005198629

REMOVAL

1. Remove headlining (rear). Keep a service area. Refer to INT-25, "Exploded View".
2. Remove antenna base mounting nut.
3. Disconnect connector and remove antenna base.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

Be careful about tightening torque. Antenna sensitivity becomes poor, and when it is excessive, roof panel may be deformed, when antenna base mounting nut tightening torque is loose.

MULTIFUNCTION SWITCH

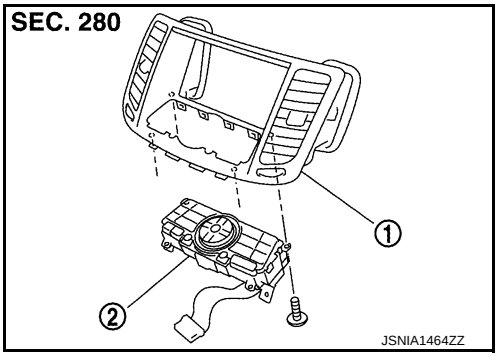
Exploded View

INFOID:0000000005198630

REMOVAL

Refer to IP-14, "A/T MODELS : Exploded View".

DISASSEMBLY



1. Cluster lid D
2. Multifunction switch

Removal and Installation

INFOID:0000000005198631

REMOVAL

1. Remove cluster lid D. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove multifunction switch mounting screws.
3. Disconnect connector and remove multifunction switch.

INSTALLATION

Installation is the reverse order of removal.

PRESET SWITCH

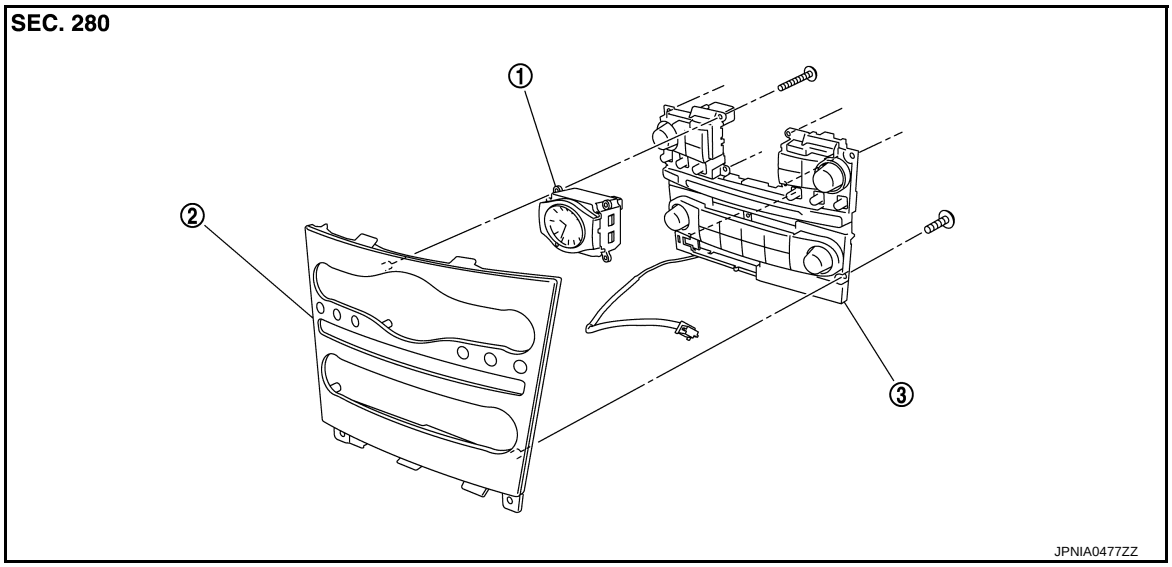
Exploded View

INFOID:0000000005198632

REMOVAL

Refer to IP-14, "A/T MODELS : Exploded View".

DISASSEMBLY



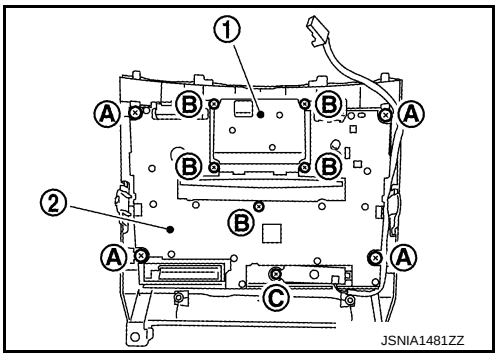
1. Clock
2. Cluster lid C
3. Preset switch

Removal and Installation

INFOID:0000000005198633

REMOVAL

1. Remove cluster lid C. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove preset switch mounting screws (A), (B) and (C).
3. Disconnect connector and remove preset switch.



1. Clock
2. Preset switch

INSTALLATION

Installation is the reverse order of removal.

NOTE:

When installing preset switch, do not allow the print wire that connects preset switch and multifunction switch to get caught in between audio unit and preset switch.

STEERING SWITCH

Exploded View

INFOID:0000000005369404

Refer to SR-16, "Exploded View".

Removal and Installation

INFOID:0000000005369405

REMOVAL

Refer to SR-16, "Removal and Installation".

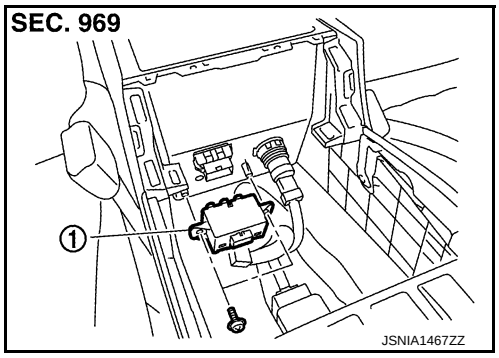
INSTALLATION

Install in the reverse order of removal.

AUXILIARY INPUT JACKS

Exploded View

INFOID:0000000005198634



1. Auxiliary input jacks

Removal and Installation

INFOID:0000000005198635

REMOVAL

1. Remove console box assembly. Refer to IP-37, "A/T MODELS : Exploded View".
2. Remove auxiliary mounting screws.
3. Disconnect connector and remove auxiliary input jacks.

INSTALLATION

Installation is the reverse order of removal.

USB CONNECTOR

Removal and Installation

INFOID:0000000005198637

REMOVAL

1. Remove console box assembly. Refer to IP-37, "A/T MODELS : Exploded View".
2. Press the pawl from the back of console box assembly to remove USB connector.

INSTALLATION

Install in the reverse order of removal.

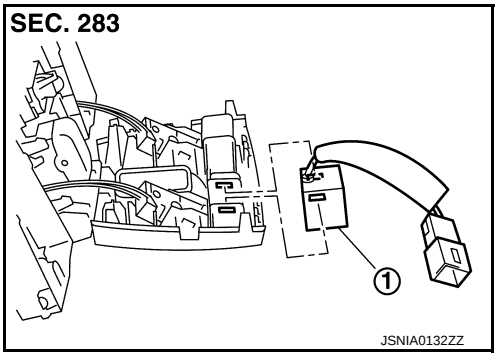
MICROPHONE

Exploded View

INFOID:0000000005198638

REMOVAL
Refer to INT-25, "Exploded View".

DISASSEMBLY



1. Microphone

Removal and Installation

INFOID:0000000005198639

REMOVAL

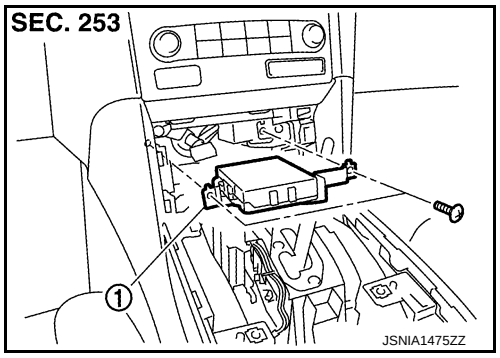
1. Remove map lamp assembly. Refer to INT-25, "Exploded View".
2. Remove microphone, stretching pawls of map lamp assembly.

INSTALLATION
Installation is the reverse order of removal.

SONAR CONTROL UNIT

Exploded View

INFOID:0000000005198640



1. Sonar control unit

Removal and Installation

INFOID:0000000005198641

REMOVAL

1. Remove AV control unit. Refer to AV-128, "Exploded View".
2. Remove screws and connector, and then sonar control unit.

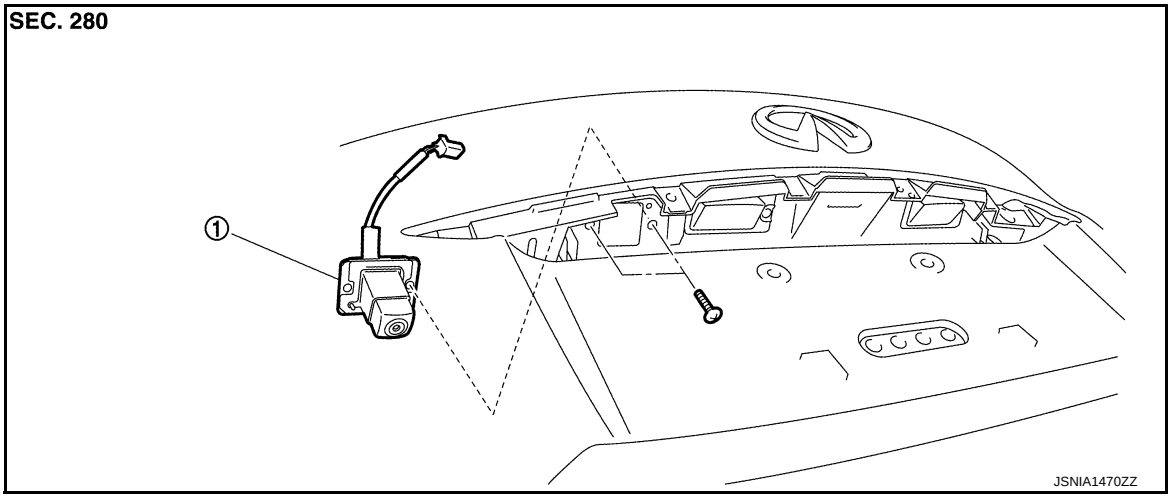
INSTALLATION

Install in the reverse order of removal.

REAR VIEW CAMERA

Exploded View

INFOID:0000000005198642



1. Rear view camera

Removal and Installation

INFOID:0000000005198643

REMOVAL

1. Remove door handle cover. Refer to EXT-52, "Exploded View".
2. Remove rear view camera mounting screws and rear view camera harness connector.
3. Remove rear view camera.

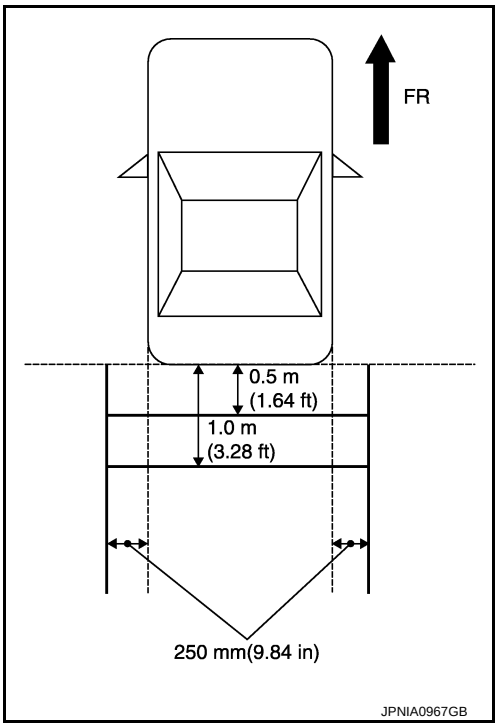
INSTALLATION

1. Installation is the reverse order of removal.
2. Adjust the guide line position if the guide line position is shifted after installing the rear view camera. Refer to AV-144, "Adjustment".

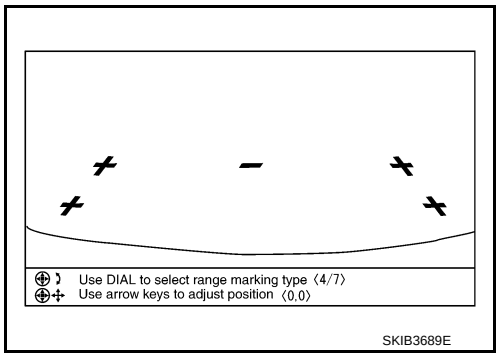
Adjustment

INFOID:0000000005198644

1. Draw lines on rearward area of the vehicle passing through the following points: 250 mm (9.84 in) from both sides of the vehicle, and 0.5 m (1.64 ft), 1.0 m (3.28 ft) from the rear end of the bumper.
2. Set into “Adjust Guide Lines” mode of Confirmation/Adjustment mode.



3. Rotate the center dial, and then select the guiding line pattern so that its angle is aligned with the correction line of the rear of the vehicle.



Selected pattern : 7

4. Fine adjust the guiding line so that its position is aligned to the correction line by pressing the up/down/left/right switches. Pressing “ENTER” enable the camera control unit to memory the adjusted guiding line position.

Up/Down adjustment range : –20 – 20

Left/Right adjustment range : –20 – 20

CAUTION:

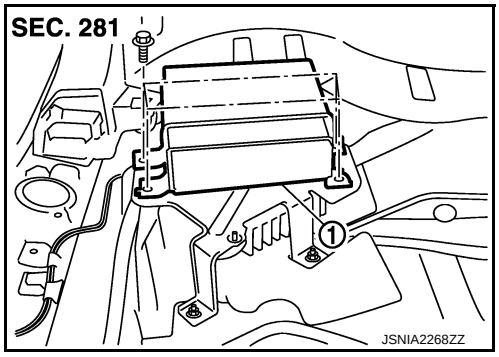
Never operate other function such as pressing BACK while writing index data.

TEL ADAPTER UNIT

Exploded View

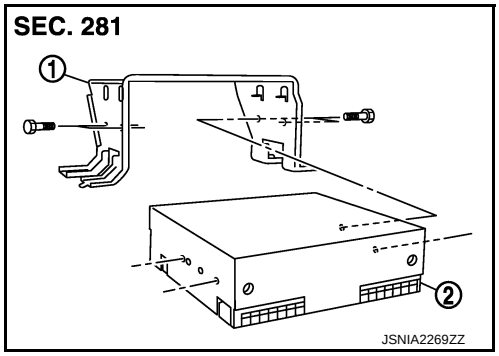
INFOID:0000000005198645

REMOVAL



1. TEL adapter unit

DISASSEMBLY



1. Bracket
2. TEL adapter unit

Removal and Installation

INFOID:0000000005198646

REMOVAL

1. Remove luggage floor spacer (LH). Refer to INT-30, "FOR EUROPE : Exploded View" (except for Russia), INT-34, "FOR RUSSIA : Exploded View" (for Russia) or INT-38, "V9X : Exploded View" (for V9X models).
2. Remove TEL adapter unit screws, disconnect TEL adapter unit connector and remove the TEL adapter unit.

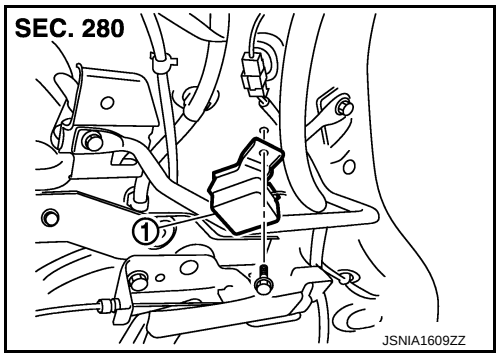
INSTALLATION

Install in the reverse order of removal.

TEL ANTENNA

Exploded View

INFOID:0000000005198686



1. TEL antenna

Removal and Installation

INFOID:0000000005198687

REMOVAL

1. Remove luggage side finisher upper (RH). Refer to INT-30, "FOR EUROPE : Exploded View" (except for Russia), INT-34, "FOR RUSSIA : Exploded View" (for Russia) or INT-38, "V9X : Exploded View" (for V9X models).
2. Remove luggage floor spacer (LH). Refer to INT-30, "FOR EUROPE : Exploded View" (except for Russia), INT-34, "FOR RUSSIA : Exploded View" (for Russia) or INT-38, "V9X : Exploded View" (for V9X models).
3. Remove TEL antenna from vehicle.

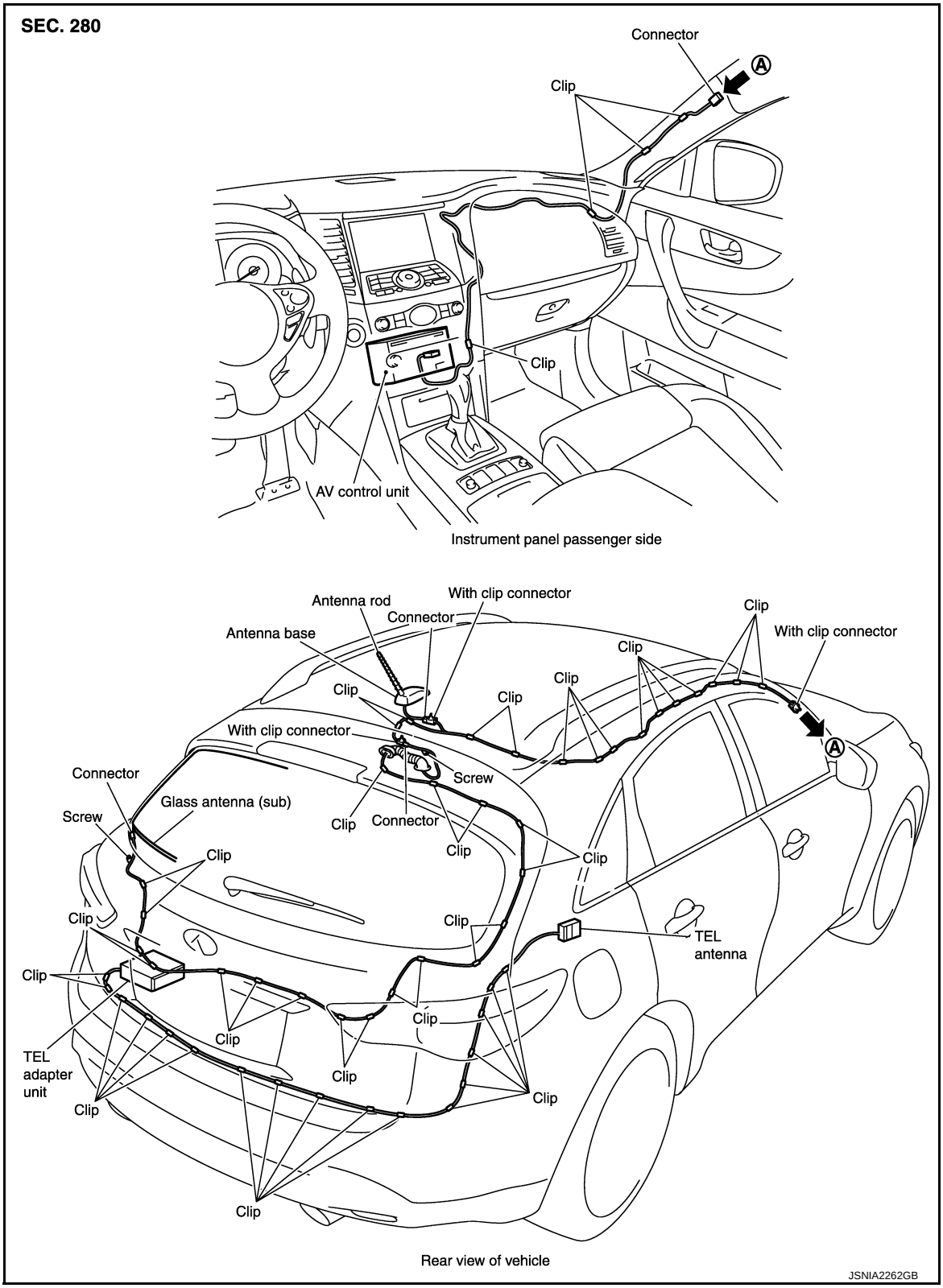
INSTALLATION

Install in the reverse order of removal.

Feeder Layout

INFOID:0000000005198689

SEC. 280

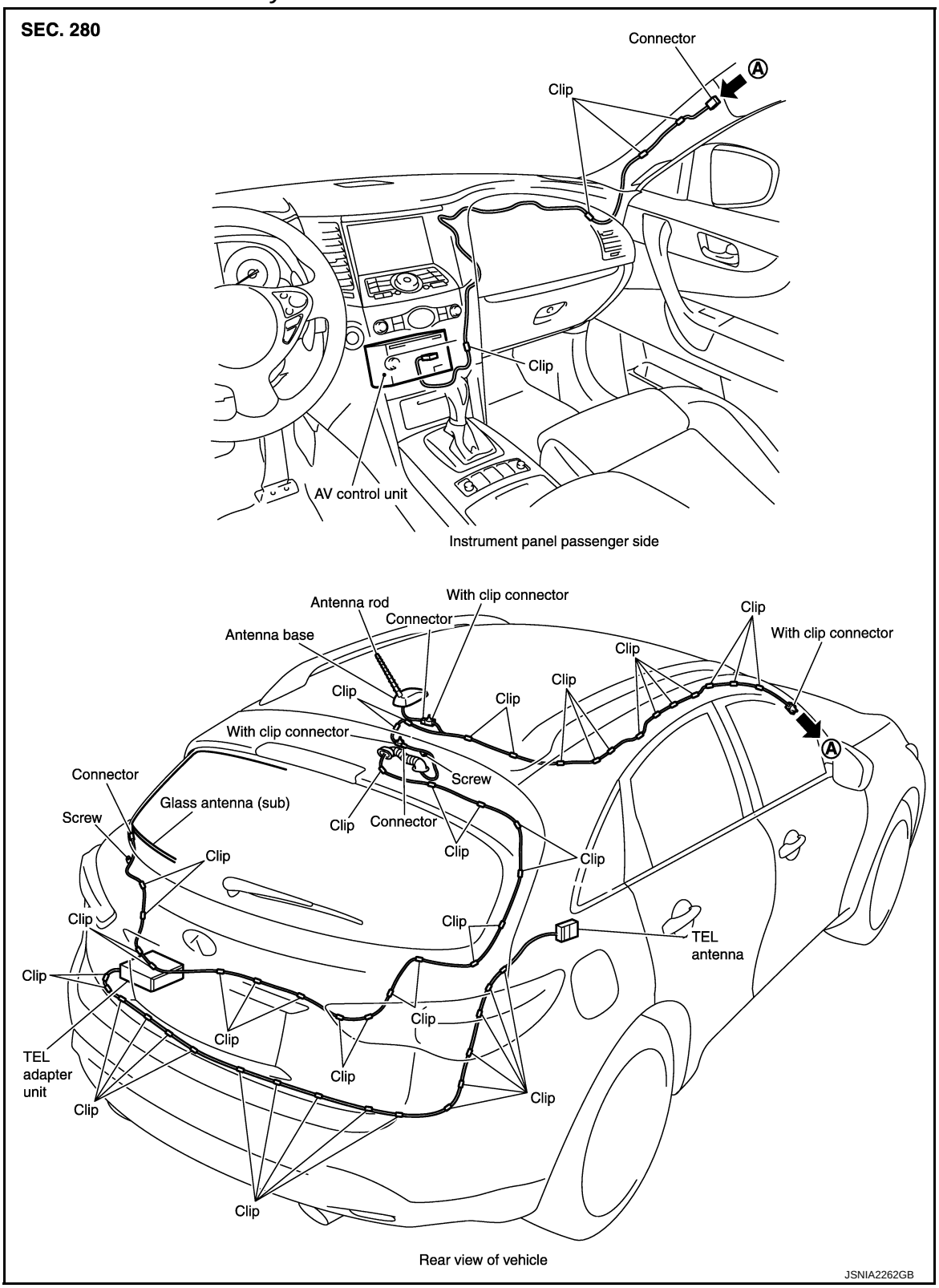


ANTENNA FEEDER

LHD MODELS

LHD MODELS : Feeder Layout

INFOID:0000000005198647

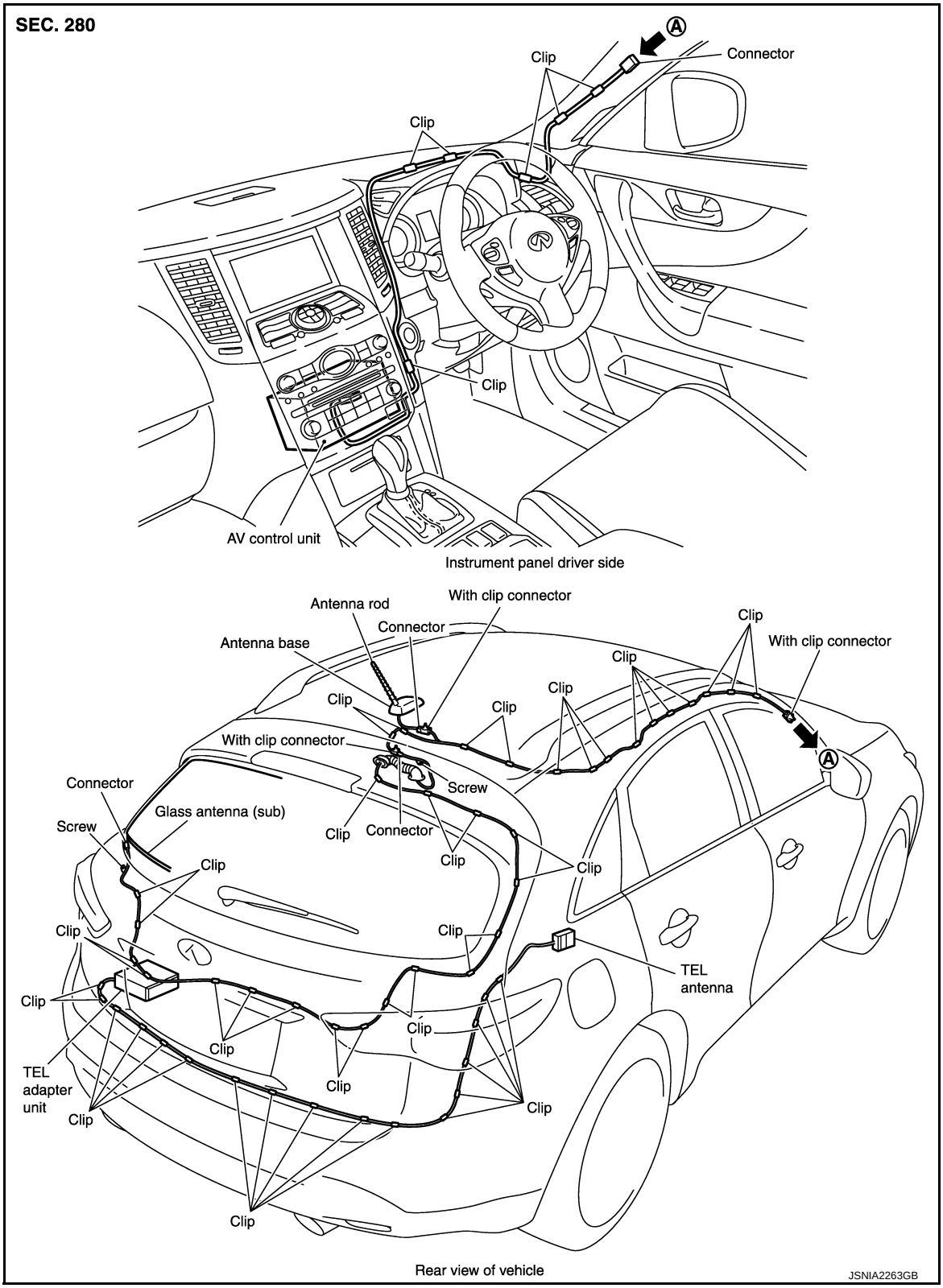


RHD MODELS

RHD MODELS : Feeder Layout

INFOID:0000000005198648

SEC. 280



HOW TO USE THIS MANUAL

APPLICATION NOTICE

Information

INFOID:0000000005194367

In this manual, “SONAR” means “PARKING SENSOR”.

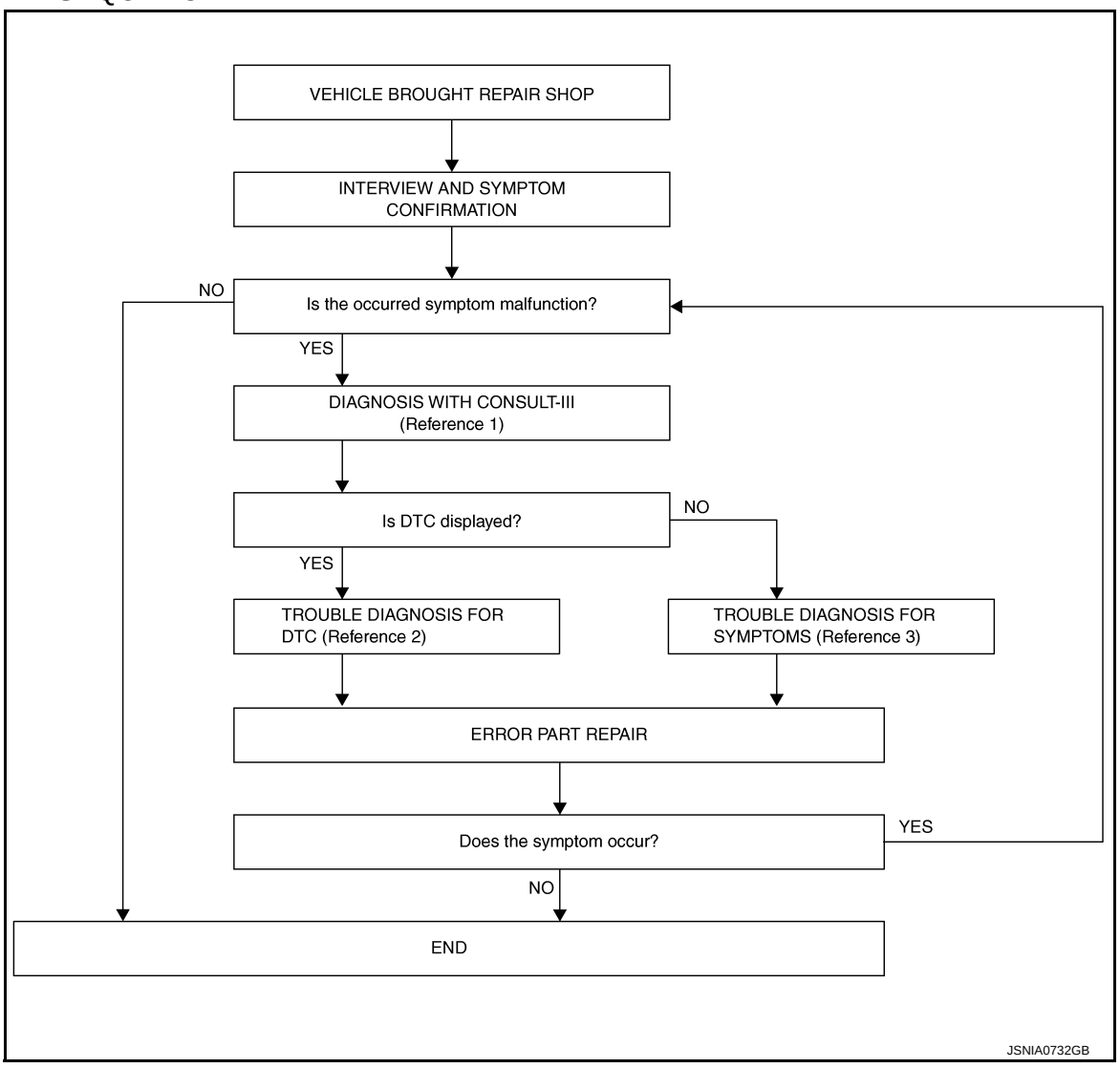
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000005194368

OVERALL SEQUENCE



- Reference 1··· Refer to AV-172, "CONSULT - III Function (MULTI AV)".
- Reference 2··· Refer to AV-226, "DTC Index".
- Reference 3··· Refer to AV-260, "Symptom Table".

DETAILED FLOW

1. INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.
NO >> INSPECTION END

2. DIAGNOSIS WITH CONSULT-III

1. Connect CONSULT-III and perform a self-diagnosis for “MULTI AV”. Refer to AV-172, "CONSULT - III Function (MULTI AV)".
   NOTE:
   Skip to step 4 of the diagnosis procedure if “MULTI AV” is not displayed.
2. Check if any DTC is displayed in the self-diagnosis results.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-226, "DTC Index".

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-260, "Symptom Table".

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “MULTI AV” with CONSULT-III.
   NOTE:
   Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000005222505

BEFORE REPLACEMENT

When replacing AV control unit, save or print current vehicle specification with CONSULT-III configuration before replacement.

AFTER REPLACEMENT

CAUTION:

When replacing AV control unit, you must perform “WRITE CONFIGURATION” with CONSULT-III.

- **Complete the procedure of “WRITE CONFIGURATION” in order.**
- **If you set incorrect “WRITE CONFIGURATION”, incidents might occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000005222506

1.SAVING VEHICLE SPECIFICATION

-CONSULT-III Configuration

Perform “READ CONFIGURATION” to save or print current vehicle specification. Refer to AV-154, "CONFIGURATION (AV CONTROL UNIT) : Description".

NOTE:

If “READ CONFIGURATION” can not be used, use the “WRITE CONFIGURATION - Manual selection”.

>> GO TO 2.

2.REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to AV-268, "Exploded View".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

-CONSULT-III Configuration

Perform “WRITE CONFIGURATION - Config file” or “WRITE CONFIGURATION - Manual selection” to write vehicle specification. Refer to AV-155, "CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement".

>> GO TO 4.

4.OPERATION CHECK

Check that the operation of the AV control unit and camera images (fixed guide lines and predictive course lines) are normal.

>> WORK END

CONFIGURATION (AV CONTROL UNIT)

CONFIGURATION (AV CONTROL UNIT) : Description

INFOID:0000000005222507

- Since vehicle specifications are not included in the AV control unit after replacement, it is required to write vehicle specifications with CONSULT-III.
- Configuration has three functions as follows.

Function	Description
READ CONFIGURATION	• Reads the vehicle configuration of current AV control unit. • Saves the read vehicle configuration.
WRITE CONFIGURATION-Manual selection	Writes the vehicle configuration with manual selection.
WRITE CONFIGURATION-Config file	Writes the vehicle configuration with saved data.

CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement

INFOID:0000000005222508

NOTE:
If “WRITE CONFIGURATION” is unsuccessful, perform “Accessory Number Initialization”. For details, refer to AV-163, "Diagnosis Description".
After performing “Accessory Number Initialization”, reboot the AV control unit to perform “WRITE CONFIGURATION”.

1.WRITING MODE SELECTION

CONSULT-III Configuration
Select “CONFIGURATION” of “MULTI AV”.

When writing saved data>>GO TO 2.
When writing manually>>GO TO 3.

2.PERFORM “WRITE CONFIGURATION-CONFIG FILE”

CONSULT-III Configuration
Perform “WRITE CONFIGURATION-Config file”.

>> WORK END

3.PERFORM “WRITE CONFIGURATION-MANUAL SELECTION”

CONSULT-III Configuration
Select “WRITE CONFIGURATION-Manual selection” to write vehicle specifications into the AV control unit. For data to write, refer to AV-155, "CONFIGURATION (AV CONTROL UNIT) : Configuration List".

>> GO TO 4.

4.OPERATION CHECK

Check that the operation of the AV control unit and camera images (fixed guide lines and predictive course lines) are normal.

>> WORK END

CONFIGURATION (AV CONTROL UNIT) : Configuration List

INFOID:0000000005222509

CAUTION:
Check vehicle specifications before servicing.

MANUAL SETTING ITEM	
Items	Setting value
STEERING	LHD
	RHD
CAMERA SYSTEM	NONE/AVM
	REAR CAMERA
	REAR+SIDE
SOUND SYSTEM	BASE
	BOSE

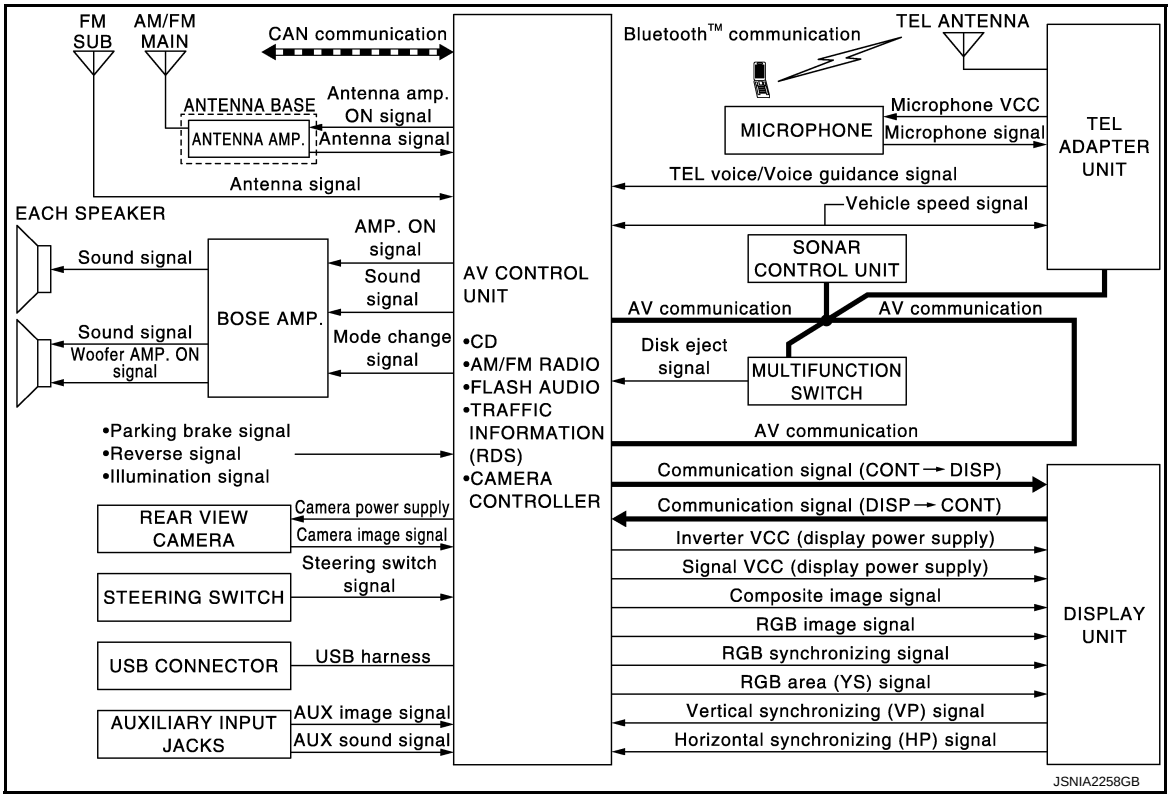
NOTE:
AVM: Around view monitor

SYSTEM DESCRIPTION

MULTI AV SYSTEM

System Diagram

INFOID:0000000005194369



NOTE:

- The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.
- An antenna base integrated with antenna amp. is adopted.

System Description

INFOID:0000000005194370

Multi AV system means that the following systems are integrated.

FUNCTION NAME
Audio function
Hands-free phone function
Auxiliary input function
Rear view monitor function
Vehicle information function
Sonar function

COMMUNICATION SIGNAL

- AV control unit function by transmitting/receiving data one by one with each unit (slave unit) that configures them completely as a master unit by connecting between units that configure MULTI AV system with two AV communication lines (H, L).
- Two AV communication lines (H, L) adopt a twisted pair line that is resistant to noise.
- AV control unit is connected by CAN communication, and it receives data signal from ECM, unified meter and A/C amp. It computes and displays fuel economy information value with the obtained information.
- AV control unit is connected with display and serial communication, and it transmits the required signal of display and display control and receives the response signal from display.

AUDIO FUNCTION

The audio system is equipped with the following functions. Each function is operated with multifunction switch, preset switch, steering switch. Operation status of audio is indicated at display.

FUNCTION
AM/FM radio
Traffic information (RDS)
CD
Music Box (flash memory)
USB connection
Driver's Audio Stage

Operating Signal

Audio system operation can be performed with multifunction switch, preset switch or steering switch.

- Operating signal is transmitted to AV control unit with AV communication when it is operated by multifunction switch or preset switch. The disk ejection operating signal is performed by hardwire.
- Operating signal is transmitted to AV control unit with steering switch signal when it is operated by steering switch.

Screen Display

- Switching of display is performed with serial communication between display unit and AV control unit.
- The image signal to display operating condition is performed with RGB image signal, RGB area signal and RGB image synchronizing signal.

AM/FM Radio Mode

- AM/FM radio tuner is built into AV control unit.
- Audio signal is received by rod antenna, next it is amplified by antenna amp., and finally it is input to AV control unit. Audio signal is input to BOSE amp., and BOSE amp. outputs to each speaker.

Traffic Information (RDS) Function

- Traffic information function is built into AV control unit.
- Traffic information is received by rod antenna, next it is amplified by antenna amp., and finally it is input to AV control unit.

CD Mode

- CD function is built into AV control unit.
- AV control unit outputs audio signal to BOSE amp., and BOSE amp. outputs to each speaker when CD is inserted to AV control unit.

Music Box Mode

- Music CD data is stored on flash memory that is built into AV control unit, and it can be played.
- AV control unit outputs music (sound signal) that is stored on flash memory to BOSE amp., and BOSE amp. outputs to each speaker.

USB Connection Function

- iPod® or music files in USB memory can be played.
- Sound signals are transmitted from USB connector to the AV control unit and to each speaker via BOSE amp.
- iPod® is recharged when connected to USB connector.

iPod® is a trademark of Apple inc., registered in the U.S. and other countries.

NOTE:

Use the enclosed USB harness when connecting iPod® to USB connector.

Driver's Audio Stage

- Driver's Audio Stage controls the speaker's output characteristic by BOSE amp. so that the driver's seat is to be the center of sounds.
- ON/OFF signals of Driver's Audio Stage are transmitted from AV control unit to BOSE amp. using mode change signal.

HANDS-FREE PHONE SYSTEM

- TEL adapter unit is controlled with AV communication from AV control unit.
- The connection between cellular phone and TEL adapter unit is performed with Bluetooth™ communication.

- The voice guidance signal is input from the TEL adapter unit to the AV control unit and output via BOSE amp. to the front door speaker when operating the cellular phone.
- TEL adapter unit has the on board self-diagnosis function. Refer to AV-176, "Diagnosis Description".

When A Call Is Originated

- Spoken voice sound output from the microphone (microphone signal) is input to TEL adapter unit.
- TEL adapter unit outputs to cellular phone with Bluetooth™ communication as a TEL voice signal.
- Voice sound is then heard at the other party.

When Receiving A Call

- Voice sound is input to own cellular phone from the other party.
- TEL voice signal is input to TEL adapter unit by establishing Bluetooth™ communication from cellular phone, and the signal is output via BOSE amp. to front speaker and center speaker.

AUXILIARY INPUT FUNCTION

- Image and sound can be output from an external device by connecting a device with auxiliary input jacks.
- AUX image signals are transmitted to the display unit and AUX sound signals are transmitted to each speaker via BOSE amp.

REAR VIEW MONITOR FUNCTION

Camera Image Operation Principle

- The AV control unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the display unit when power is supplied from the AV control unit.
- The AV control unit transmits a warning message, fixed guide lines, and predictive course lines to the display unit by RGB image signals. Rear view monitor images are displayed by combining the RGB image signals and the camera image signals from the rear view camera.
- Predictive course lines are controlled by a steering angle sensor signal received the AV control unit via CAN communication.

VEHICLE INFORMATION FUNCTION

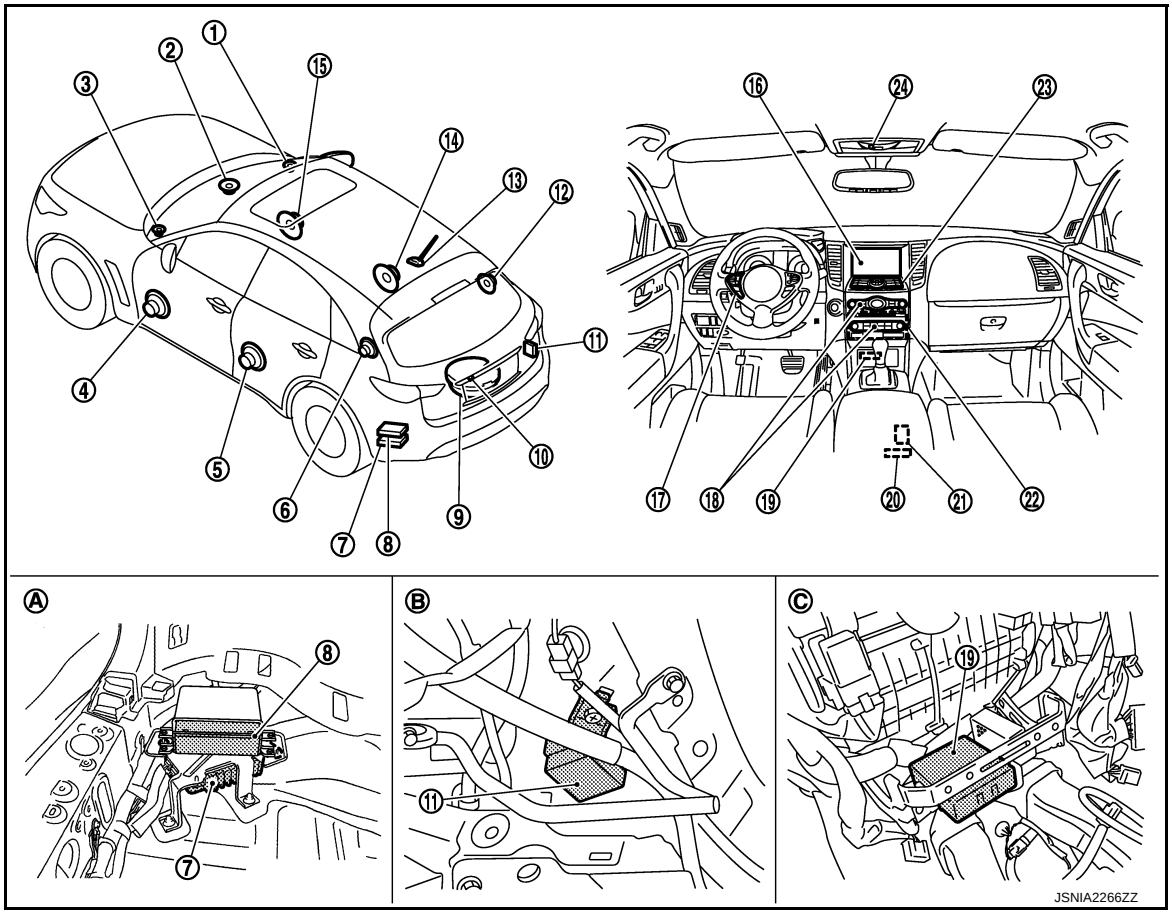
- Status of audio, climate control system, fuel economy and maintenance are displayed.
- AV control unit displays the fuel consumption status while receiving data signal through CAN communication from ECM, unified meter and A/C amp.

SONAR SYSTEM FUNCTION

For further information about the sonar system, refer to SN-7, "System Description".

Component Parts Location

INFOID:0000000005194371



1. Front squawker RH
2. Center speaker
3. Front squawker LH
4. Front door speaker LH
5. Rear door speaker LH
6. Rear squawker LH
7. BOSE amp.
8. TEL adapter unit
9. Woofer
10. Rear view camera
11. TEL antenna
12. Rear squawker RH
13. Antenna base
14. Rear door speaker RH
15. Front door speaker RH
16. Display unit
17. Steering switch
18. Preset switch
19. Sonar control unit
20. Auxiliary input jack
21. USB connector
22. AV control unit
23. Multifunction switch
24. Microphone

A. Luggage floor (LH side)
B. Luggage side RH
C. Console pocket assembly removed condition

Component Description

INFOID:0000000005194372

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.
Display unit	• Display image is controlled by the serial communication from AV control unit. • It receives the power (signal VCC and inverter VCC) from the AV control unit and operates. • RGB image signal is input from AV control unit (RGB, RGB area and RGB synchronizing). • Composite image signals (auxiliary and camera images) are input from AV control unit. • Synchronizing signal (HP, VP) is output to AV control unit.
BOSE amp.	• Inputs sound signal from AV control unit, and outputs sound signal to each speaker. • Input mode change signal from AV control unit.
Front door speaker	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
Rear door speaker	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
Front squawker	• Outputs sound signal from BOSE amp. • Outputs mid range sounds.
Rear squawker	• Outputs sound signal from BOSE amp. • Outputs mid range sounds.
Center speaker	• Outputs sound signal from BOSE amp. • Outputs mid range sounds.
Woofer	• Inputs power (woofer amp. ON) and sound signal from BOSE amp. • Outputs low range sound.
Multifunction switch	• Operation panel is equipped with the centralized switch where audio and auxiliary input, etc. operations are integrated. • Connected with preset switch via cable, and operation signal is transmitted to AV control unit via AV communication.
Preset switch	• Operation panel is equipped with the centralized switch where audio and air conditioner, etc. operations are integrated. • Connected with multifunction switch via cable, and operation signal is transmitted to AV control unit via AV communication. • The disk ejection operating signal is performed by hardwire.
Rear view camera	• Camera power supply is input from AV control unit. • The image of vehicle rear view is transmitted to AV control unit.
Steering switch	• Operations for audio and hands-free phone are possible. • Steering switch signal (operation signal) is output to AV control unit.
Microphone	• Used for hands-free phone operation. • Microphone signal is transmitted to TEL adapter unit. • Power (Microphone VCC) is supplied from TEL adapter unit.
Auxiliary input jacks	Sound signal of auxiliary input is transmitted to AV control unit.

Part name	Description
Antenna base	• An antenna base integrated with radio antenna amp. is adopted. • Radio signal received by rod antenna is amplified and transmitted to AV control unit. • Power (antenna amp. ON signal) is supplied from AV control unit.
TEL adapter unit	• Inputs the TEL voice signal from TEL antenna and outputs it to the AV control unit. • It is connected with the AV control unit via AV communication and controlled with the AV control unit.
TEL antenna	Receives the TEL voice signal and outputs it to the TEL adapter unit.
USB connector	Sound signal of USB input is transmitted to AV control unit.
Sonar control unit	• Controlled by AV communication transmitted from AV control unit. • Trouble diagnosis is supported with CONSULT-III (K-LINE).

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Diagnosis Description

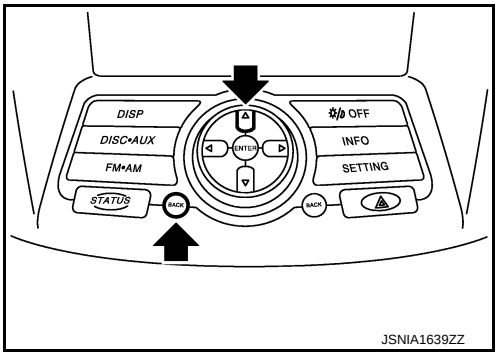
INFOID:0000000005194373

MULTIFUNCTION SWITCH AND PRESET SWITCH SELF-DIAGNOSIS FUNCTION

The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

Self-diagnosis Mode

- Press the “BACK” switch and the “UP” switch of the 8-direction switches within 10 seconds after turning the ignition switch from OFF to ACC and hold them for 3 seconds or more. Then the buzzer sounds, all indicators of the preset switch illuminate, and the self-diagnosis mode starts.
- The continuity of each switch at the ON position can be checked by pressing the switch. The buzzer sounds if the switch is normal.
  NOTE:
  The hazard switch and disk eject switch cannot be checked.



Finishing Self-diagnosis Mode

Self-diagnosis mode is canceled when turning the ignition switch OFF.

MULTI AV SYSTEM ON BOARD DIAGNOSIS FUNCTION

- The AV control unit diagnosis function starts up with multifunction switch operation and the AV control unit performs a diagnosis for each unit in the system during the on board diagnosis.
- Perform a CONSULT-III diagnosis if the on board diagnosis does not start, e.g., the screen does not display anything, the multifunction switch does not function, etc.

ON BOARD DIAGNOSIS

Description

- The trouble diagnosis function has a self-diagnosis mode for conducting trouble diagnosis automatically and a confirmation/adjustment mode for operating manually.
- Self-diagnosis mode performs the AV control unit diagnosis and the connection diagnosis between each of the units that make up the system, and it indicates the results to the display unit.
- The confirmation/adjustment mode allows the technician to check, modify or adjust the vehicle signals and set values, as well as to monitor the system error records and system communication status. The checking, modifying or adjusting generally require human intervention and judgment (the system cannot make judgment automatically).

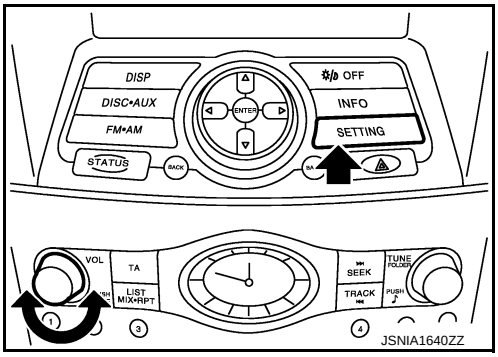
On Board Diagnosis Item

Mode	Description
Self Diagnosis	• AV control unit diagnosis. • Diagnoses the connections across system components, between AV control unit and each unit.

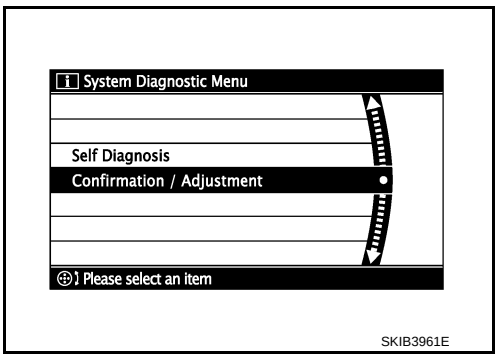
Mode		Description
Confirmation/ Adjustment	Display Diagnosis	The following check functions are available: color tone check by color bar display and white display, light and shade check by gray scale display.
	Vehicle Signals	Diagnosis of signals can be performed for vehicle speed, parking brake, lights, ignition and reverse.
	Speaker Test	The connection of a speaker can be confirmed by test tone.
	Climate Control	Start auto air conditioner system self-diagnosis.
	Error History	The system malfunction and the frequency when occurring in the past are displayed. When the malfunctioning item is selected, the time and place that the selected malfunction last occurred are displayed.
	Camera Cont.	• Guiding line position that overlaps rear view camera image can be adjusted. • Configuration stored in the AV control unit can be checked.
	Vehicle CAN Diagnosis	The transmitting/receiving of CAN communication can be monitored.
	AV COMM Diagnosis	The communication condition of each unit of Multi AV system can be monitored.
	Delete Unit Connection Log	Erase the connection history of unit and error history.
	Initialize Settings	Initializes the AV control unit memory.

STARTING PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “SETTING” button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   • Shifting from current screen to previous screen is performed by pressing “BACK” button.



4. The trouble diagnosis initial screen is displayed, and then the items of “Self Diagnosis” and “Confirmation/Adjustment” can be selected.

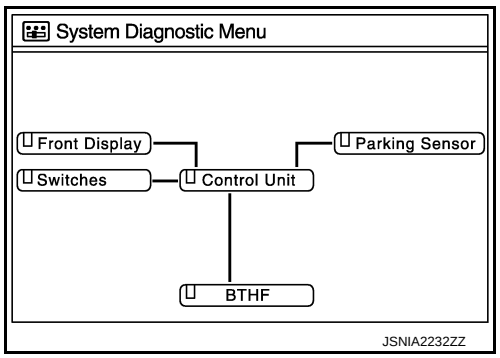


SELF-DIAGNOSIS MODE

1. Start the self-diagnosis function and select “Self Diagnosis”.

- Self-diagnosis subdivision screen is displayed, and the self-diagnosis mode starts.
- The bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis.

2. Diagnosis results are displayed after the self-diagnosis is completed. The unit names and the connection lines are color-coded according to the diagnostic results.



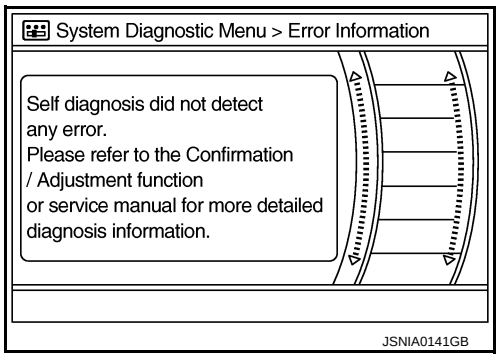
Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction Note	Red	Green

NOTE:

Control unit (AV control unit) and is displayed in red.

- Replace AV control unit if “Self-Diagnosis did not run because of a control unit malfunction” is indicated. The symptom is AV control unit internal error. Refer to AV-268, "Exploded View".
- If multiple errors occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > gray.

- The comments of the self-diagnosis results can be viewed with a component in the diagnosis result screen.



Detection Range of Self-diagnosis Mode

- The self-diagnosis mode allows the technician to diagnose the connection in the communication line between AV control unit and each unit and the internal operation of the AV control unit.
- Because the start condition of diagnosis function is a switch operation, the on board diagnosis function cannot be started up if any malfunction is detected in the communication circuit between AV control unit and multifunction switch.

SELF-DIAGNOSIS RESULTS

Check the applicable display at the following table, and then repair the malfunctioning parts.

Only Unit Part Is Displayed In Red.

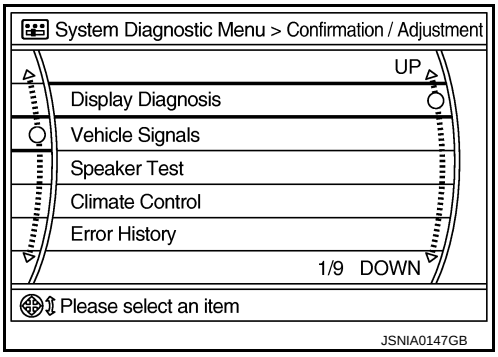
Screen switch	Description	Possible malfunction location / Action to take
Control unit	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.

A Connecting Cable Between Units Is Displayed In Yellow.

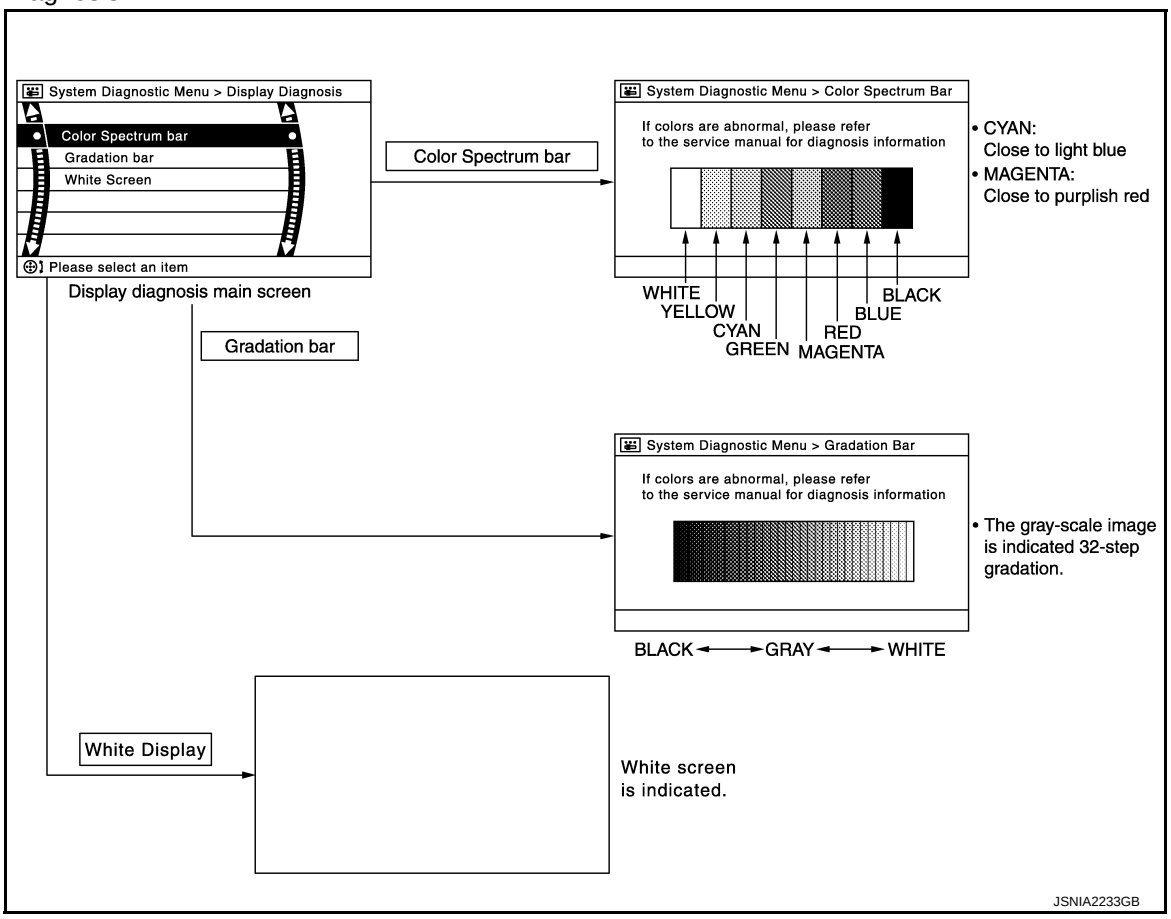
Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control unit ⇔ Front Display	Malfunction is detected in serial communication circuits between AV control unit and display unit.	Serial communication circuits between AV control unit and display unit.
Control unit ⇔ Parking Sensor	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between multifunction switch and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between multifunction switch and sonar control unit.
Control unit ⇔ BTHF	When either one of the following items are detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between sonar control unit and TEL adapter unit are malfunctioning.	• TEL adapter unit power supply and ground circuits. • AV communication circuits between sonar control unit and TEL adapter unit.

CONFIRMATION/ADJUSTMENT MODE

1. Start the diagnosis function and select “Confirmation/Adjustment”. The confirmation/adjustment mode indicates where each item can be checked or adjusted.
2. Select each switch on the “Confirmation/Adjustment Mode” screen to display the relevant trouble diagnosis screen. Press the “BACK” switch to return to the initial Confirmation/Adjustment Mode screen.

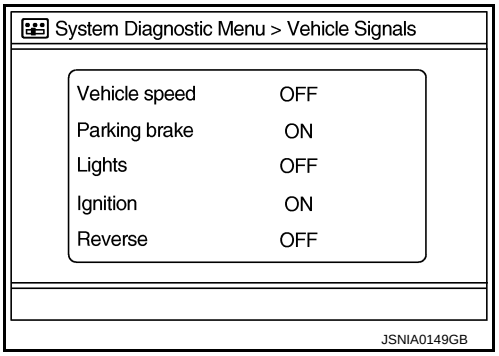


Display Diagnosis



Vehicle Signals

A comparison check can be made of each actual vehicle signal and the signals recognized by the system.

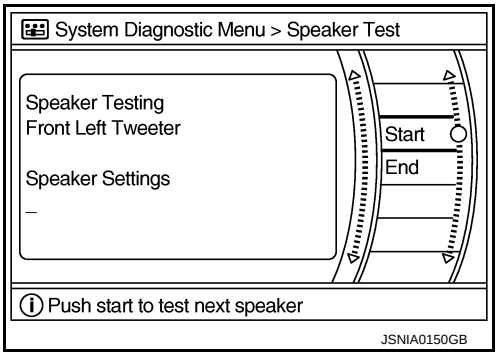


Diagnosis item	Display	Vehicle status	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
Parking brake	ON	Parking brake is applied.	
	OFF	Parking brake is released.	
Lights	ON	Light switch ON	—
	OFF	Light switch OFF	
Ignition	ON	Ignition switch ON	—
	OFF	Ignition switch in ACC position	

Diagnosis item	Display	Vehicle status	Remarks
Reverse	ON	Shift the selector lever to “R” position	Changes in indication may be delayed. This is normal.
	OFF	Shift the selector lever other than “R” position	

Speaker Test

Select “Speaker Test” to display the Speaker Diagnosis screen. Press “Start” to generate a test tone in a speaker. Press “Start” again to generate a test tone in the next speaker. Press “End” to stop the test tones.



Climate Control

Refer to “HEATER & AIR CONDITIONING CONTROL SYSTEM” for details.

Error History

The self-diagnosis results are judged depending on whether any error occurs from when “Self-diagnosis” is selected until the self-diagnosis results are displayed.

However, the diagnosis results are judged normal if an error has occurred before the ignition switch is turned ON and then no error has occurred until the self-diagnosis start. Check the “Error Record” to detect any error that may have occurred before the self-diagnosis start because of this situation.

The frequency of occurrence is displayed in a count up manner. The actual count up method differs depending on the error item.

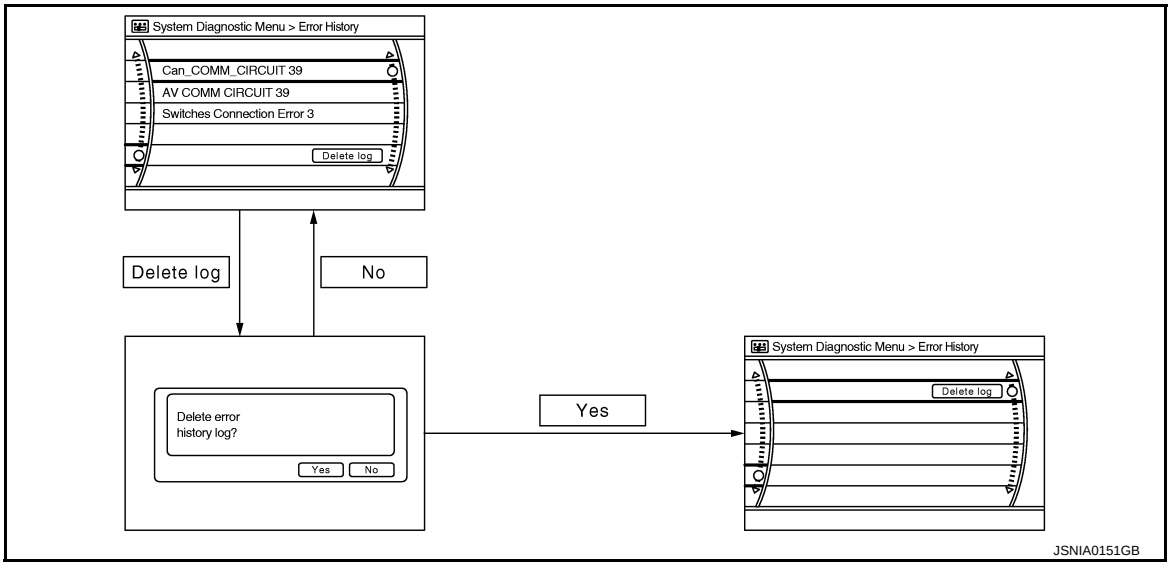
Count up method A

- The counter resets to 0 if an error occurs when IGN switch is turned ON. The counter increases by 1 if the condition is normal at a next IGN ON cycle.
- The counter upper limit is 39. Any counts exceeding 39 are ignored.“ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT-III.

Count up method B

- The counter increases by 1 if an error occurs when IGN switch is ON. The counter will not decrease even if the condition is normal at the next IGN ON cycle.
- The counter upper limit is 50. Any counts exceeding 50 are ignored. “ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT-III.

Display type of occurrence frequency	Error history display item
Count up method A	CAN communication line, control unit (CAN), AV communication line, control unit (AV)
Count up method B	Other than the above



Error item

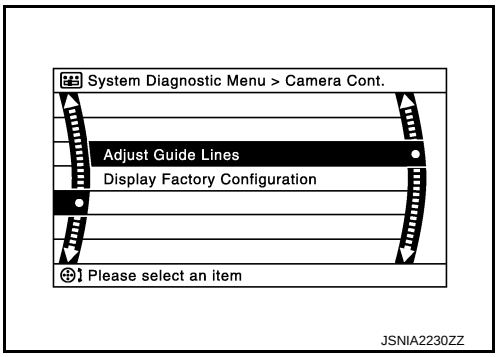
Some error items may be displayed simultaneously according to the cause. If some error items are displayed simultaneously, the detection of the cause can be performed by the combination of display items

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT	CAN communication malfunction is detected.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-172, "CONSULT - III Function (MULTI AV)".
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	
FLASH-ROM Error Of Control Unit	AV control unit malfunction is detected.	
CAN Controller Memory Error		
Sub CPU Connection Error		
iPod authentification chip error		
Audio connection error		
DSP Connection Error	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
DSP Communication Error		
Unfinished configuration	The writing of configuration data is incomplete.	Write configuration data with CONSULT-III.
USB Controller Communication Error	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.
Steer. Angle Sensor Calibration	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.
Front Display Connection Error	When either one of the following items are detected: • display unit power supply and ground circuits malfunction is detected. • malfunction is detected in communication circuits between AV control unit and display unit.	• Display unit power supply and ground circuits. • Communication circuits between AV control unit and display unit.

Error item	Description	Possible malfunction factor/Action to take
USB electric current Error	Detection of overcurrent in USB connecter.	Check USB harness between the AV control unit and USB connector.
• AV COMM CIRCUIT • Switches Connection Error	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT • Sonar Connection Error	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between multifunction switch and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between multifunction switch and sonar control unit.
• AV COMM CIRCUIT • H/F Unit Connection Error	When either one of the following items are detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between sonar control unit and TEL adapter unit are malfunctioning.	• TEL adapter unit power supply and ground circuits. • AV communication circuits between sonar control unit and TEL adapter unit.
• AV COMM CIRCUIT • Switches Connection Error • Sonar Connection Error • H/F Unit Connection Error	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

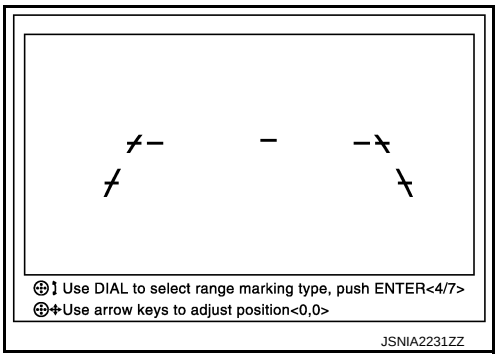
Camera Cont.

The two functions of “Adjust Guide Lines”, “Display Factory configuration” are available.



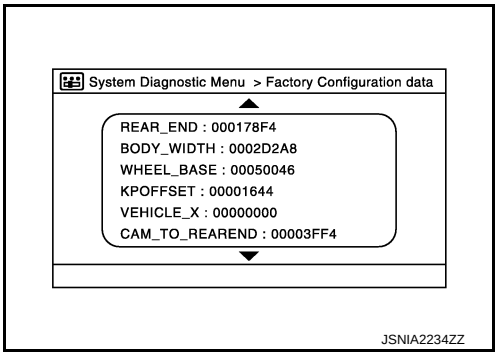
Adjust Guide Lines

- Use this mode to adjust the guide line display position of the rear-view monitor if necessary after removing the rear view monitor camera.



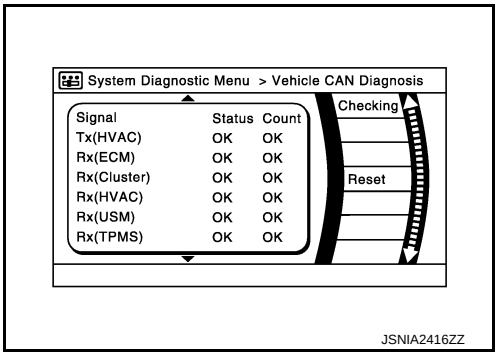
Display Factory configuration

- Configuration stored in the AV control unit can be checked.



Vehicle CAN Diagnosis

- CAN communication status and error counter is displayed.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if “Reset” is pressed.

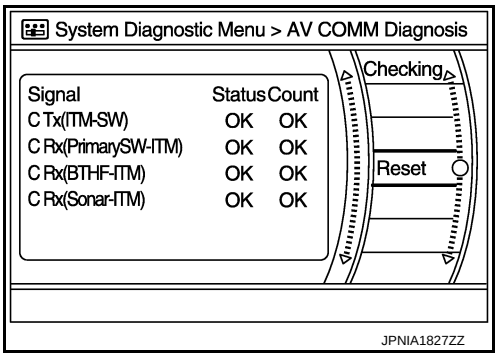


Items	Display (Current)	Malfunction counter (Past)
Tx(HVAC)	OK / ???	OK / 0 – 39
Rx(ECM)	OK / ???	OK / 0 – 39
Rx(Cluster)	OK / ???	OK / 0 – 39
Rx(HVAC)	OK / ???	OK / 0 – 39
Rx(USM)	OK / ???	OK / 0 – 39
Rx(TPMS)	OK / ???	OK / 0 – 39
Rx(STRG)	OK / ???	OK / 0 – 39

NOTE:
“???” indicates UNKWN.

AV COMM Diagnosis

- Displays the communication status between AV control unit (master unit) and each unit.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if “Reset” is pressed.

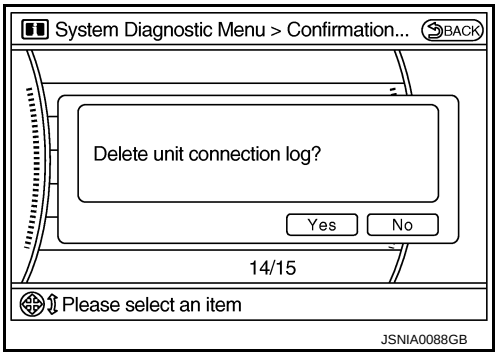


Items	Status (Current)	Counter (Past)
C Tx(ITM-PrimarySW)	OK / ???	OK / 0 – 39
C Rx(PrimarySW-ITM)	OK / ???	OK / 0 – 39
C Rx(BTHF-ITM)	OK / ???	OK / 0 – 39
C Tx(Sonar-ITM)	OK / ???	OK / 0 – 39

NOTE:
“???” indicates UNKWN.

Delete Unit Connection Log

Deletes any unit connection records and error records from the AV control unit memory. (Clear the records of the unit that has been removed.)

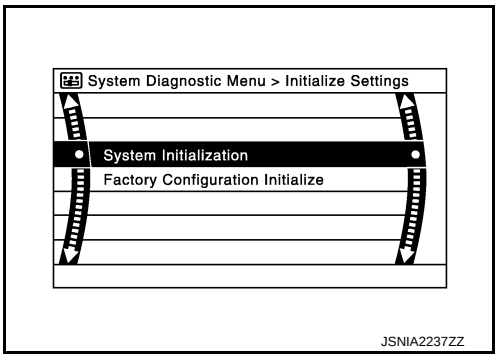


Initialize Settings

"User Data Initialization" and "Accessory Number Initialization" are possible.

CAUTION:

- **Never perform Accessory Number Initialization except when configuration is unsuccessful.**
- **Accessory Number Initialization requires configuration. For details, refer to AV-154, "CONFIGURATION (AV CONTROL UNIT) : Description".**



CONSULT - III Function (MULTI AV)

INFOID:0000000005194374

CONSULT-III FUNCTIONS

CONSULT-III performs the following functions via the communication with the AV control unit.

Diagnosis mode	Description
Ecu Identification	The part number of AV control unit can be checked.
Self Diagnostic Result	Performs a diagnosis on the AV control unit and a connection diagnosis for the communication circuit of the Multi AV system, and displays the current and past malfunctions collectively.
Data Monitor	The diagnosis of vehicle signal that is input to the AV control unit can be performed.
Work Support	Steering angle sensor can be adjusted.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing AV control unit.

AV COMMUNICATION

When "AV communication" of "CAN Diag Support Monitor" is selected, the following function will be performed.

AV communication	AV&NAVI C/U	Displays the communication status from AV control unit to each unit as well as the error counter.
	AUDIO	Displays the AV control unit communication status and the error counter.

ECU IDENTIFICATION

The part number of AV control unit is displayed.

SELF DIAGNOSIS RESULT

- In CONSULT-III self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates "CRNT". The past malfunction indicates "PAST".
- The timing is displayed as "0" if any of the error codes [U1000], [U1010], [U1300] and [U1310] is detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.

Self-diagnosis Results Display Item

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detected.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-178, "Diagnosis Procedure".
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	
Cont Unit [U1200]	AV control unit malfunction is detected.	
CAN CONT [U1216]		
SUB CPU CONN [U1228]		
iPod CERTIFICATION [U1229]		
Built-in AUDIO CONN [U122E]		
USB CONTROLLER [U1225]	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.
DSP CONN [U121D]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
DSP COMM [U121E]		
ST ANGLE SEN CALIB [1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.
CONFIG UNFINISH [U122A]	The writing of configuration data is incomplete.	Write configuration data with CONSULT-III.
FRONT DISP CONN [U1243]	When either one of the following items are detected: • display unit power supply and ground circuits malfunction is detected. • communication circuits between AV control unit and display unit.	• Display unit power supply and ground circuits. • Communication circuits between AV control unit and AV display unit.
USB OVERCURRENT [U1263]	Detection of overcurrent in USB connector.	Check USB harness between the AV control unit and USB connector.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between multifunction switch and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between multifunction switch and sonar control unit.

Error item	Description	Possible malfunction factor/Action to take
• AV COMM CIRCUIT [U1300] • HAND FREE CONN [U1256]	When either one of the following items are detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between sonar control unit and TEL adapter unit are malfunctioning.	• TEL adapter unit power supply and ground circuits. • AV communication circuits between sonar control unit and TEL adapter unit.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • SONAR CONN [U125C] • HAND FREE CONN [U1256]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

DATA MONITOR

ALL SIGNALS
- Displays the status of the following vehicle signals inputted into the AV control unit.
- For each signal, actual signal can be compared with the condition recognized on the system.

Display Item	Display	Vehicle status	Remarks
VHCL SPD SIG	On	Vehicle speed >0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed =0 km/h (0 MPH)	
PKB SIG	On	Parking brake is applied.	
	Off	Parking brake is released.	
ILLUM SIG	On	Block the light beam from the auto light optical sensor when the light SW is ON.	—
	Off	Expose the auto light optical sensor to light when the light SW is OFF or ON.	
IGN SIG	On	Ignition switch ON	
	Off	Ignition switch in ACC position	
REV SIG	On	Selector lever in R position	Changes in indication may be delayed. This is normal.
	Off	Selector lever in any position other than R	

SELECTION FROM MENU

Allows the technician to select which vehicle signals should be displayed and displays the status of the selected vehicle signals.

Item to be selected	Description
VHCL SPD SIG	The same as when “ALL SIGNALS” is selected.
PKB SIG	
ILLUM SIG	
IGN SIG	
REV SIG	

WORK SUPPORT

Adjusts the neutral position of the steering angle sensor.

CAUTION:

For vehicles with ESP, adjust the steering angle sensor neutral position on the ABS actuator control unit side.

Item	Description
ST ANGLE SENSOR ADJUSTMENT	Adjusts the neutral position of the steering angle sensor.

CONFIGURATION

Configuration has three functions as follows.

Function	Description
READ CONFIGURATION	• Reads the vehicle configuration of current AV control unit. • Saves the read vehicle configuration.
WRITE CONFIGURATION-Manual selection	Writes the vehicle configuration with manual selection.
WRITE CONFIGURATION-Config file	Writes the vehicle configuration with saved data.

DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

Diagnosis Description

INFOID:0000000005194375

HANDS-FREE PHONE SYSTEM ON BOARD DIAGNOSIS

During on board diagnosis the diagnosis function of TEL adapter unit starts with the operation of the steering switch and performs the diagnosis when ignition switch ACC.

ON BOARD DIAGNOSIS ITEM

The on board diagnosis has 3 modes: the self-diagnosis mode that performs the trouble diagnosis, the speaker adaptation data deleting mode and the hands-free phone system initialization mode.

CAUTION:

- **Perform the diagnosis with the vehicle stopped.**
- **Perform STEP2 if necessary.**

STEP	MODE	Description
STEP1	Self-diagnosis	The self-diagnosis mode performs the microphone test and the diagnosis of TEL adapter unit, TEL antenna and steering unit, and then reads out the results with the sound and indicates them on the display.
STEP2	Speaker adaptation data deleting	The speaker adaptation data deleting mode can delete the speaker adaptation data.
	Hands-free phone system initialization	Hands-free phone system initialization mode can perform the initialization of hands-free phone system.

Self-diagnosis results

Self-diagnosis mode reads out the self-diagnosis results.

NOTE:

- Error count is read out simultaneously when reading out the DTC name.
- The errors are read out continuously when some errors occur at the same time.

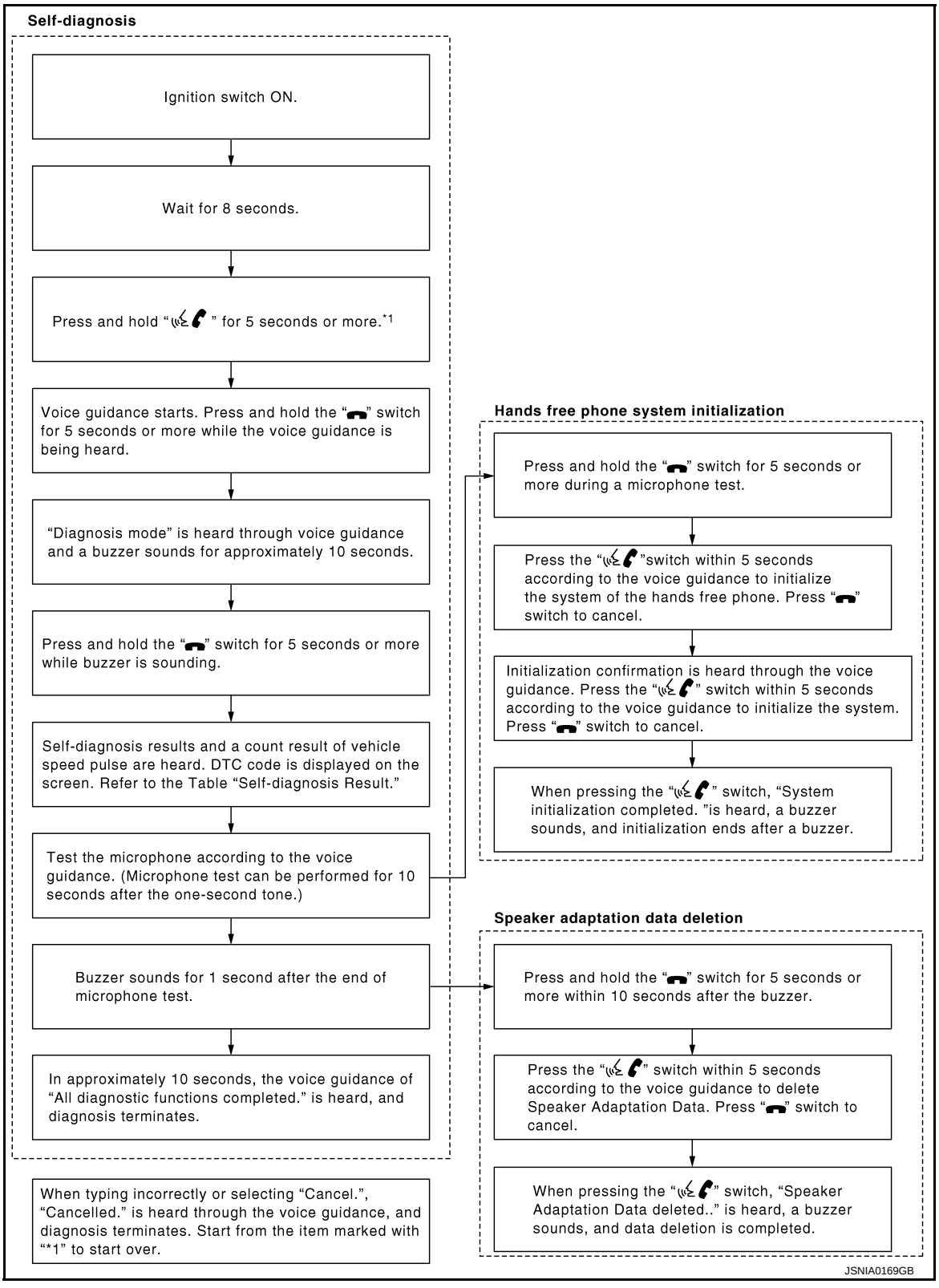
Self-diagnosis results

DTC	DTC name	Possible causes
DTC 10000	INTERNAL FAILURE	TEL adapter unit
DTC 01000	ANT. SHORT TO BATT OR OPEN	TEL antenna
DTC 00100	ANT. SHORT TO GROUND	
DTC 00010	STEERING REMOTE BUTTON STUCK A	Steering switch
DTC 00001	STEERING REMOTE BUTTON STUCK B	
DTC 00000	THERE ARE NO FAILURE RECORDS TO REPORT	—

The Details of Error Count

The error count guides “0” when the error occurs. The next time it counts up “1” if it is normal with the ignition switch ON. It continues the count up unless the initialization of hands-free phone system is performed.

FLOW CHART OF TROUBLE DIAGNOSIS



DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000005194376

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-39, "CAN Communication Signal Chart".

DTC Logic

INFOID:0000000005194377

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Probable malfunction location
U1000	CAN COMM CIRCUIT [U1000]	AV control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

Diagnosis Procedure

INFOID:0000000005194378

1.PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of “MULTI AV”.

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to LAN-29, "Trouble Diagnosis Procedure".
NO >> Refer to GI-34, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000005194379

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-268, "Exploded View".

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005194380

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Probable malfunction factor
U1010	CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1200 AV CONTROL UNIT

Description

INFOID:0000000005194381

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-268, "Exploded View".

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005194382

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1200	Cont Unit [U1200]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1216 AV CONTROL UNIT

Description

INFOID:0000000005194383

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-268, "Exploded View".

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005194384

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1216	CAN CONT [U1216]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U121D AV CONTROL UNIT

Description

INFOID:0000000005194385

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005194386

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121D	DSP CONN [U121D]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005194387

1.CHECK PLAYBACK OF A DISK (CD)

Can a disk (CD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-268, "Exploded View".

U121E AV CONTROL UNIT

Description

INFOID:0000000005194388

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005194389

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121E	DSP COMM [U121E]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005194390

1.CHECK PLAYBACK OF A DISK (CD)

Can a disk (CD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-268, "Exploded View".

U1225 AV CONTROL UNIT

Description

INFOID:0000000005194391

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005194392

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1225	USB CONTROLLER [U1225]	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.

U1228 AV CONTROL UNIT

Description

INFOID:0000000005194393

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-268, "Exploded View".

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005194394

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1228	SUB CPU CONN [U1228]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1229 AV CONTROL UNIT

Description

INFOID:0000000005194395

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-268, "Exploded View".

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005194396

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1229	iPod CERTIFICATION [U1229]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U122A AV CONTROL UNIT

Description

INFOID:0000000005194397

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005194398

DTC	Display contents of CONSULT-III	DTC detection condition	Action to take
U122A	CONFIG UNFINISH [U122A]	The writing of configuration data is incomplete.	Write configuration data with CONSULT-III.

Diagnosis Procedure

INFOID:0000000005194399

1.PERFORM THE SELF-DIAGNOSIS

When U122A is detected, write configuration data with CONSULT-III.

>> Write configuration data with CONSULT-III. Refer to AV-155, "CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement".

U122E AV CONTROL UNIT

Description

INFOID:0000000005194400

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-268, "Exploded View".

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005194401

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U122E	Built-in AUDIO CONN [U122E]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1232 STEERING ANGLE SENSOR

Description

INFOID:0000000005194402

Part name	Description
Steering angle sensor	It is connected to the AV control unit and transmits the steering angle signal via CAN communication.

DTC Logic

INFOID:0000000005194403

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1232	ST ANGLE SEN CALIB [1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.

Diagnosis Procedure

INFOID:0000000005194404

1.ADJUST THE PREDICTIVE COURSE LINE CENTER POSITION OF THE STEERING ANGLE SENSOR

When U1232 is detected, adjust the predictive course line center position of the steering angle sensor.

>> Adjusts the steering angle sensor neutral position on ABS actuator and electrical unit (control unit) side. Refer to BRC-11, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".

U1243 DISPLAY UNIT

Description

INFOID:0000000005194405

Part name	Description
Display unit	• Display image is controlled by the serial communication from AV control unit. • It receives the power (signal VCC and inverter VCC) from the AV control unit and operates. • RGB image signal is input from AV control unit (RGB, RGB area and RGB synchronizing). • Composite image signals (auxiliary and camera images) are input from AV control unit. • Synchronizing signal (HP, VP) is output to AV control unit.

DTC Logic

INFOID:0000000005369447

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1243	FRONT DISP CONN [U1243]	When either one of the following items are detected: • display unit power supply and ground circuit malfunction is detected. • communication circuit between AV control unit and display unit.	• Display unit power supply and ground circuit. • Communication circuit between AV control unit and Display unit.

Diagnosis Procedure

INFOID:0000000005369448

1.CHECK DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check display unit power supply and ground circuit. Refer to AV-195, "DISPLAY UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M194	11	M202	51	Existed
	22		39	

4. Check continuity between display unit harness connector and ground.

Display unit		Ground	Continuity
Connector	Terminals		
M194	11		Not existed
	22		

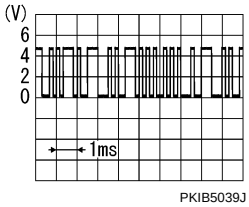
Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK COMMUNICATION SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.

3. Check signal between display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Display unit				
Connector	Terminal			
M194	11	Ground	When adjusting display brightness.	

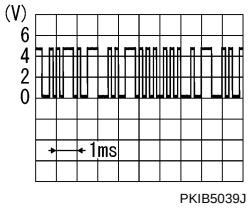
PKIB5039J

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-268, "Exploded View".

4. CHECK COMMUNICATION SIGNAL

Check signal between display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Display unit				
Connector	Terminal			
M194	22	Ground	When adjusting display brightness.	

PKIB5039J

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace display unit. Refer to AV-270, "Exploded View".

U1263 USB

Description

INFOID:0000000005194408

Part name	Description
USB connector	Sound signal of USB input is transmitted to AV control unit.

DTC Logic

INFOID:0000000005194409

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1263	USB OVERCURRENT [U1263]	Detection of overcurrent in USB connecter.	Check USB harness between the AV control unit and USB connector.

Diagnosis Procedure

INFOID:0000000005194410

1.CHECK USB HARNESS

Visually check USB harness.

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-268, "Exploded View"
NO >> Replace USB harness.

U1300 AV COMM CIRCUIT

Description

INFOID:0000000005194411

U1300 is indicated when malfunction occurs in communication signal of multi AV system. Indicated simultaneously, without fail, with the malfunction of control units connected to AV control unit with communication line. Determine the possible malfunction cause from the table below.

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
U1300 U125C	• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between multifunction switch and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between multifunction switch and sonar control unit.
U1300 U1256	• AV COMM CIRCUIT [U1300] • HAND FREE CONN [U1256]	When either one of the following items are detected: • TEL adapter unit power supply and ground circuits are malfunctioning. • AV communication circuits between sonar control unit and TEL adapter unit are malfunctioning.	• TEL adapter unit power supply and ground circuits. • AV communication circuits between sonar control unit and TEL adapter unit.
U1300 U1240 U125C U1256	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • SONAR CONN [U125C] • HAND FREE CONN [U1256]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

U1310 AV CONTROL UNIT

Description

INFOID:0000000005194412

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-268, "Exploded View".

Part name	Description
AV control unit	• Integrates flash memory allowing music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, rear view monitor, USB connection and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • TEL voice signal is input from TEL adapter unit.

DTC Logic

INFOID:0000000005194413

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1310	CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace the AV control unit if the malfunction occurs constantly.

POWER SUPPLY AND GROUND CIRCUIT

AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000005369601

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34*1
	74*2
Ignition switch ACC or ON	19

- *1: Gasoline engine models
- *2: Diesel engine models

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M201	19	OFF	Battery voltage
ACC power supply	M201	7	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between AV control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connectors.
3. Check continuity between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M201	20	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

DISPLAY UNIT

DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000005194421

1.CHECK POWER SUPPLY CIRCUIT (DISPLAY SIDE)

Check voltage between display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Inverter VCC	M194	2	ACC	9.0 V
Signal VCC		3		

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 2.

2.CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

1. Turn ignition switch OFF.
2. Disconnect the harness connector between display unit and AV control unit.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	2	M202	48	Existed
	3		36	Existed

4. Check continuity between display unit harness connector and ground.

Display unit		Ground	Continuity
Connector	Terminal		
M194	2		Not existed
	3		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK POWER SUPPLY CIRCUIT (AV CONTROL UNIT SIDE)

1. Connect the AV control unit harness connector.
2. Turn ignition switch ACC.
3. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Ignition switch position	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M202	48	Ground	ACC	9.0 V
	36			9.0 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replacement of AV control unit.

4.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector.
3. Check continuity between display unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M194	1	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

MULTIFUNCTION SWITCH

MULTIFUNCTION SWITCH : Diagnosis Procedure

INFOID:0000000005369602

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between multifunction switch harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
ACC power supply	M72	3	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between multifunction switch and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect multifunction switch connector.
3. Check continuity between multifunction switch harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M72	1	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

BOSE AMP.

BOSE AMP. : Diagnosis Procedure

INFOID:0000000005369625

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	8

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B42	11	OFF	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between BOSE amp. and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector.
3. Check continuity between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B42	12	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

TEL ADAPTER UNIT

TEL ADAPTER UNIT : Diagnosis Procedure

INFOID:0000000005194424

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34*1
	74*2
Ignition switch ACC or ON	19

- *1:Gasoline engine models
- *2: Diesel engine models

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between TEL adapter unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B87	1	OFF	Battery voltage
ACC power supply	B87	2	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between TEL adapter unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector.
3. Check continuity between TEL adapter unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B87	4	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

RGB (R: RED) SIGNAL CIRCUIT

Description

INFOID:0000000005194425

Transmit the image displayed with AV control unit with RGB image signal to the display unit.

Diagnosis Procedure

INFOID:0000000005194426

1.CHECK CONTINUITY RGB (R: RED) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	17	M202	43	Existed

4. Check continuity between display unit harness connector and ground.

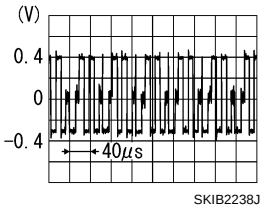
Display unit		Ground	Continuity
Connector	Terminal		
M194	17		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (R: RED) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+) Display unit		(–)	Condition	Reference value
Connector	Terminal			
M194	17	Ground	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	

SKIB2238J

Is inspection result normal?

YES >> Replace display unit. Refer to AV-270, "Exploded View".
NO >> Replace AV control unit. Refer to AV-268, "Exploded View".

RGB (G: GREEN) SIGNAL CIRCUIT

Description

INFOID:0000000005194427

Transmit the image displayed with AV control unit with RGB image signal to the display unit.

Diagnosis Procedure

INFOID:0000000005194428

1.CHECK CONTINUITY RGB (G: GREEN) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	6	M202	44	Existed

4. Check continuity between display unit harness connector and ground.

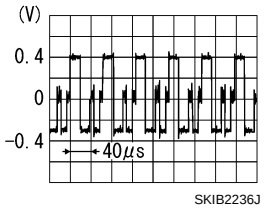
Display unit		Ground	Continuity
Connector	Terminal		
M194	6		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (G: GREEN) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+) Display unit		(–)	Condition	Reference value
Connector	Terminal			
M194	6	Ground	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	

SKIB2236J

Is inspection result normal?

YES >> Replace display unit. Refer to AV-270, "Exploded View".
NO >> Replace AV control unit. Refer to AV-268, "Exploded View".

RGB (B: BLUE) SIGNAL CIRCUIT

Description

INFOID:0000000005194429

Transmit the image displayed with AV control unit with RGB image signal to the display unit.

Diagnosis Procedure

INFOID:0000000005194430

1.CHECK CONTINUITY RGB (B: BLUE) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	18	M202	45	Existed

4. Check continuity between display unit harness connector and ground.

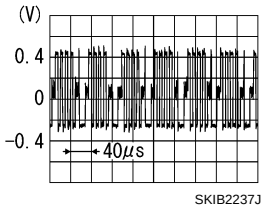
Display unit		Ground	Continuity
Connector	Terminal		
M194	18		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (B: BLUE) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+) Display unit		(–)	Condition	Reference value
Connector	Terminal			
M194	18	Ground	Start confirmation/adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on DISPLAY DIAGNOSIS screen.	

SKIB2237J

Is inspection result normal?

YES >> Replace display unit. Refer to AV-270, "Exploded View".
NO >> Replace AV control unit. Refer to AV-268, "Exploded View".

RGB SYNCHRONIZING SIGNAL CIRCUIT

Description

INFOID:0000000005194431

Transmit the RGB synchronizing signal to the display unit so as to synchronize the RGB image displayed with AV control unit.

Diagnosis Procedure

INFOID:0000000005194432

1.CHECK CONTINUITY RGB SYNCHRONIZING SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	19	M202	42	Existed

4. Check continuity between display unit harness connector and ground.

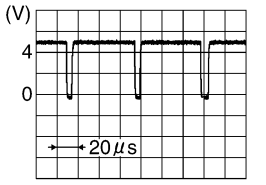
Display unit		Ground	Continuity
Connector	Terminal		
M194	19		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB SYNCHRONIZING SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+) Display unit		(–)	Reference value
Connector	Terminal		
M194	19	Ground	

SKIB3603E

Is the inspection result normal?

YES >> Replace display unit. Refer to AV-270, "Exploded View".
NO >> Replace AV control unit. Refer to AV-268, "Exploded View".

RGB AREA (YS) SIGNAL CIRCUIT

Description

INFOID:0000000005194433

Transmits the display area of RGB image displayed by AV control unit with RGB area (YS) signal to display unit.

Diagnosis Procedure

INFOID:0000000005194434

1.CHECK CONTINUITY RGB AREA (YS) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	9	M202	40	Existed

4. Check continuity between display unit harness connector and ground.

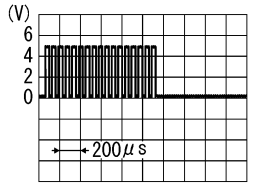
Display unit		Ground	Continuity
Connector	Terminal		
M194	9		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB AREA (YS) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+) Display unit		(–)	Condition	Reference value (Approx.)
Connector	Terminal			
M194	9	Ground	At RGB image is displayed.	5.0 V
			At AUX image is displayed.	

PKIB4948J

Is the inspection result normal?

YES >> Replace display unit. Refer to AV-270, "Exploded View".
NO >> Replace AV control unit. Refer to AV-268, "Exploded View".

COMPOSITE IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000005194435

AV control unit that inputs the camera image signal and AUX image signal transmits the composite image signal to the display unit.

Diagnosis Procedure

INFOID:0000000005369451

1.CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and display unit connector.
3. Check continuity between AV control unit harness connector and display unit harness connector.

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M202	47	M194	15	Existed

4. Check continuity between AV control unit harness connector and ground.

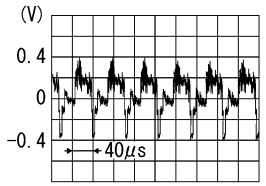
AV control unit		Ground	Continuity
Connector	Terminal		
M202	47		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AUX COMPOSITE SIGNAL

1. Connect AV control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between auxiliary input jacks harness connector and ground.

(+)		(–)	Condition	Reference value
AV control unit				
Connector	Terminal			
M202	47	Ground	At rear view camera image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace display unit. Refer to AV-270, "Exploded View".
NO >> Replace AV control unit. Refer to AV-268, "Exploded View".

HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

Description

INFOID:0000000005194437

In composite image (AUX image), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from display unit to AV control unit so as to synchronize the RGB images displayed with AV control unit such as the image quality adjusting menu, etc.

Diagnosis Procedure

INFOID:0000000005194438

1. CHECK CONTINUITY HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	8	M202	38	Existed

4. Check continuity between display unit harness connector and ground.

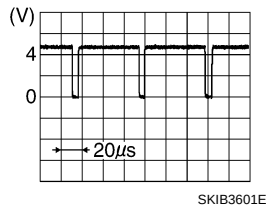
Display unit		Ground	Continuity
Connector	Terminal		
M194	8		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK HORIZONTAL SYNCHRONIZING (HP) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(–)	Reference value
Display unit			
Connector	Terminal		
M194	8	Ground	

SKIB3601E

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-268, "Exploded View".
NO >> Replace display unit. Refer to AV-270, "Exploded View".

VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

Description

INFOID:0000000005194439

In composite image (AUX image), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from display unit to AV control unit so as to synchronize the RGB images displayed with AV control unit such as the image quality adjusting menu, etc.

Diagnosis Procedure

INFOID:0000000005194440

1.CHECK CONTINUITY VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and AV control unit connector.
3. Check continuity between display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M194	20	M202	50	Existed

4. Check continuity between display unit harness connector and ground.

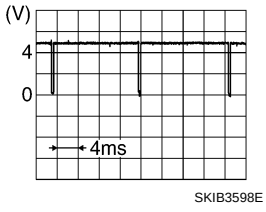
Display unit		Ground	Continuity
Connector	Terminal		
M194	20		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VERTICAL SYNCHRONIZING (VP) SIGNAL

1. Connect display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit harness connector and ground.

(+)		(–)	Reference value
Display unit			
Connector	Terminal		
M194	20	Ground	

SKIB3598E

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-268, "Exploded View".
NO >> Replace display unit. Refer to AV-270, "Exploded View".

AUX IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000005194441

- Transmits the image signal of AUX device from auxiliary input jacks to AV control unit.
- AV control unit transmits the image signal that is input to the display unit.

Diagnosis Procedure

INFOID:0000000005194442

1.CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect auxiliary input jacks connector and AV control unit connector.
3. Check continuity between auxiliary input jacks harness connector and AV control unit harness connector.

Auxiliary input jacks		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M196*1	7	M203	61	Existed
M325*2				

- *1: A/T models
- *2: M/T models

4. Check continuity between auxiliary input jacks harness connector and ground.

Auxiliary input jacks		Ground	Continuity
Connector	Terminal		
M196*1	7		Not existed
M325*2			

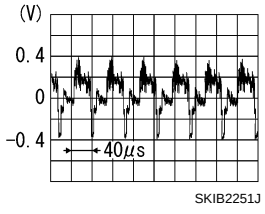
- *1: A/T models
- *2: M/T models

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AUX IMAGE SIGNAL

1. Connect auxiliary input jacks connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between auxiliary input jacks harness connector and ground.

(+)		(–)	Condition	Reference value
Auxiliary input jacks				
Connector	Terminal			
M196*1	7	Ground	At AUX image is displayed.	
M325*2				

SKIB2251J

- *1: A/T models
- *2: M/T models

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-268, "Exploded View".
NO >> Check that there is no malfunction in the external device.

CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000005194443

- AV control unit outputs camera power supply to rear view camera and inputs rear view camera image signal from rear view camera when the reverse signal is input.
- The AV control unit that inputs the camera image signal transmits the camera image signal to the display unit.

Diagnosis Procedure

INFOID:0000000005194444

1.CHECK CONTINUITY CAMERA POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and rear view camera connector.
3. Check continuity between AV control unit harness connector and rear view camera harness connector.

AV control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M203	73	D121	1	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M203	73		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE CAMERA POWER SUPPLY

1. Connect AV control unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to “R”.
4. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M203	73	Ground	Shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace AV control unit. Refer to AV-268, "Exploded View".

3.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and rear view camera connector.
3. Check continuity between AV control unit harness connector and rear view camera harness connector.

AV control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M203	62	D121	3	Existed

4. Check continuity between AV control unit harness connector and ground.

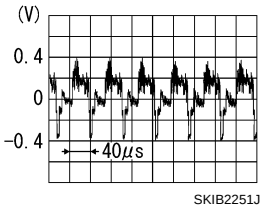
AV control unit		Ground	Continuity
Connector	Terminal		
M203	62		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK CAMERA IMAGE SIGNAL

1. Connect AV control unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to “R”.
4. Check signal between AV control unit harness connector and ground.

(+)		(–)	Condition	Reference value
AV control unit				
Connector	Terminal			
M203	62	Ground	At rear view camera image is displayed.	

SKIB2251J

Is inspection result normal?

YES >> Replace AV control unit. Refer to AV-268, "Exploded View".
NO >> Replace rear view camera. Refer to AV-286, "Exploded View".

MODE CHANGE SIGNAL CIRCUIT

Description

INFOID:0000000005214565

- AV control unit transmits the mode change signal to BOSE amp.
- Driver's Audio Stage controls the speaker's output characteristic by BOSE amp. so that the driver's seat is to be the center of sounds.

Diagnosis Procedure

INFOID:0000000005214566

1.CHECK CONTINUITY MODE CHANGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector and AV control unit connector.
3. Check continuity between BOSE amp. harness connector and AV control unit harness connector.

BOSE amp.		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
B41	17	M206	128	Existed

4. Check continuity between BOSE amp. harness connector and ground.

BOSE amp.		Ground	Continuity
Connector	Terminal		
B41	17		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK MODE CHANGE SIGNAL

1. Connect BOSE amp. connector.
2. Turn ignition switch ON.
3. Check signal between BOSE amp. harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
BOSE amp.				
Connector	Terminal			
B41	17	Ground	Driver's Audio Stage ON	0 V
			Driver's Audio Stage OFF	8.5 V

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-268, "Exploded View".
NO >> Replace BOSE amp. Refer to AV-277, "Exploded View".

DISK EJECT SIGNAL CIRCUIT

Description

INFOID:0000000005194445

The eject signal is output to AV control unit when the eject switch of multifunction switch is pressed.

Diagnosis Procedure

INFOID:0000000005194446

1.CHECK CONTINUITY CD EJECT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect multifunction switch connector and AV control unit connector.
3. Check continuity between multifunction switch harness connector and AV control unit harness connector.

Multifunction switch		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M72	14	M204	96	Existed

4. Check continuity between multifunction switch harness connector and ground.

Multifunction switch		Ground	Continuity
Connector	Terminal		
M72	14		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Connect multifunction switch connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M204	96	Ground	Pressing the eject switch	0 V
			Except for above	5.0 V

Is the inspection result normal?

YES >> Replace preset switch. Refer to AV-280, "Exploded View".
NO >> Replace AV control unit. Refer to AV-268, "Exploded View".

MICROPHONE SIGNAL CIRCUIT

Description

INFOID:0000000005194447

Supply power from TEL adapter unit to microphone. The microphone transmits the sound/voice to the microphone.

Diagnosis Procedure

INFOID:0000000005194448

1.CHECK CONTINUITY BETWEEN TEL ADAPTER UNIT AND MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector and microphone connector.
3. Check continuity between TEL adapter unit harness connector and microphone harness connector.

TEL adapter unit		Microphone		Continuity
Connector	Terminals	Connector	Terminals	
B87	7	R17	1	Existed
	8		2	
	29		4	

4. Check continuity between TEL adapter unit harness connector and ground.

TEL adapter unit		Ground	Continuity
Connector	Terminals		
M87	7		Not existed
	29		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE MICROPHONE VCC

1. Connect TEL adapter unit connector.
2. Turn ignition switch ON.
3. Check voltage between TEL adapter unit harness connector.

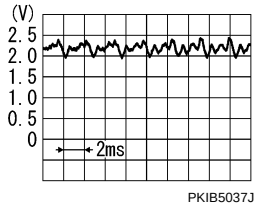
(+)		(–)		Voltage (Approx.)
TEL adapter unit		TEL adapter unit		
Connector	Terminal	Connector	Terminal	
B87	29	B87	8	5.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace TEL adapter unit. Refer to AV-288, "Exploded View".

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.
2. Check signal between TEL adapter unit harness connector.

(+)		(–)		Condition	Reference value
TEL adapter unit		TEL adapter unit			
Connector	Terminal	Connector	Terminal		
B87	7	B87	8	give a voice.	

PKIB5037J

Is the inspection result normal?

YES >> Replace TEL adapter unit. Refer to AV-288, "Exploded View".
NO >> Replace microphone. Refer to AV-284, "Exploded View".

STEERING SWITCH SIGNAL A CIRCUIT

Description

INFOID:0000000005194449

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000005194450

1.CHECK STEERING SWITCH SIGNAL A CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M201	6	M36	24	Existed

3. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M201	6		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit		AV control unit		
Connector	Terminal	Connector	Terminal	
M201	6	M201	15	3.3 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-268, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-214, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to SR-16, "Exploded View".

Component Inspection

INFOID:0000000005194451

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

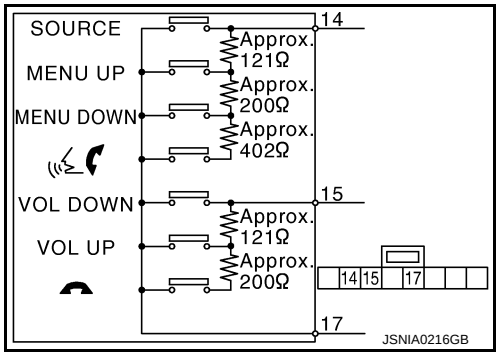
Standard

Between terminals 14 and 17

switch ON	: Approx. 716 – 730 Ω
MENU DOWN switch ON	: Approx. 318 – 324 Ω
MENU UP switch ON	: Approx. 120 – 122 Ω
SOURCE switch ON	: Approx. 0 Ω

Between terminals 15 and 17

switch ON	: Approx. 318 – 324 Ω
VOL UP switch ON	: Approx. 120 – 122 Ω
VOL DOWN switch ON	: Approx. 0 Ω



STEERING SWITCH SIGNAL B CIRCUIT

Description

INFOID:0000000005369453

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000005194453

1.CHECK STEERING SWITCH SIGNAL B CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M201	16	M36	31	Existed

3. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M201	16		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit		AV control unit		
Connector	Terminal	Connector	Terminal	
M201	16	M201	15	3.3 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-268, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-216, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to SR-16, "Exploded View".

Component Inspection

INFOID:0000000005194454

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

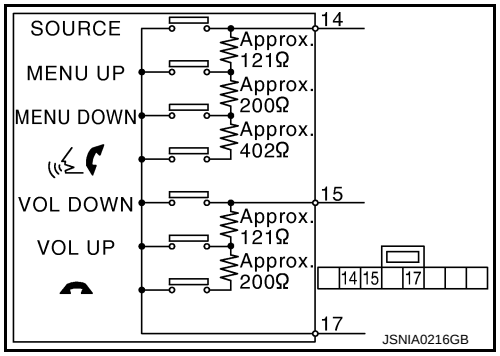
Standard

Between terminals 14 and 17

switch ON	: Approx. 716 – 730 Ω
MENU DOWN switch ON	: Approx. 318 – 324 Ω
MENU UP switch ON	: Approx. 120 – 122 Ω
SOURCE switch ON	: Approx. 0 Ω

Between terminals 15 and 17

switch ON	: Approx. 318 – 324 Ω
VOL UP switch ON	: Approx. 120 – 122 Ω
VOL DOWN switch ON	: Approx. 0 Ω



STEERING SWITCH GROUND CIRCUIT

Description

INFOID:0000000005369454

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000005194456

1.CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M201	15	M36	33	Existed

3. Connect AV control unit connector.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK GROUND CIRCUIT

1. Connect AV control unit connector.
2. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M201	15		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-268, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-218, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to SR-16, "Exploded View".

Component Inspection

INFOID:0000000005194457

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

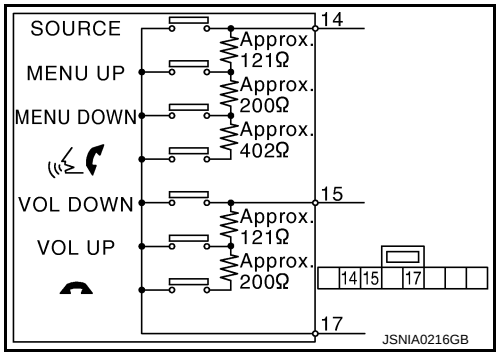
Standard

Between terminals 14 and 17

switch ON	: Approx. 716 – 730 Ω
MENU DOWN switch ON	: Approx. 318 – 324 Ω
MENU UP switch ON	: Approx. 120 – 122 Ω
SOURCE switch ON	: Approx. 0 Ω

Between terminals 15 and 17

switch ON	: Approx. 318 – 324 Ω
VOL UP switch ON	: Approx. 120 – 122 Ω
VOL DOWN switch ON	: Approx. 0 Ω



ECU DIAGNOSIS INFORMATION

AV CONTROL UNIT

Reference Value

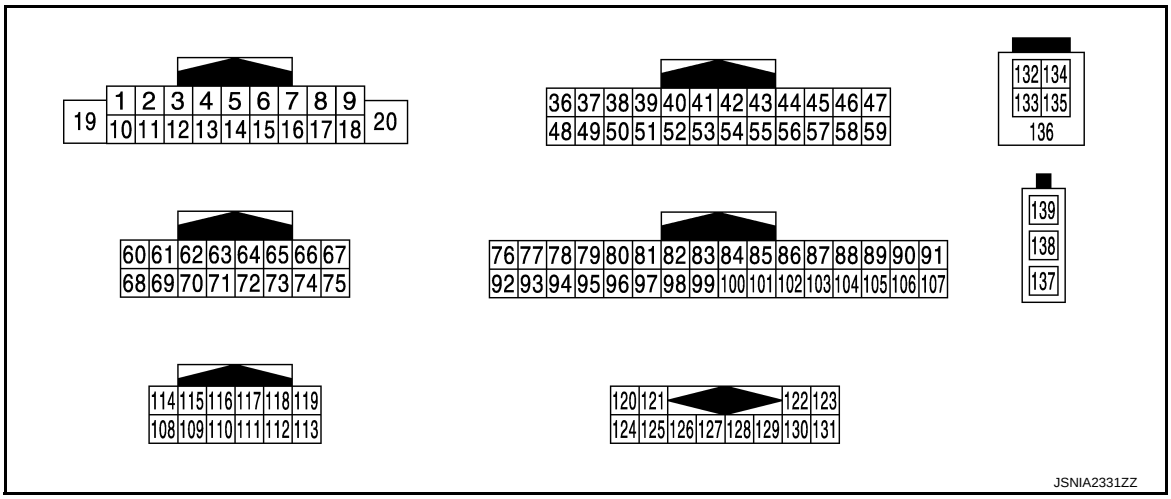
INFOID:0000000005194458

VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

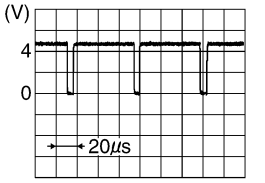
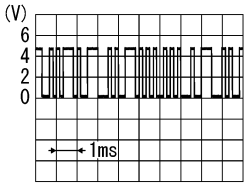
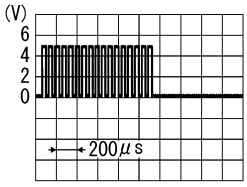
Monitor Item	Condition		Value/Status
VHCL SPD SIG	Ignition switch ON	Vehicle speed > 0 km/h (0 MPH)	On
		Vehicle speed = 0 km/h (0 MPH)	Off
PKB SIG	Ignition switch ON	Parking brake is applied.	On
		Parking brake is released.	Off
ILLUM SIG	Ignition switch ON	Light switch ON	On
		Light switch OFF	Off
IGN SIG	Ignition switch ON	—	On
	Ignition switch ACC	—	Off
REV SIG	Ignition switch ON	Selector lever in R position	On
		Selector lever in any position other than R	Off

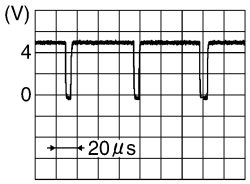
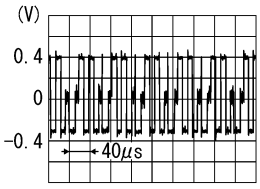
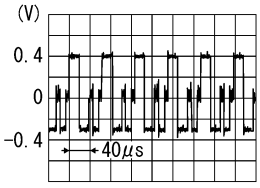
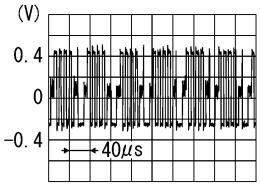
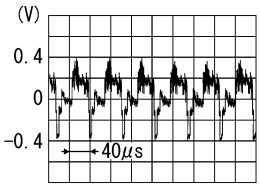
TERMINAL LAYOUT

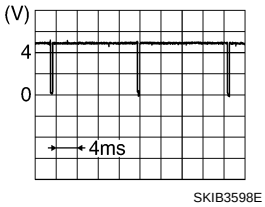
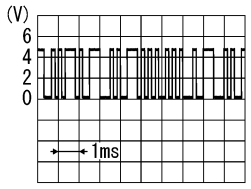
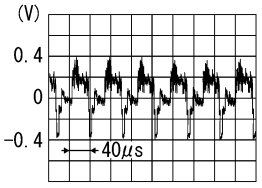
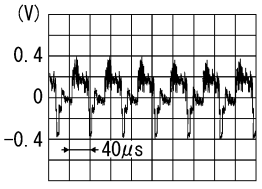


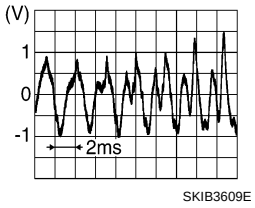
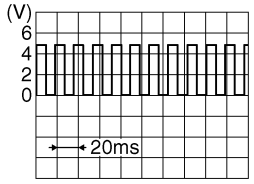
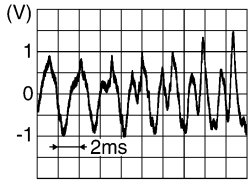
PHYSICAL VALUES

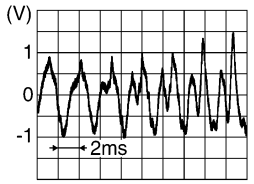
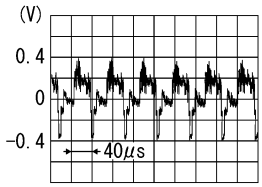
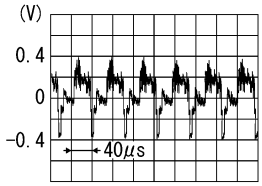
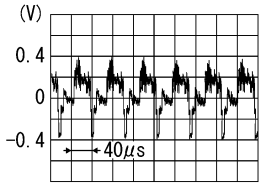
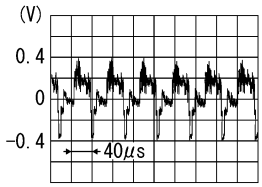
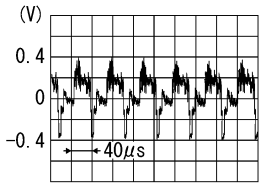
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
6 (P)	15 (B)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing MENU UP switch.	0.7 V
					Keep pressing MENU DOWN switch.	1.3 V
					Keep pressing switch	2.0 V
					Except for above.	3.3 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
9 (R)	Ground	Illumination signal	Input	Ignition switch OFF	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12.0 V
16 (L)	15 (B)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	0.7 V
					Keep pressing switch.	1.3 V
					Except for above.	3.3 V
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
20 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
36 (O)	Ground	Signal VCC	Output	Ignition switch ACC	—	9.0 V
37 (LG)	Ground	Signal ground	—	Ignition switch OFF	—	0 V
38 (G)*1 (R)*2	Ground	Horizontal synchronizing (HP) signal	Input	Ignition switch ON	—	 SKIB3601E
39 (G)*3 (BR)*4	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
40 (R)*1 (B)*5 (G)*6	Ground	RGB area (YS) signal	Output	Ignition switch ON	At RGB image is displayed.	5.0 V
					At AUX image is displayed.	 PKIB4948J
41	—	Shield	—	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
42 (W)*1 (G)*5 (B)*6	Ground	RGB synchronizing signal	Output	Ignition switch ON	—	 SKIB3603E
43 (B)*5 (G)*7	Ground	RGB image signal (R: red)	Output	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2238J
44 (W)*5 (L)*7	Ground	RGB image signal (G: green)	Output	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2236J
45 (R)*5 (P)*7	Ground	RGB image signal (B: blue)	Output	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2237J
46 (V)*8 (O)*9	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
47 (SB)	Ground	Composite image signal	Output	Ignition switch ON	At rear view camera image is displayed.	 SKIB2251J
48 (Y)	Ground	Inverter VCC	Output	Ignition switch ACC	—	9.0 V
49 (Y)*3 (BR)*4	Ground	Inverter ground	—	Ignition switch OFF	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
50 (B)*1 (W)*2	Ground	Vertical synchronizing (VP) signal	Input	Ignition switch ON	—	 SKIB3598E
51 (R)*3 (Y)*4	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
52 (SB)*9	—	Shield	—	—	—	—
57	—	Shield	—	—	—	—
58	—	Shield	—	—	—	—
61 (Y)*8 (BR)*9	Ground	AUX image signal	Input	Ignition switch ON	At AUX image is displayed.	 SKIB2251J
62 (W)	Ground	Camera image signal	Input	Ignition switch ON	At rear view camera image is displayed.	 SKIB2251J
63 (B)*9	—	Shield	—	—	—	—
69 (BR)*8 (Y)*9	Ground	AUX image signal ground	—	Ignition switch ON	—	0 V
70	—	Shield	—	—	—	—
72 (B)*8 (W)*9	Ground	Camera ground	—	Ignition switch ON	—	0 V
73 (R)	Ground	Camera power supply	Output	Ignition switch ON	At rear view camera image is displayed.	6.0 V
76 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
77 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
78 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
79 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
80 (P)	—	CAN–L	Input/ Output	—	—	—
81 (L)	—	CAN–H	Input/ Output	—	—	—
82 (BR)*5 (B)*7	Ground	Switch ground	—	Ignition switch ON	—	0 V
86	—	Shield	—	—	—	—
87 (L)	88 (P)	TEL voice signal	Input	Ignition switch ON	During voice guide output with the switch pressed.	 SKIB3609E
92 (R)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** Maximum voltage may be 12.0 V due to specifications (connected units).  SKIA6649J
93 (V)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake is ON.	4.5 V
					Parking brake is OFF.	0 V
94 (O)	Ground	Reverse signal	Input	Ignition switch ON	R position	12.0 V
					Other than R position	0 V
95 (G)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
96 (SB)*5 (Y)*7	Ground	Disk eject signal	Input	Ignition switch ON	Pressing the eject switch.	0 V
					Except for above.	5.0 V
103 (W)	102 (B)	AUX sound signal LH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
104 (R)	102 (B)	AUX sound signal RH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E
108 (BR)*8 (V)*9	114 (Y)*8 (LG)*9	Sound signal rear RH	Output	Ignition switch ON	Sound output	 SKIB2251J
109 (R)*8 (P)*9	115 (G)*8 (L)*9	Sound signal front RH	Output	Ignition switch ON	Sound output	 SKIB2251J
110 (V)	Ground	AMP. ON signal	Output	Ignition switch ON	—	 SKIB2251J
111 (B)	—	Shield	—	—	—	—
112 (V)*8 (BR)*9	118 (LG)*8 (Y)*9	Sound signal rear LH	Output	Ignition switch ON	Sound output	 SKIB2251J
113 (P)*8 (R)*9	119 (L)*8 (G)*9	Sound signal front LH	Output	Ignition switch ON	Sound output	 SKIB2251J
128 (SB)	Ground	Mode change signal	Output	Ignition switch ON	Driver's Audio Stage ON	0 V
					Driver's Audio Stage OFF	8.5 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
132 (G)	—	USB ground	—	—	—	—
133 (R)	—	USB D– signal	Input/ Output	—	—	—
134 (W)	—	V BUS signal	Output	—	—	—
135 (L)	—	USB D+ signal	Input/ Output	—	—	—
136	—	Shield	—	—	—	—
137	—	FM sub	Input	—	—	—
138	—	AM - FM sub	Input	—	—	—
139	Ground	Antenna amp. ON signal	Input	Ignition switch ON	—	12.0 V

- *1: LHD models with diesel engine
- *2: Except LHD models with diesel engine
- *3: RHD models with gasoline engine
- *4: Except RHD models with gasoline engine
- *5: LHD models with gasoline engine
- *6: RHD models
- *7: Except LHD models with gasoline engine
- *8: With gasoline engine
- *9: With diesel engine

DTC Index

INFOID:0000000005194461

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	AV-178, "Diagnosis Procedure"
U1010	CONTROL UNIT (CAN) [1010]	AV-179, "DTC Logic"
U1200	Cont Unit [U1200]	AV-180, "DTC Logic"
U1216	CAN CONT [U1216]	AV-181, "DTC Logic"
U121D	DSP CONN [U121D]	AV-182, "Diagnosis Procedure"
U121E	DSP COMM [U121E]	AV-183, "Diagnosis Procedure"
U1225	USB CONTROLLER [U1225]	AV-184, "DTC Logic"
U1228	SUB CPU CONN [U1228]	AV-185, "DTC Logic"
U1229	iPod CERTIFICATION [U1229]	AV-186, "DTC Logic"
U122A	CONFIG UNFINISH [U122A]	AV-187, "Diagnosis Procedure"
U122E	Built-in AUDIO CONN [U122E]	AV-188, "DTC Logic"
U1232	ST ANGLE SEN CALIB [1232]	AV-189, "Diagnosis Procedure"
U1243	FRONT DISP CONN [U1243]	AV-190, "Diagnosis Procedure"
U1263	USB OVERCURRENT [U1263]	AV-192, "Diagnosis Procedure"
U1310	CONTROL UNIT (AV) [U1310]	AV-194, "DTC Logic"
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	AV-193, "Description"
U1300 U125C	• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	AV-193, "Description"

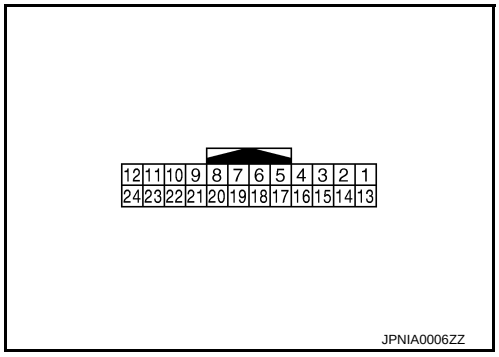
DTC	Display item	Refer to
U1300 U1256	• AV COMM CIRCUIT [U1300] • HAND FREE CONN [U1256]	AV-193, "Description"
U1300 U1240 U125C U1256	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • SONAR CONN [U125C] • HAND FREE CONN [U1256]	AV-193, "Description"

DISPLAY UNIT

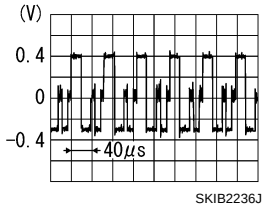
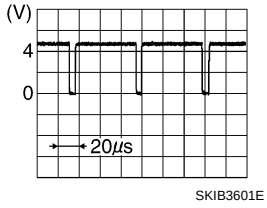
Reference Value

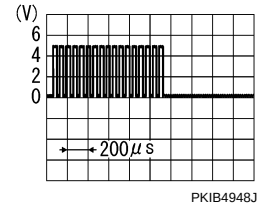
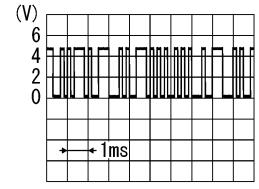
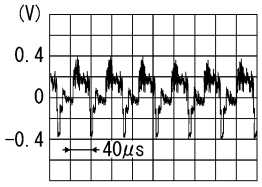
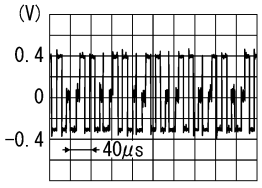
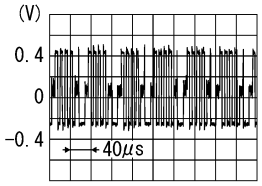
INFOID:0000000005194462

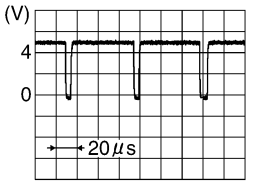
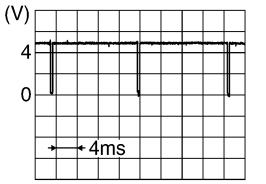
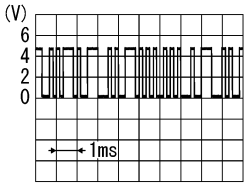
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y)	Ground	Inverter VCC	Input	Ignition switch ACC	—	9.0 V
3 (O)	Ground	Signal VCC	Input	Ignition switch ACC	—	9.0 V
4 (V)*1 (O)*2	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
5	—	Shield	—	—	—	—
6 (W)*3 (L)*4	Ground	RGB image signal (G: green)	Input	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	
7	—	Shield	—	—	—	—
8 (G)*5 (R)*6	Ground	Horizontal synchronizing (HP) signal	Output	Ignition switch ON	—	

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
9 (B)*3 (R)*5 (G)*7	Ground	RGB area (YS) signal	Input	Ignition switch ON	At RGB image is displayed.	5.0 V
					At AUX image is displayed.	 PKIB4948J
11 (R)*8 (Y)*9	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
13 (Y)*8 (BR)*9	Ground	Inverter ground	—	Ignition switch ON	—	0 V
14 (LG)	Ground	Signal ground	—	Ignition switch ON	—	0 V
15 (SB)	Ground	Composite image signal	Input	Ignition switch ON	At rear view camera image is displayed.	 SKIB2251J
17 (B)*3 (G)*4	Ground	RGB image signal (R: red)	Input	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2238J
18 (R)*3 (P)*4	Ground	RGB image signal (B: blue)	Input	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Color Spectrum Bar” on Display Diagnosis screen.	 SKIB2237J

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
19 (G)*3 (W)*5 (B)*7	Ground	RGB synchronizing signal	Input	Ignition switch ON	—	 SKIB3603E
20 (B)*5 (W)*6	Ground	Vertical synchronizing (VP) signal	Output	Ignition switch On	—	 SKIB3598E
21	—	Shield	—	—	—	—
22 (G)*8 (BR)*9	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
23 (SB)*2	—	Shield	—	—	—	—

- *1: With gasoline engine
- *2: With diesel engine
- *3: LHD models with gasoline engine
- *4: Except LHD models with gasoline engine
- *5: LHD models with diesel engine
- *6: Except LHD models with diesel engine
- *7: RHD models
- *8: RHD models with gasoline engine
- *9: Except RHD models with gasoline engine

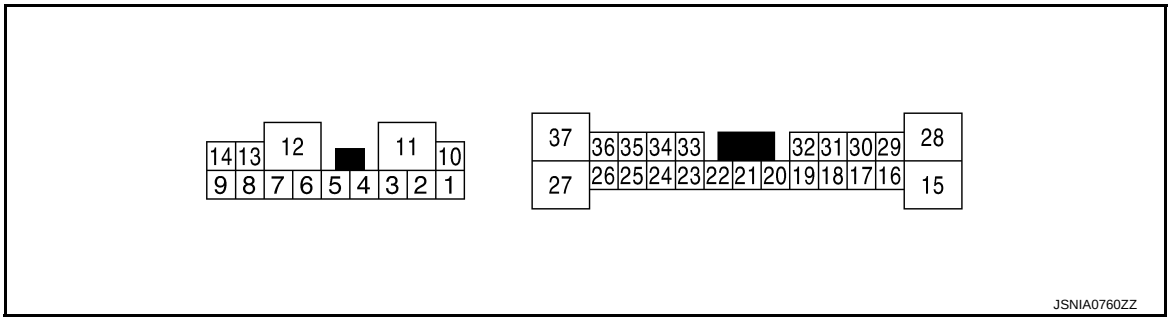
BOSE AMP.

LHD MODELS

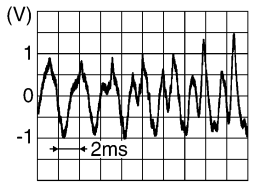
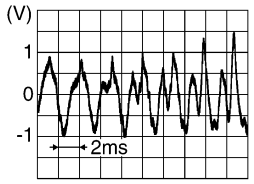
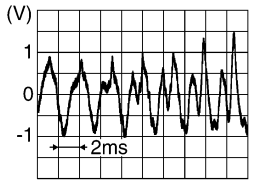
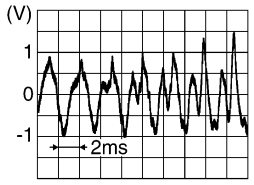
LHD MODELS : Reference Value

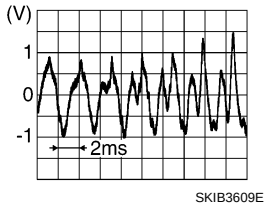
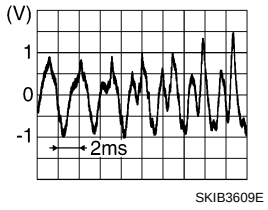
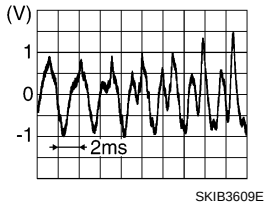
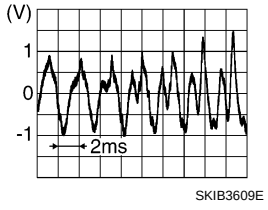
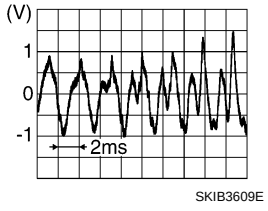
INFOID:0000000005280012

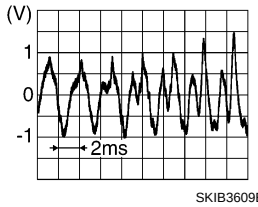
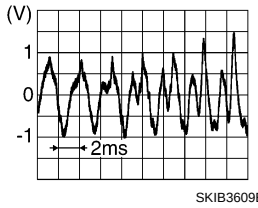
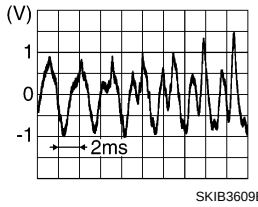
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (Y)	10 (G)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
2 (SB)	3 (V)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
4 (L)	5 (P)	Sound signal front door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
6 (O)	7 (W)	Sound signal front squawker LH	Output	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
8 (LG)	13 (Y)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
9 (G)	14 (R)	Sound signal woofer and rear squawker	Output	Ignition switch ON	Sound output	 SKIB3609E
11 (GR)	Ground	Battery power supply	Input	Ignition switch ON	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
15 (Y)	28 (G)	Sound signal center speaker	Output	Ignition switch ON	Sound output	 SKIB3609E
17 (O)*1 (SB)*2	Ground	Mode change signal	Input	Ignition switch ON	Driver's Audio Stage ON	0 V
					Driver's Audio Stage OFF	8.5 V
18 (P)*1 (R)*2	32 (L)*1 (G)*2	Sound signal front LH	Input	Ignition switch ON	Sound output	 SKIB3609E
19 (R)*1 (P)*2	20 (G)*1 (L)*2	Sound signal front RH	Input	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
21 (V)*1 (BR)*2	22 (SB)*1 (Y)*2	Sound signal rear LH	Input	Ignition switch ON	Sound output	 SKIB3609E
23 (BR)*1 (V)*2	33 (Y)*1 (SB)*2	Sound signal rear RH	Input	Ignition switch ON	Sound output	 SKIB3609E
25 (GR)	Ground	Woofer amp. ON signal	Output	Ignition switch ON	—	12.0 V
31 (GR)	Ground	AMP. ON signal	Input	Ignition switch ON	—	12.0 V
37 (V)	27 (LG)	Sound signal front squawker RH	Output	Ignition switch ON	Sound output	 SKIB3609E

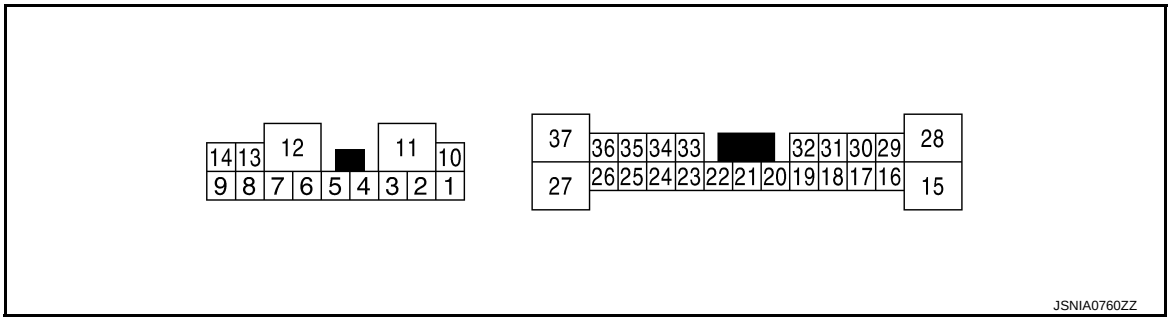
- *1: With gasoline engine
- *2: With diesel engine

RHD MODELS

RHD MODELS : Reference Value

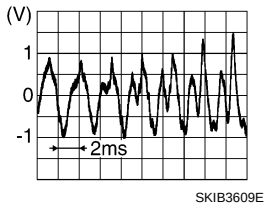
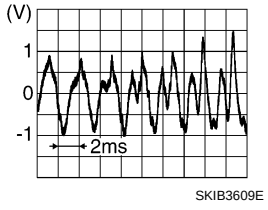
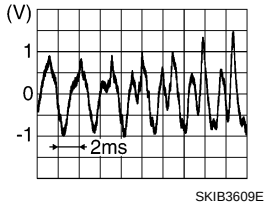
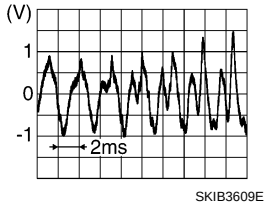
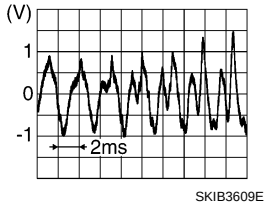
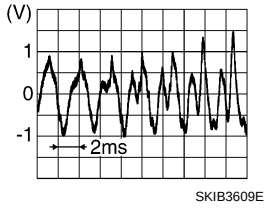
INFOID:0000000005399914

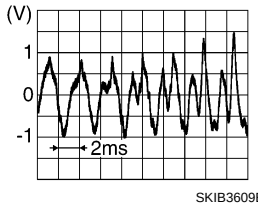
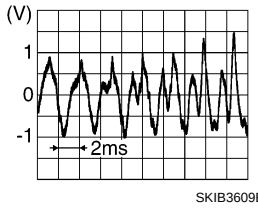
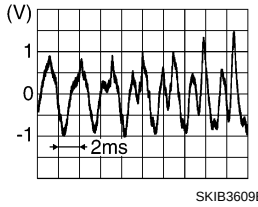
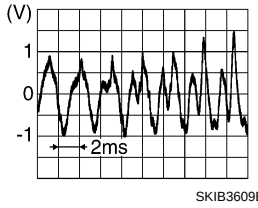
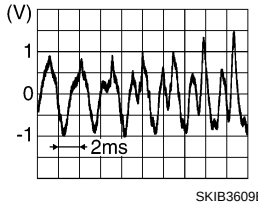
TERMINAL LAYOUT

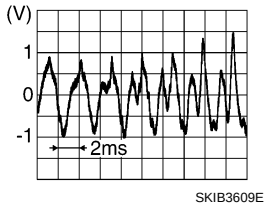


JSNIA0760ZZ

PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (SB)	10 (V)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
2 (Y)	3 (G)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
4 (O)	5 (GR)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
6 (V)	7 (LG)	Sound signal front squawker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
8 (L)	13 (P)	Sound signal front door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
9 (G)	14 (R)	Sound signal woofer and rear squawker	Output	Ignition switch ON	Sound output	 SKIB3609E
11 (GR)	Ground	Battery power supply	Input	Ignition switch ON	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
15 (Y)	28 (G)	Sound signal center speaker	Output	Ignition switch ON	Sound output	 SKIB3609E
17 (SB)	Ground	Mode change signal	Input	Ignition switch ON	Deiver's Audio Stage ON	0 V
					Deiver's Audio Stage OFF	8.5 V
18 (R)*1 (P)*2	32 (G)*1 (L)*2	Sound signal front RH	Input	Ignition switch ON	Sound output	 SKIB3609E
19 (P)*1 (R)*2	20 (L)*1 (G)*2	Sound signal front LH	Input	Ignition switch ON	Sound output	 SKIB3609E
21 (BR)*1 (V)*2	22 (Y)*1 (SB)*2	Sound signal rear RH	Input	Ignition switch ON	Sound output	 SKIB3609E
23 (V)*1 (BR)*2	33 (SB)*1 (Y)*2	Sound signal rear LH	Input	Ignition switch ON	Sound output	 SKIB3609E
25 (GR)	Ground	Woofer amp. ON signal	Input	Ignition switch ON	—	12.0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
31 (GR)	Ground	AMP. ON signal	Input	Ignition switch ON	—	12.0 V
37 (O)	27 (W)	Sound signal front squawker LH	Output	Ignition switch ON	Sound output	

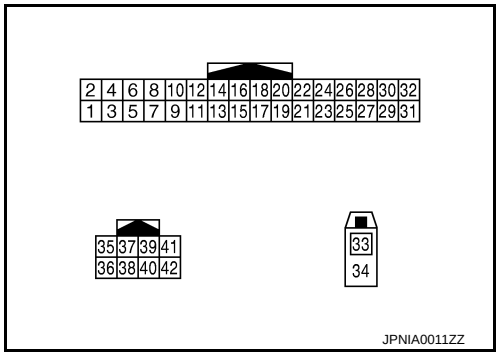
SKIB3609E

- *1: With gasoline engine
- *2: With diesel engine

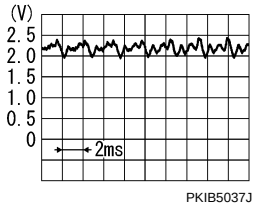
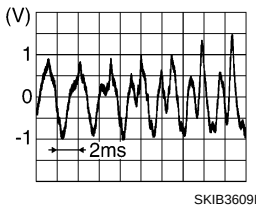
TEL ADAPTER UNIT

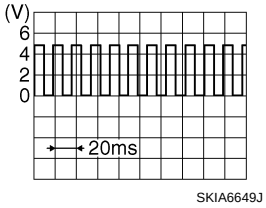
Reference Value

INFOID:0000000005194465



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (Y)*1 (GR)*2	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
2 (LG)*3 (V)*4	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
3 (W)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
4 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
5	—	Shield	—	—	—	—
7 (L)	8	Microphone signal	Input	Ignition switch ON	Give a voice	 PKIB5037J
9 (Y)	10 (G)	TEL voice signal	Output	Ignition switch ON	During voice guide output with the switch pressed.	 SKIB3609E
20 (B)	Ground	Control signal	Input	Ignition switch ON	—	0 V
23 (B)	Ground	Control signal	Input	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
24 (B)	Ground	Control signal	Input	Ignition switch ON	—	0 V
28 (V)*5 (P)*6	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** Maximum voltage may be 12.0 V due to specifications (connected units).  SKIA6649J
29 (P)	8	Microphone VCC	Output	Ignition switch ON	—	5.0 V
33	—	TEL antenna signal	Input	—	—	—
34	—	Shield	—	—	—	—
35 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
36 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—

- *1: RHD models with gasoline engine
- *2: Except RHD models with gasoline engine
- *3: LHD models
- *4: RHD models
- *5: With gasoline engine
- *6: With diesel engine

WIRING DIAGRAM

BOSE AUDIO WITHOUT NAVIGATION

LHD MODELS

LHD MODELS : Wiring Diagram

INFOID:0000000006106622

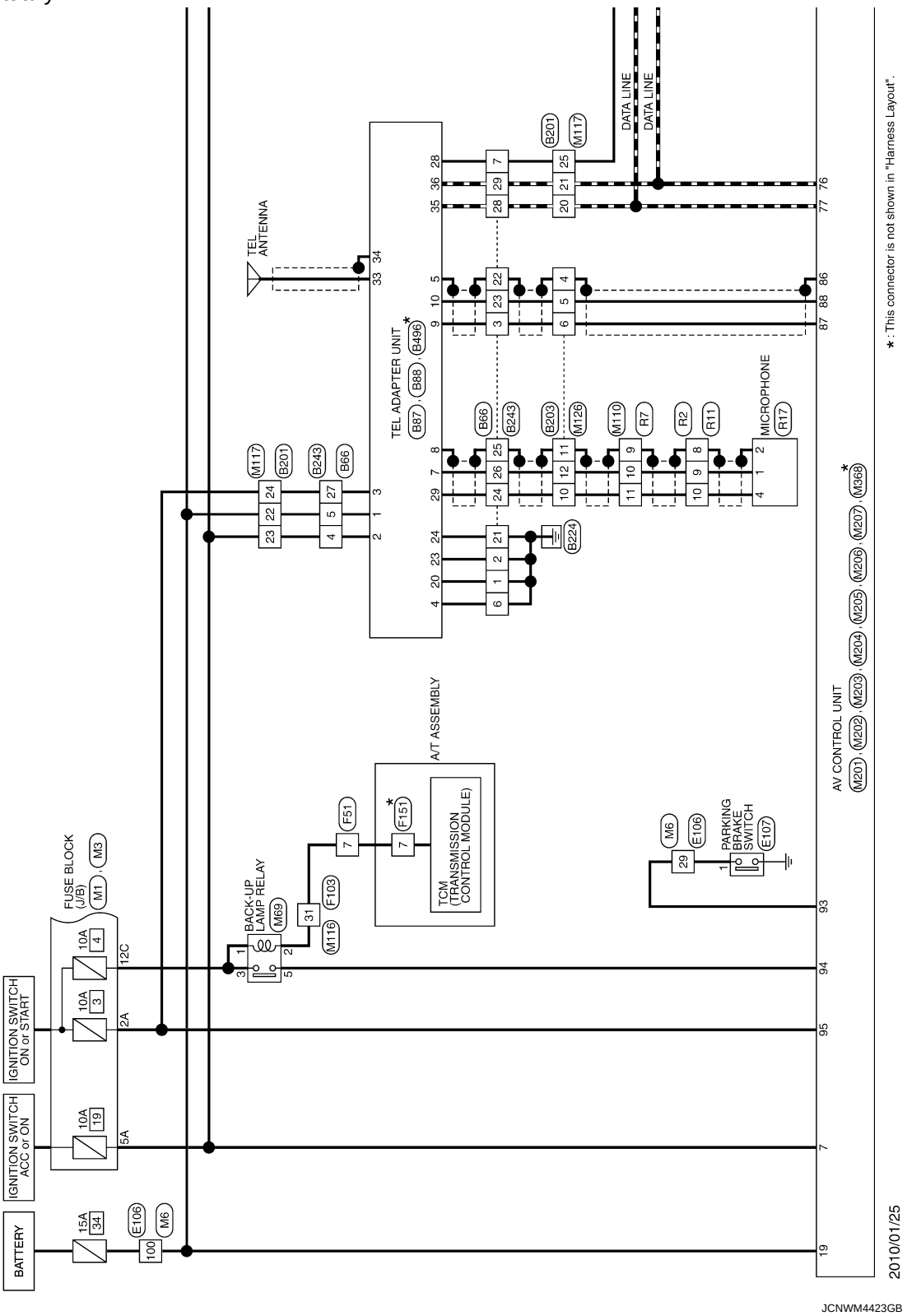
GASOLINE ENGINE MODELS

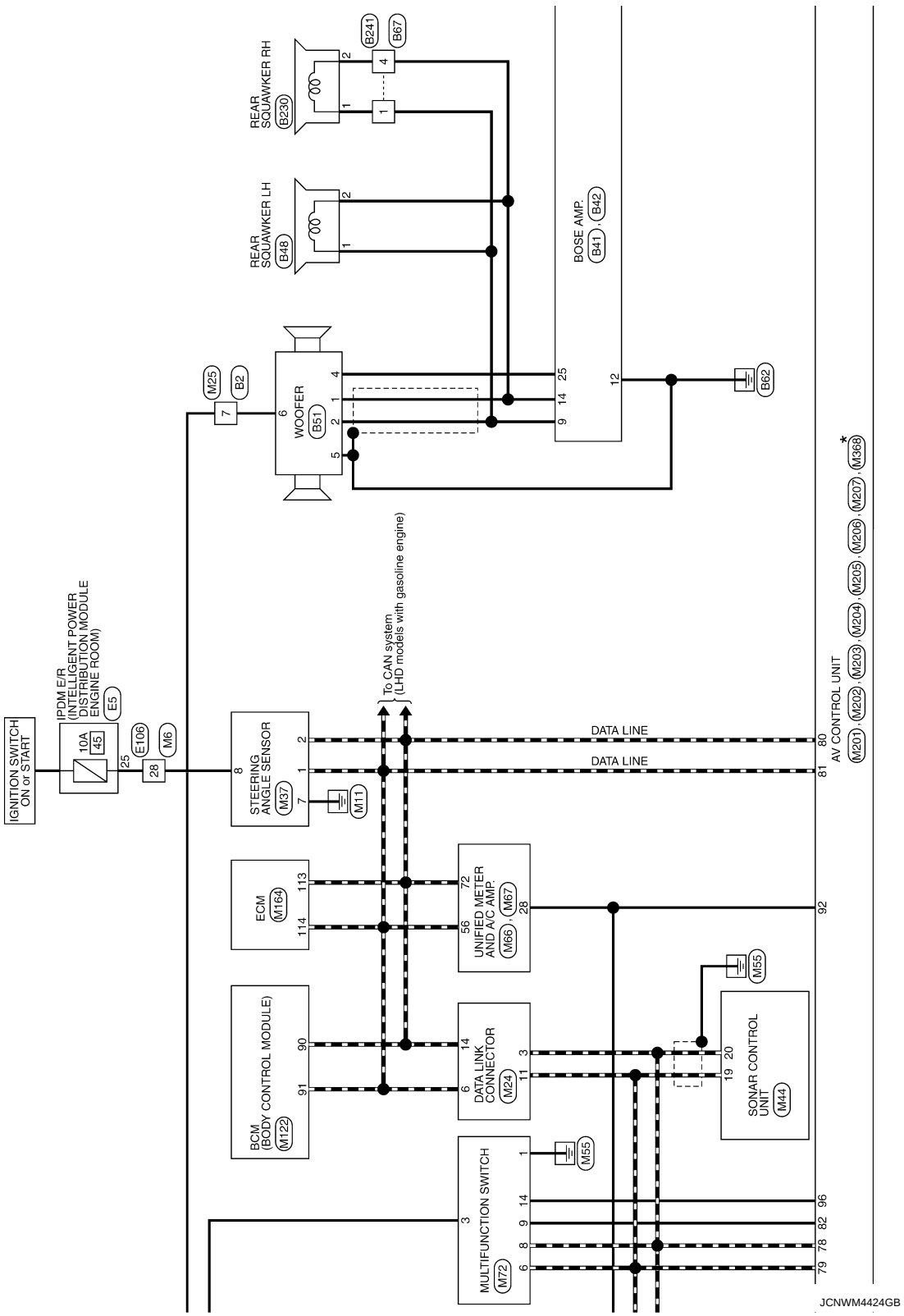
For connector terminal arrangements, harness layouts, and alphabets in a ⬭ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

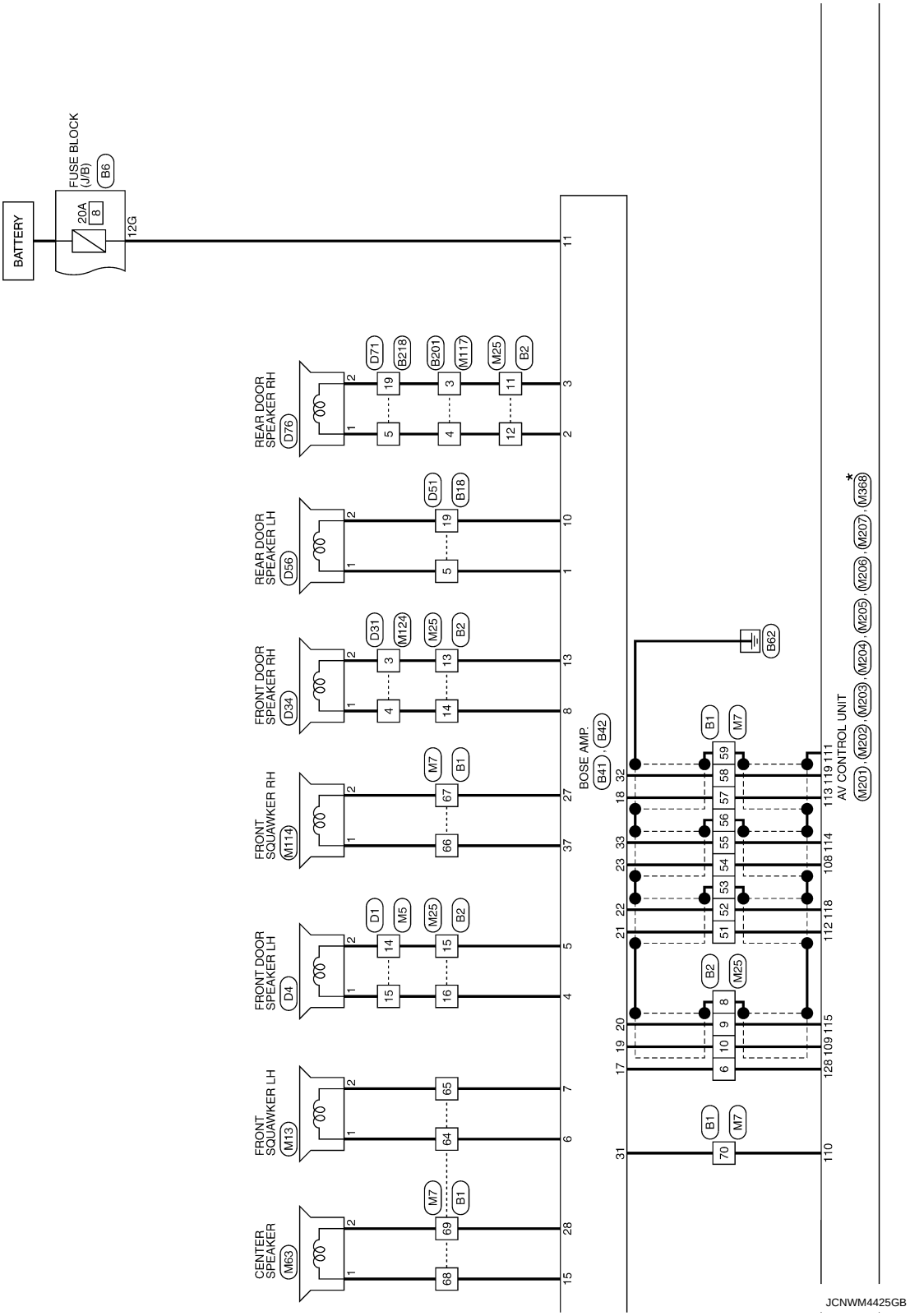
NOTE:

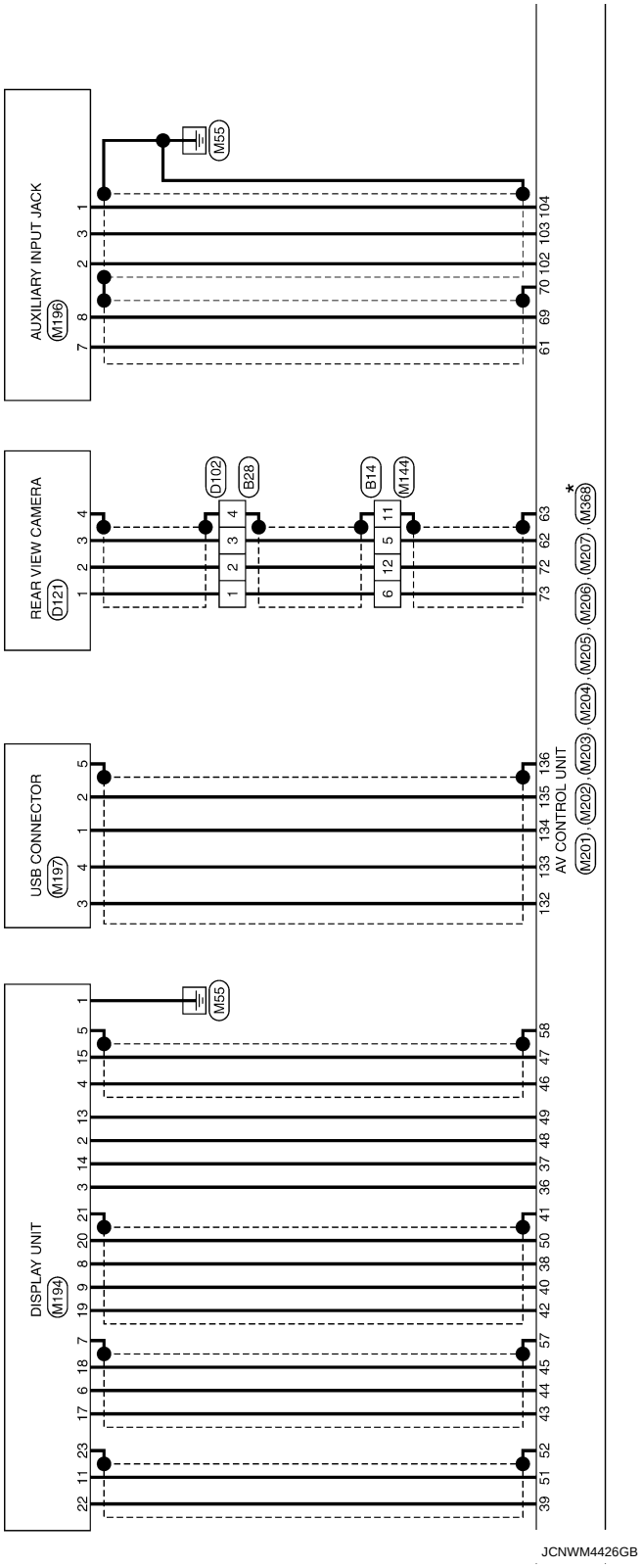
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

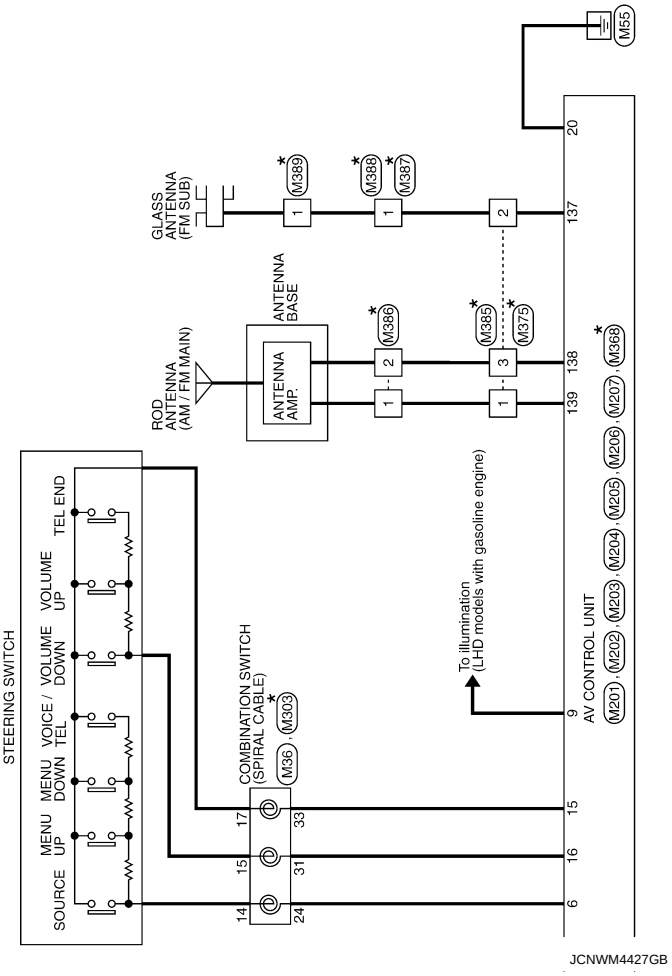
BOSE AUDIO WITHOUT NAVIGATION (LHD MODELS WITH GASOLINE ENGINE)




REAR SQUAWKER RH
B230
B241
B67
REAR SQUAWKER LH
B48
BOSE AMP.
B41, B42
WOOFER
B51
M25
B2
B62
IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
10A 45
E106
M6
To CAN system (LHD models with gasoline engine)
STEERING ANGLE SENSOR
M37
M11
DATA LINE
DATA LINE
AV CONTROL UNIT
M201, M202, M203, M204, M205, M206, M207, M368
ECM
M164
UNIFIED METER AND A/C AMP.
M66, M67
BCM (BODY CONTROL MODULE)
M122
DATA LINK CONNECTOR
M24
SONAR CONTROL UNIT
M44
M55
MULTIFUNCTION SWITCH
M72
JCNWM4424GB


BATTERY
FUSE BLOCK (J/B) B6
20A 8
12G
REAR DOOR SPEAKER RH D76
REAR DOOR SPEAKER LH D56
FRONT DOOR SPEAKER RH D34
FRONT SQUAWKER RH M114
FRONT DOOR SPEAKER LH D4
FRONT SQUAWKER LH M13
CENTER SPEAKER M63
BOSE AMP B41, B42
B62
AV CONTROL UNIT M201, M202, M203, M204, M205, M206, M207, M368*
JCNWM4425GB


AUXILIARY INPUT JACK
M196
M55
REAR VIEW CAMERA
D121
D102
B28
B14
M144
USB CONNECTOR
M197
DISPLAY UNIT
M194
AV CONTROL UNIT
M201, M202, M203, M204, M205, M206, M207, M368
*
JCNWM4426GB

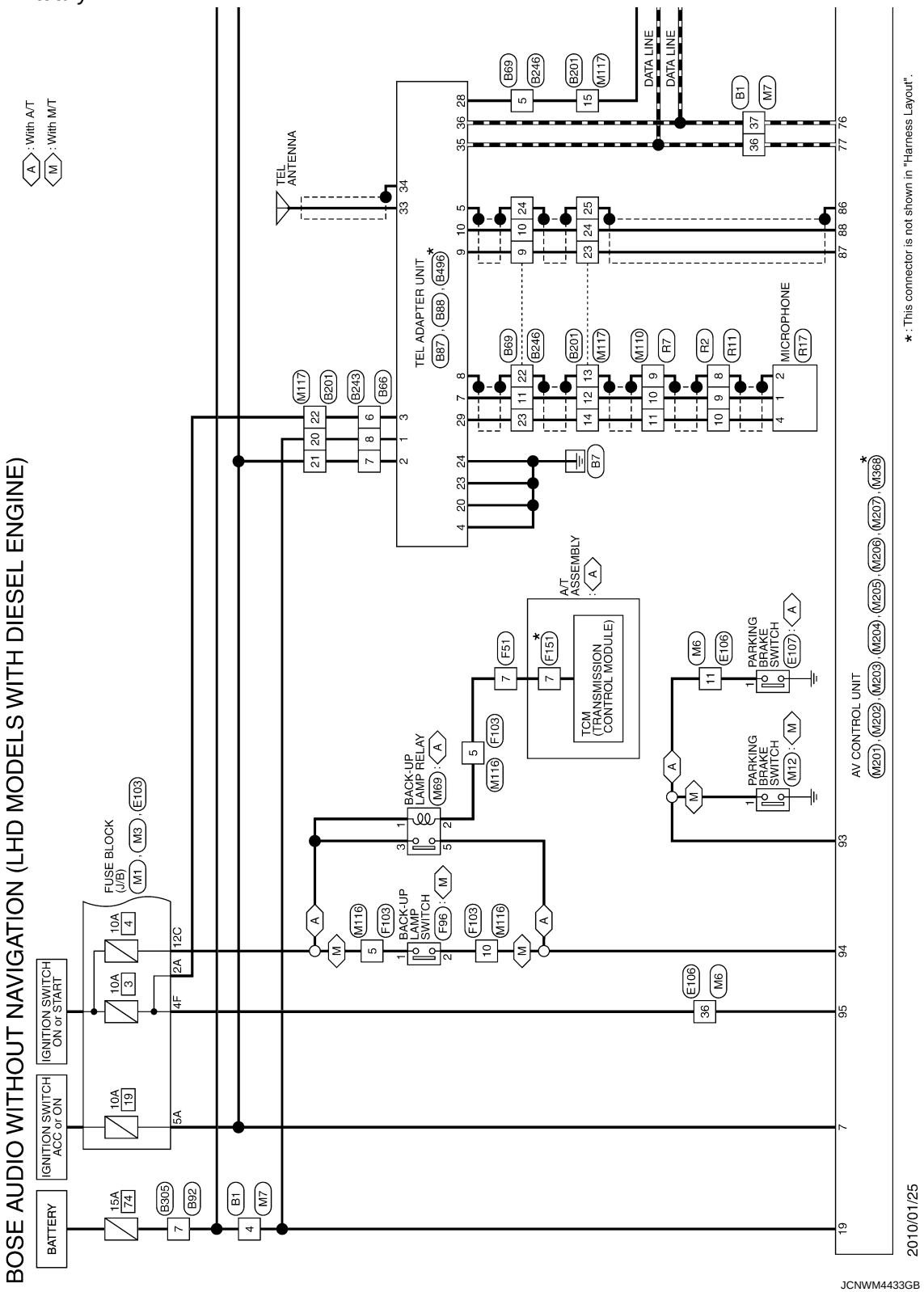


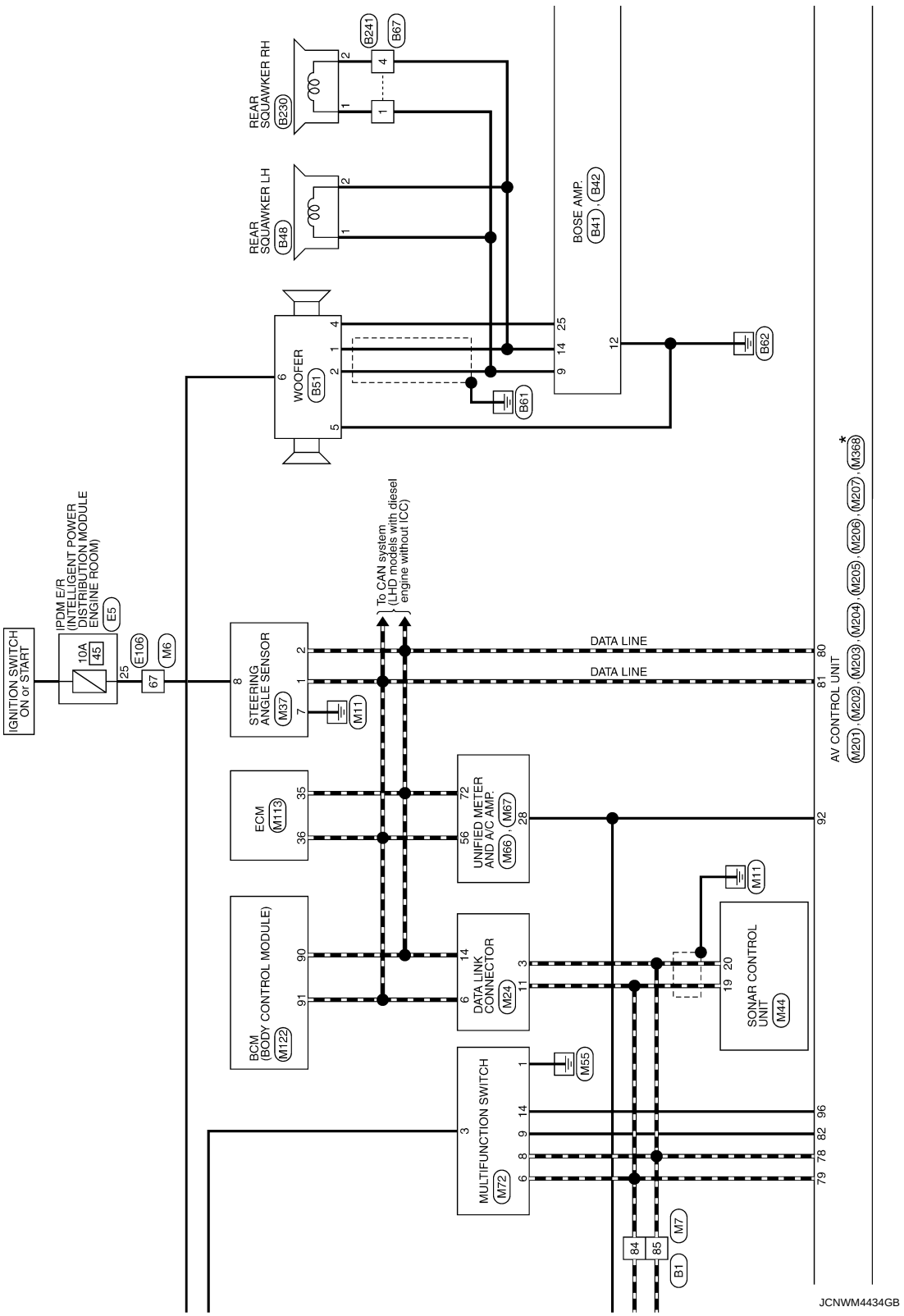
DIESEL ENGINE MODELS

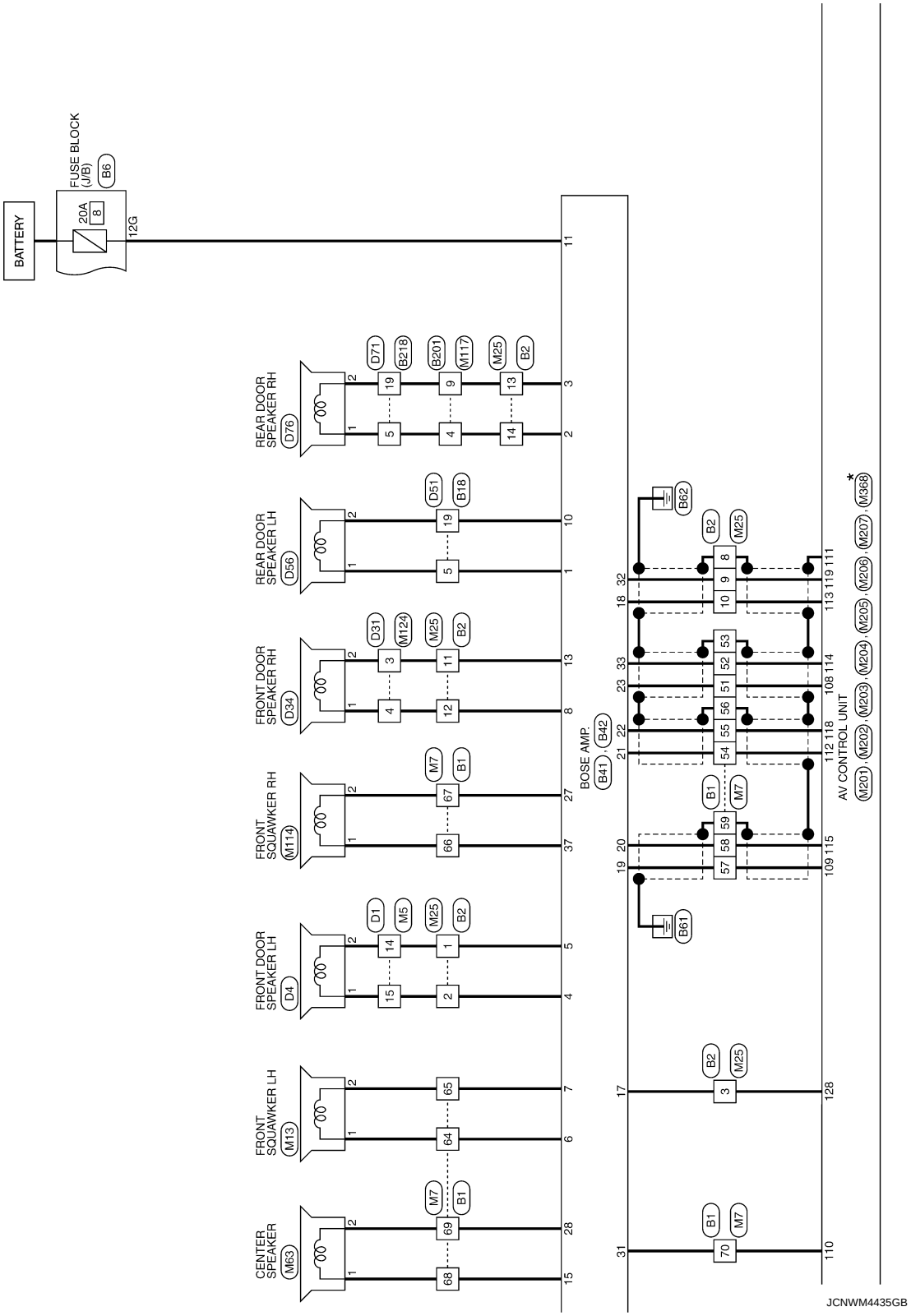
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

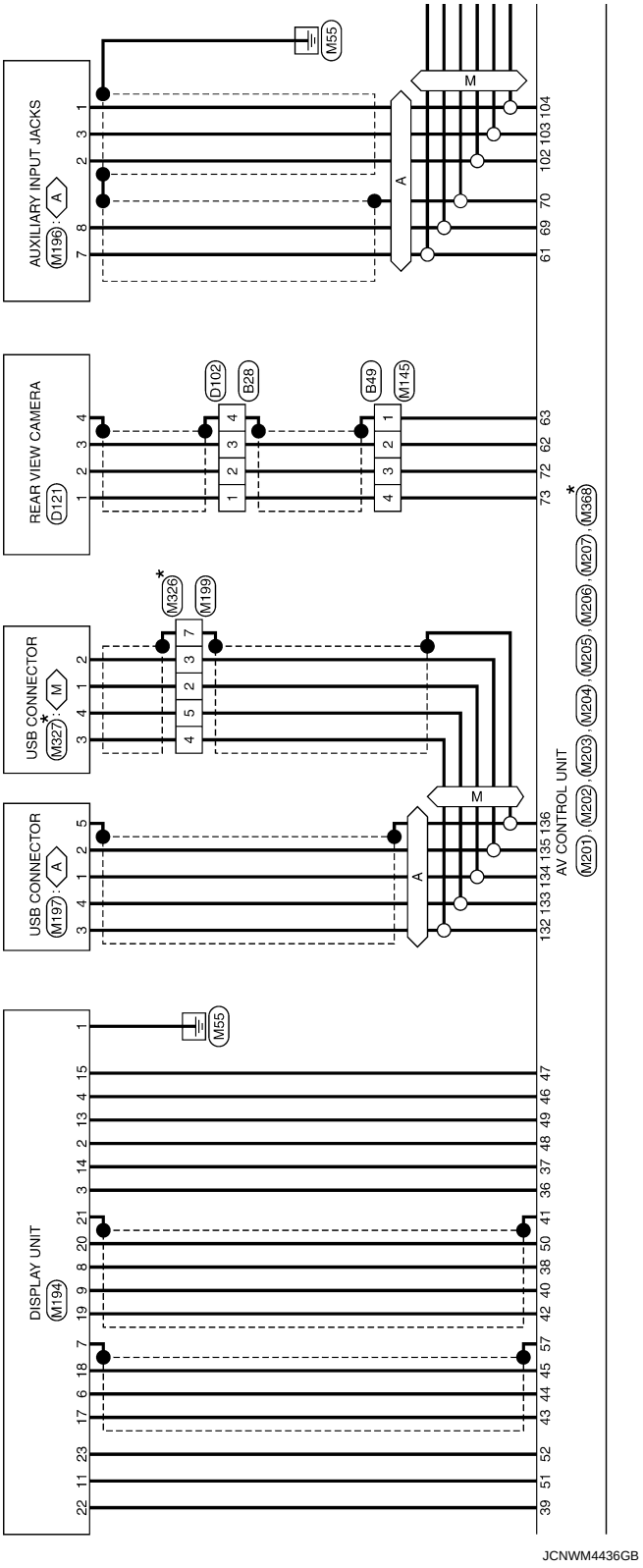
NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

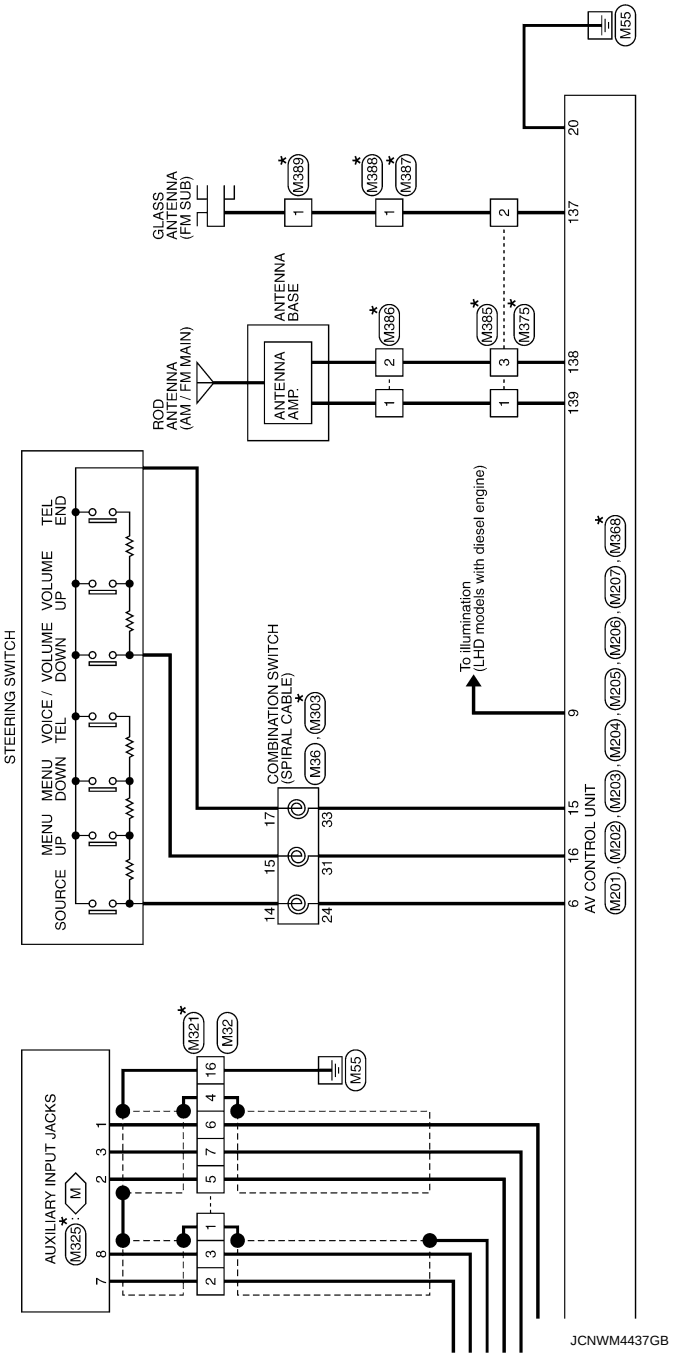



REAR SQUAWKER RH
B230
B241
B67
REAR SQUAWKER LH
B48
BOSE AMP.
B41, B42
WOOFER
B51
B61
B62
IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
10A 45
E106
M6
67
To CAN system (LHD models with diesel engine without ICC)
STEERING ANGLE SENSOR
M37
M11
DATA LINE
DATA LINE
AV CONTROL UNIT
M201, M202, M203, M204, M205, M206, M207, M368
ECM
M113
UNIFIED METER AND A/C AMP.
M66, M67
BCM (BODY CONTROL MODULE)
M122
DATA LINK CONNECTOR
M24
SONAR CONTROL UNIT
M44
MULTIFUNCTION SWITCH
M72
M55
B1
M7
JCNWM4434GB


BATTERY
FUSE BLOCK (J/B) B6
20A 8
12G
REAR DOOR SPEAKER RH D76
REAR DOOR SPEAKER LH D56
FRONT DOOR SPEAKER RH D34
FRONT SQUAWKER RH M114
FRONT DOOR SPEAKER LH D4
FRONT SQUAWKER LH M13
CENTER SPEAKER M63
BOSE AMP B41, B42
AV CONTROL UNIT M201, M202, M203, M204, M205, M206, M207, M368*
B62
B61
JCNWM4435GB



JCNWM4436GB



RHD MODELS

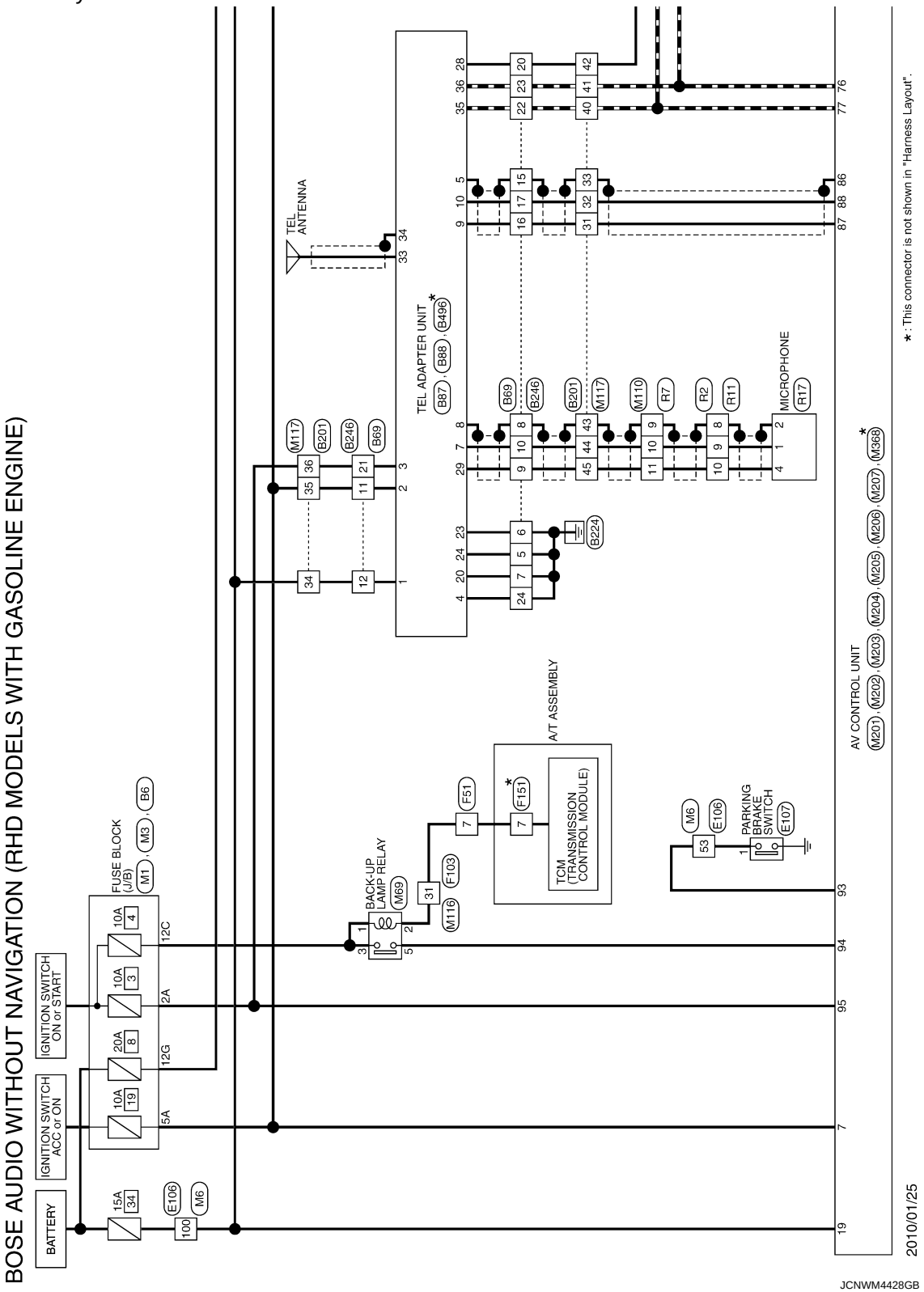
RHD MODELS : Wiring Diagram

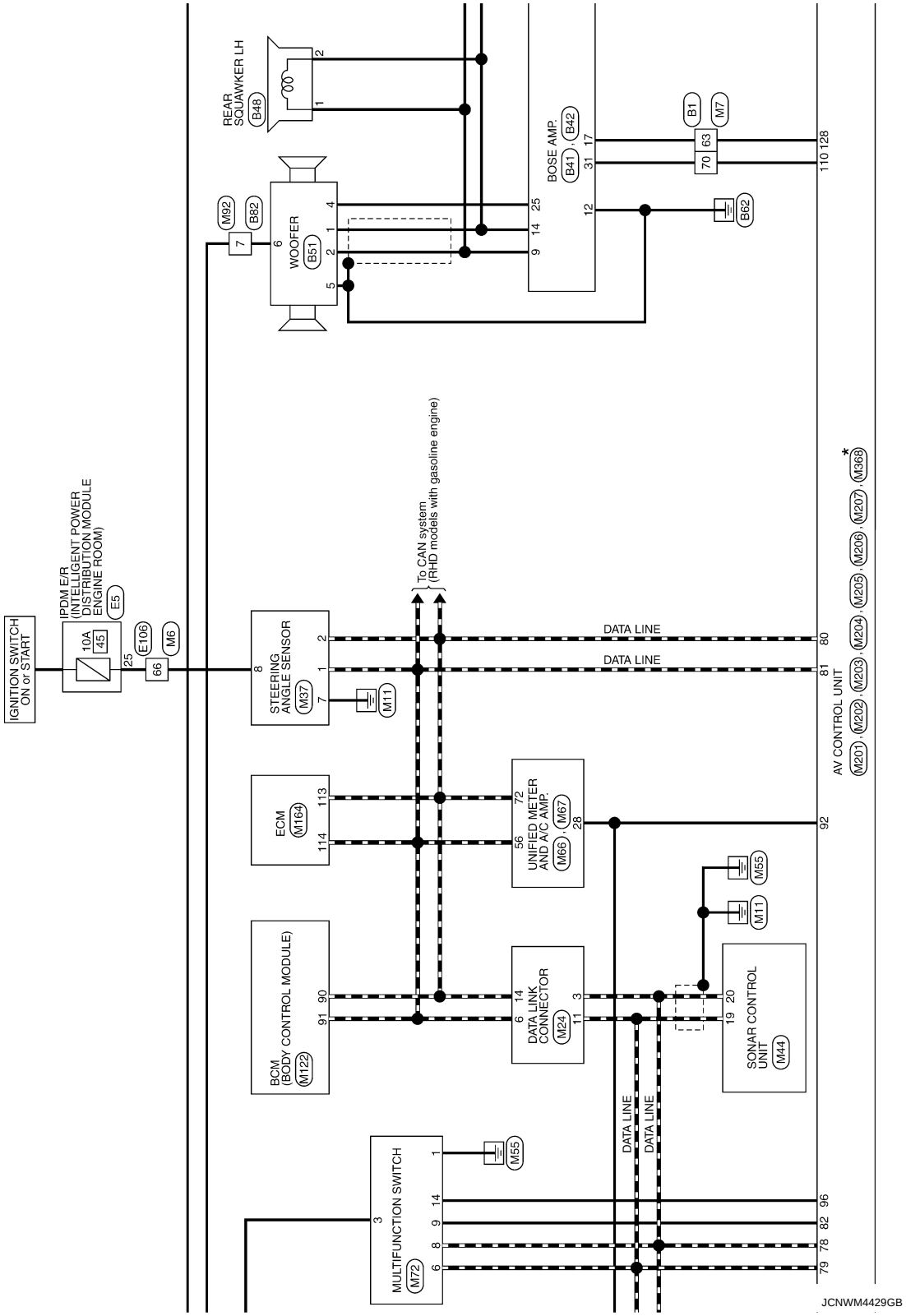
INFOID:0000000006106623

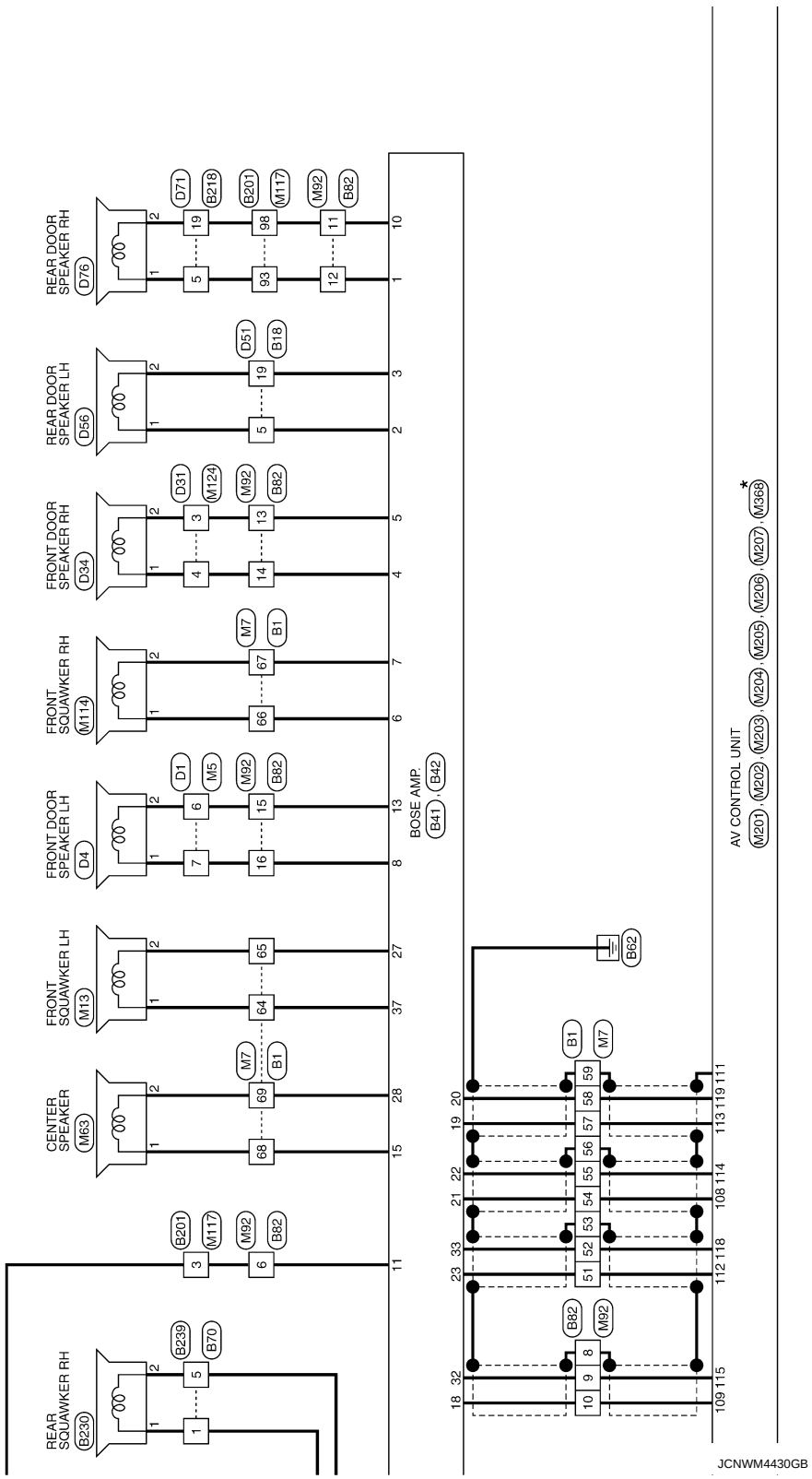
GASOLINE ENGINE MODELS

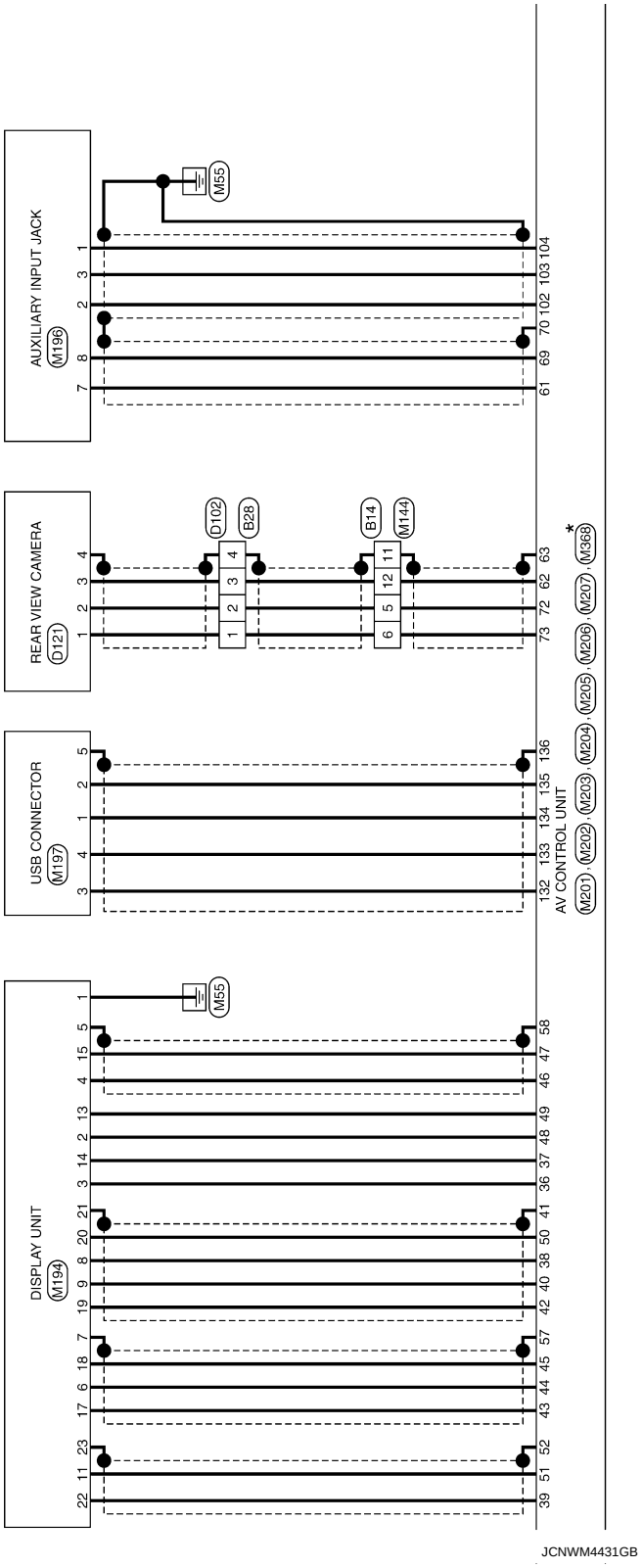
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

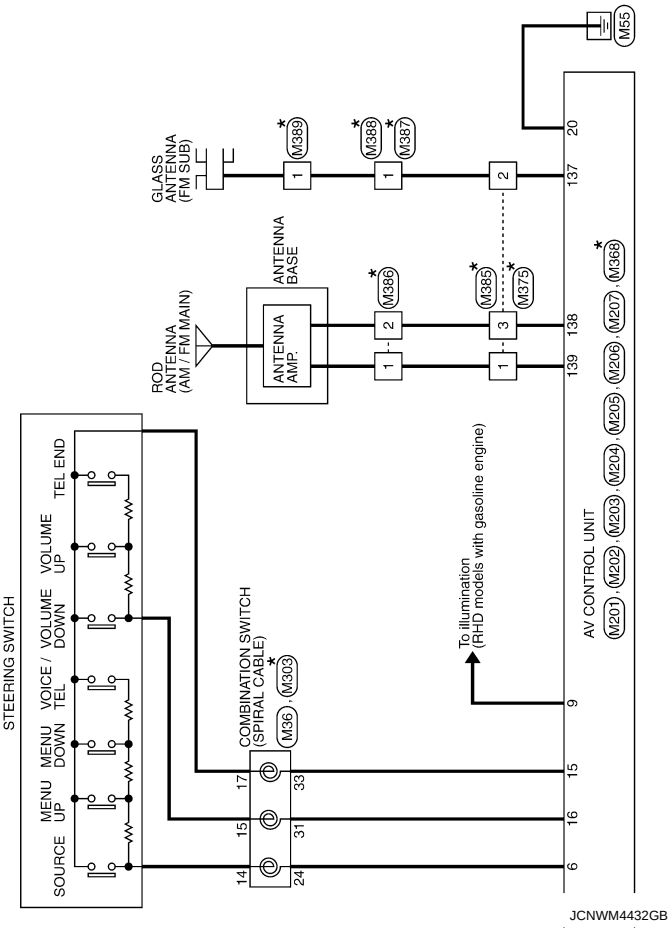
NOTE:
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.




REAR SQUAWKER LH
B48
WOOFER
B51
M92
B82
BOSE AMP.
B41, B42
B1
M7
B62
IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
10A 45
E106
M6
To CAN system (RHD models with gasoline engine)
STEERING ANGLE SENSOR
M37
M11
DATA LINE
DATA LINE
AV CONTROL UNIT
M201, M202, M203, M204, M205, M206, M207, M368*
ECM
M164
UNIFIED METER AND A/C AMP.
M66, M67
M55
M11
BCM (BODY CONTROL MODULE)
M122
DATA LINK CONNECTOR
M24
SONAR CONTROL UNIT
M44
MULTIFUNCTION SWITCH
M72
M55
DATA LINE
DATA LINE
JCNWM4429GB


REAR DOOR SPEAKER RH
D76
REAR DOOR SPEAKER LH
D56
FRONT DOOR SPEAKER RH
D34
FRONT SQUAWKER RH
M114
FRONT DOOR SPEAKER LH
D4
FRONT SQUAWKER LH
M13
CENTER SPEAKER
M63
REAR SQUAWKER RH
B230
BOSE AMP.
B41, B42
AV CONTROL UNIT
M201, M202, M203, M204, M205, M206, M207, M368*
B62
JCNWM4430GB


AUXILIARY INPUT JACK
M196
M55
REAR VIEW CAMERA
D121
D102
B28
B14
M144
USB CONNECTOR
M197
DISPLAY UNIT
M194
AV CONTROL UNIT
M201, M202, M203, M204, M205, M206, M207, M368
*
JCNWM4431GB

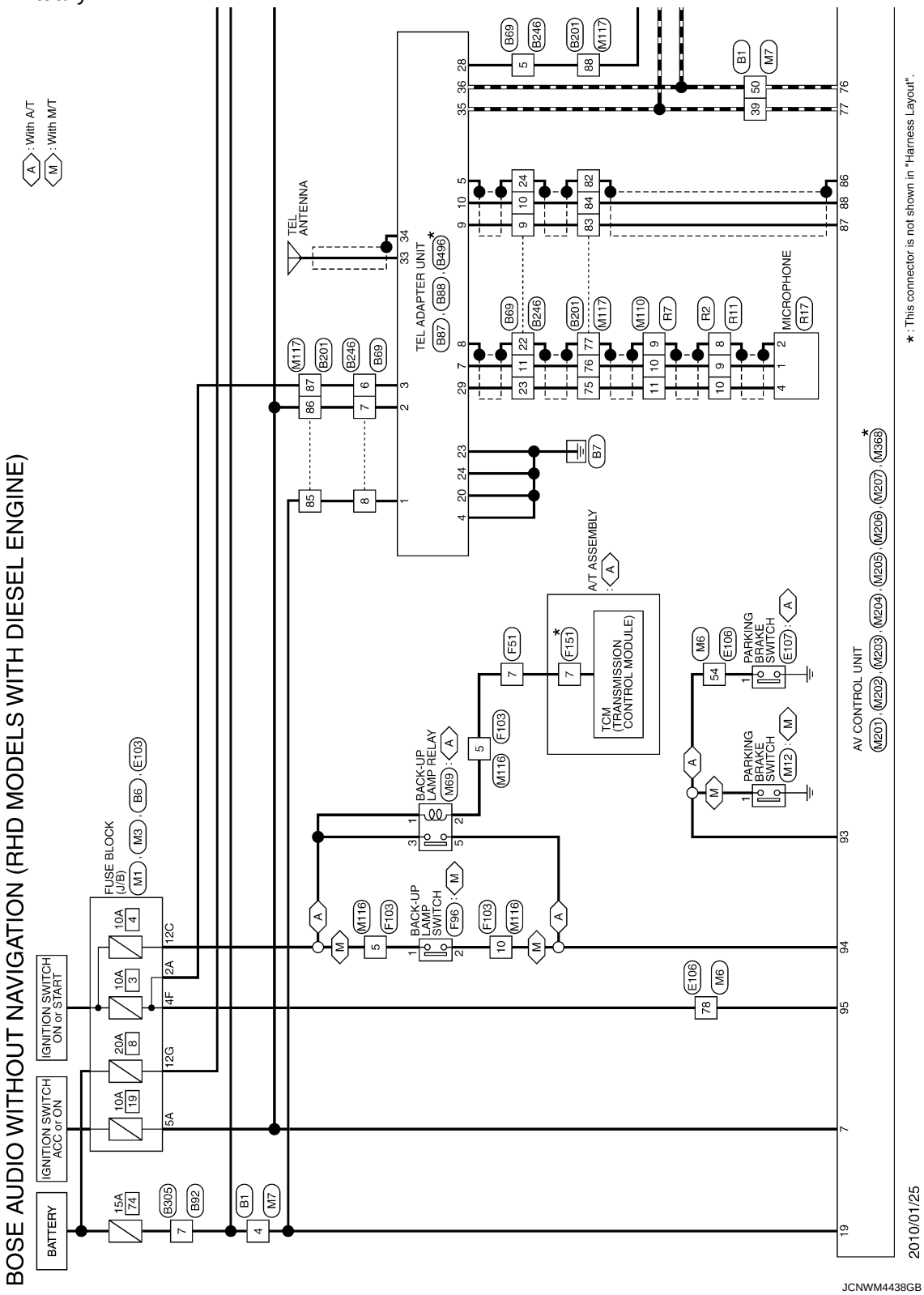


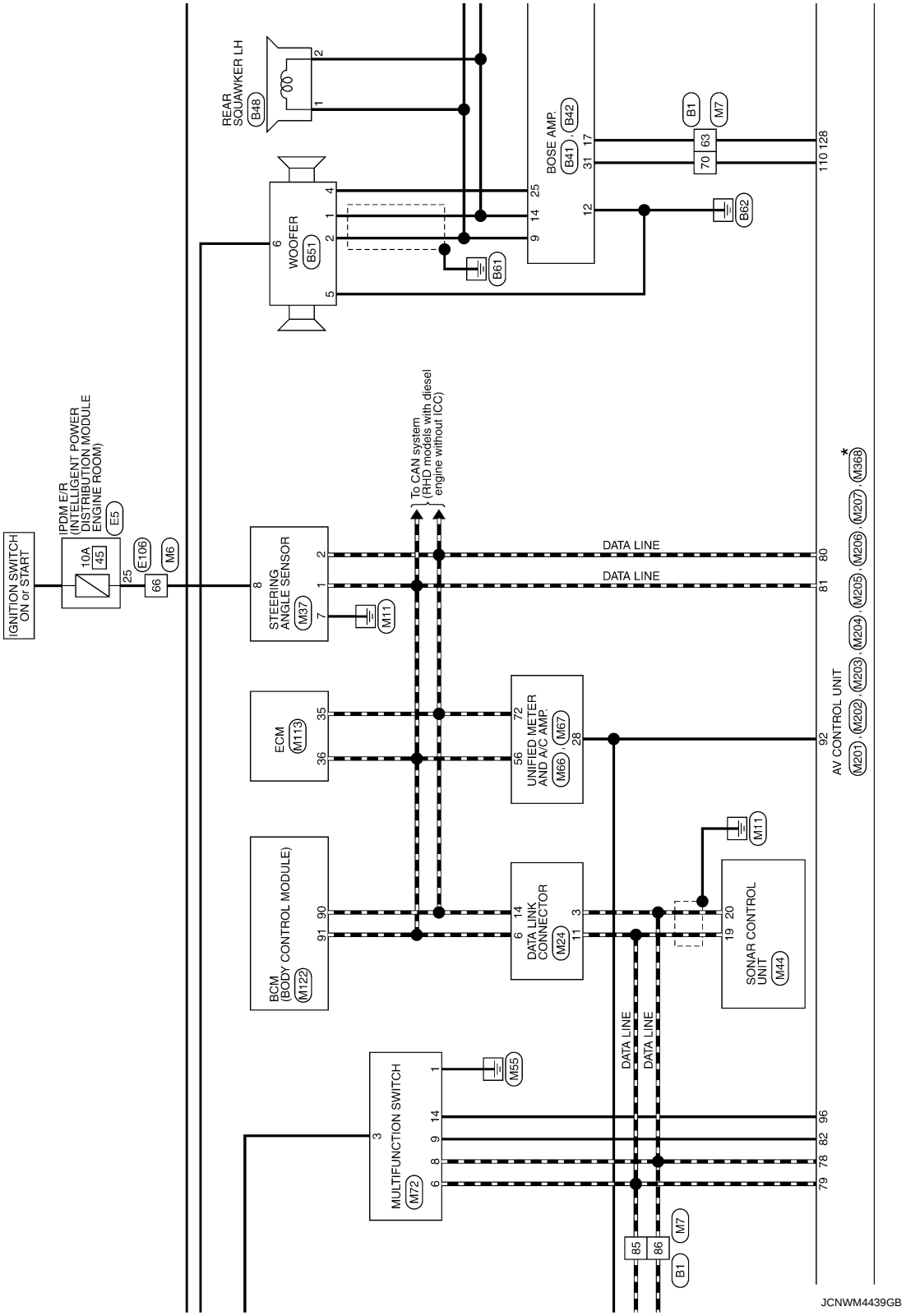
DIESEL ENGINE MODELS

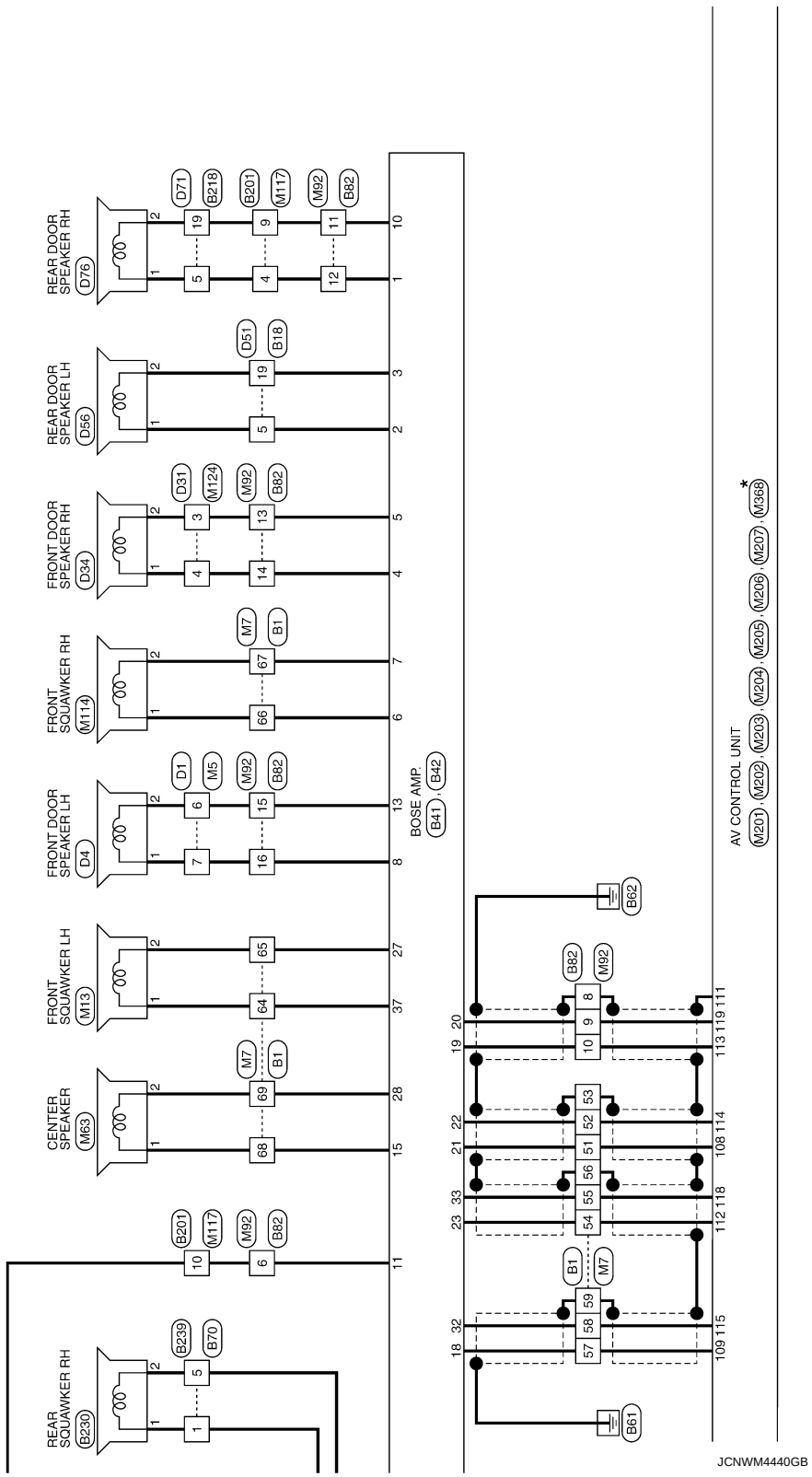
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

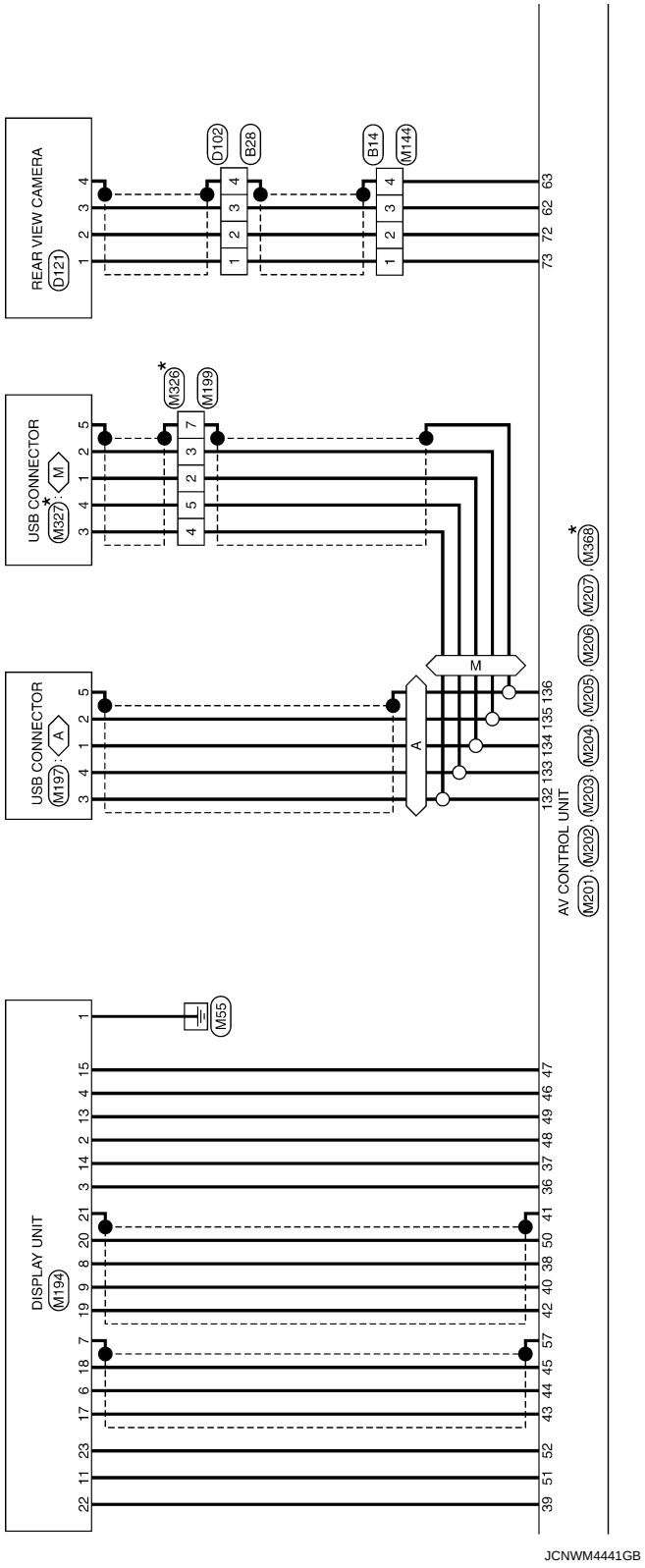
NOTE:

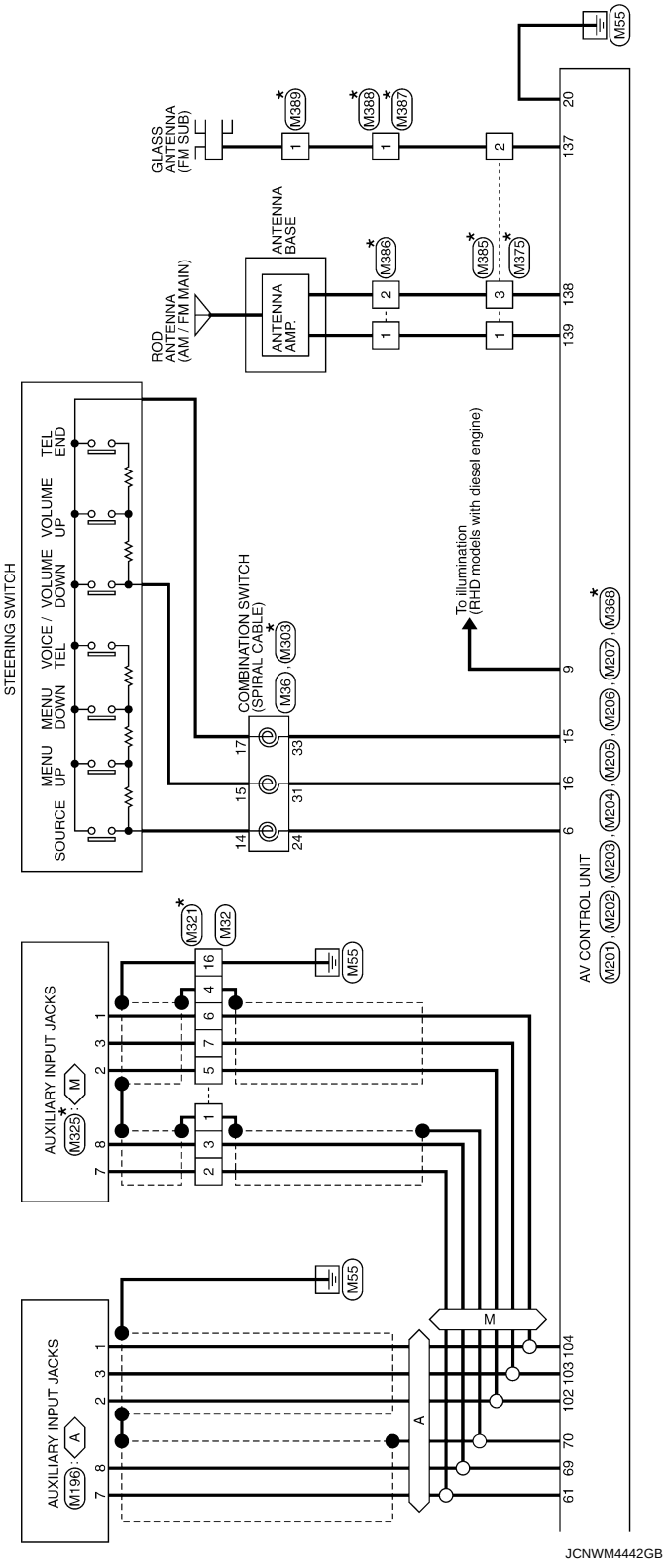
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.




REAR SQUAWKER LH
B48
WOOFER
B51
BOSE AMP.
B41, B42
B61
B62
B1
M7
IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
10A 45
E106
M6
To CAN system (RHD models with diesel engine without ICC)
STEERING ANGLE SENSOR
M37
M11
DATA LINE
ECM
M113
UNIFIED METER AND A/C AMP.
M66, M67
AV CONTROL UNIT
M201, M202, M203, M204, M205, M206, M207, M368
BCM (BODY CONTROL MODULE)
M122
DATA LINK CONNECTOR
M24
SONAR CONTROL UNIT
M44
MULTIFUNCTION SWITCH
M72
M55
JCNWM4439GB


REAR DOOR SPEAKER RH D76
REAR DOOR SPEAKER LH D56
FRONT DOOR SPEAKER RH D34
FRONT SQUAWKER RH M114
FRONT DOOR SPEAKER LH D4
FRONT SQUAWKER LH M13
CENTER SPEAKER M63
REAR SQUAWKER RH B230
BOSE AMP. B41, B42
AV CONTROL UNIT M201, M202, M203, M204, M205, M206, M207, M368*
B62
B61
JCNWM4440GB


REAR VIEW CAMERA
D121
D102
B28
B14
M144
USB CONNECTOR
M197
A
USB CONNECTOR
M327
M
*
M326
M199
AV CONTROL UNIT
M201, M202, M203, M204, M205, M206, M207, M368
DISPLAY UNIT
M194
M55
JCNWM4441GB


STEERING SWITCH
SOURCE
MENU UP
MENU DOWN
VOICE / TEL
VOLUME DOWN
VOLUME UP
TEL END
COMBINATION SWITCH (SPIRAL CABLE)
M36
M303
To illumination (RHD models with diesel engine)
GLASS ANTENNA (FM SUB)
ROD ANTENNA (AM / FM MAIN)
ANTENNA BASE
ANTENNA AMP.
M389
M388
M387
M386
M385
M375
M55
AUXILIARY INPUT JACKS
M325
M321
M32
AUXILIARY INPUT JACKS
M196
AV CONTROL UNIT
M201, M202, M203, M204, M205, M206, M207, M368
JCNWM4442GB

SYMPTOM DIAGNOSIS

MULTI AV SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000005194471

OPERATION

Symptoms	Check items	Probable malfunction location
Multifunction switch and preset switch operation does not work.	• All switches cannot be operated. • “MULTI AV” is displayed on system selection screen when the CONSULT-III is started.	• Multifunction switch power supply and ground circuit. Refer to AV-196, "MULTIFUNCTION SWITCH : Diagnosis Procedure". • AV communication circuit between AV control unit and multifunction switch. Perform CONSULT-III self-diagnosis. Refer to AV-172, "CONSULT - III Function (MULTI AV)".
	• All switches cannot be operated. • “MULTI AV” is not displayed on system selection screen when the CONSULT-III is initialized.	AV control unit power supply and ground circuit malfunction. Refer to AV-195, "AV CONTROL UNIT : Diagnosis Procedure".
	Only specified switch cannot be operated.	Multifunction switch or preset switch malfunction. Perform multifunction switch and preset switch self-diagnosis function. Refer to AV-163, "Diagnosis Description".
Fuel economy display is abnormal.	There is malfunction in the CONSULT-III “self-diagnosis result” of “MULTI AV”.	Perform detected DTC diagnosis. Refer to AV-226, "DTC Index".
	There is no malfunction in the CONSULT-III “self-diagnosis results” of “MULTI AV”.	Ignition signal circuit malfunction. (AV control unit)

RELATED TO HANDS-FREE PHONE

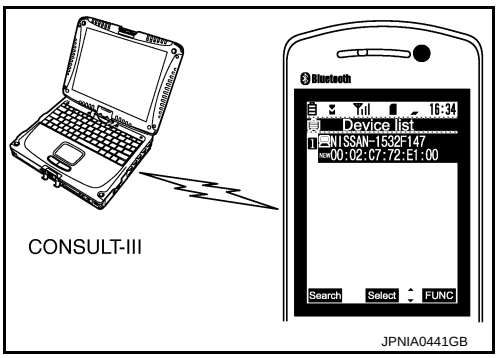
- Check that the cellular phone is the corresponding type (Bluetooth™ enabled) and Bluetooth™ turns ON.
- Malfunction may occur due to the version change of the phone type, etc. even though it is the corresponding type. The cellular phone must support at least hands-free profile V1.0 and object push V1.0. Refer to cellular phone instruction manual.
- When customers contact concerning Bluetooth™ compatible cellular phone malfunction for the first time, always suggest customers to update cellular phone software if possible.
- Check that customer cellular phone is compatible on the published list. The dealer should contact its RBU/NSC for the list.
- Take note of any exceptions that the list may detail, i.e. no ringing tone or no phonebook transfer etc. If the customer phone is not listed then its full function cannot be guaranteed. NISSAN should not replace the TEL adapter unit if the cellular phone does not appear on the list or the cellular phone is operating as described on the list e.g. no ringing tone, no phonebook transfer etc.
- Take note of any exceptions to other phones made by the same manufacturer as the customers. Any exceptions on one model by a specific manufacturer may be common to all models made by that manufacturer.

Simple Check for Bluetooth™ Communication

If cellular phone and TEL adapter unit cannot be connected with Bluetooth™ communication, following procedure allows the technician to judge which device has malfunction.

1. Turn ON cellular phone, not connecting Bluetooth™ communication.
2. Start CONSULT-III, then start Windows®.
3. Set CONSULT-III near a cellular phone.

4. When operated Bluetooth™ registration by cellular phone, check if CONSULT-III* would be displayed on the device name.
(If other Bluetooth™ device is located near cellular phone, a name of the device would be displayed also.)
NOTE:
*:Displayed device name is “NISSAN-********”.



- If no device name is displayed, cellular phone is malfunctioning. Repair the cellular phone first, then perform diagnosis.
- If CONSULT-III is displayed on device name, cellular phone is normal*. Perform diagnosis as per the following table.

*: There is no 100% guarantee that cellular phone operates all functions on AV control unit. Different phone manufacturers implement Bluetooth™ in different ways. Phones on Supported Phone List are tested and any minor exceptions are listed.

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection. (No connection is displayed on the display at the guide.)	Repeat the registration of cellular phone.	TEL adapter unit malfunction. Refer to AV-288, "Exploded View".
Hands-free phone cannot be established.	Both the reception and the speech cannot be performed	• Perform CONSULT-III self-diagnosis. Refer to AV-172, "CONSULT - III Function (MULTI AV)". • No malfunction. TEL adapter unit malfunction. Refer to AV-288, "Exploded View". • Malfunction is detected. Perform detected DTC diagnosis. Refer to AV-226, "DTC Index".
The other party's voice cannot be heard by hands-free phone.	The operation of the “ ” switch can be performed.	TEL voice signal circuit malfunction between TEL adapter unit and AV control unit.
	The operation of the “ ” switch cannot be performed.	Control signal circuit.
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	TEL adapter unit. Refer to AV-288, "Exploded View".
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-212, "Diagnosis Procedure".
The system cannot be operated.	• The retractable hard top is fully closed. • “SOURCE”, “MENU UP”, and “MENU DOWN”, but “ ” switches is not operated.	Steering switch ground circuit malfunction. Replace steering switch. Refer to SR-16, "Exploded View".
	• The retractable hard top is fully closed. • “SOURCE”, “MENU UP”, “MENU DOWN” , and “ ” switches of steering switch are not operated.	Steering switch signal B circuit malfunction. Refer to AV-216, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-218, "Diagnosis Procedure".

RELATED TO CAMERA

Symptoms	Check items	Probable malfunction location
Camera image is not shown. (Vehicle width and possible route line is displayed.)	AUX image is displayed.	Camera image signal circuit. Refer to AV-208, "Diagnosis Procedure".
	AUX image is not displayed.	Composite image signal circuit. Refer to AV-204, "Diagnosis Procedure".

Symptoms	Check items	Probable malfunction location
Camera image is not shown. (displayed in black and nothing can be displayed)	—	• Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-205, "Diagnosis Procedure". • Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to AV-206, "Diagnosis Procedure".
Camera image does not switch.	“Reverse” is not turned ON on “VehicleSignals” screen of “Confirmation/Adjustment”.	Reverse signal circuit malfunction.
	“Reverse” is turned ON on “Vehicle Signals”screen of “Confirmation/Adjustment”.	AV control unit malfunction. Replace AV control unit. Refer to AV-268, "Exploded View".

RELATED TO RGB IMAGE

Symptoms	Check items	Possible malfunction location / Action to take
RGB image is not shown.	There is malfunction in the CONSULT-III “self-diagnosis result” of “MULTI AV”.	Perform detected DTC diagnosis. Refer to AV-226, "DTC Index".
	There is no malfunction in the CONSULT-III “self-diagnosis result” of “MULTI AV”.	Vertical synchronizing (VP) signal circuit. Refer to AV-206, "Diagnosis Procedure".
Color of RGB image is not proper.	Light blue (Cyan) tint.	RGB signal (R: red) circuit. Refer to AV-199, "Diagnosis Procedure".
	Purple (Magenta) tint.	RGB signal (G: green) circuit. Refer to AV-200, "Diagnosis Procedure".
	Screen looks yellowish.	RGB signal (B: blue) circuit. Refer to AV-201, "Diagnosis Procedure".
RGB screen is rolling.	—	RGB synchronizing signal circuit. Refer to AV-202, "Diagnosis Procedure".
Fuel economy display is malfunctioning.	There is malfunction in the CONSULT-III “self-diagnosis result” of “MULTI AV”.	Perform detected DTC diagnosis. Refer to AV-226, "DTC Index".
	There is no malfunction in the CONSULT-III “self-diagnosis result” of “MULTI AV”.	Ignition signal circuit malfunction. (AV control unit)

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to AV-211, "Diagnosis Procedure".
Audio sound is not heard.	No sound from all speakers.	• Amp. ON signal circuit malfunction. • BOSE amp. power supply and ground circuits malfunction. Refer to AV-197, "BOSE AMP. : Diagnosis Procedure".
	Sound is not heard from woofer.	• Woofer power supply and ground circuit malfunction. • Sound signal (woofer) circuit malfunction. • Woofer amp. ON signal circuit malfunction.
	Sound is heard only from specific places.	Sound signals circuit of suspect system.
AM/FM radio is not received.	Other audio sounds are normal.	• Antenna amp. ON signal circuit. • Antenna feeder.

RELATED TO USB

NOTE:

Check that there is no malfunction of USB equipment main body before performing a diagnosis.

Symptoms	Check items	Possible malfunction location / Action to take
iPod® or USB memory can not be recognized.	—	• USB harness malfunction. • USB connector malfunction.

iPod® is a trademark of Apple inc., registered in the U.S. and other countries.

RELATED TO STEERING SWITCH

Symptoms	Probable malfunction location
None of the steering switch operations work.	Steering switch ground circuit malfunction. Refer to AV-218, "Diagnosis Procedure".
Only specified switch cannot be operated.	Steering switch malfunction. Replace steering switch. Refer to SR-16, "Exploded View".
“SOURCE”, “MENU UP”, “MENU DOWN”, “ ” switches of steering switch are not operated.	Steering switch signal A circuit. Refer to AV-214, "Diagnosis Procedure".
”VOL UP“, “VOL DOWN”, “ ” switches of steering switch are not operated.	Steering switch signal B circuit. Refer to AV-216, "Diagnosis Procedure".

RELATED TO AUXILIARY INPUT

NOTE:

Check that there is no malfunction of AUX equipment main body before performing a diagnosis.

Symptoms	Check items	Probable malfunction location
No voice sound is heard when AUX mode is selected.	Voice sound is heard when other modes are selected.	AUX sound signal circuit.
Image is not displayed when AUX mode is selected.	Camera image is displayed.	AUX image signal circuit malfunction. Refer to AV-207, "Diagnosis Procedure".
	Camera image is not displayed.	Composite image signal circuit malfunction. Refer to AV-204, "Diagnosis Procedure".

NORMAL OPERATING CONDITION

Description

INFOID:0000000005194472

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The systems in the video mode.	Press “DISC-AUX” to change the mode.
	The display is turned off.	Press “☀/◑ OFF” to turn on the display.
Screen not clear.	Contrast setting is not appropriate.	Adjust the contrast of the display.
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the multi AV system.

RELATED TO VOICE RECOGNITION

Related to Telephone

The system should respond correctly to all voice commands without difficulty. If problems are encountered, try the following solutions.

Where the solutions are listed by number, try each solution in turn, starting with number 1, until the problem is resolved.

Symptom	Solution
System fails to interpret the command correctly.	1. Ensure that the command is valid.
	2. Ensure that the command is spoken after the tone.
	3. Speak clearly without pausing between words and at level appropriate to the ambient noise level in the vehicle.
	4. Ensure that the ambient noise level is not excessive (for example, windows open or defroster on). **NOTE:** If it is too noisy to use the phone, it is likely that the voice commands will not be recognized.
	5. If more than one command was said at a time, try saying the commands separately.
	6. If the system consistently fails to recognize commands, the voice training procedure should be carried out to improve the recognition response for the speaker. See “Speaker adaptation (SA) mode” earlier in this section. Refer to “OWNER’S MANUAL”.
The system consistently selects the wrong voicetag	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the “List Names” command.
	2. Replace one of the names being confused with a new name.

RELATED TO AUDIO

- The majority of the audio malfunctions are the result of outside causes (bad CD/cassette, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and then determine the cause.

NOTE:

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA, AAC) or could be incorrectly mastered by the customer on a computer.
- Check if the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the “red book” Compact Disc Standard and may not play.

Symptom	Cause and Counter measure
Cannot play	Check if the CD was inserted correctly.
	Check if the CD is scratched or dirty.
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.
	If there is a mixture of music CD files (CD-DA data) and MP3/WMA/AAC files on a CD, only the music CD files (CD-DA data) will be played.
	Files with extensions other than ".MP3", ".WMA", "AAC", ".mp3", ".wma" or ".aac" cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format, This may occur depending on the variation or the setting of MP3/WMA/AAC writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the disc.
	Check if the CD is protected by copyright.
	Disks recorded in live file system format are not supported. (For Microsoft Windows Vista, check the settings.)
Poor sound quality	Check if the CD is scratched or dirty.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA/AAC CD, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.
Move immediately to the next song when playing	When a non-MP3/WMA/AAC file has been given an extension of ".MP3", ".WMA", "AAC" ".mp3", ".wma" or ".aac" or when play is prohibited by copyright protection, the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.

Noise resulting from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources, is not a malfunction.

NOTE:

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

PRECAUTION

PRECAUTIONS

FOR RUSSIA

FOR RUSSIA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000006018379

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted.
Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the “SRS AIR BAG”.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

EXCEPT FOR RUSSIA

EXCEPT FOR RUSSIA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000006018380

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the “SRS AIR BAG”.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

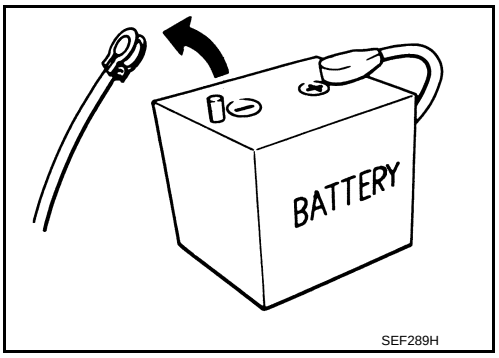
- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s)**

with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

EXCEPT FOR RUSSIA : Precaution for Battery Service (for V9X Models)

INFOID:0000000006081197

When disconnect the battery cable, pay attention to the following.
- Always use a 12 volt battery as power source.
- Do not attempt to disconnect battery cables while engine is running.
- **Before disconnecting battery cables, turn ignition switch OFF and wait at least 4 minutes.**
- **After high-load driving, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery cable.**
  NOTE:
  Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.



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Precaution for Trouble Diagnosis

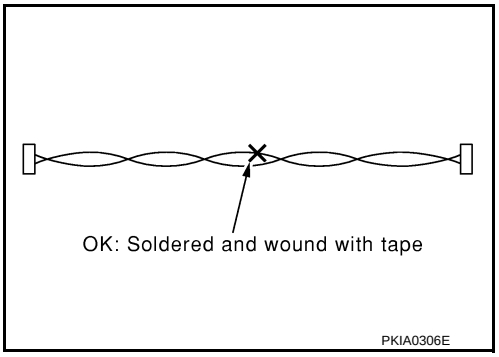
INFOID:0000000005194474

AV COMMUNICATION SYSTEM
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

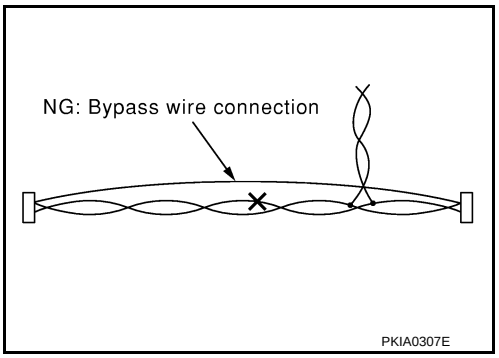
INFOID:0000000005194475

AV COMMUNICATION SYSTEM
- Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]



PKIA0306E

- Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)



PKIA0307E

REMOVAL AND INSTALLATION

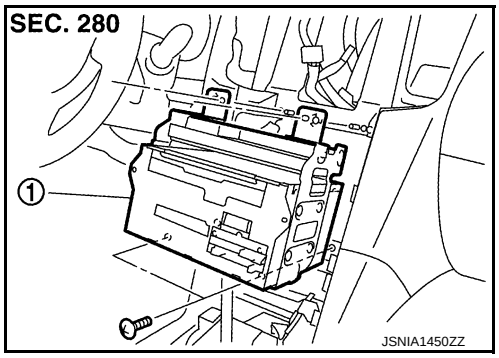
AV CONTROL UNIT

Exploded View

INFOID:0000000005194967

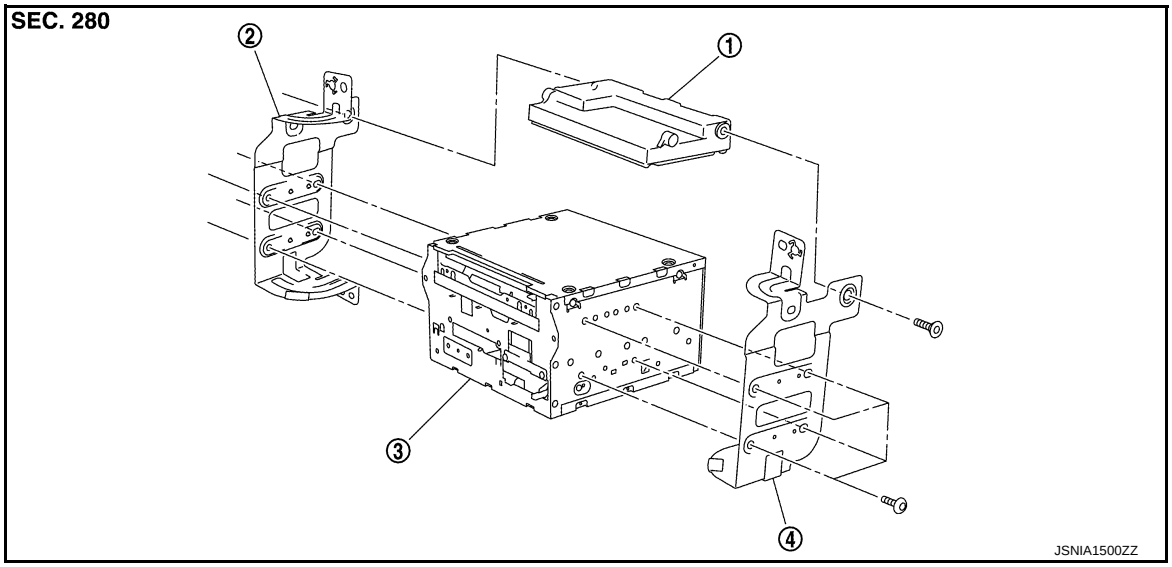
CAUTION:
Before replacing AV control unit, perform “READ CONFIGURATION” to save or print current vehicle specification. For details, refer to AV-154, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description".

REMOVAL



1: AV control unit

DISASSEMBLY



1. Unified meter and A/C amp.
2. Bracket LH
3. AV control unit
4. Bracket RH

Removal and Installation

INFOID:0000000005194968

REMOVAL

CAUTION:
Before replacing AV control unit, perform “READ CONFIGURATION” to save or print current vehicle specification. For details, refer to AV-154, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description".

1. Remove display unit. Refer to AV-270, "Exploded View".
2. Remove AV control unit with a unified meter and A/C amp. as a single unit from the body.
3. Remove bracket screws, and then remove AV control unit.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

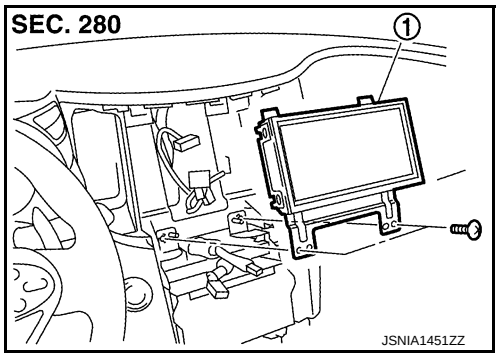
Be sure to perform “WRITE CONFIGURATION” when replacing AV control unit.

DISPLAY UNIT

Exploded View

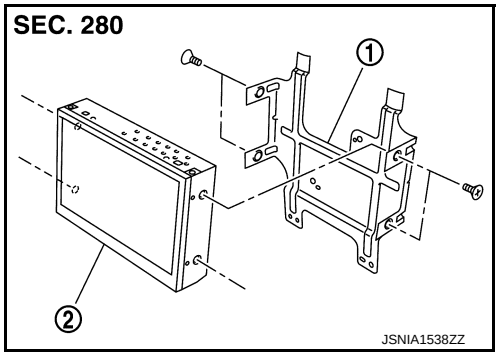
INFOID:0000000005194969

REMOVAL



1. Display unit

DISASSEMBLY



1. Bracket
2. Display unit

Removal and Installation

INFOID:0000000005194970

REMOVAL

1. Remove cluster lid D. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove display unit mounting screws.
3. Disconnect connector, and remove display unit.

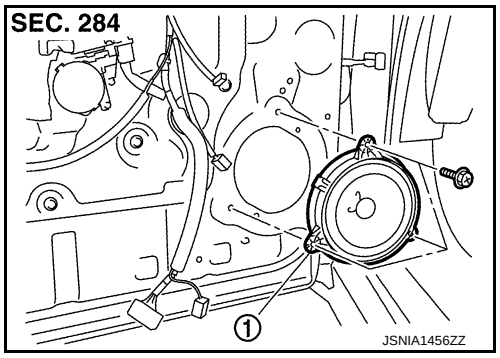
INSTALLATION

Installation is the reverse order of removal.

FRONT DOOR SPEAKER

Exploded View

INFOID:0000000005194971



1. Front door speaker

Removal and Installation

INFOID:0000000005194972

REMOVAL

1. Remove front door finisher. Refer to INT-13, "Exploded View".
2. Remove front door speaker mounting bolts.
3. Disconnect connector and remove front door speaker.

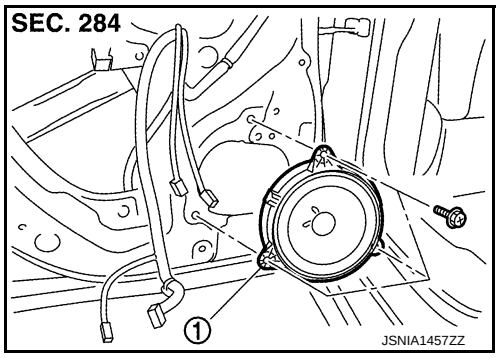
INSTALLATION

Installation is the reverse order of removal.

REAR DOOR SPEAKER

Exploded View

INFOID:0000000005194973



1. Rear door speaker

Removal and Installation

INFOID:0000000005194974

REMOVAL

1. Remove rear door finisher. Refer to INT-16, "Exploded View".
2. Remove rear door speaker mounting bolts.
3. Disconnect connector and remove rear door speaker.

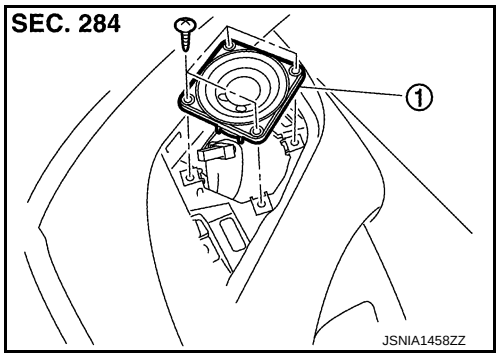
INSTALLATION

Installation is the reverse order of removal.

FRONT SQUAWKER

Exploded View

INFOID:0000000005194975



1. Front squawker

Removal and Installation

INFOID:0000000005194976

REMOVAL

1. Remove speaker grille. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove front squawker mounting screws.
3. Disconnect connector and remove front squawker.

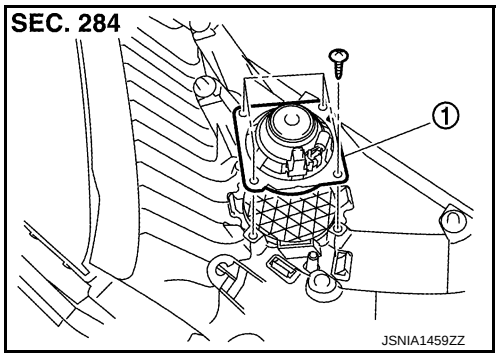
INSTALLATION

Installation is the reverse order of removal.

REAR SQUAWKER

Exploded View

INFOID:0000000005194977



1. Rear squawker

Removal and Installation

INFOID:0000000005194978

REMOVAL

1. Remove luggage side finisher upper. Refer to INT-30, "FOR EUROPE : Exploded View" (except for Russia), INT-34, "FOR RUSSIA : Exploded View" (for Russia) or INT-38, "V9X : Exploded View" (for V9X models).
2. Remove rear squawker mounting screws.
3. Remove rear squawker.

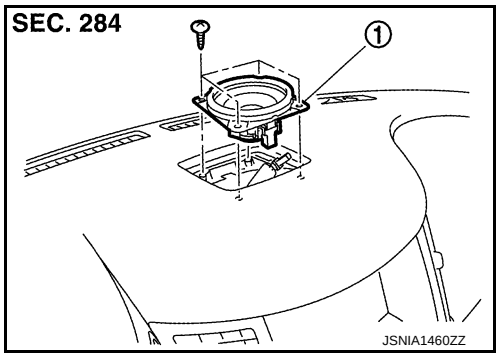
INSTALLATION

Installation is the reverse order of removal.

CENTER SPEAKER

Exploded View

INFOID:0000000005194979



1. Center speaker

Removal and Installation

INFOID:0000000005194980

REMOVAL

1. Remove center speaker grille. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove center speaker mounting screws, lift up the center speaker and disconnect connector.
3. Remove center speaker.

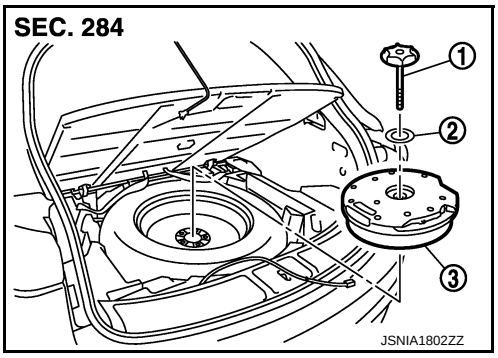
INSTALLATION

Installation is the reverse order of removal.

WOOFER

Exploded View

INFOID:0000000005194981



1. Woofer clamp
2. Spacer
3. Woofer

Removal and Installation

INFOID:0000000005194982

REMOVAL

1. Pull up luggage finisher center and hang the strap to upper body.
2. Remove woofer clamp.
3. Remove harness clip and connector.
4. Remove woofer.

INSTALLATION

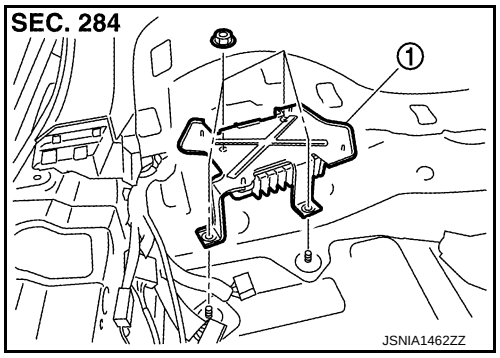
Installation is the reverse order of removal.

BOSE AMP.

Exploded View

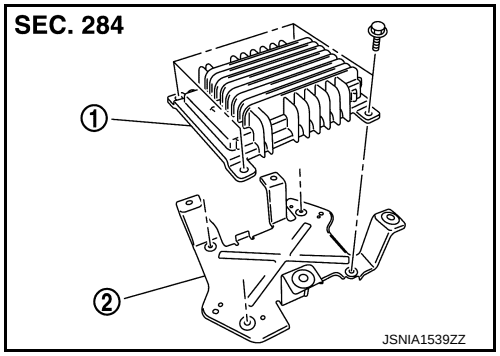
INFOID:0000000005194983

REMOVAL



1. BOSE amp.

DISASSEMBLY



1. BOSE amp.
2. Bracket

Removal and Installation

INFOID:0000000005194984

REMOVAL

1. Remove TEL adapter unit. Refer to AV-288, "Exploded View".
2. Remove BOSE amp. mounting nuts.
3. Disconnect connector and remove BOSE amp.

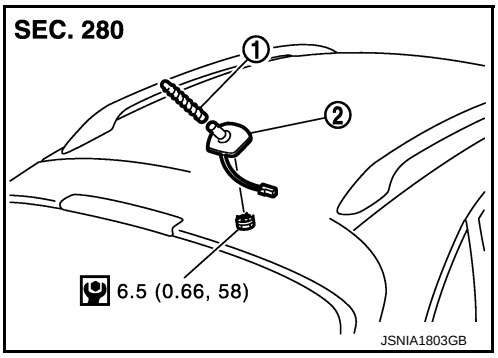
INSTALLATION

Installation is the reverse order of removal.

ANTENNA BASE

Exploded View

INFOID:0000000005194985



1. Antenna rod
2. Antenna base

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000005194986

REMOVAL

1. Remove headlining (rear). Keep a service area. Refer to INT-25, "Exploded View".
2. Remove antenna base mounting nut.
3. Disconnect connector and remove antenna base.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

Be careful about tightening torque. Antenna sensitivity becomes poor, and when it is excessive, roof panel may be deformed, when antenna base mounting nut tightening torque is loose.

MULTIFUNCTION SWITCH

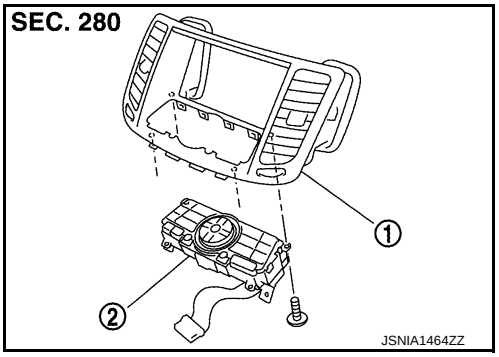
Exploded View

INFOID:0000000005194987

REMOVAL

Refer to IP-14, "A/T MODELS : Exploded View".

DISASSEMBLY



1. Cluster lid D
2. Multifunction switch

Removal and Installation

INFOID:0000000005194988

REMOVAL

1. Remove cluster lid D. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove multifunction switch mounting screws.
3. Disconnect connector and remove multifunction switch.

INSTALLATION

Installation is the reverse order of removal.

PRESET SWITCH

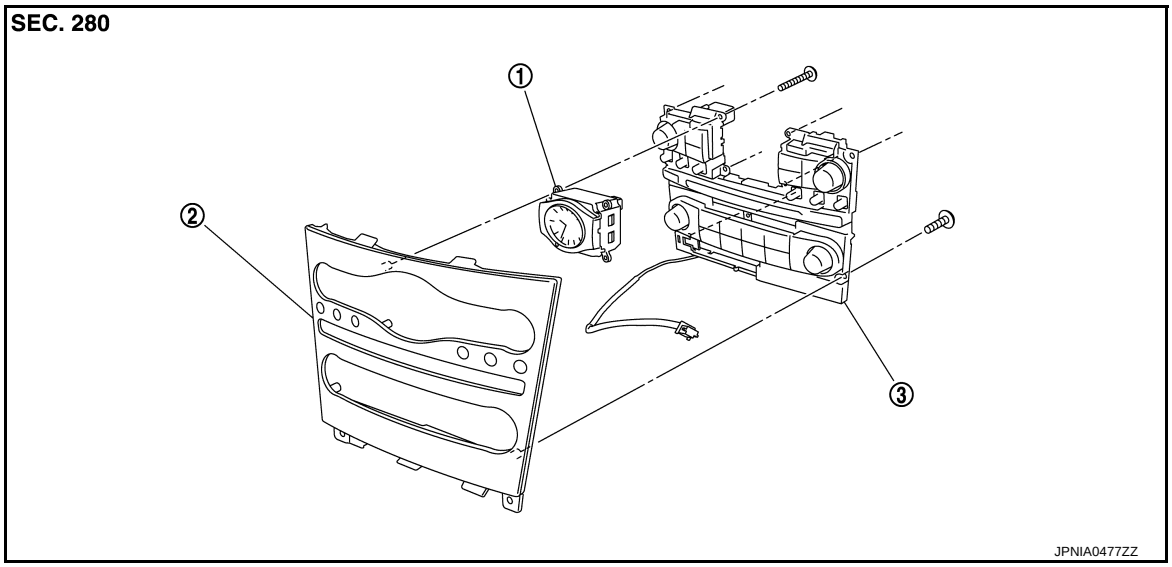
Exploded View

INFOID:0000000005194989

REMOVAL

Refer to IP-14, "A/T MODELS : Exploded View".

DISASSEMBLY



1. Clock
2. Cluster lid C
3. Preset switch

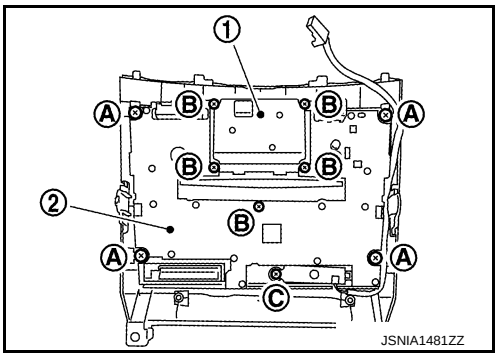
Removal and Installation

INFOID:0000000005194990

REMOVAL

1. Remove cluster lid C. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove preset switch mounting screws (A), (B) and (C).
3. Disconnect connector and remove preset switch.

1. Clock
2. Preset switch



INSTALLATION

Installation is the reverse order of removal.

NOTE:

When installing preset switch, do not allow the print wire that connects preset switch and multifunction switch to get caught in between audio unit and preset switch.

STEERING SWITCH

Exploded View

INFOID:0000000005369401

Refer to SR-16, "Exploded View".

Removal and Installation

INFOID:0000000005369402

REMOVAL

Refer to SR-16, "Removal and Installation".

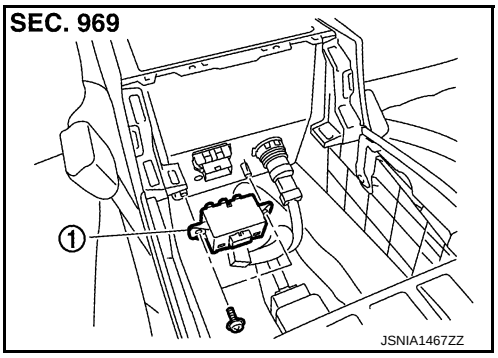
INSTALLATION

Install in the reverse order of removal.

AUXILIARY INPUT JACKS

Exploded View

INFOID:0000000005194991



1. Auxiliary input jacks

Removal and Installation

INFOID:0000000005194992

REMOVAL

1. Remove console box assembly. Refer to IP-37, "A/T MODELS : Exploded View".
2. Remove auxiliary mounting screws.
3. Disconnect connector and remove auxiliary input jacks.

INSTALLATION

Installation is the reverse order of removal.

USB CONNECTOR

Removal and Installation

INFOID:0000000005198493

REMOVAL

1. Remove console box assembly. Refer to IP-37, "A/T MODELS : Exploded View".
2. Press the pawl from the back of console box assembly to remove USB connector.

INSTALLATION

Install in the reverse order of removal.

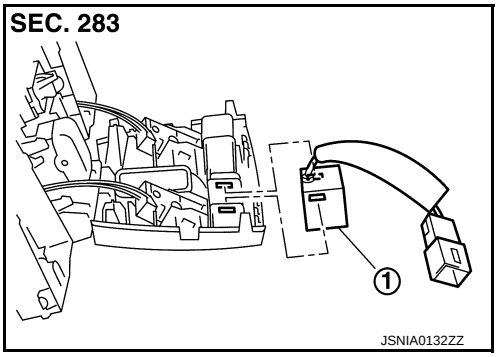
MICROPHONE

Exploded View

INFOID:0000000005194993

REMOVAL
Refer to INT-25, "Exploded View".

DISASSEMBLY



1. Microphone

Removal and Installation

INFOID:0000000005194994

REMOVAL

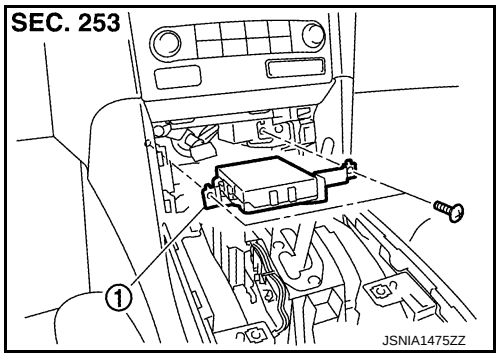
1. Remove map lamp assembly. Refer to INT-25, "Exploded View".
2. Remove microphone, stretching pawls of map lamp assembly.

INSTALLATION
Installation is the reverse order of removal.

SONAR CONTROL UNIT

Exploded View

INFOID:0000000005195008



1. Sonar control unit

Removal and Installation

INFOID:0000000005195009

REMOVAL

1. Remove AV control unit. Refer to AV-268, "Exploded View".
2. Remove screws and connector, and then sonar control unit.

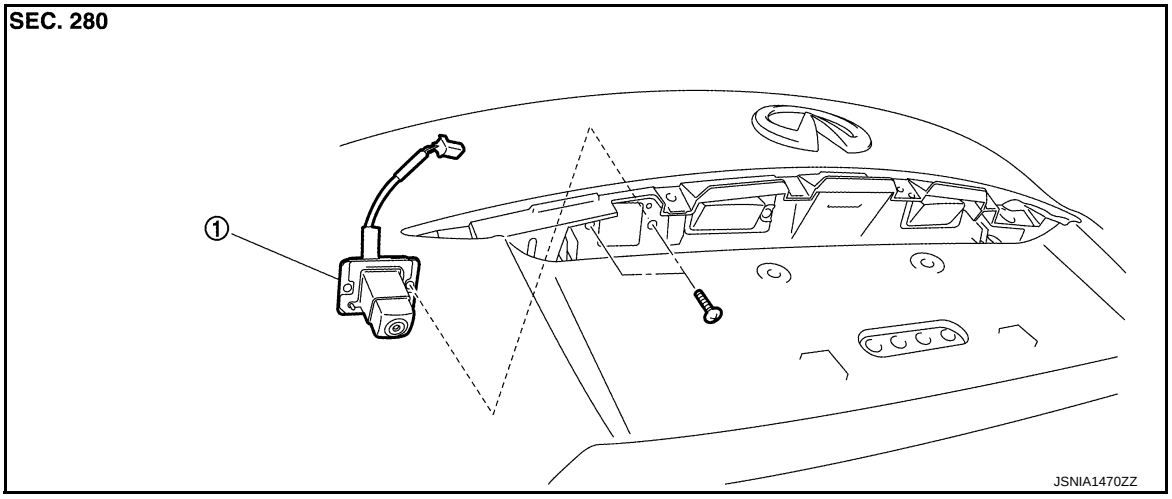
INSTALLATION

Install in the reverse order of removal.

REAR VIEW CAMERA

Exploded View

INFOID:0000000005195016



1. Rear view camera

Removal and Installation

INFOID:0000000005195017

REMOVAL

1. Remove door handle cover. Refer to EXT-52, "Exploded View".
2. Remove rear view camera mounting screws and rear view camera harness connector.
3. Remove rear view camera.

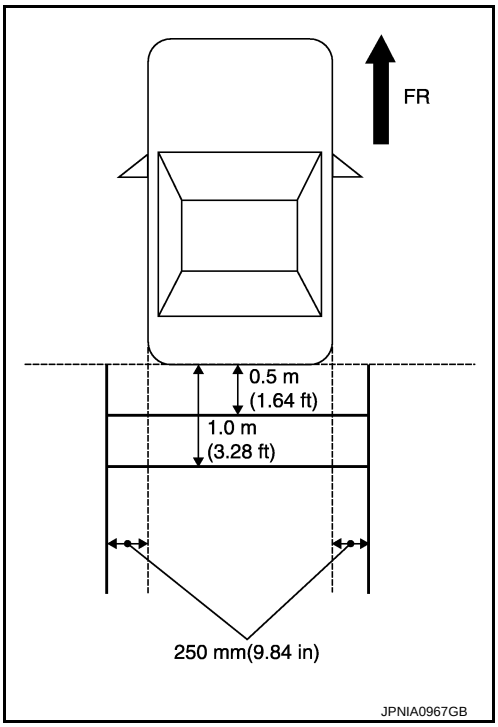
INSTALLATION

1. Installation is the reverse order of removal.
2. Adjust the guide line position if the guide line position is shifted after installing the rear view camera. Refer to AV-286, "Adjustment".

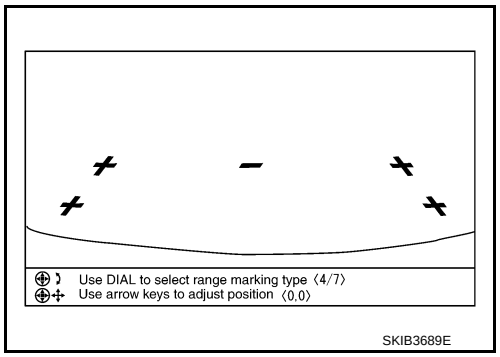
Adjustment

INFOID:0000000005195018

1. Draw lines on rearward area of the vehicle passing through the following points: 250 mm (9.84 in) from both sides of the vehicle, and 0.5 m (1.64 ft), 1.0 m (3.28 ft) from the rear end of the bumper.
2. Set into “Adjust Guide Lines” mode of Confirmation/Adjustment mode.



3. Rotate the center dial, and then select the guiding line pattern so that its angle is aligned with the correction line of the rear of the vehicle.



Selected pattern : 7

4. Fine adjust the guiding line so that its position is aligned to the correction line by pressing the up/down/left/right switches. Pressing “ENTER” enable the camera control unit to memory the adjusted guiding line position.

Up/Down adjustment range : –20 – 20

Left/Right adjustment range : –20 – 20

CAUTION:

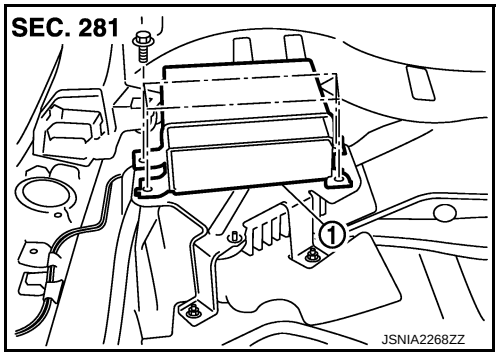
Never operate other function such as pressing BACK while writing index data.

TEL ADAPTER UNIT

Exploded View

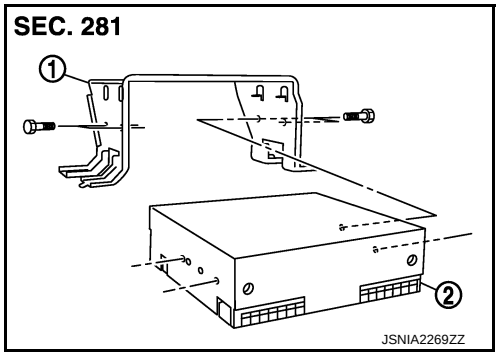
INFOID:0000000005195043

REMOVAL



1. TEL adapter unit

DISASSEMBLY



1. Bracket
2. TEL adapter unit

Removal and Installation

INFOID:0000000005195044

REMOVAL

1. Remove luggage floor spacer (LH). Refer to INT-30, "FOR EUROPE : Exploded View" (except for Russia), INT-34, "FOR RUSSIA : Exploded View" (for Russia) or INT-38, "V9X : Exploded View" (for V9X models).
2. Remove TEL adapter unit screws, disconnect TEL adapter unit connector and remove the TEL adapter unit.

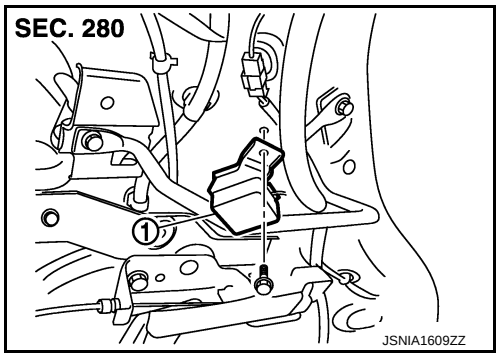
INSTALLATION

Install in the reverse order of removal.

TEL ANTENNA

Exploded View

INFOID:0000000005198650



1. TEL antenna

Removal and Installation

INFOID:0000000005198651

REMOVAL

1. Remove luggage side finisher upper (RH). Refer to INT-30, "FOR EUROPE : Exploded View" (except for Russia), INT-34, "FOR RUSSIA : Exploded View" (for Russia) or INT-38, "V9X : Exploded View" (for V9X models).
2. Remove luggage floor spacer (LH). Refer to INT-30, "FOR EUROPE : Exploded View" (except for Russia), INT-34, "FOR RUSSIA : Exploded View" (for Russia) or INT-38, "V9X : Exploded View" (for V9X models).
3. Remove TEL antenna from vehicle.

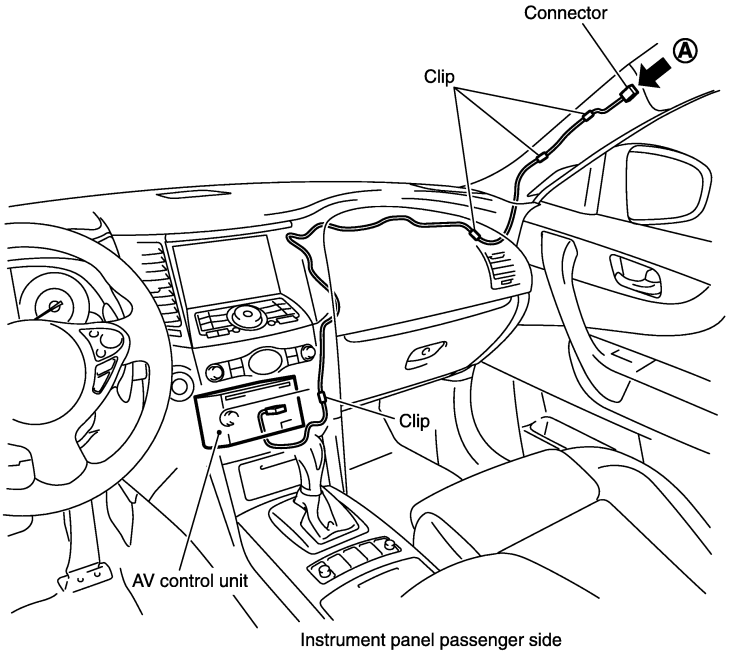
INSTALLATION

Install in the reverse order of removal.

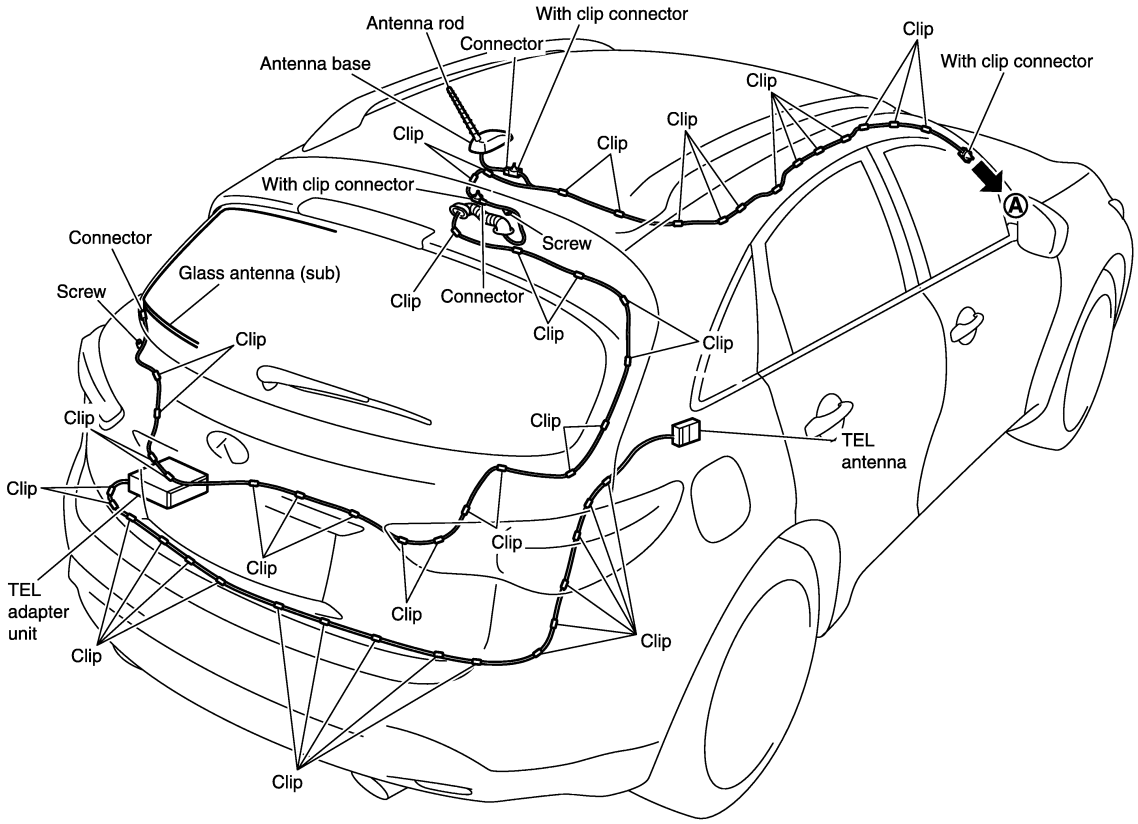
Feeder Layout

INFOID:0000000005198653

SEC. 280



Instrument panel passenger side



Rear view of vehicle

JSNIA2262GB

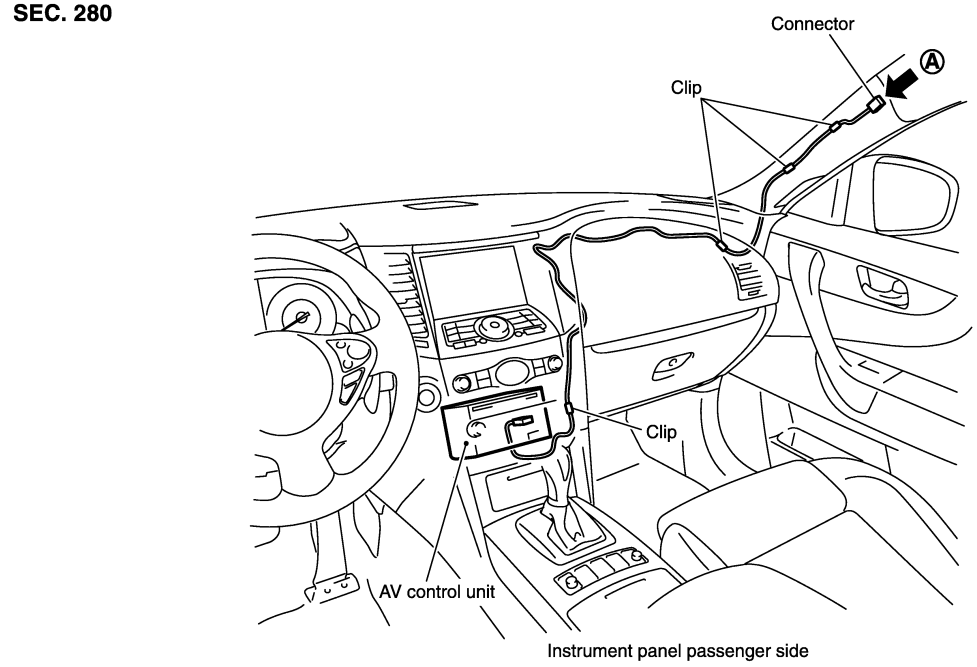
ANTENNA FEEDER

LHD MODELS

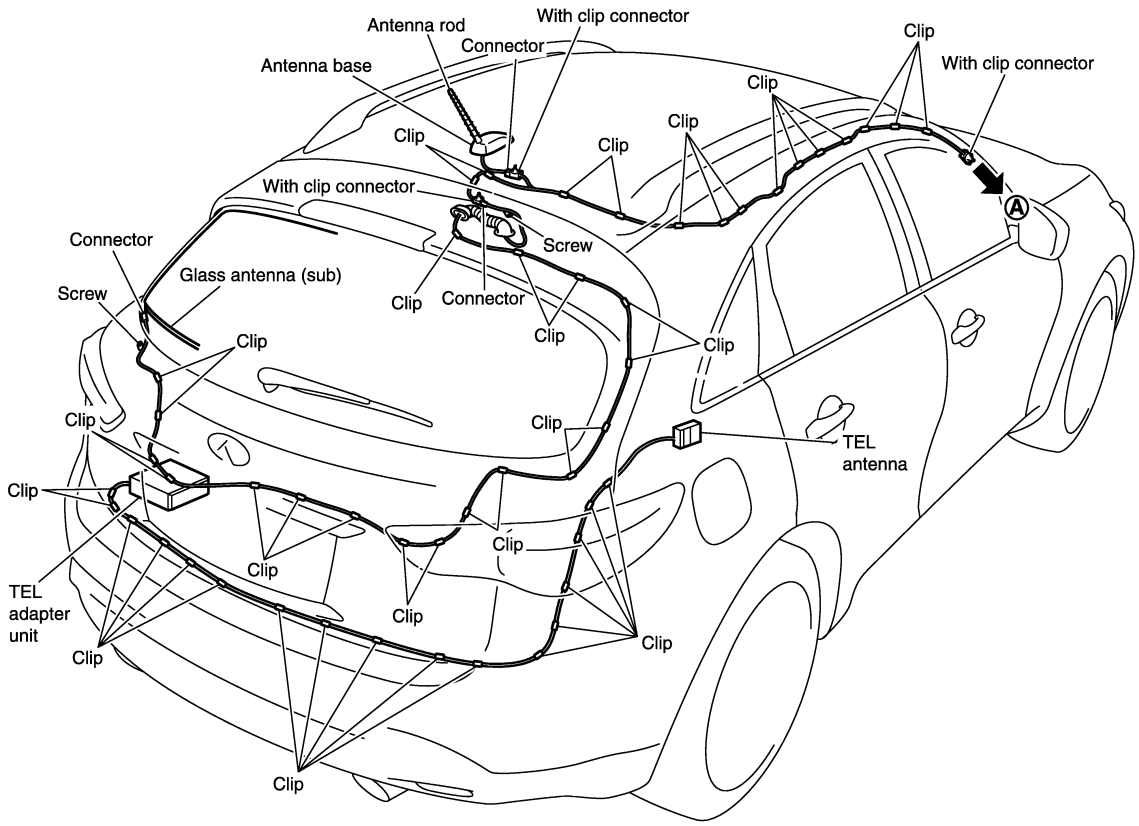
LHD MODELS : Feeder Layout

INFOID:0000000005197170

SEC. 280



Instrument panel passenger side



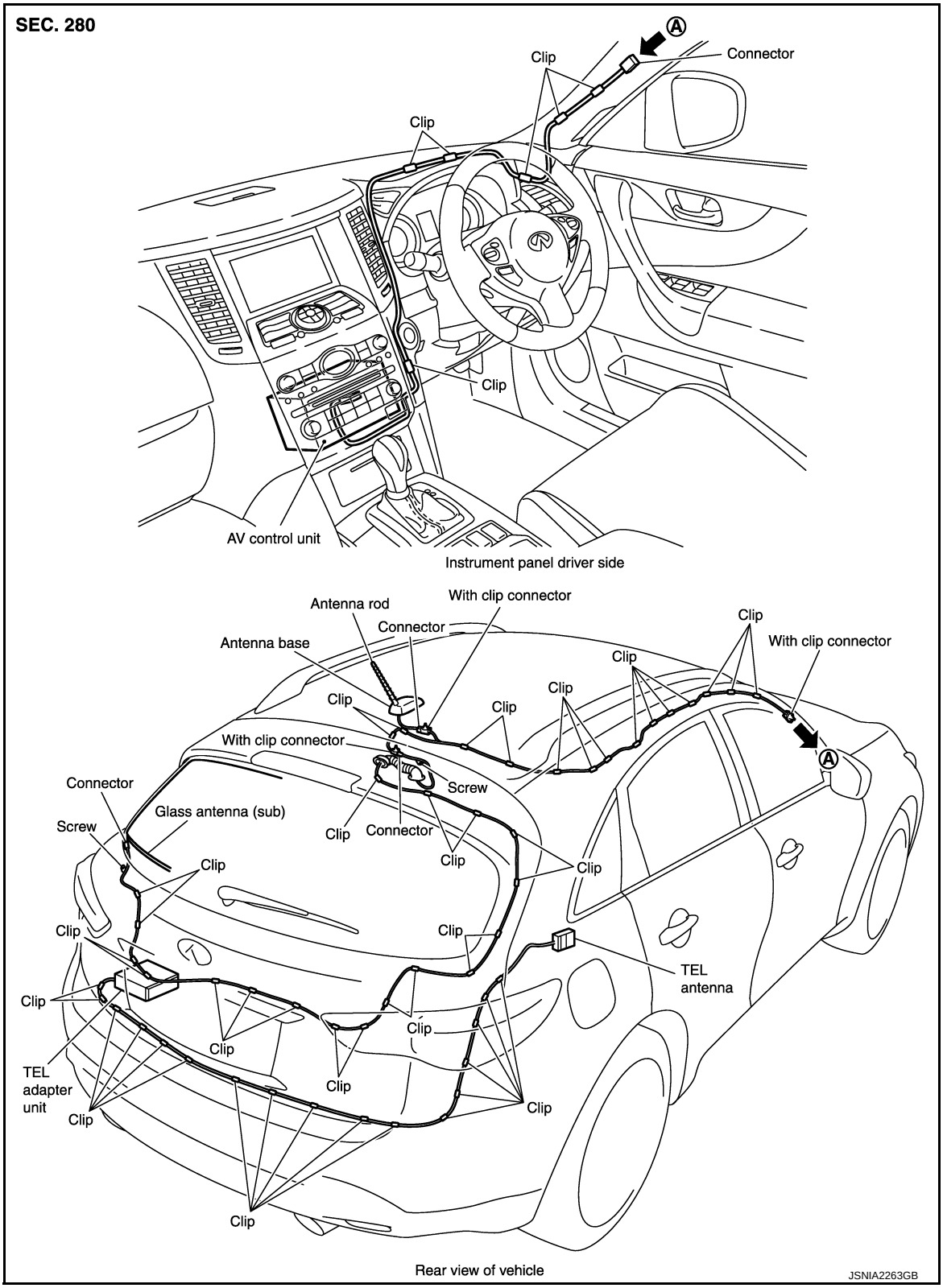
Rear view of vehicle

JSNIA2262GB

RHD MODELS

RHD MODELS : Feeder Layout

INFOID:0000000005197172



HOW TO USE THIS MANUAL

APPLICATION NOTICE

Information

INFOID:0000000005193973

In this manual, “SONAR” means “PARKING SENSOR”.

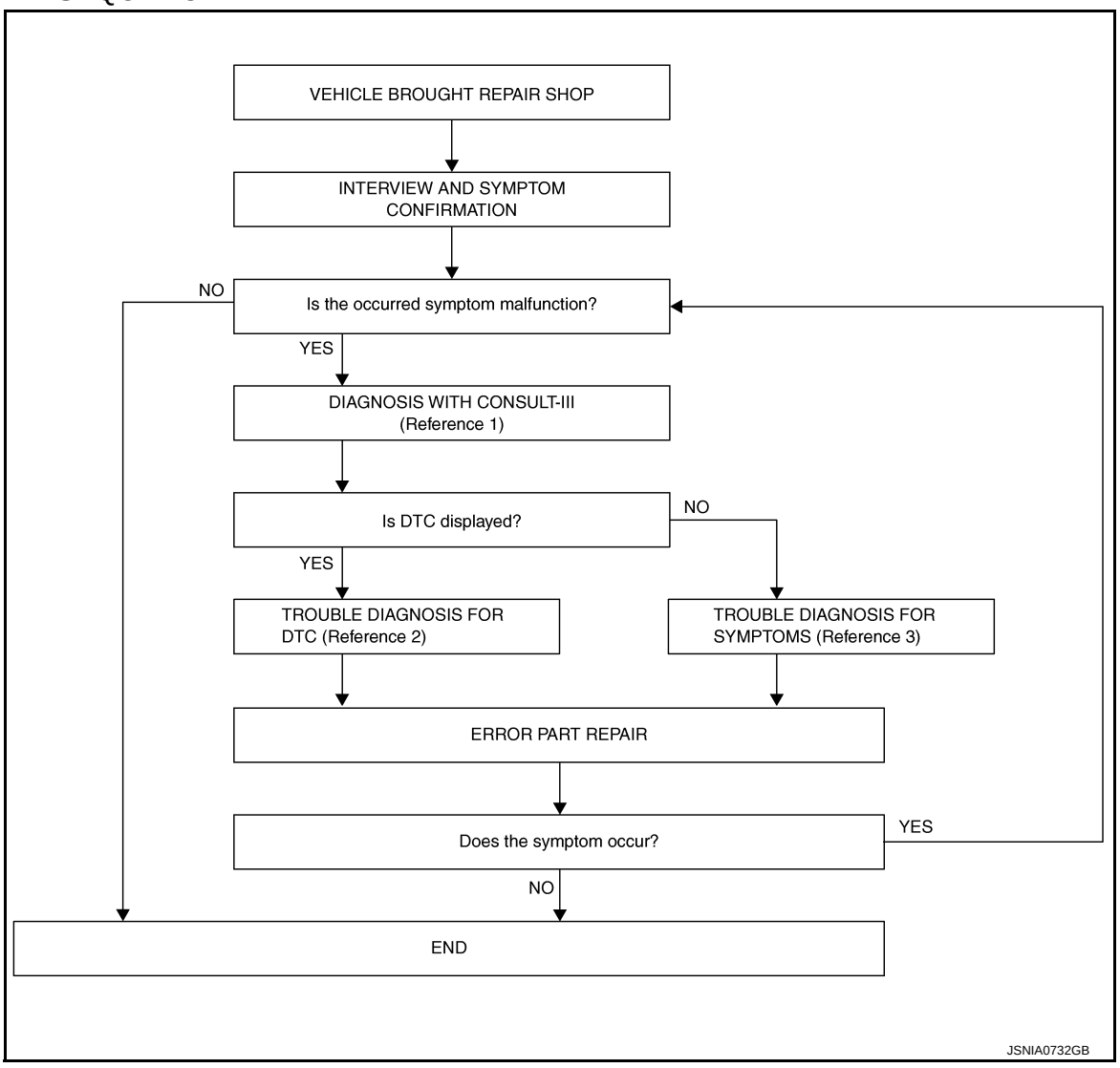
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow (Multi AV)

INFOID:0000000005193974

OVERALL SEQUENCE



- Reference 1··· Refer to AV-334, "CONSULT - III Function (MULTI AV)".
- Reference 2··· Refer to AV-426, "DTC Index".
- Reference 3··· Refer to AV-481, "Symptom Table".

DETAILED FLOW

1. INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.
NO >> INSPECTION END

2. DIAGNOSIS WITH CONSULT-III

1. Connect CONSULT-III and perform a self-diagnosis for “MULTI AV”. Refer to AV-334, "CONSULT - III Function (MULTI AV)".
   NOTE:
   Skip to step 4 of the diagnosis procedure if “MULTI AV” is not displayed.
2. Check if any DTC is displayed in the self-diagnosis results.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-426, "DTC Index".

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-481, "Symptom Table".

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “MULTI AV” with CONSULT-III.
   NOTE:
   Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

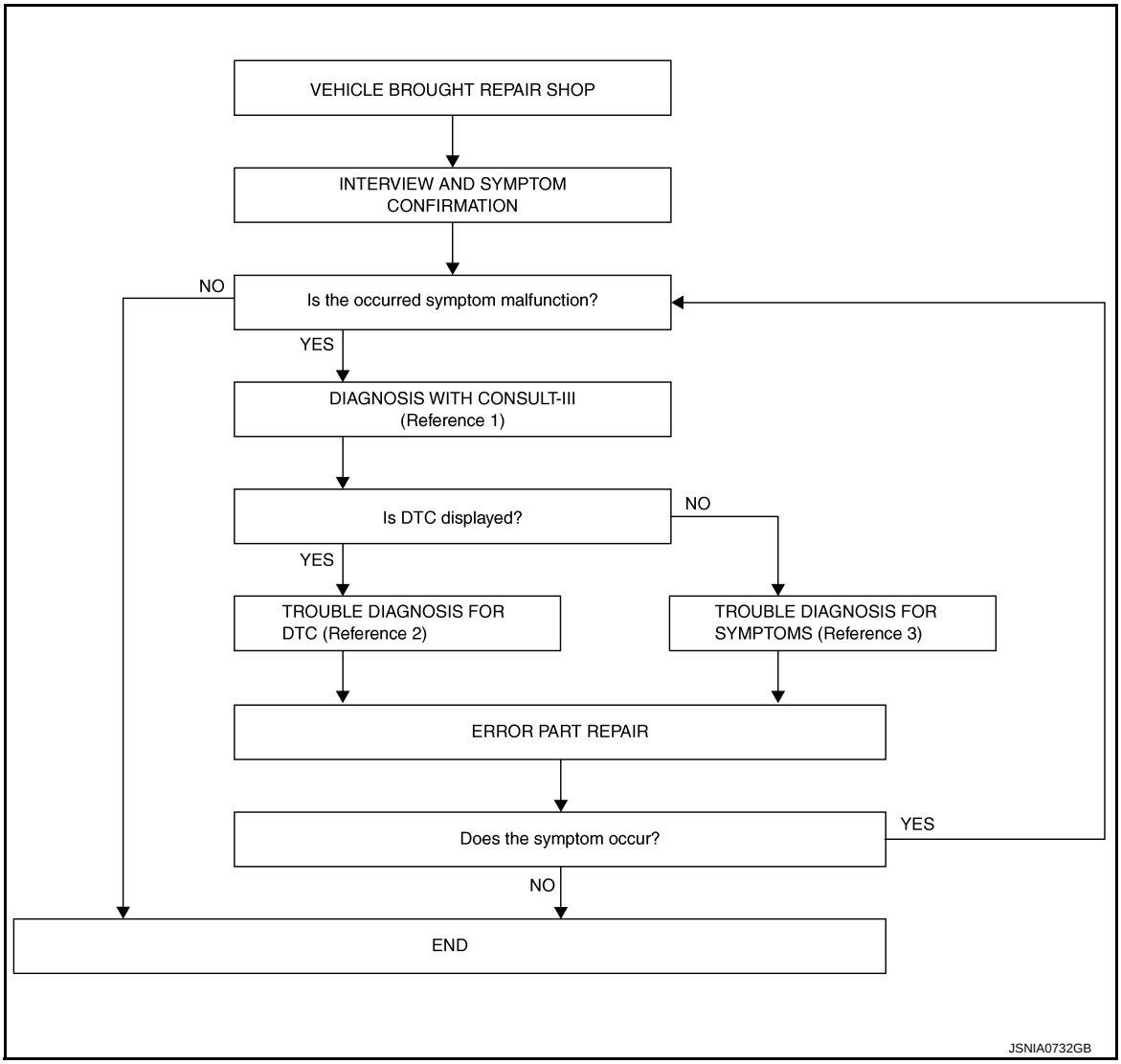
Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

Work Flow (Camera Assistance Sonar)

INFOID:0000000005216736

OVERALL SEQUENCE



- Reference 1··· Refer to AV-341, "CONSULT-III Function (SONAR)".
- Reference 2··· Refer to AV-437, "DTC Index".
- Reference 3··· Refer to AV-481, "Symptom Table".

DETAILED FLOW

1. INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.
NO >> INSPECTION END

2. DIAGNOSIS WITH CONSULT-III

1. Connect CONSULT-III and perform a self-diagnosis for “SONAR”. Refer to AV-341, "CONSULT-III Function (SONAR)".
   NOTE:
   Skip to step 4 of the diagnosis procedure if “SONAR” is not displayed.

2. Check if any DTC is displayed in the self-diagnosis results.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-437, "DTC Index".

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-481, "Symptom Table".

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “SONAR” with CONSULT-III.
   NOTE:
   Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000005193977

BEFORE REPLACEMENT

When replacing AV control unit, save or print current vehicle specification with CONSULT-III configuration before replacement.

AFTER REPLACEMENT

CAUTION:

When replacing AV control unit, you must perform “WRITE CONFIGURATION” with CONSULT-III.

- **Complete the procedure of “WRITE CONFIGURATION” in order.**
- **If you set incorrect “WRITE CONFIGURATION”, incidents might occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000005193978

1.SAVING VEHICLE SPECIFICATION

-CONSULT-III Configuration

Perform “READ CONFIGURATION” to save or print current vehicle specification. Refer to AV-298, "CONFIGURATION (AV CONTROL UNIT) : Description".

NOTE:

If “READ CONFIGURATION” can not be used, use the “WRITE CONFIGURATION - Manual selection”.

>> GO TO 2.

2.REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to AV-496, "Exploded View".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

-CONSULT-III Configuration

Perform “WRITE CONFIGURATION - Config file” or “WRITE CONFIGURATION - Manual selection” to write vehicle specification. Refer to AV-299, "CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement".

>> GO TO 4.

4.OPERATION CHECK

Check that the operation of the AV control unit and camera images (fixed guide lines and predictive course lines) are normal.

>> WORK END

CONFIGURATION (AV CONTROL UNIT)

CONFIGURATION (AV CONTROL UNIT) : Description

INFOID:0000000005193979

- Since vehicle specifications are not included in the AV control unit after replacement, it is required to write vehicle specifications with CONSULT-III.
- Configuration has three functions as follows.

Function	Description
READ CONFIGURATION	• Reads the vehicle configuration of current AV control unit. • Saves the read vehicle configuration.
WRITE CONFIGURATION-Manual selection	Writes the vehicle configuration with manual selection.
WRITE CONFIGURATION-Config file	Writes the vehicle configuration with saved data.

CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement

INFOID:0000000005193980

NOTE:
If “WRITE CONFIGURATION” is unsuccessful, perform “Accessory Number Initialization”. For details, refer to AV-322, "Diagnosis Description".
After performing “Accessory Number Initialization”, reboot the AV control unit to perform “WRITE CONFIGURATION”.

1. WRITING MODE SELECTION

CONSULT-III Configuration
Select “CONFIGURATION” of “MULTI AV”.

When writing saved data>>GO TO 2.
When writing manually>>GO TO 3.

2. PERFORM “WRITE CONFIGURATION-CONFIG FILE”

CONSULT-III Configuration
Perform “WRITE CONFIGURATION-Config file”.

>> WORK END

3. PERFORM “WRITE CONFIGURATION-MANUAL SELECTION”

CONSULT-III Configuration
Select “WRITE CONFIGURATION-Manual selection” to write vehicle specifications into the AV control unit. For data to write, refer to AV-299, "CONFIGURATION (AV CONTROL UNIT) : Configuration List".

>> GO TO 4.

4. OPERATION CHECK

Check that the operation of the AV control unit and camera images (fixed guide lines and predictive course lines) are normal.

>> WORK END

CONFIGURATION (AV CONTROL UNIT) : Configuration List

INFOID:0000000005193981

CAUTION:
Check vehicle specifications before servicing.

MANUAL SETTING ITEM	
Items	Setting value
STEERING	LHD
	RHD
CAMERA SYSTEM	NONE/AVM
	REAR CAMERA
	REAR+SIDE
SOUND SYSTEM	BASE
	BOSE

NOTE:
AVM: Around view monitor

PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT

PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Description

INFOID:0000000005193982

Adjust the center position of the predictive course line of the rear view monitor if it is shifted.

PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Special Repair Requirement

INFOID:0000000005193983

1. DRIVING

Drive the vehicle straight ahead 100 m (328.1 ft) or more at a speed of 30 km/h (18.6 MPH) or more.

>> END

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Description

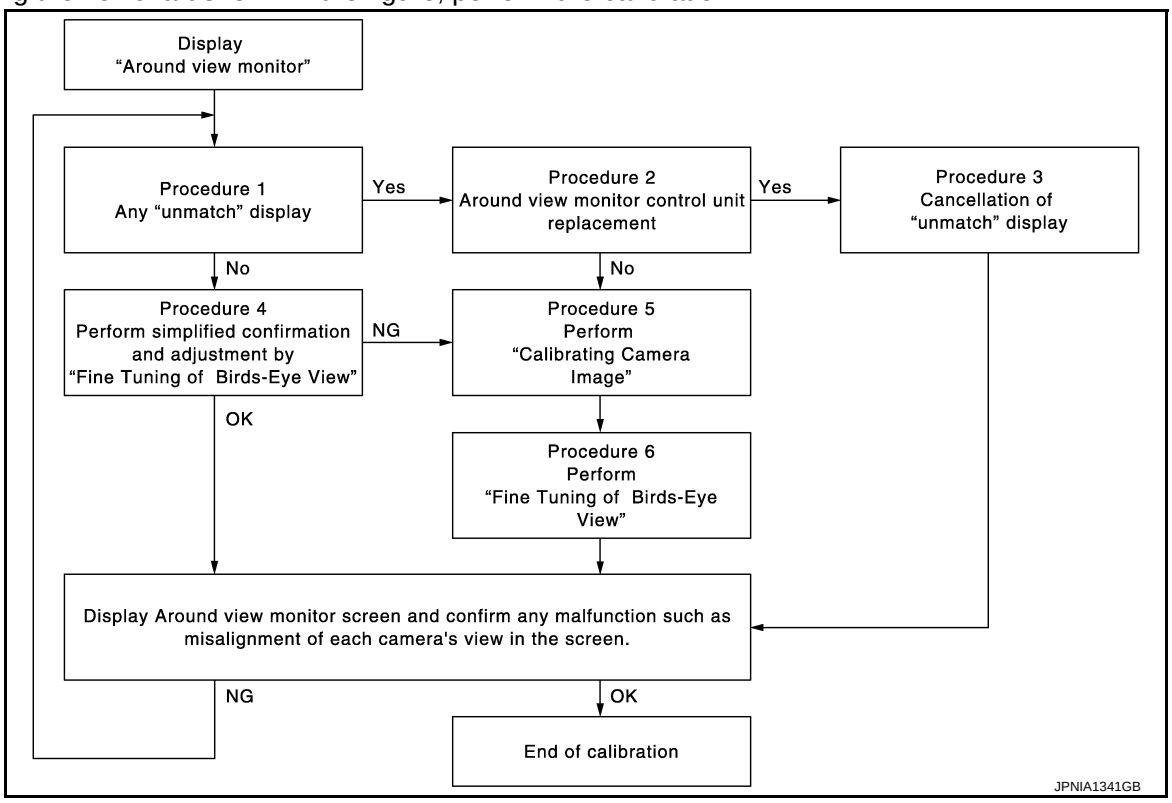
INFOID:0000000005402863

- Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.
- Align the white lines on the road near the vehicle at the boundary of each camera image by this camera calibration. The white lines far from the vehicle may not be aligned at the boundary of each camera image. The farther the line, the greater the difference is.

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement

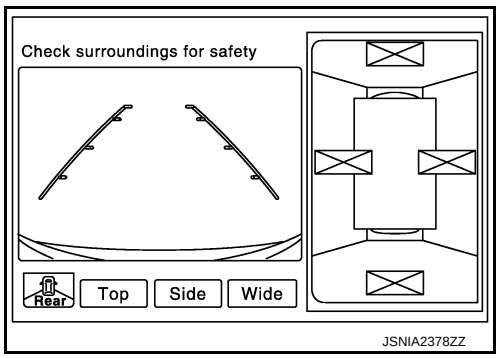
INFOID:0000000005402864

Calibration flowchart
Following the flowchart shown in the figure, perform the calibration.



NOTE:

In the un-match display, the un-match camera position is indicated as "⊠" on the birds-eye view.



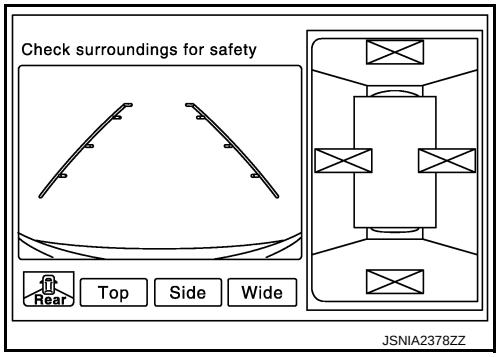
Calibration procedure

1. AROUND VIEW MONITOR SCREEN CONFIRMATION

Check that there is the un-match display in any camera.

Is the un-match display visible?

YES >> GO TO 2.
NO >> GO TO 4.



2. CHECK THAT AROUND VIEW MONITOR CONTROL UNIT IS REPLACED

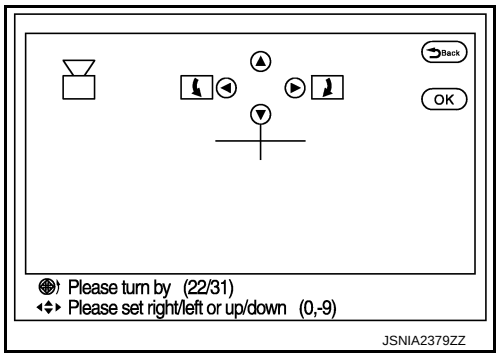
Check that the around view monitor control unit is replaced.

Is the around view monitor control unit replaced?

YES >> GO TO 3.
NO >> GO TO 5.

3. RELEASE UN-MATCH DISPLAY (PERFORM ONLY WHEN THE AROUND VIEW MONITOR CONTROL UNIT IS REPLACED)

1. Select "Camera Cont." of Confirmation/ Adjustment mode, and then set to "Calibrating Camera Image" mode.
2. Press the "ENTER" switch of the multifunction switch on each screen of "Rear Camera", "Front Camera", "Dr-Side Camera", "Pass-Side Camera".
   CAUTION:
   - **Do never operate the center dial and up/down/left/right switches. Only press the "ENTER" switch.**
   - **Never perform "Initialize Camera Image Calibration".**
3. Display the around view monitor screen, and check that there is no malfunction such as a difference between each camera image.



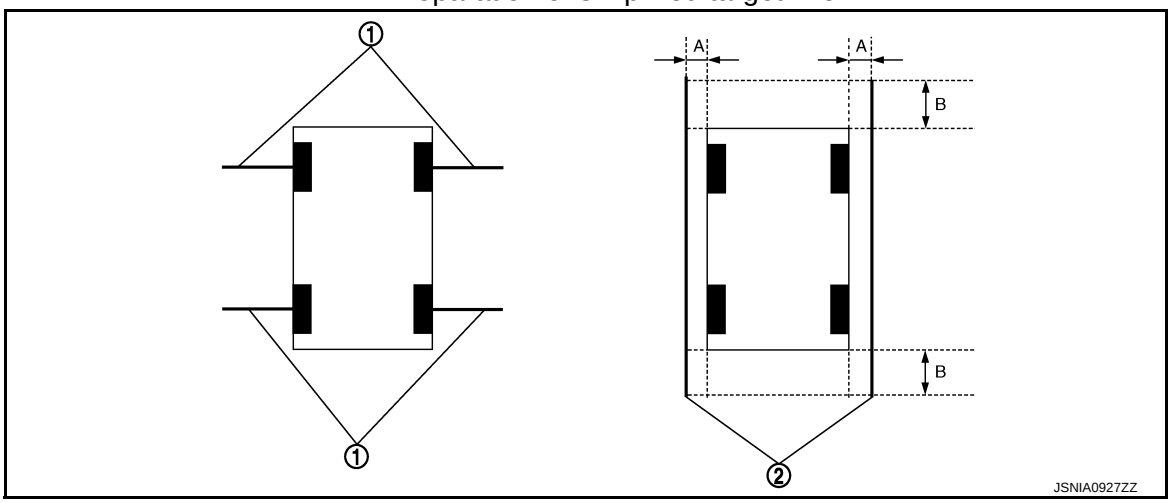
Is there a malfunction?

YES >> Calibration end
NO >> GO TO 1.

4. PERFORM SIMPLIFIED CONFIRMATION/ADJUSTMENT BY "FINE TUNING OF BIRDS-EYE VIEW"

1. Put target line 1 on the ground beside each axle using packing tape, etc.
2. Put target lines 2 equal to the vehicle total length + approximately 1.0 m (39.3 in) from the vehicle side (right and left) at approximately 30 cm (11.8 in) away from the vehicle (make the line as parallel with the vehicle as possible)

Preparation of simplified target line



1. Target lines 1
2. Target lines 2
A. Approx. 30 cm (11.8 in)
B. Approx. 1.0 m (39.3 in)

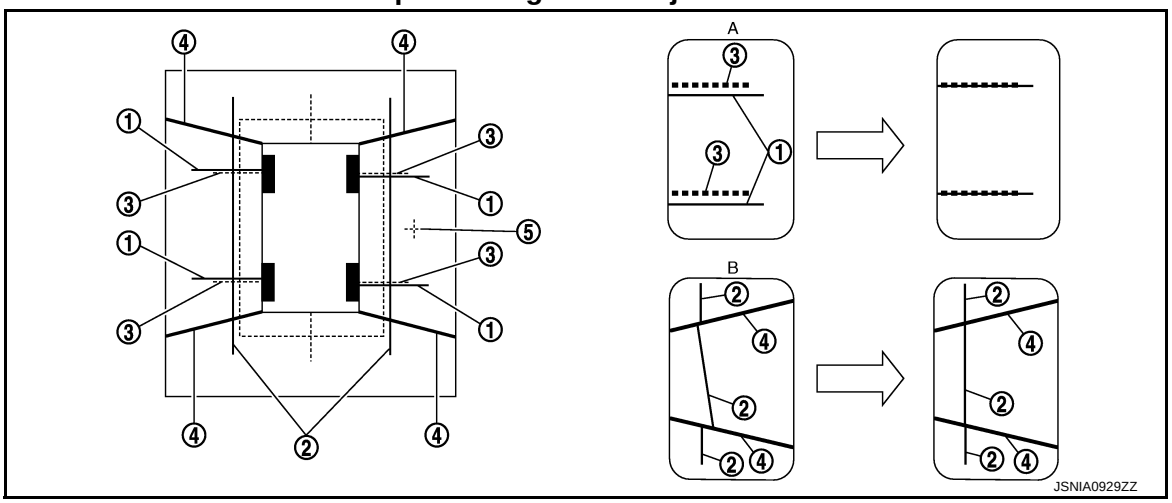
3. Select “Camera Cont.” of Confirmation/ Adjustment mode, and then set to “Fine Tuning of Birds-Eye View” mode.
4. Select left and right cameras by pressing the “CAMERA” switch, and perform the following confirmation.

- Check that target line 1 is aligned with the marker on the screen. Overlap the line aligned to the marker with the upper/lower switches if necessary.
- Check if there is a difference between target lines 2 between cameras. Adjust target lines 2 to be straight lines by operating the center dial and left/right switches if necessary.

CAUTION:

- **Never adjust the front camera and rear camera. Only adjust the right and left cameras.**
- **Operate the center dial slowly because the changing of the screen takes approximately 1 second.**

Simplified target line adjustment method



1. Target lines 1
2. Target lines 2
3. Marker for target line 1
4. Boundary between cameras
5. Crosshairs cursor (mark indicated the selected camera)
A. Adjustment method for target lines 1 (right)
B. Adjustment method for target lines 2 (right)

5. Adjust left and right cameras. Check that the difference between target line 1 and the marker on the screen, and between target lines 2 is solved.

NOTE:

- It can be initialized to the NISSAN factory default condition with “Initialize Camera Image Calibration” of “Calibrating Camera Image”.

- The adjustment value is cancelled on this mode by performing “Initialize Camera Image Calibration”.

Is the difference corrected?

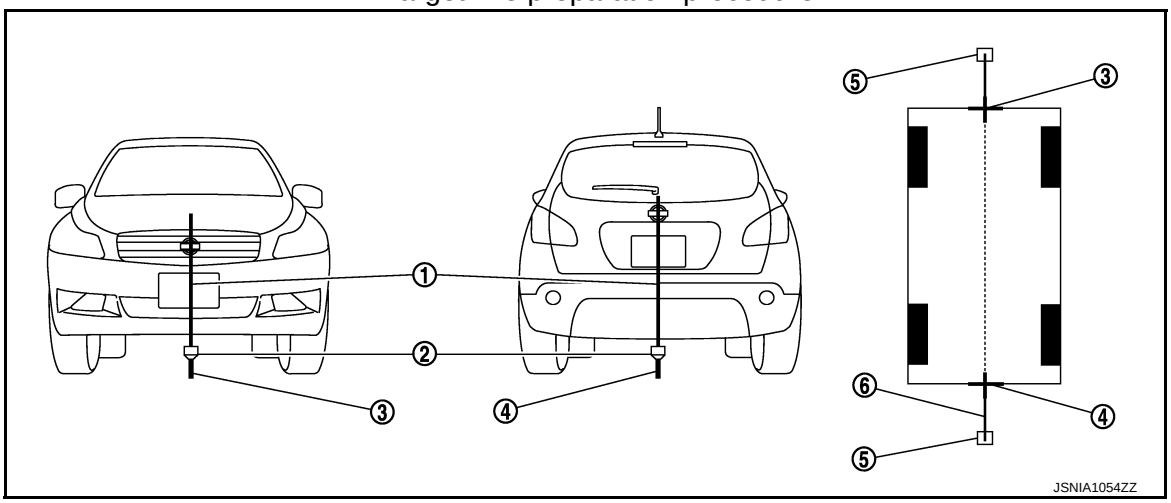
YES >> Finish the writing to around view monitor control unit by pressing “ENTER” switch.
NO >> GO TO 5.

5. PERFORM “CALIBRATING CAMERA IMAGE”

Preparation of target line

1. Hang a string with a weight as shown in the figure. Put the points FM0, RM0 (mark) on the ground at the center of the vehicle front end and rear end with white packing tape or a pen.
2. Route the vinyl string under the vehicle, and then pull and fix it on the point approximately 1.0 m (39.9 in) to the front and rear of the vehicle through the points FM0 and RM0 using packing tape.

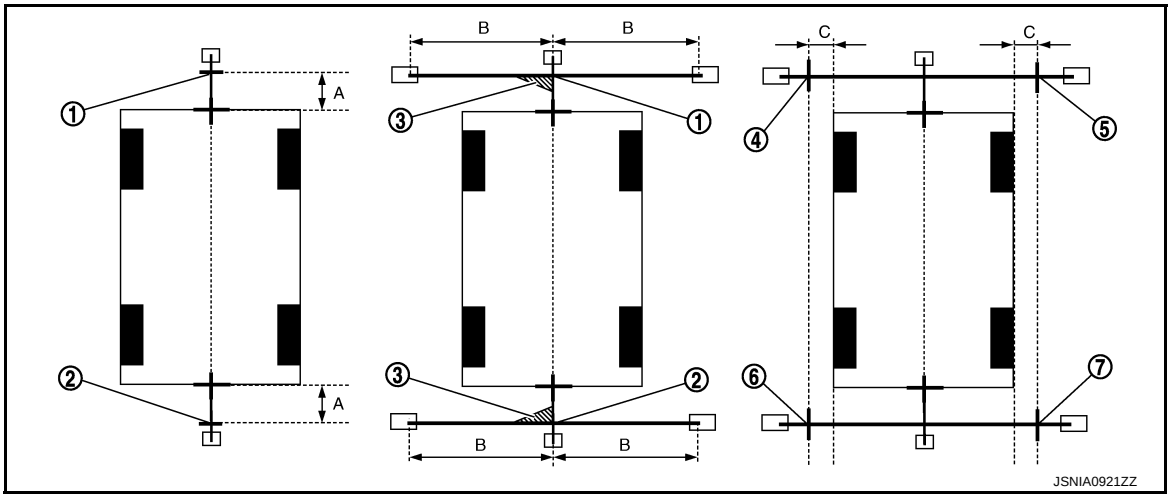
Target line preparation procedure 1



1. Thread
2. Weight
3. Point FM0 (mark)
4. Point RM0 (mark)
5. Packing tape (to fix the vinyl string)
6. Vinyl string

3. Put the points FM and RM (mark) 75 cm (29.5 in) from the points FM0 and RM0 individually.
4. Route the vinyl string through the points FM and RM using a triangle scale, and then fix it at approximately 1.5 m (59 in) on both sides with packing tape.
5. Put the points FL, FR, RL, and RR (mark) to both right and left [vehicle width / 2 + 30 cm (11.8 in)] from the points FM and RM.

Target line preparation procedure 2



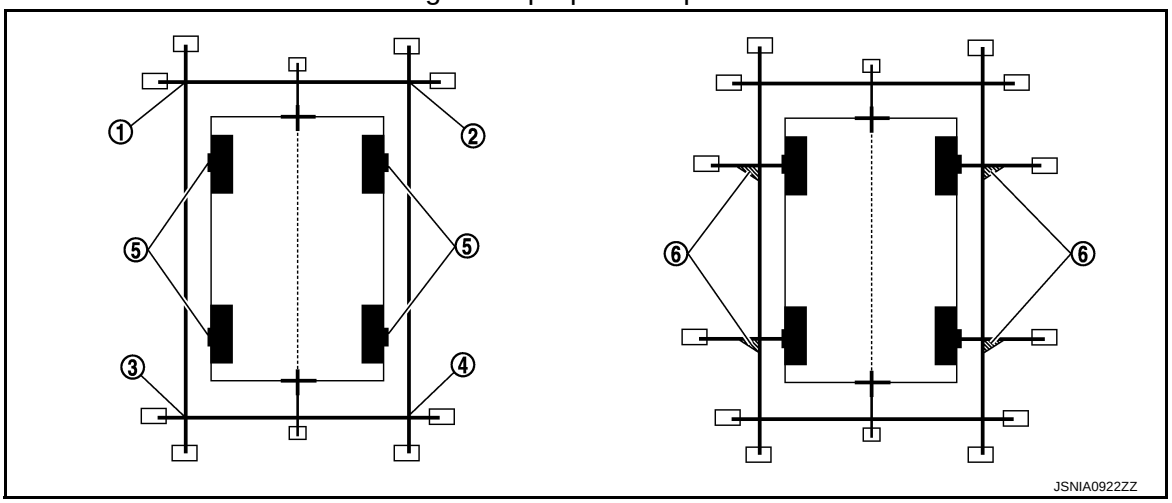
1. Point FM
2. Point RM
3. Triangle scale
4. Point FL (mark)
5. Point FR (mark)
6. Point RL (mark)

7. Point RR (mark)

A. 75 cm (29.5 in) B. Approx. 1.5 m (59 in) C. 30 cm (11.8 in) [Vehicle width/ 2 + 30 cm (11.8 in) from the points FM and RM]

6. Draw the lines of the points FL – RL and FR – RR with vinyl string, and fix it with packing tape.
7. Put a mark on the center of each axle, draw vertical lines to the lines of the points FL – RL and FR – RR from the marks on the center of the axle using a triangle scale, and then fix the lines using packing tape.

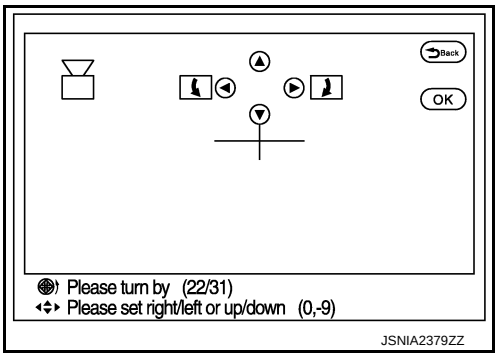
Target line preparation procedure 3



1. Point FL 2. Point FR 3. Point RL
4. Point RR 5. Center position of axle 6. Triangle scale

Perform “Calibrating Camera Image”

1. Select “Camera Cont.” of “Confirmation/ Adjustment” mode, and then set to “Calibrating Camera Image” mode.
2. Overlap the target lines drawn on the ground with the calibration marker on the screen by operating the center dial and upper/ lower/left/right switches of multifunction switch on each screen of “Rear Camera”, “Pass-Side Camera”, “Front Camera”, “Dr-Side Camera”.



Adjustment range	
Rotation direction (Center dial)	: 31 patterns (16 on the center)
Upper/lower direction (upper/lower switch)	: –99 – 99
Left/right direction (left/right switch)	: –99 – 99

3. “Writing...” is displayed by pressing the “ENTER” switch, and then the adjustment result is written to the around view monitor control unit.
   CAUTION:
   Check that “Writing...” is displayed. Do never perform other operations while “Writing...” is displayed.

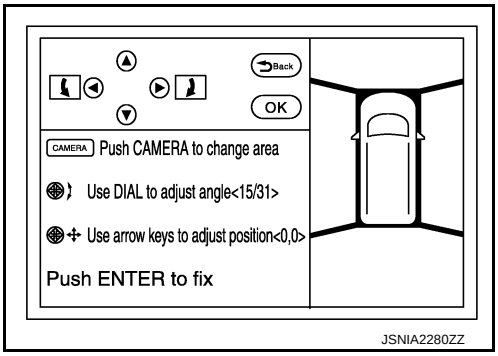
>> GO TO 6.

6. PERFORM “FINE TUNING OF BIRDS-EYE VIEW”

This mode is designed to align the boundary between each camera image that could not be aligned in the “Calibrating Camera Image” mode.

1. Select “Camera Cont.” of “Confirmation/ Adjustment” mode, and then set to “Fine Tuning of Birds-Eye View” mode.

2. Operate the center dial and upper/lower/left/right switch to overlap the marker on the screen and the target lines on the ground.
NOTE:
Move the “+”- mark on the camera position to adjustment by pressing the “CAMERA” switch.
3. When the target line is overlapped on the marker, press the “ENTER” switch to write the adjustment result to the around view monitor control unit.
CAUTION:
Check that “Writing...” is displayed. Do never perform other operations while “Writing...” is displayed.
NOTE:



- It can be initialized to the NISSAN factory default condition with “Initialize Camera Image Calibration” of “Calibrating Camera Image”.
- The adjustment value is cancelled on this mode by performing “Initialize Camera Image Calibration”.

>> Calibration end

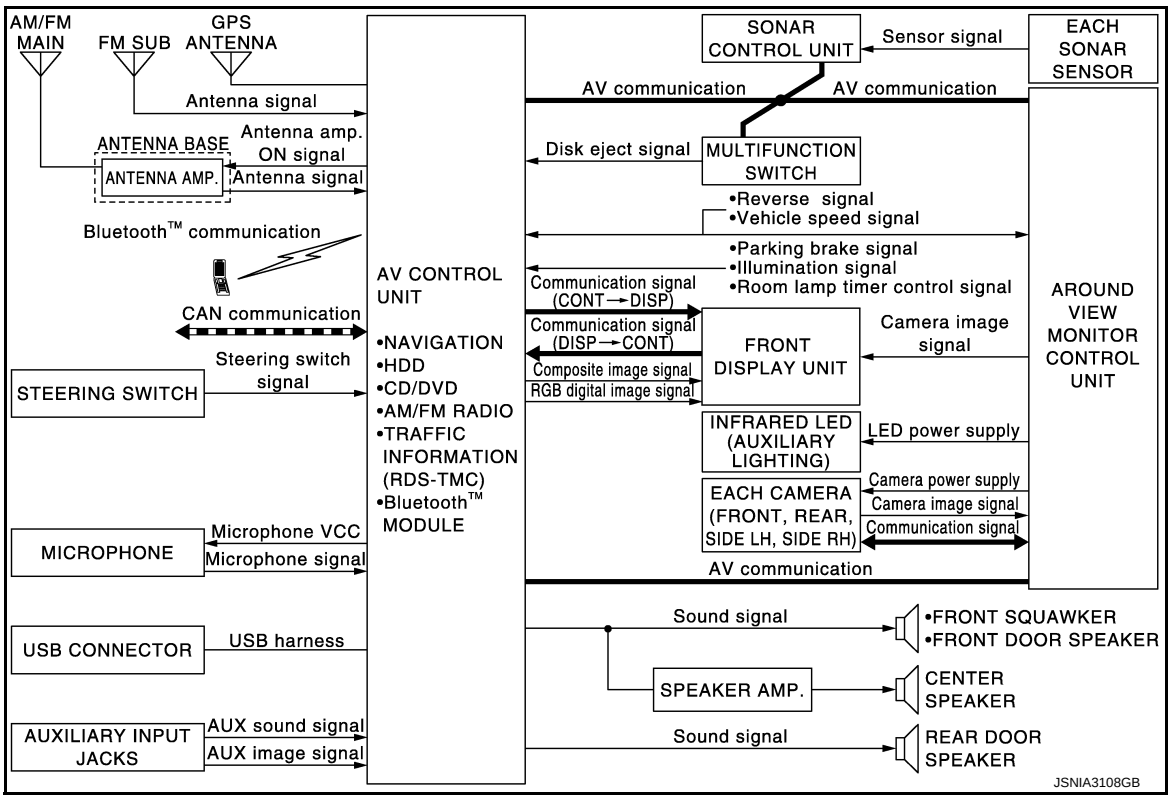
SYSTEM DESCRIPTION

MULTI AV SYSTEM

System Diagram

INFOID:0000000005193986

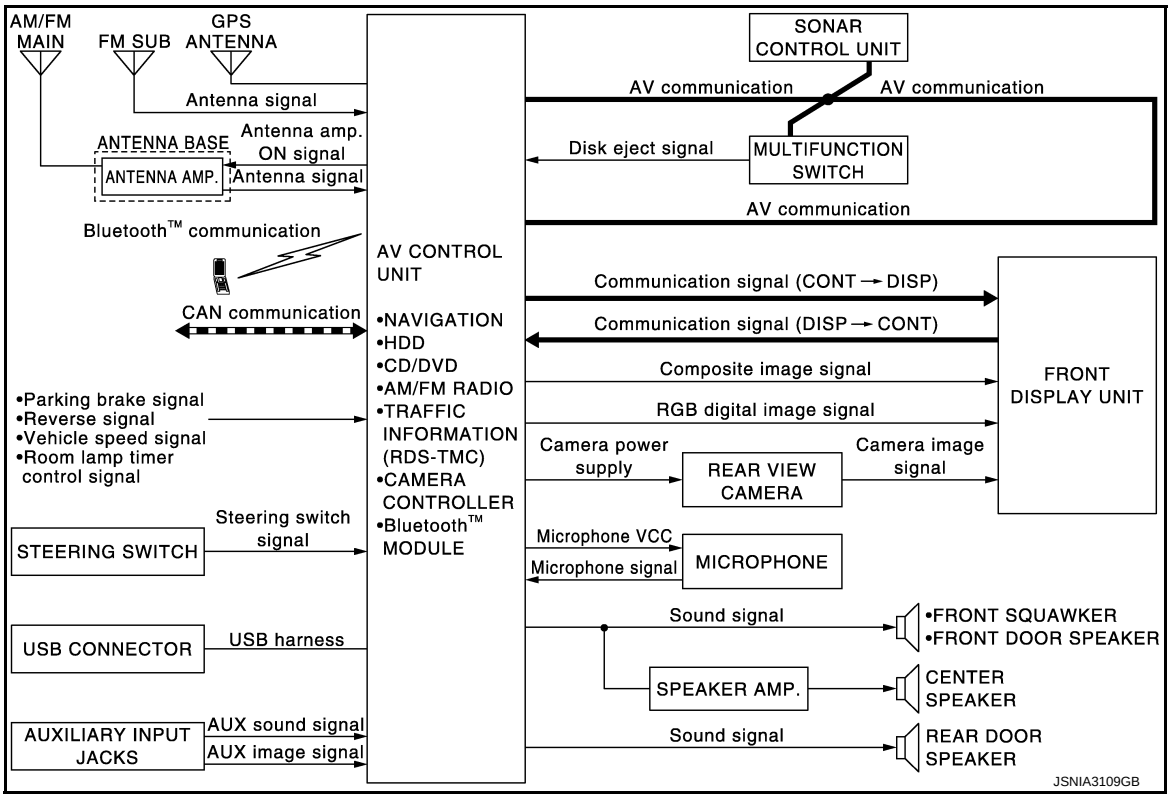
WITH AROUND VIEW MONITOR



NOTE:

- The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.
- An antenna base integrated with antenna amp. is adopted.

WITH REAR VIEW MONITOR



NOTE:
- The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.
- An antenna base integrated with antenna amp. is adopted.

System Description

INFOID:0000000005215857

Multi AV system means that the following systems are integrated.

FUNCTION NAME
Navigation system function
Audio function
DVD play function
Hands-free phone function
Auxiliary input function
USB connection function
Voice recognition function
Touch panel function
Rear view monitor function*1
Around view monitor function*2
Camera assistance sonar system*2
Vehicle information function
Sonar function*1

- *1: Without around view monitor system
- *2: With around view monitor system

COMMUNICATION SIGNAL

- AV control unit function by transmitting/receiving data one by one with each unit (slave unit) that configures them completely as a master unit by connecting between units that configure MULTI AV system with two AV communication lines (H, L).
- Two AV communication lines (H, L) adopt a twisted pair line that is resistant to noise.
- AV control unit is connected by CAN communication, and it receives data signal from ECM, unified meter and A/C amp. It computes and displays fuel economy information value with the obtained information.
- AV control unit is connected with display and serial communication, and it transmits the required signal of display and display control and receives the response signal from display.

NAVIGATION SYSTEM FUNCTION

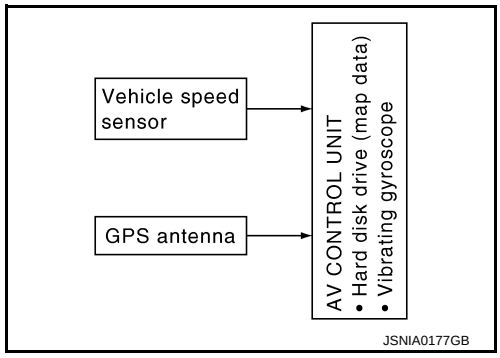
Description

- The AV control unit controls navigation function while GPS tuner has built-in map data, GYRO (angle speed sensor), on the HDD (Hard Disk Drive).
- The AV control unit inputs operation signal with communication signal, through display (touch panel) and multifunction switch and steering switch.
- Guide sound is output to front speaker from AV control unit when operating navigation system.
- A vehicle position is calculated with the GYRO (angle speed sensor), vehicle sensor, signal from GPS satellite and map data stored on HDD (Hard Disk Drive), and transmits the map image signal (RGB image, RGB area, RGB image synchronizing) to the display.

Position Detection Principle

The navigation system periodically calculates the current vehicle position according to the following three types of signals.

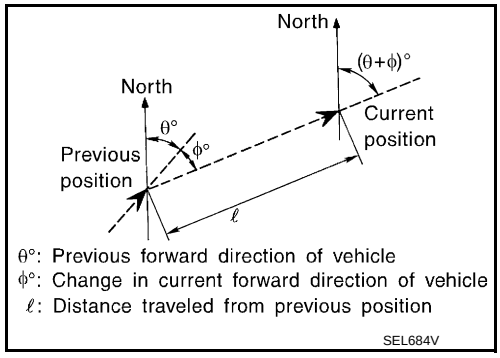
- Travel distance of the vehicle as determined by the vehicle speed sensor
- Vehicle turning angle determined by the gyroscope (angular speed sensor)
- The travel direction of the vehicle determined by the GPS antenna (GPS information)



The current position of the vehicle is then identified by comparing the calculated vehicle position with map data, which is stored in the HDD (Hard Disk Drive) (map-matching), and indicated on the screen with a current location mark. More accurate data is used by comparing position detection results from GPS to the map-matching.

The current position is calculated by detecting the travel distance from the previous calculation point, and its direction change.

- Travel distance
  The travel distance is generated from the vehicle speed sensor input signal. The automatic distance correction function is adopted for preventing a miss-detection of the travel distance because of tire wear etc.
- Travel direction
  The gyroscope (angular velocity sensor) and GPS antenna (GPS information) generate the change of the travel direction. Both have advantages and disadvantages as per the following descriptions.

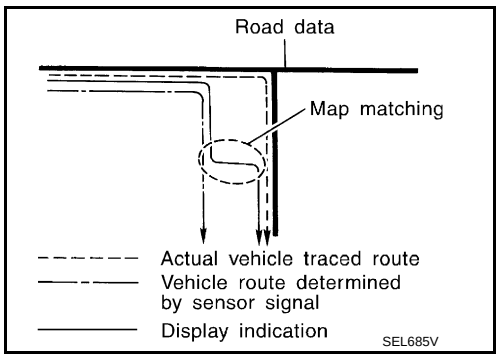


Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	The turning angle is precisely detected.	Errors are accumulated when driving a long distance without stopping.
GPS antenna (GPS information)	The travel direction (North/South/East/West) is detected.	The travel direction is not precisely detected when driving slowly.

Input signals are prioritized in each situation. However, this order of priority may change in accordance with more detailed travel conditions so that the travel direction is detected more accurately.

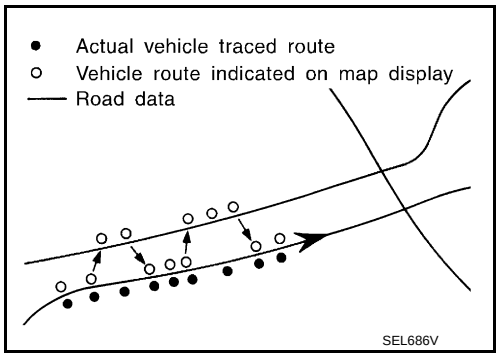
Map-matching

Map-matching repositions the vehicle on the road map when a new location is judged to be more accurate. This is done by comparing the current vehicle position (calculated by the normal position detection method) from the map data stored in the HDD (Hard Disk Drive).

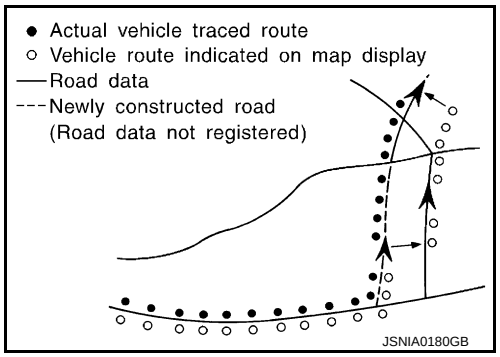


There is a possibility that the vehicle position may not be corrected in the following case, and when vehicle is driven over a certain distance or time in which GPS information is hard to receive. Correct manually the current location mark on the screen.

- In map-matching, several alternative routes are prepared and prioritized in addition to the road judged as currently driving on.
  Therefore, due to errors in the distance and/or direction, an incorrect road may be prioritized, and the current location mark may be repositioned to the incorrect road.
  If two roads are running in parallel, they are of the same priority. Therefore, the current location mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road, etc.

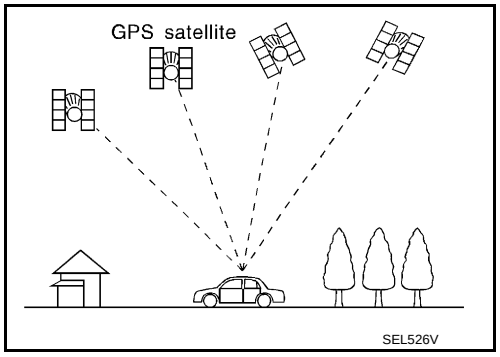


- Map-matching does not function correctly when road on which the vehicle is driving is new, etc. and not recorded in the map data. Also, map-matching does not function correctly when road pattern stored in the map data and the actual road pattern are different due to repair, etc.
  Therefore, the map-matching function judges other road as a currently driving road if the road is not in the map, and displays the current location mark on it. Later, the current location mark may be repositioned to the road if the correct road is detected.
- Effective range for comparing the vehicle position and travel direction calculated by the distance and direction with the road data is limited. Therefore, correction by map-matching is not possible when there is an excessive gap between current vehicle position and the position on the map.



GPS (Global Positioning System)

GPS (Global Positioning System) is developed for and is controlled by the US Department of Defense. The system utilizes GPS satellites (NAVSTAR), transmitting out radio waves while flying on an orbit around the earth at an altitude of approximately 21,000 km (13,049 mile).
The receiver calculates the travel position in three dimensions (latitude/longitude/altitude) according to the time lag of the radio waves that four or more GPS satellites transmit (three-dimensional positioning). The GPS receiver calculates the travel position in two dimensions (latitude/longitude) with the previous altitude data if the GPS receiver receives only three radio waves (two-dimensional positioning). GPS position correction is not performed while stopping the vehicle.



Accuracy of the GPS will deteriorate under the following conditions:

- In two-dimensional positioning, GPS accuracy will deteriorate when altitude of the vehicle position changes.
- The position of GPS satellite affects GPS detection precision. The position detection may not be precisely performed.

- The position detection is not performed if GPS receiver does not receive radio waves from GPS satellites. (Inside a tunnel, parking in a building, under an elevated highway etc.) GPS receiver may not receive radio waves from GPS satellites if any object is placed on the GPS antenna.

NOTE:

- The detection result has an error of approximately 10 m (32.81 ft) even with a high-precision three dimensional positioning.
- There may be cases when the accuracy is lowered and radio waves are stopped intentionally because the GPS satellite signal is controlled by the US trace control center.

AUDIO FUNCTION

The audio system is equipped with the following functions. Each function is operated with multifunction switch, preset switch, touch panel, steering switch or audio recognition. Operation status of audio is indicated at display.

FUNCTION
AM/FM radio
Traffic information (RDS-TMC)
CD
Bluetooth™ audio
Music Box (Hard Disk Drive)

Operating Signal

Audio system operation can be performed with multifunction switch, preset switch, steering switch, touch panel function or voice recognition function.

- Operating signal is transmitted to AV control unit with AV communication when it is operated by multifunction switch or preset switch. The disk ejection operating signal is performed by hardwire.
- Operating signal is transmitted to AV control unit with steering switch signal when it is operated by steering switch.

Screen Display

Switching of display is performed with serial communication between front display unit and AV control unit.

AM/FM Radio Mode

- AM/FM radio tuner is built into AV control unit.
- Audio signal is received by rod antenna, next it is amplified by antenna amp., and finally it is input to AV control unit.
- AV control unit outputs audio signal to each speaker.

Traffic Information (RDS-TMC) Function

The traffic information broadcast can avoid delays due to traffic incidents.
Traffic jams, roadwork, closed roads around current location, etc. are represented graphically on the map by icons depicting the nature of the event. Incidents on the route are automatically noticed when they are approached.
The traffic information feature gives the driver the opportunity to forecast traffic incidents, determine how serious they are and, via the guidance mode, allows to detour around traffic problems.
The navigation system receives traffic information from best available sources and enables the RDS-TMC (Radio Data System-Traffic Message Channel) to inform and guide the driver.

- Traffic information function is built into AV control unit.
- Traffic information is received by rod antenna, next it is amplified by antenna amp., and finally it is input to AV control unit.

CD Mode

- CD function is built into AV control unit.
- AV control unit outputs audio signal to each speaker when CD is inserted to AV control unit.

Bluetooth™ Audio Mode

- Bluetooth™ audio function is built into AV control unit.
- Bluetooth™ audio can play music data in the portable audio by means of Bluetooth™ communications between the portal audio and the AV control unit.
- AV control unit outputs audio signal to each speaker.

Music Box Mode
- Music CD data is stored on HDD that is built into AV control unit, and it can be played.
- AV control unit outputs music (sound signal) that is stored on HDD to each speaker.

DVD PLAY FUNCTION
- DVD is played by inserting DVD into the AV control unit.
- DVD image signals are transmitted to the front display unit and DVD sound signals are transmitted to each speaker.

HANDS-FREE PHONE FUNCTION
- AV control unit includes hands-free phone function.
- Hands-free communication can be operated by connecting using Bluetooth™ communication with cellular phone.
- Operation is performed by steering switch, and operating condition is indicated on display.

When A Call Is Originated

Spoken voice sound output from the microphone (microphone signal) is input to AV control unit. AV control unit outputs to cellular phone with Bluetooth™ communication as a TEL voice signal. Voice sound is then heard at the other party.

When Receiving A Call

Voice sound is input to own cellular phone from the other party. TEL voice signal is output to door speaker, and the signal is input to AV control unit by establishing Bluetooth™ communication from cellular phone.

AUXILIARY INPUT FUNCTION
- Image and sound can be output from an external device by connecting a device with auxiliary input jacks.
- AUX image signals are transmitted to the front display unit and AUX sound signals are transmitted to each speaker.

USB CONNECTION FUNCTION
- iPod® or music files and video data* in USB memory can be played.
- Sound signals are transmitted from USB connector to the AV control unit and to each speaker.
- Video signals are transmitted from USB connector to the front display unit via the AV control unit.
- iPod® is recharged when connected to USB connector.
- Playable movie formats are “DivX” and “MPEG4 (ASF)”.

*:Image signal can not be getting from iPod®.

iPod® is a trademark of Apple inc., registered in the U.S. and other countries.

NOTE:

Use the enclosed USB harness when connecting iPod® to USB connector.

VOICE RECOGNITION FUNCTION
- Each operation of multi AV system can be performed by inputting sound to microphone.
- Start of sound recognition system can be performed by steering switch.
- System operation is available only when the retractable hard top is closed.

TOUCH PANEL SYSTEM

Each operation of multi AV system can be performed by directly touching a display.

REAR VIEW MONITOR FUNCTION

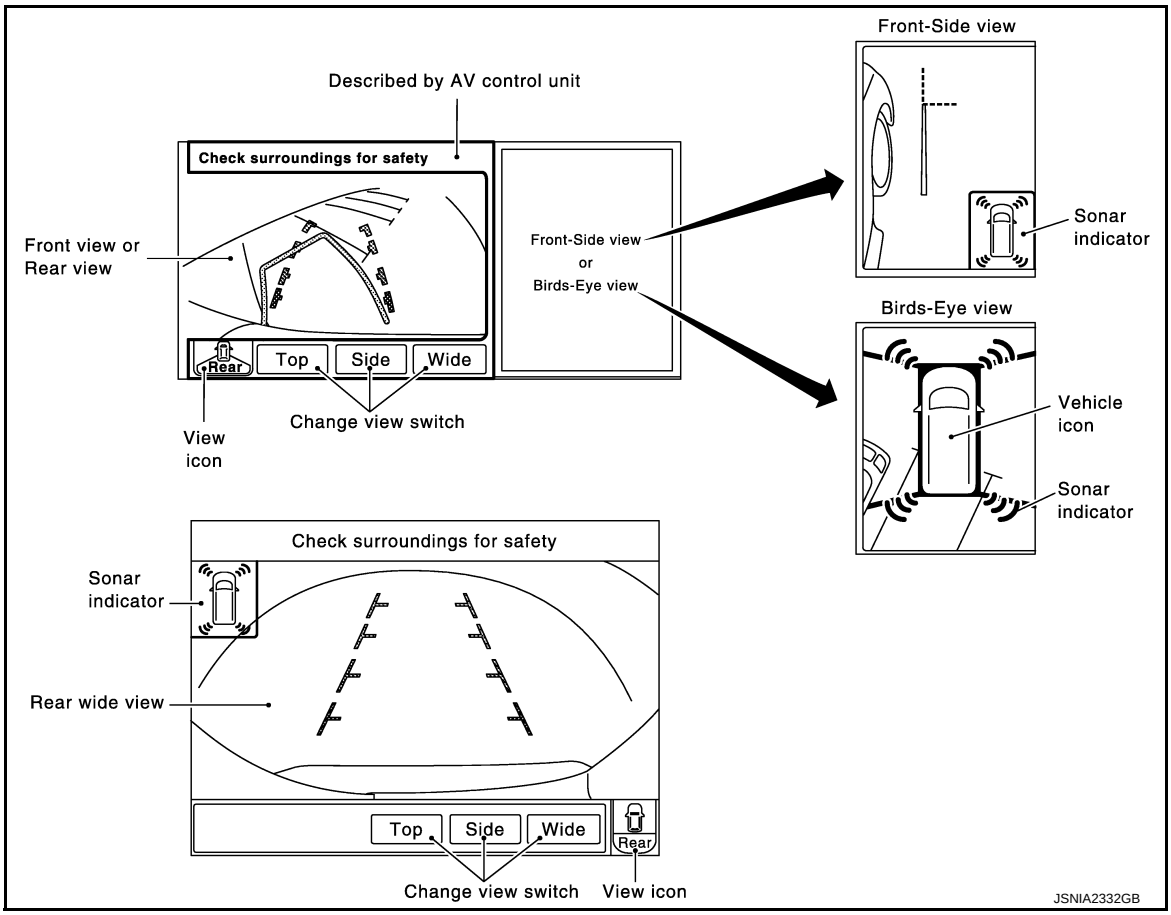
Camera Image Operation Principle
- The AV control unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the front display unit when power is supplied from the AV control unit.
- The AV control unit transmits a warning message, fixed guide lines, and predictive course lines to the front display unit by RGB digital video signals. Rear view monitor images are displayed by combining the RGB digital video signals and the camera image signals from the rear view camera.
- Predictive course lines are controlled by a steering angle sensor signal received the AV control unit via CAN communication.

AROUND VIEW MONITOR FUNCTION
- This system is equipped with wide-angle high-resolution cameras on the front and rear of the vehicle and on both right and left door mirrors. The images from front view, rear view, front-side view [RH side (LHD mod-

els), LH side (RHD models)], and birds-eye view that shows the view from the top of the vehicle are displayed to monitor the vehicle surroundings.
- Around view monitor control unit cuts out and expands the image received from each camera to create each view.
- The sonar indicator is displayed on display (superimposed on the camera image) in combination with the camera assistance sonar system to warm of the approach of an obstacle.
- In front view and rear view, the vehicle width, distance lines and predictive course lines are superimposed and displayed. In front-side view, the vehicle distance guiding line and vehicle width guiding line are displayed.
- The Birds-Eye view converts the images from 4 cameras into the overhead view and displays the status of the vehicle on display. The vehicle icon and sonar indicator that are displayed on the Birds-Eye view display are rendered by around view monitor control unit.

Around View Monitor Screen
- Around view monitor combines and displays the travel direction view and “Birds-Eye view”, “Front-Side view” and then it displays the sonar indicator on the “Birds-Eye view”, “Front-Side view”“Rear wide view”.
- AV control unit renders the “Change View” switch, view icon, warning message on display.

Screen constitution

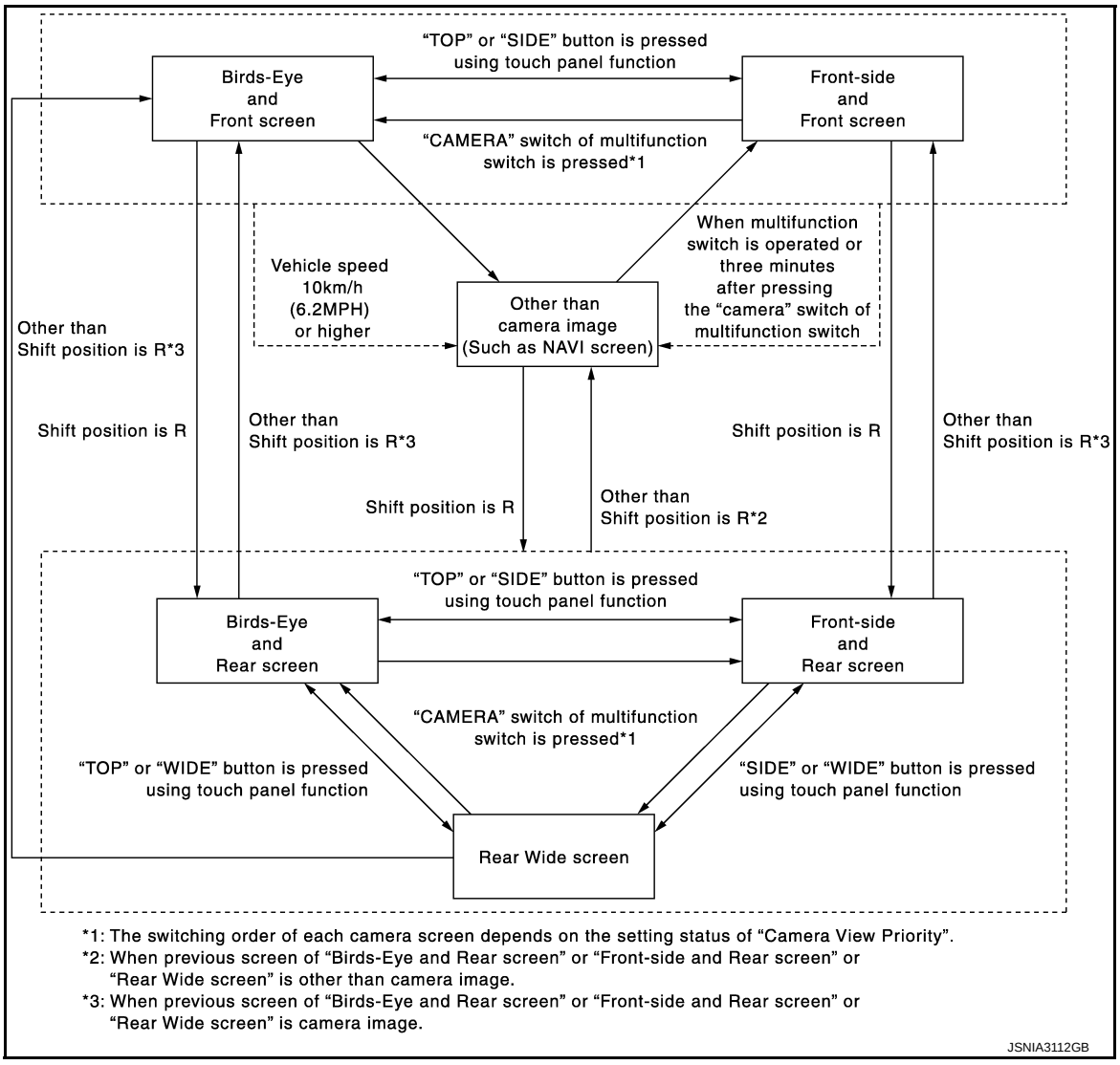


Operation Description
- Around view monitor operates by pressing the “CAMERA” switch of multifunction switch and shifting the selector switch to the reverse position.
- When the selector lever is in any position other than the reverse position, the screen is switched to the around view monitor by pressing the “CAMERA” switch.
- The screen is switched to the around view monitor by shifting the selector lever to the reverse position.
- In the around view monitor, Birds-Eye view and Front-side view can be switched by pressing the “CAMERA” switch.
- The “Front-Side and Front screen” are displayed as a priority when turning “Default to Front-Side View” ON.
- The around view monitor is cancelled 3 minutes after pressing the “CAMERA” switch, and then the screen returns to the screen before displaying the around view monitor when selector lever is in a position other than the “R” position.
- ON/OFF setting of sonar indicator display on the Front-Side view screen can be performed.

- In the Birds-Eye view, the invisible area is displayed on the image to specify the boundary of the 4 cameras. The invisible area is displayed in yellow in the Birds-Eye view after turning the ignition switch ON.
- The sonar (both of buzzer and indicator) operates only when the camera screen is displayed.

NOTE:
The first, second, and third camera image displayed when switched to the camera image display depends on the settings of “Camera View Priority”.

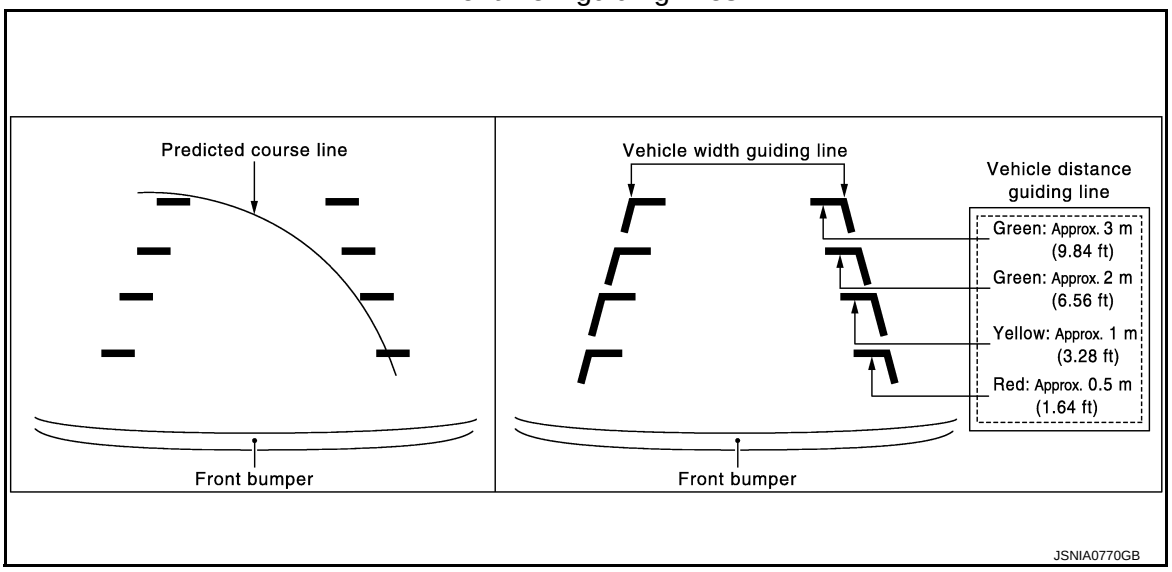
Around view monitor screen transition



FRONT VIEW

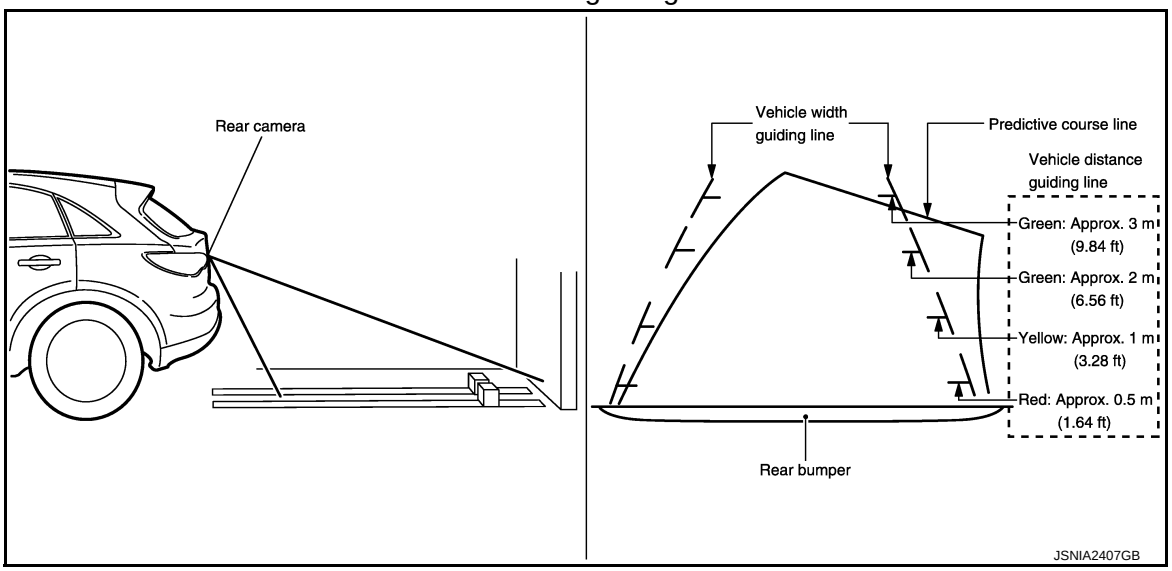
- The front view image is from the front camera.
- When the selector lever is in any position other than the reverse position, the front view is displayed by pressing the “CAMERA” switch. It improves the visibility of obstacles in front of the vehicle and helps driving by the images displayed from Birds-Eye view and Front-Side view.
- Display the vehicle width guiding line and vehicle distance guiding line in front view and display the predictive course line according to the steering angle.
- If the steering angle is within approximately 90 degrees, the predictive course lines on the left/right side are displayed. If the steering angle is exceeding approximately 90 degrees, only the predictive course line on the outside (in the opposite side of steering direction) is displayed.
- AV control unit is connected to the steering angle sensor and receives the steering angle signal via CAN communication. AV control unit is transmits steering angle signal to around view monitor control unit via AV communication.
- Around view monitor control unit controls the direction and distance of the predictive course line according to the sensor signal from steering angle sensor.

Front view guiding lines



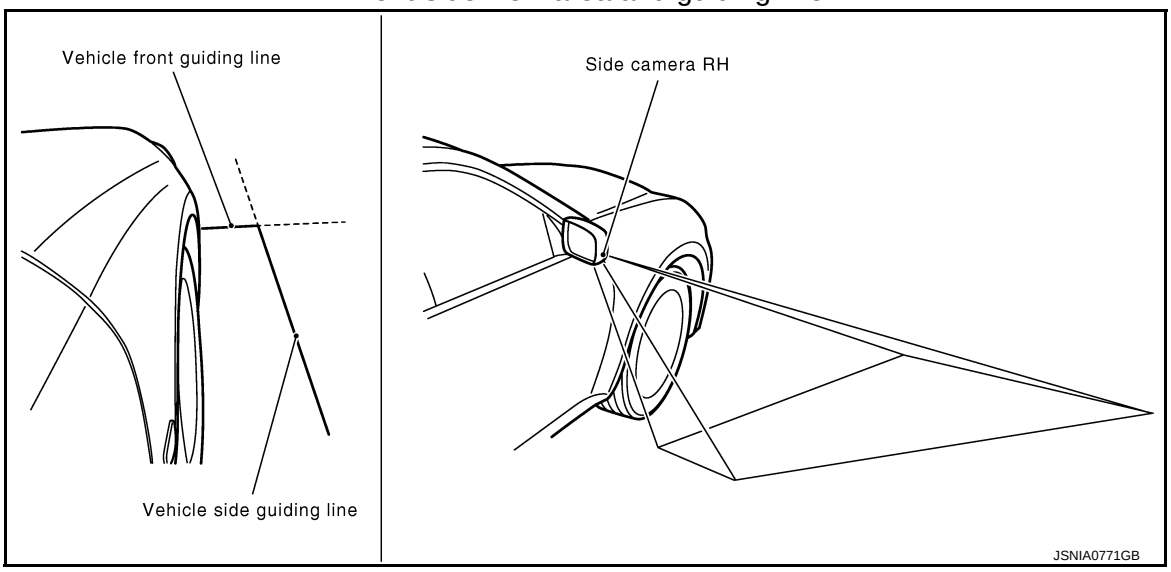
REAR VIEW
- The rear view image is from the rear camera.
- When the selector lever is in the reverse position, the rear view is displayed. Backing and parking are improved by the images from Birds-Eye view and Front-Side view. The rear wide view function allows the display of an image with a 180° horizontal angle.
- Display the vehicle width guiding line and vehicle distance guiding line in Rear view and display the predictive course line according to the steering angle (except when using the rear wide view function).
- The predictive course line is not displayed at the steering neutral position.
- AV control unit is connected to the steering angle sensor and receives the steering angle signal via CAN communication. AV control unit is transmits steering angle signal to around view monitor control unit via AV communication.
- Around view monitor control unit controls the direction and distance of predictive course line according to the sensor signal from steering angle sensor.

Rear view guiding lines



FRONT-SIDE VIEW
- The front-side view image is from the side camera RH (LHD models) or side camera LH (RHD models).
- In Front-Side view, display the vehicle distance guiding line and vehicle width guiding line.
- The infrared LED illumination is installed on the door mirror RH (LHD models) or door mirror LH (RHD models) to illuminate around the front wheels.

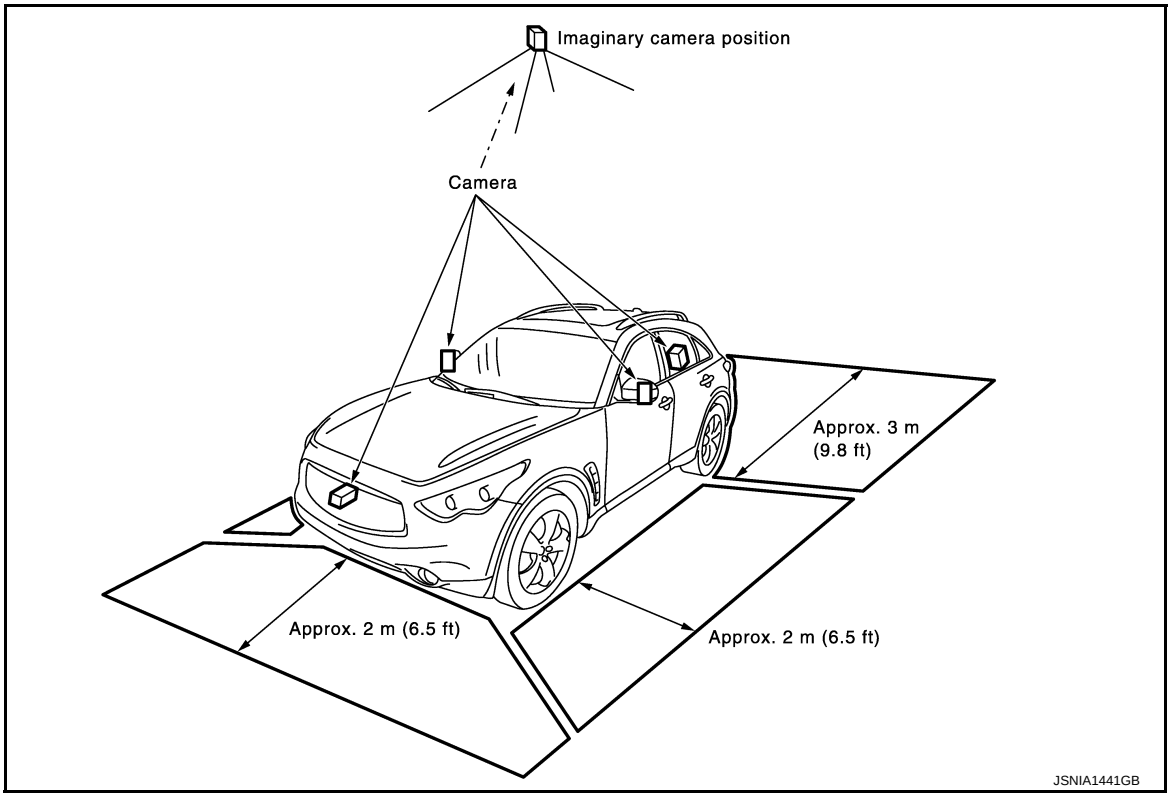
Front-side view area and guiding line



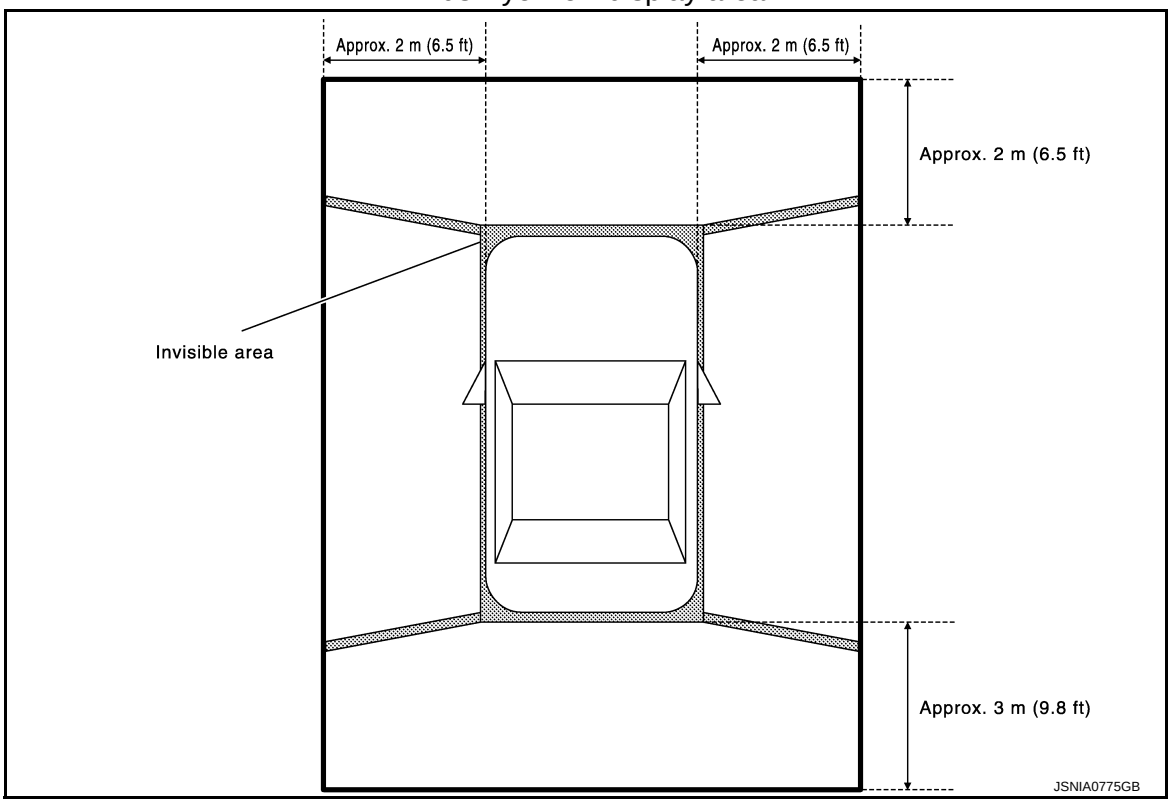
BIRDS-EYE VIEW

- The image from the 4 cameras is cut out and converted into the overhead view, and the surroundings of the vehicle is displayed in birds-eye view.
- In Birds-Eye view, the invisible area is displayed on the image to specify the boundary of the 4 cameras.
- The invisible area is displayed in yellow in the Birds-Eye view after turning the ignition switch ON as an information for the user. (OFF setting can be performed)

Birds-Eye view display image



Birds-Eye view display area



Camera Image Operation Principle

- If the information writing to around view monitor control unit and the information from the camera are not matched, the applicable camera position is indicated as an error on the Birds-Eye view display. (Calibration operation is necessary when replacing each camera or when replacing around view monitor control unit.)
- Around view monitor control unit receives the camera switch signal from AV control unit via AV communication by pressing the “CAMERA” switch of multifunction switch.
- Around view monitor control unit that receives the camera switch signal supplies the power to each camera and inputs the camera image from each camera.
- When the selector lever is in the reverse position, around view monitor control unit receives the reverse signal from AV control unit via AV communication, supplies the power to each camera, and inputs the camera image from each camera.
- Around view monitor control unit that receives the camera image signal from each camera cuts out the required screen for each view, superimposes the camera image, vehicle icon, guiding lines, sonar indicator, and outputs them to the front display unit.

CAMERA ASSISTANCE SONAR FUNCTION

- Install the corner sensor on the front bumper and rear bumper. It detects the obstacles around the vehicle when the around view monitor is displayed. It warns of the approach to the obstacles with the buzzer and indicator in the display linked with the around view monitor system.
- It displays the distance between the bumper and obstacle with the color of sonar indicator in the display and the blinking cycle of indicator in 3 stages.
- The buzzer warns of the distance to the obstacles with the cycle in 3 stages.

System Operation Description

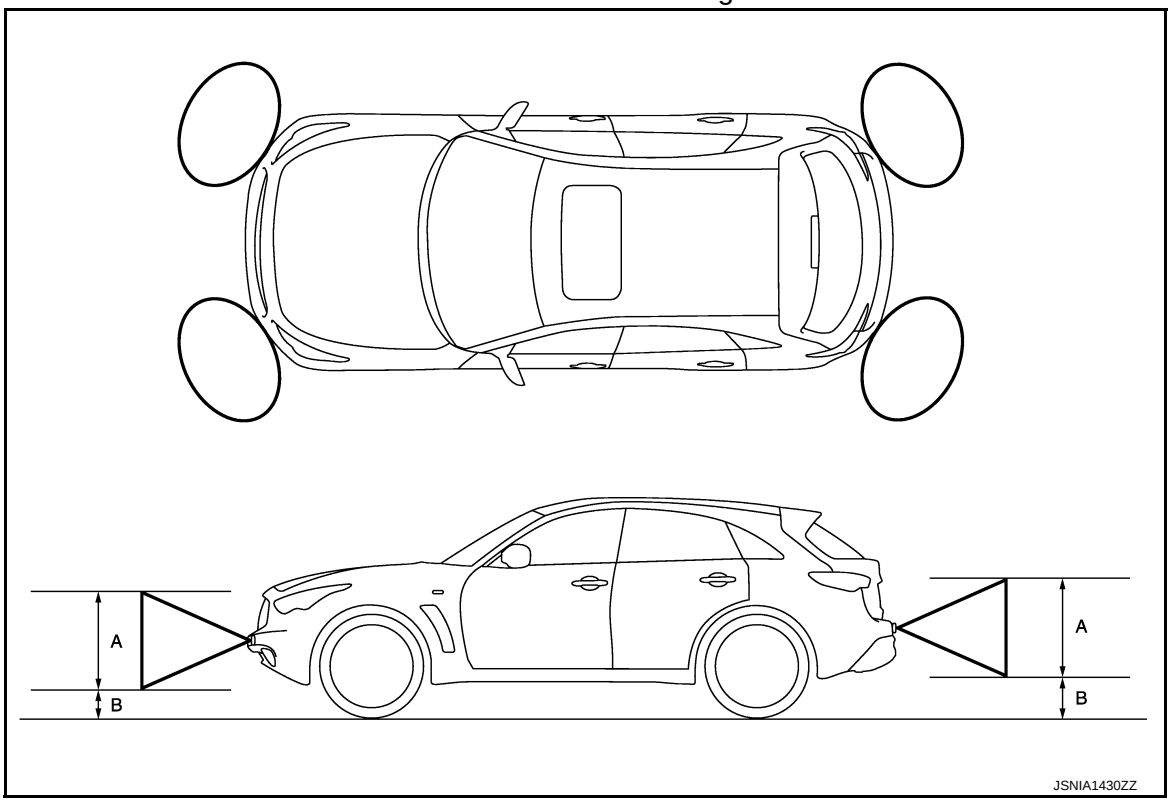
- Around view monitor control unit transmits the sonar operation signal via AV communication to sonar control unit to control the operation of sonar indicator and sonar buzzer.
- Sonar control unit that receives the sonar operation signal from around view monitor control unit transmits the detection signal and detection distance signal according to the signal from corner sensor via AV communication to around view monitor control unit. around view monitor control unit operates the applicable sonar indicator.
- When receiving a sonar operation signal from the around view monitor control unit, the sonar control unit converts a signal transmitted from the corner sensor into a detection distance signal and transmits it to the AV control unit via AV communication. When receiving the detection signal, the AV control unit activates each speaker.

- Sonar control unit has the diagnosis function. It can detect the corner sensor malfunction or sensor harness open circuit. It transmits the diagnosis results to around view monitor control unit and always displays the sonar indicator in red to inform the user.

Obstacle Detection Distance

- Sonar control unit changes the outputs of the sonar indicator and warning buzzer in 3 stages according to the obstacle detection distance from the corner sensor.
- The sonar control unit can change the setting of obstacle detection distance in 4 stages.

Obstacle detection image



A. Approx. 50 cm (19.6 in) B. Approx. 15 cm (5.9 in)

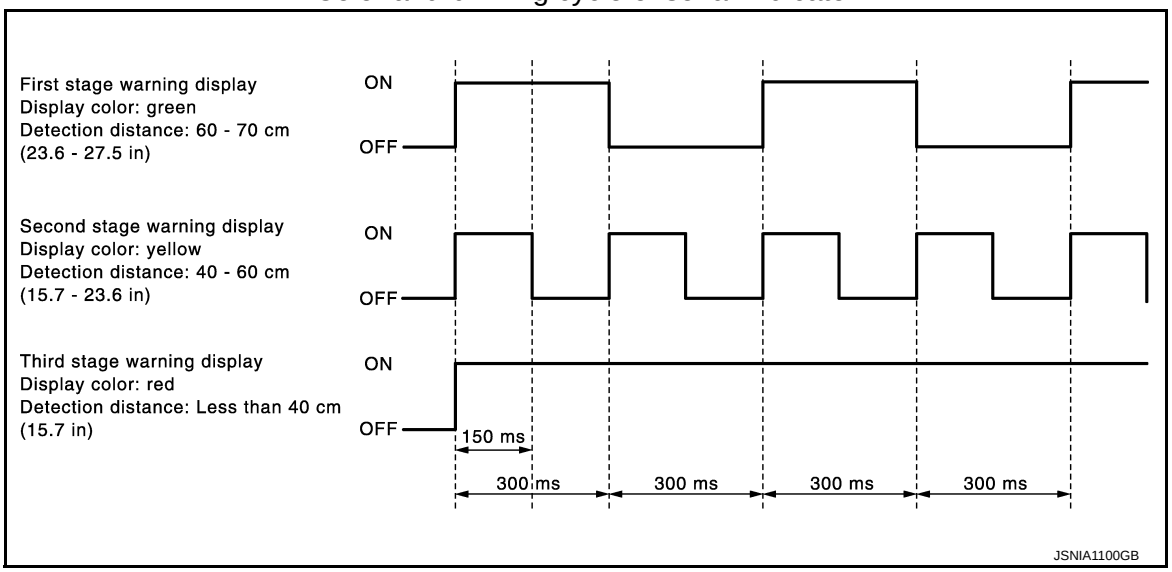
Detection distance

Warning item	Sensitivity level 1 (Faster warning)	Sensitivity level 2 (Default value)	Sensitivity level 3 (Slower warning)	Sensitivity level 4 (Slowest warning)
First stage warning	70 – 80 cm (27.5 – 31.4 in)	60 – 70 cm (23.6 – 27.5 in)	50 – 60 cm (19.6 – 23.6 in)	40 – 50 cm (15.7 – 19.6 in)
Second stage warning	50 – 70 cm (19.6 – 27.5 in)	40 – 60 cm (15.7 – 23.6 in)	30 – 50 cm (11.8 – 19.6 in)	30 – 40 cm (11.8 – 15.7 in)
Third stage warning	Less than 50 cm (19.6 in)	Less than 40 cm (15.7 in)	Less than 30 cm (11.8 in)	Less than 30 cm (11.8 in)

Sonar Indicator Display

- Around view monitor control unit that receives the detection signal and detection distance signal from sonar control unit displays the sonar indicator on display.
- Around view monitor control unit changes the color or blinking cycle of the indicator according to the detection distance.

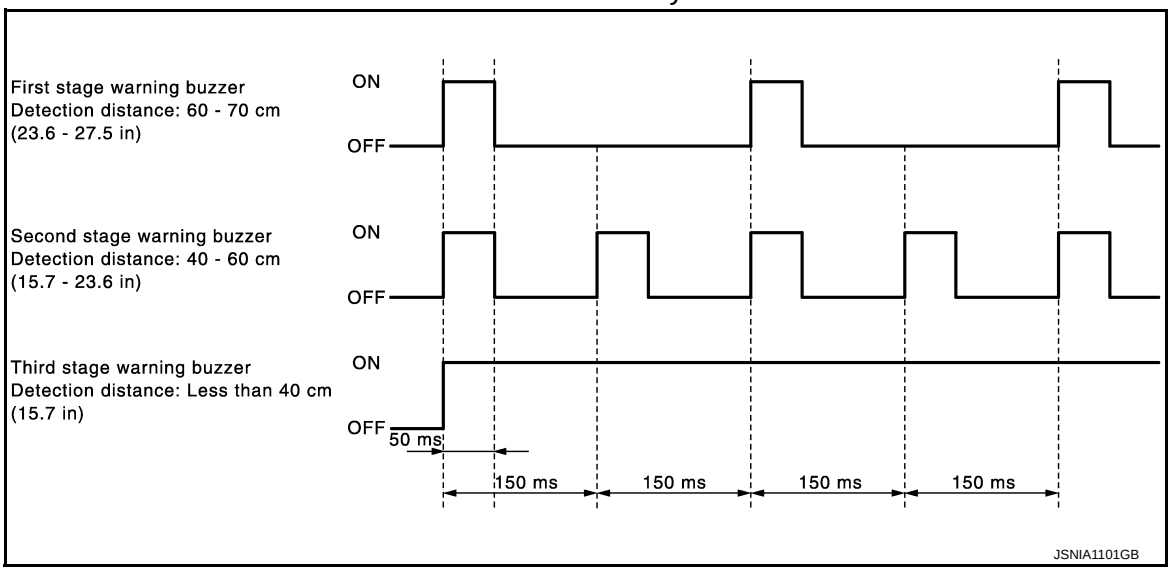
Color and blinking cycle of sonar indicator



Sonar Buzzer Operation

- Each sonar sensor transmits a sensor signal to the sonar control unit when detecting an obstacle.
- The sonar control unit converts a signal received from each sonar sensor into distance and transmits detection distance signal to the AV control unit via AV communication.
- The AV control unit transmits a buzzer signal to the speaker corresponding to each sonar sensor and the speaker amp. based on the received signal.
- When the front corner sensor detects an obstacle, a buzzer is heard from the speakers on the front side.
- When the rear corner sensor detects an obstacle, a buzzer is heard from the speakers on the rear side.
- It changes the buzzer cycle in 3 stages according to the detection distance.

Sonar buzzer cycle



VEHICLE INFORMATION FUNCTION

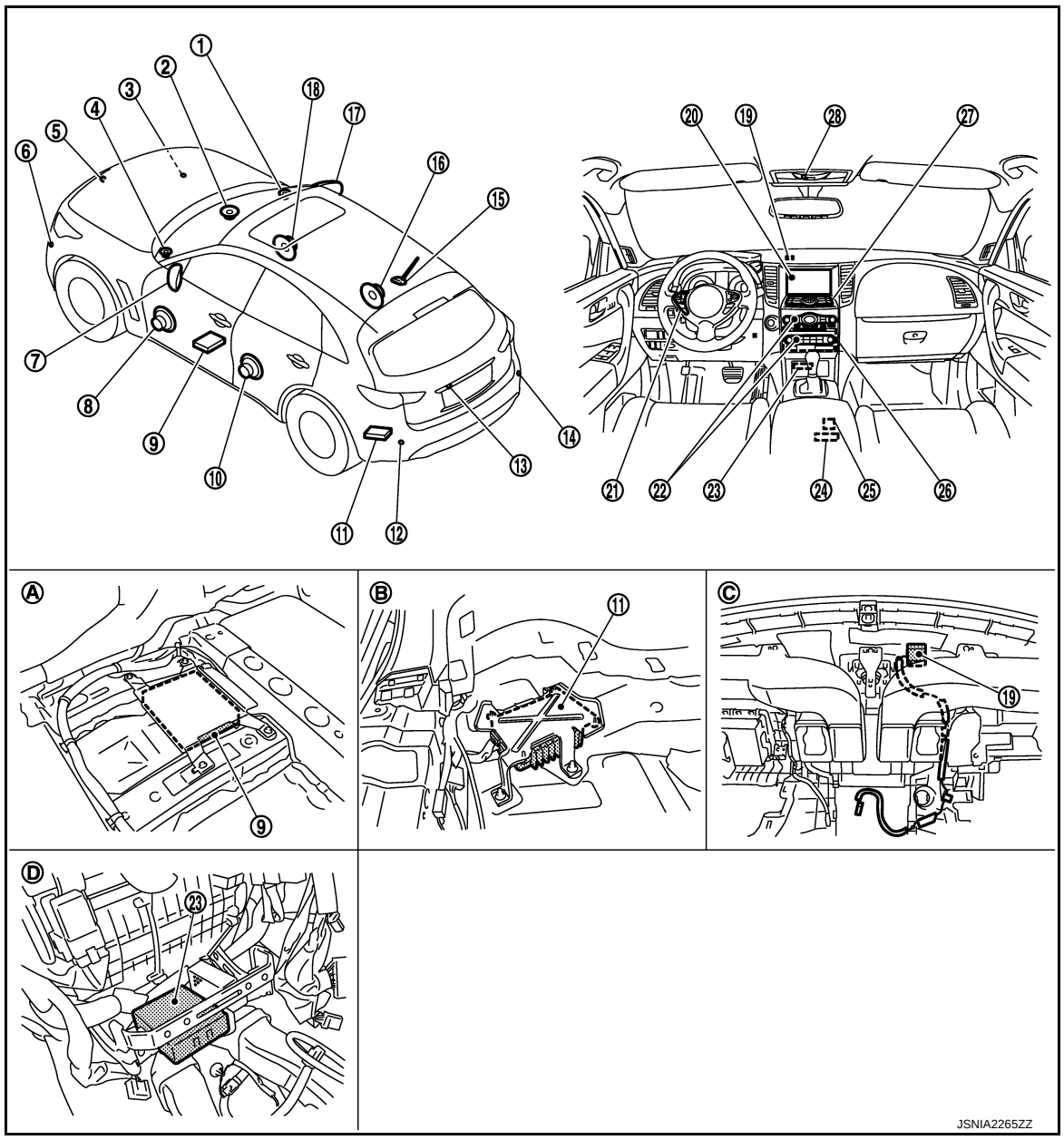
- Status of audio, climate control system, fuel economy, maintenance and navigation are displayed.
- AV control unit displays the fuel consumption status while receiving data signal through CAN communication from ECM, unified meter and A/C amp.
- AV control unit is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function.

SONAR FUNCTION

For further information about the sonar system, refer to SN-7, "System Description".

Component Parts Location

INFOID:0000000005193988



1. Front squawker RH
2. Center speaker
3. Corner sensor front RH
4. Front squawker LH
5. Front camera
6. Corner sensor front LH
7. Side camera LH
8. Front door speaker LH
9. Around view monitor control unit (with around view monitor)
10. Rear door speaker LH
11. Speaker amp.
12. Corner sensor rear LH
13. • Rear camera (with around view monitor)
    • Rear view camera (with rear view monitor)
14. Corner sensor rear RH
15. Antenna base
16. Rear door speaker RH
17. Side camera RH and infrared LED (auxiliary lighting)
18. Front door speaker RH
19. GPS antenna
20. front display unit
21. Steering switch
22. Preset switch
23. Sonar control unit (with around view monitor)
24. Auxiliary input jack
25. USB connector
26. AV control unit
27. Multifunction switch

28. Microphone

A. Under front seat (LH side) B. Luggage floor (LH side) C. Instrument panel rear side

D. Console pocket assembly removed condition

Component Description

INFOID:0000000005193989

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor*1, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • The RGB digital image signal and composite image signal are output to front display unit. • Camera power supply is transmitted to rear view camera (with rear view monitor). • Camera image signal is input from rear view camera (with rear view monitor). • Update of map data is performed with the DVD-ROM.
front display unit	• Display image is controlled by the serial communication from AV control unit. • RGB digital image signal is input from AV control unit. • Composite image signal is input from AV control unit. • Camera image signal is input from rear view camera (with rear view monitor). • Camera image signal is input from around view monitor control unit (with around view monitor). • Touch panel function can be operated for each system by touching a display directly.
Speaker amp.	Output sound signal to center speaker.
Front door speaker	• Outputs sound signal from AV control unit. • Outputs high, mid and low range sounds.
Rear door speaker	• Outputs sound signal from AV control unit. • Outputs high, mid and low range sounds.
Front squawker	• Outputs sound signal from AV control unit. • Outputs mid range sounds.
Center speaker	• Outputs sound signal from speaker amp. • Outputs mid range sounds.
Multifunction switch	• Operation panel is equipped with the centralized switch where audio, auxiliary input and navigation, etc. operations are integrated. • Connected with preset switch via cable, and operation signal is transmitted to AV control unit via AV communication.
Preset switch	• Operation panel is equipped with the centralized switch where audio and air conditioner, etc. operations are integrated. • Connected with multifunction switch via cable, and operation signal is transmitted to AV control unit via AV communication. • The disk ejection operating signal is performed by hardwire.
Around view monitor control unit	• It supplies power to front camera, rear camera, and side camera. And then it superimposes the images from each camera and outputs them to front display unit. • Superimpose the guiding line, predicted course line and sonar indicator to the camera image that outputs to front display unit. • It performs the reception/transmission of communication signal with each camera. • It transmits the sonar operation signal from sonar control unit and receives the sonar information from sonar control unit via AV communication. • It transmits the information received/transmitted with sonar control unit via AV communication to AV control unit.

Part name	Description
Front camera	• It inputs the power supply from around view monitor control unit and outputs the image of the vehicle front to around view monitor control unit. • It performs the reception/transmission of the communication signal with around view monitor control unit.
Rear camera	• It inputs the power supply from around view monitor control unit and outputs the image of the vehicle rear to around view monitor control unit. • It performs the reception/transmission of the communication signal with around view monitor control unit.
Side camera LH	• It inputs the power supply from around view monitor control unit and outputs the image of the vehicle LH to around view monitor control unit. • It performs the reception/transmission of the communication signal with around view monitor control unit.
Side camera RH	• It inputs the power supply from around view monitor control unit and outputs the image of the vehicle RH to around view monitor control unit. • It performs the reception/transmission of the communication signal with around view monitor control unit.
Infrared LED (Auxiliary lighting)	• It illuminates around the front RH wheel by the power supply from around view monitor control unit to improve nighttime visibility of front-side view (LHD models). • It illuminates around the front LH wheel by the power supply from around view monitor control unit to improve nighttime visibility of front-side view (RHD models). • The infrared LED is an invisible light ray.
Sonar control unit (Camera assistance sonar system)	• It is connected with around view monitor control unit via AV communication and receives the sonar operation signal from around view monitor control unit. • It transmits the sonar detection status to around view monitor control unit via AV communication. • It judges the warning level according to the signal from corner sensor.
Corner sensor	The obstacle distance is detected. The signal is transmitted to sonar control unit.
Rear view camera (Rear view monitor system)	• Camera power supply is input from AV control unit. • The image of vehicle rear view is transmitted to front display unit.
Steering switch	• Operations for audio, hands-free phone, voice control and navigation, etc. are possible. • Steering switch signal (operation signal) is output to AV control unit.
Microphone	• Used for hands-free phone operation and voice recognition. • Microphone signal is transmitted to AV control unit. • Power (Microphone VCC) is supplied from AV control unit.
Auxiliary input jacks	Image signal and sound signal of auxiliary input is transmitted to AV control unit.
GPS antenna	GPS signal is received and transmitted to AV control unit.
Antenna base	• An antenna base integrated with radio antenna amp. is adopted. • Radio signal received by rod antenna is amplified and transmitted to AV control unit. • Power (antenna amp. ON signal) is supplied from AV control unit.
USB connector	Image signal*2 and sound signal of USB input is transmitted to AV control unit.
Sonar control unit	• Controlled by AV communication transmitted from AV control unit. • Trouble diagnosis is supported with CONSULT-III (K-LINE).

- *1: Without around view monitor
- *2: Image signals cannot be received from iPod®.

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Diagnosis Description

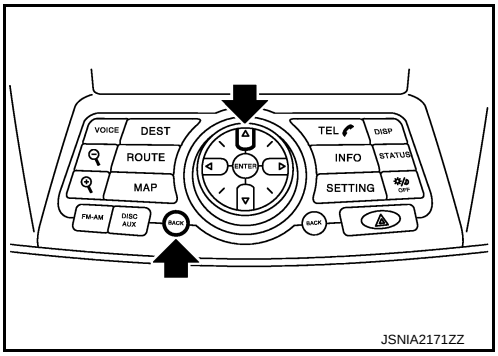
INFOID:0000000005193990

MULTIFUNCTION SWITCH AND PRESET SWITCH SELF-DIAGNOSIS FUNCTION

The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

Self-diagnosis Mode

- Press the “BACK” switch and the “UP” switch of the 8-direction switches within 10 seconds after turning the ignition switch from OFF to ACC and hold them for 3 seconds or more. Then the buzzer sounds, all indicators of the preset switch illuminate, and the self-diagnosis mode starts.
- The continuity of each switch at the ON position can be checked by pressing the switch. The buzzer sounds if the switch is normal.
  NOTE:
  The hazard switch and disk eject switch cannot be checked.



Finishing Self-diagnosis Mode

Self-diagnosis mode is canceled when turning the ignition switch OFF.

MULTI AV SYSTEM ON BOARD DIAGNOSIS FUNCTION

- The AV control unit diagnosis function starts up with multifunction switch operation and the AV control unit performs a diagnosis for each unit in the system during the on board diagnosis.
- Perform a CONSULT-III diagnosis if the on board diagnosis does not start, e.g., the screen does not display anything, the multifunction switch does not function, etc.

ON BOARD DIAGNOSIS

Description

- The trouble diagnosis function has a self-diagnosis mode for conducting trouble diagnosis automatically and a confirmation/adjustment mode for operating manually.
- The self-diagnosis mode performs diagnoses on the AV control unit, connections between system components as well as connections between AV control unit and GPS antenna. Then it displays the diagnosis results on the display.
- The confirmation/adjustment mode allows the technician to check, modify or adjust the vehicle signals and set values, as well as to monitor the system error records and system communication status. The checking, modifying or adjusting generally require human intervention and judgment (the system cannot make judgment automatically).

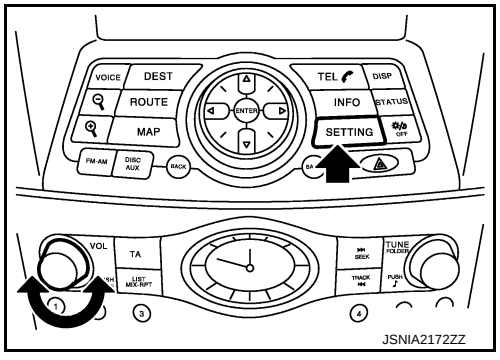
On Board Diagnosis Item

Mode	Description
Self Diagnosis	• AV control unit diagnosis. • Diagnoses the connections across system components, between AV control unit and GPS antenna.

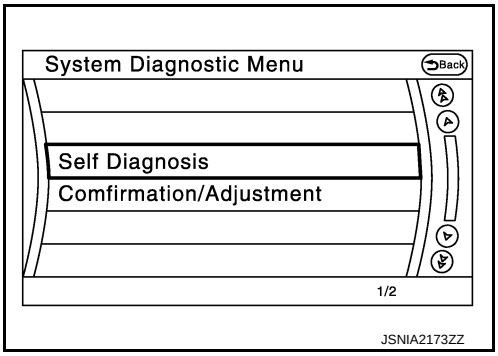
Mode			Description
Confirmation/ Adjustment	Display Diagnosis		The following check functions are available: color tone check by color bar display and white display, light and shade check by gray scale display and touch panel calibration response check.
	Vehicle Signals		Diagnosis of signals can be performed for vehicle speed, parking brake, lights, ignition, reverse, side view switch and room lamp.
	Climate Control		Start auto air conditioner system self-diagnosis.
	Navigation	Steering Angle Adjustment	When there is a difference between the actual turning angle and the vehicle mark turning angle, it can be adjusted.
		Speed Calibration	When there is a difference between the current location mark and the actual location, it can be adjusted.
	Error History		The system malfunction and the frequency when occurring in the past are displayed. When the malfunctioning item is selected, the time and place that the selected malfunction last occurred are displayed.
	Synchronizer FES Clock		–
	Speaker Test		The connection of a speaker can be confirmed by test tone.
	Vehicle CAN Diagnosis		The transmitting/receiving of CAN communication can be monitored.
	AV COMM Diagnosis		The communication condition of each unit of Multi AV system can be monitored.
	Hands-free Phone		The received volume adjustment of hands-free phone, microphone speaker check, and erase memory can be performed.
	Camera Cont.	With rear view monitor	The four functions of “Correct Draw Line of Rear view Camera”, “Alter/ Confirm Configuration”, “Reset Configuration” and “Camera Syst Type” are available.
		With around view monitor	It can perform the confirmation of a signal connection to around view monitor control unit, the calibration of each camera, Correct Draw Line of Camera Image, and Fine Tuning of Birds-Eye View.
	Delete Unit Connection Log		Erase the connection history of unit and error history.
	Initialize Settings		Initializes the AV control unit memory.
	Version Information		Version information of the AV control unit is displayed.

STARTING PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “SETTING” button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   - Shifting from current screen to previous screen is performed by pressing “BACK” button.



4. The trouble diagnosis initial screen is displayed, and then the items of “Self Diagnosis” and “Confirmation/Adjustment” can be selected.



SELF-DIAGNOSIS MODE

1. Start the self-diagnosis function and select “Self Diagnosis”.

- Self-diagnosis subdivision screen is displayed, and the self-diagnosis mode starts.
- The bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis.

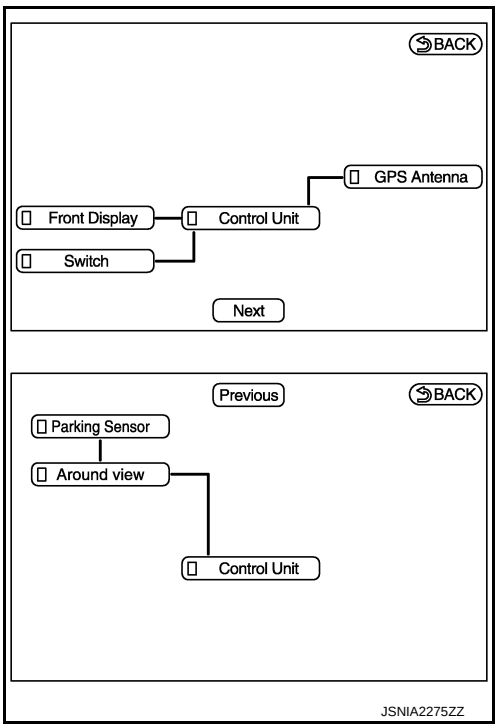
2. Diagnosis results are displayed after the self-diagnosis is completed. The unit names and the connection lines are color-coded according to the diagnostic results.

Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction Note	Red	Green

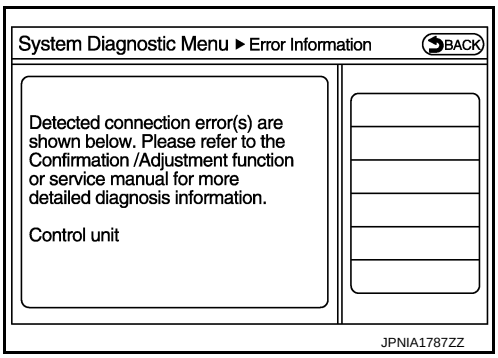
NOTE:

Control unit (AV control unit) is displayed in red.

- Replace AV control unit if “Self-Diagnosis did not run because of a control unit malfunction” is indicated. The symptom is AV control unit internal error. Refer to AV-496, "Exploded View".
- If multiple errors occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > gray.



- The comments of the self-diagnosis results can be viewed with a component in the diagnosis result screen.



Detection Range of Self-diagnosis Mode

- The self-diagnosis mode allows the technician to diagnose the connection in the communication line between AV control unit and each unit and the internal operation of the AV control unit.
- Because the start condition of diagnosis function is a switch operation, the on board diagnosis function cannot be started up if any malfunction is detected in the communication circuit between AV control unit and multifunction switch.

SELF-DIAGNOSIS RESULTS

Check the applicable display at the following table, and then repair the malfunctioning parts.

Only Unit Part Is Displayed In Red.

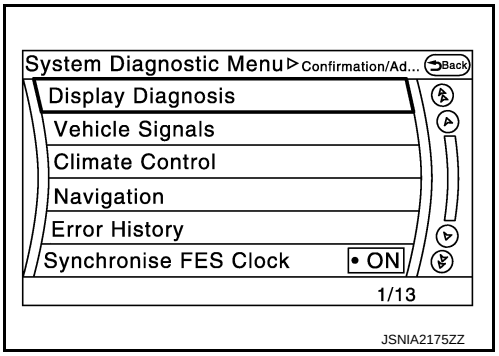
Screen switch	Description	Possible malfunction location / Action to take
Control Unit	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.

A Connecting Cable Between Units Is Displayed In Yellow.

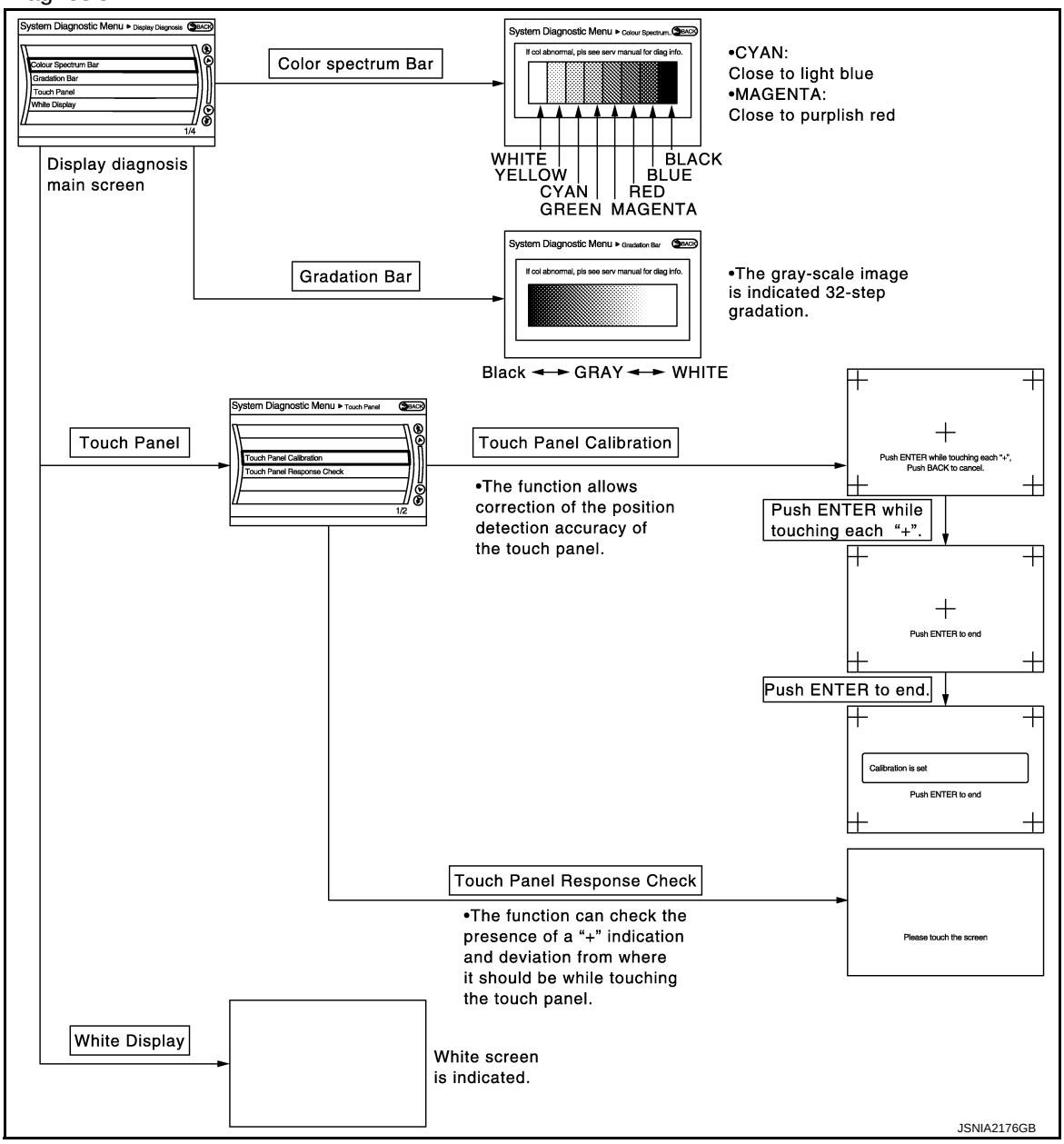
Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control unit ⇔ Front Display	Malfunction is detected in serial communication circuits between AV control unit and front display unit.	Serial communication circuits between AV control unit and front display unit.
Control unit ⇔ GPS Antenna	GPS antenna connection malfunctions detected.	GPS antenna
Control unit ⇔ Around view	When either one of the following items are detected: • around view monitor control unit power supply and ground circuits are malfunctioning. • AV communication circuits between around view monitor control unit and AV control unit are malfunctioning.	• Around view monitor control unit power supply and ground circuits. • AV communication circuits between around view monitor control unit and AV control unit.
Around view ⇔ Parking sensor	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between AV control unit and sonar control unit.

CONFIRMATION/ADJUSTMENT MODE

1. Start the diagnosis function and select “Confirmation/Adjustment”. The confirmation/adjustment mode indicates where each item can be checked or adjusted.
2. Select each switch on the “Confirmation/Adjustment Mode” screen to display the relevant trouble diagnosis screen. Press the “Back” switch to return to the initial Confirmation/Adjustment Mode screen.

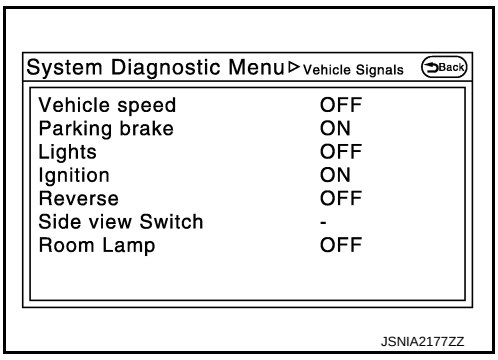


Display Diagnosis



Vehicle Signals

A comparison check can be made of each actual vehicle signal and the signals recognized by the system.



Diagnosis item	Display	Vehicle status	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
Parking brake	ON	Parking brake is applied.	
	OFF	Parking brake is released.	
Lights	ON	Light switch ON	—
	OFF	Light switch OFF	
Ignition	ON	Ignition switch ON	—
	OFF	Ignition switch in ACC position	
Reverse	ON	Shift the selector lever to “R” position	Changes in indication may be delayed. This is normal.
	OFF	Shift the selector lever other than “R” position	
SIDE VIEW SW	—	—	This item is displayed, but cannot be monitored.
ROOM LAMP*	ON	5 seconds after opening any door.	Check 10 seconds after closing all doors.
	OFF	Except for above.	

*:For vehicles without front driver door switch signal circuit, the ON/OFF indication is fixed to off.

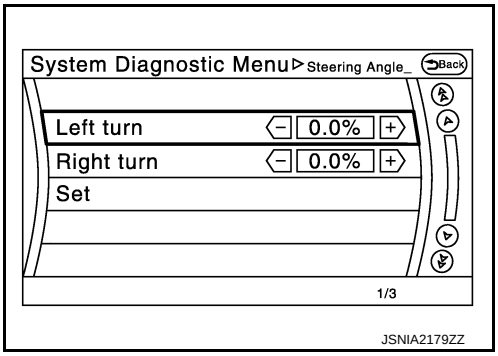
Climate Control

Refer to “HEATER & AIR CONDITIONING CONTROL SYSTEM” for details.

Navigation

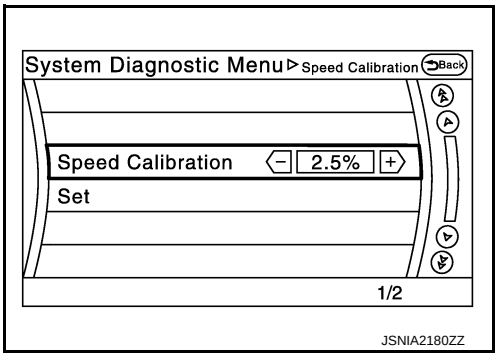
STEERING ANGLE ADJUSTMENT

The steering angle output value detected with the gyroscope is adjusted.



SPEED CALIBRATION

During normal driving, distance error caused by tire wear and tire pressure change is automatically adjusted for by the automatic distance correction function. This function, on the other hand, is for immediate adjustment, in cases such as driving with tire chain fitted on tires.



Error History

The self-diagnosis results are judged depending on whether any error occurs from when “Self-diagnosis” is selected until the self-diagnosis results are displayed.

However, the diagnosis results are judged normal if an error has occurred before the ignition switch is turned ON and then no error has occurred until the self-diagnosis start. Check the “Error Record” to detect any error that may have occurred before the self-diagnosis start because of this situation.

The error record displays the time and place of the most recent occurrence of that error. However, take note of the following points.

- If there is a malfunction with the GPS antenna circuit board in the AV control unit, the correct date and time of occurrence may not be able to be displayed.
- Place of the error occurrence is represented by the position of the current location mark at the time an error occurred. If current location mark has deviated from the correct position, then the place of the error occurrence cannot be located correctly.
- The frequency of occurrence is displayed in a count up manner. The actual count up method differs depending on the error item.

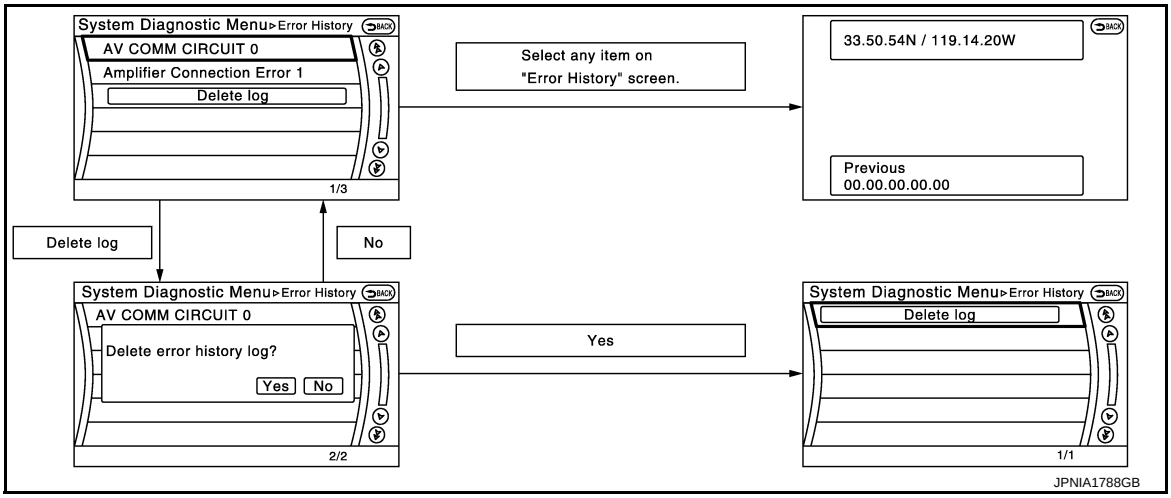
Count up method A

- The counter resets to 0 if an error occurs when IGN switch is turned ON. The counter increases by 1 if the condition is normal at a next IGN ON cycle.
- The counter upper limit is 39. Any counts exceeding 39 are ignored.“ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT-III.

Count up method B

- The counter increases by 1 if an error occurs when IGN switch is ON. The counter will not decrease even if the condition is normal at the next IGN ON cycle.
- The counter upper limit is 50. Any counts exceeding 50 are ignored. “ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT-III.

Display type of occurrence frequency	Error history display item
Count up method A	CAN communication line, control unit (CAN), AV communication line, control unit (AV)
Count up method B	Other than the above



Error item

Some error items may be displayed simultaneously according to the cause. If some error items are displayed simultaneously, the detection of the cause can be performed by the combination of display items

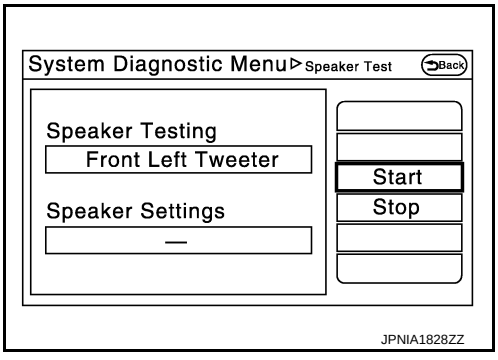
Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT	CAN communication malfunction is detected.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-334, "CONSULT - III Function (MULTI AV)".

Error item	Description	Possible malfunction factor/Action to take
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	
FLASH-ROM Error Of Control Unit	AV control unit malfunction is detected.	
Connection Of Gyro		
Connection of G Sensor		
CAN Controller Memory Error		
Bluetooth Module Connection Error		
Sub CPU Connection Error		
iPod authentification chip error		
Audio connection error		
DSP Connection Error	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
DSP Communication Error		
HDD Connection Error	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
HDD Read Error		
HDD Write Error		
HDD Communication Error		
HDD Access Error		
GPS Communication Error	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.
GPS ROM Error		
GPS RAM Error		
GPS RTC Error		
Unfinished configuration	The writing of configuration data is incomplete.	Write configuration data with CONSULT-III.
USB Controller Communication Error	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.
DVD Mechanism Communication Error	AV control unit malfunction is detected.	• If DVD can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
Steer. Angle Sensor Calibration	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.
Front Display Connection Error	When either one of the following items are detected: • front display unit power supply and ground circuits malfunction is detected. • malfunction is detected in communication circuits between AV control unit and front display unit.	• front display unit power supply and ground circuits. • Communication circuits between AV control unit and front display unit.
USB electric current Error	Detection of overcurrent in USB connector.	Check USB harness between the AV control unit and USB connector.
GPS Antenna Error	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.

Error item	Description	Possible malfunction factor/Action to take
• AV COMM CIRCUIT • Sonar Connection Error	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between AV control unit and sonar control unit.
• AV COMM CIRCUIT • Switches Connection Error	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT • AVM Connection Error	When either one of the following items are detected: • around view monitor control unit power supply and ground circuits are malfunctioning. • AV communication circuits between multifunction switch and around view monitor control unit are malfunctioning.	• Around view monitor control unit power supply and ground circuits. • AV communication circuits between multifunction switch and around view monitor control unit.
• AV COMM CIRCUIT • AVM Sonar Connection Error	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between AV control unit and sonar control unit.
• AV COMM CIRCUIT • Switches Connection Error • Sonar Connection Error	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT • Switches Connection Error • AVM Connection Error	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

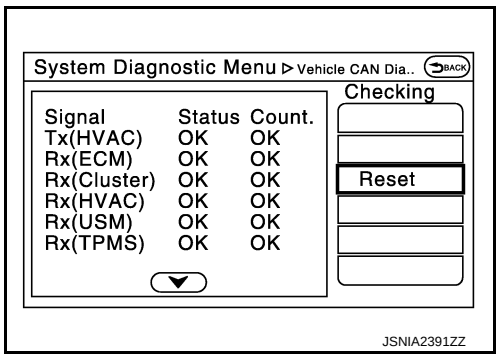
Speaker Test

Select “SPEAKER DIAGNOSIS” to display the Speaker Diagnosis screen. Press “Start” to generate a test tone in a speaker. Press “Start” to generate a test tone in the next speaker. Press “Stop” to stop the test tones.



Vehicle CAN Diagnosis

- CAN communication status and error counter is displayed.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if “Reset” is pressed.

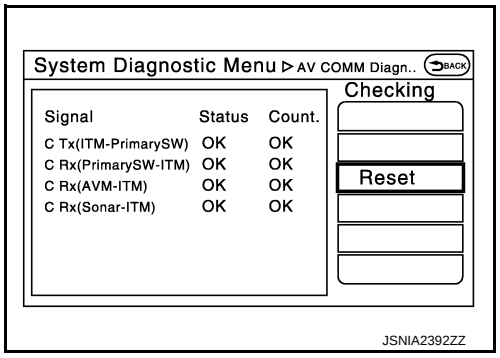


Items	Display (Current)	Malfunction counter (Past)
Tx(HVAC)	OK / ???	OK / 0 – 39
Rx(ECM)	OK / ???	OK / 0 – 39
Rx(Cluster)	OK / ???	OK / 0 – 39
Rx(HVAC)	OK / ???	OK / 0 – 39
Rx(USM)	OK / ???	OK / 0 – 39
Rx(TPMS)	OK / ???	OK / 0 – 39
Rx(STRG)	OK / ???	OK / 0 – 39

NOTE:
“???” indicates UNKWN.

AV COMM Diagnosis

- Displays the communication status between AV control unit (master unit) and each unit.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if “Reset” is pressed.

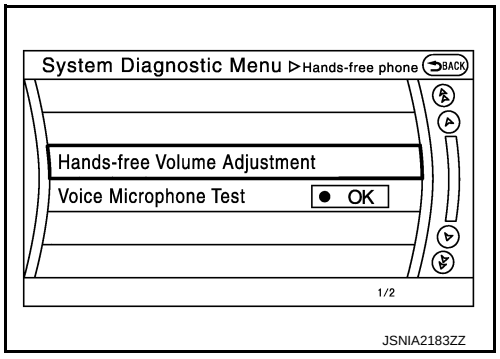


Items	Status (Current)	Counter (Past)
C Tx(ITM-PrimarySW)	OK / ???	OK / 0 – 39
C Rx(PrimarySW-ITM)	OK / ???	OK / 0 – 39
C Rx(AVM-ITM)*	OK / ???	OK / 0 – 39
C Rx(Sonar-ITM)	OK / ???	OK / 0 – 39

*: With around view monitor
NOTE:
“???” indicates UNKWN

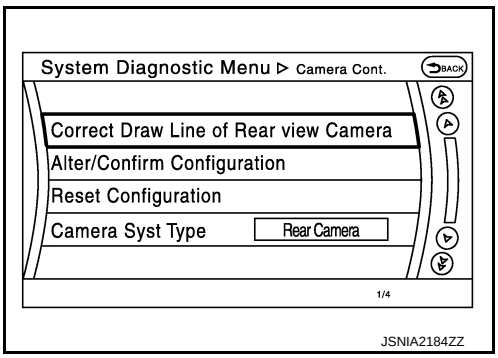
Hands-Free Phone

The hands-free phone reception volume adjustment and microphone and speaker test functions are also available.



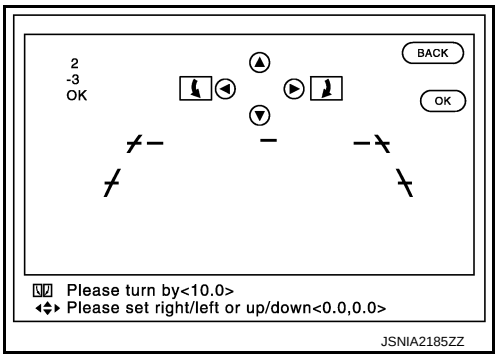
Camera Cont. (With rear view monitor)

The four functions of “Correct Draw Line of Rear view Camera”, “Alter/Confirm Configuration”, “Reset Configuration” and “Camera Syst Type” are available.



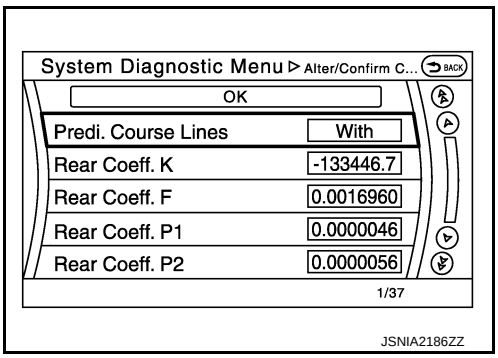
Correct Draw Line of Rear view Camera

- Use this mode to adjust the guide line display position of the rear view monitor if necessary after removing the rear view monitor camera.



Alter/Confirm Configuration

- Configuration stored in the AV control unit can be checked and modified.

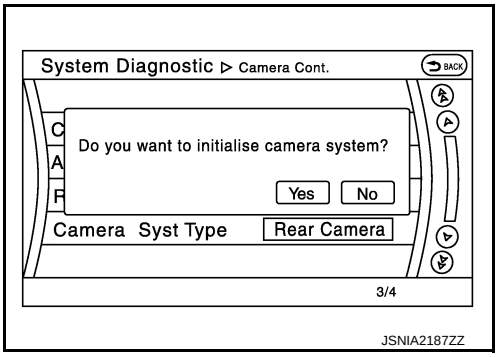


Configuration list

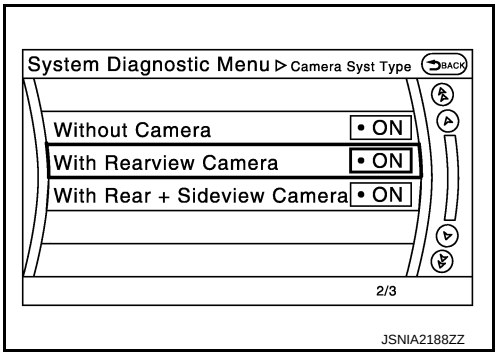
Setting item	Setting	Setting item	Setting
Predi. Course Lines	With	Wheelbase	2.8000000
Rear Coeff. K	–133446.7	Total Length	0.0000000
Rear Coeff. F	0.0016960	Steering Gear Ratio	21.276596
Rear Coeff. P1	0.0000046	Side Coeff. K	0.0000000
Rear Coeff. P2	0.0000056	Side Coeff. F	0.0000000
Rear Coeff. C1	823.00000	Side Coeff. P1	0.0000000
Rear Coeff. C2	480.00000	Side Coeff. P2	0.0000000
Rear Coeff. D1	800.00000	Side Coeff. C1	0.0000000
Rear Coeff. D2	494.00000	Side Coeff. C2	0.0000000
Car Width	1.8029000	Side Coeff. D1	0.0000000
Rear Offset	0.2116000	Side Coeff. D2	0.0000000
Rear Height	0.9106300	Side Offset	0.0000000
Rear L/R Angle	0.0000000	Overall Height	0.0000000
Rear Up/Dn Angle	48.740001	Side L/R Angle	0.0000000

Setting item	Setting	Setting item	Setting
Rear Roll Angle	0.0000000	Side Up/Dn Angle	0.0000000
Bumper Rear Dist.	0.1280900	Side Roll Angle	0.0000000
Bumper Rear Ax Dist	0.9538000	Side Front End Dist	0.0000000
Steer. Max Angle	641.70214	Total Width	0.0000000
Min. Turning Red.	5.6999998	—	—

Reset Configuration
- Configuration stored in the AV control unit can be initialized.

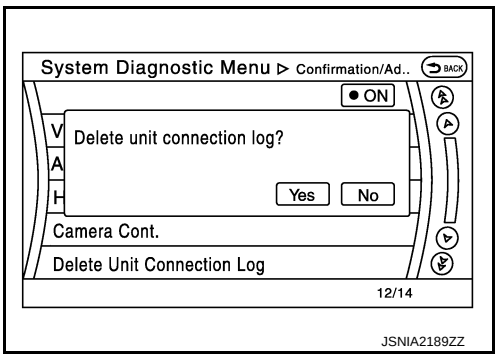


Camera Syst Type
- Type of camera system is selectable.



Camera Cont. (With around view monitor)
Refer to AV-338, "Diagnosis Description".

Delete Unit Connection Log
Deletes any unit connection records and error records from the AV control unit memory. (Clear the records of the unit that has been removed.)

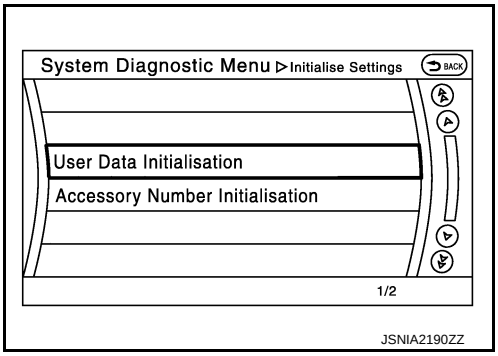


Initialize Settings

“User Data Initialization” and “Accessory Number Initialization” are possible.

CAUTION:

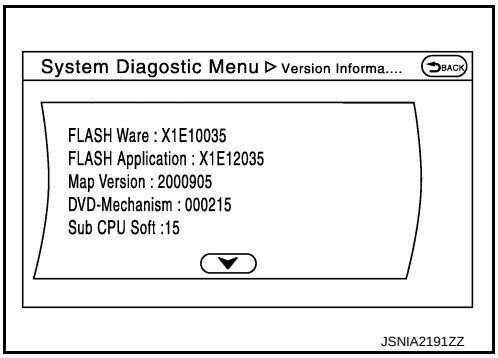
- **Never perform Accessory Number Initialization except when configuration is unsuccessful.**
- **Accessory Number Initialization requires configuration. For details, refer to AV-298, "CONFIGURATION (AV CONTROL UNIT) : Description".**



JSNIA2190ZZ

Version Information

Version information of the AV control unit is displayed.



JSNIA2191ZZ

CONSULT - III Function (MULTI AV)

INFOID:0000000005193991

CONSULT-III FUNCTIONS

CONSULT-III performs the following functions via the communication with the AV control unit.

Diagnosis mode	Description
Ecu Identification	The part number of AV control unit can be checked.
Self Diagnostic Result	Performs a diagnosis on the AV control unit and a connection diagnosis for the communication circuit of the Multi AV system, and displays the current and past malfunctions collectively.
Data Monitor	The diagnosis of vehicle signal that is input to the AV control unit can be performed.
Work Support	Steering angle sensor can be adjusted.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing AV control unit.

AV COMMUNICATION

When “AV communication” of “CAN Diag Support Monitor” is selected, the following function will be performed.

AV communication	AV&NAVI C/U	Displays the communication status from AV control unit to each unit as well as the error counter.
	AUDIO	Displays the AV control unit communication status and the error counter.

ECU IDENTIFICATION

The part number of AV control unit is displayed.

SELF DIAGNOSIS RESULT

- In CONSULT-III self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates “CRNT”. The past malfunction indicates “PAST”.
- The timing is displayed as “0” if any of the error codes [U1000], [U1010], [U1300] and [U1310] is detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.

Self-diagnosis Results Display Item

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detected.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-343, "Diagnosis Procedure".
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	
Cont Unit [U1200]	AV control unit malfunction is detected.	
GYRO NO CONN [U1201]		
G-SENSOR NO CONN [U1202]		
CAN CONT [U1216]		
BLUETOOTH MODULE [U1217]		
SUB CPU CONN [U1228]		
iPod CERTIFICATION [U1229]		
Built-in AUDIO CONN [U122E]		
HDD CONN [U1218]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
HDD READ [U1219]		
HDD WRITE [U121A]		
HDD COMM [U121B]		
HDD ACCESS [U121C]		
GPS COMM [U1204]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.
GPS ROM [U1205]		
GPS RAM [U1206]		
GPS RTC [U1207]		
USB CONTROLLER [U1225]	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.
DSP CONN [U121D]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
DSP COMM [U121E]		
DVD COMM [U1227]	AV control unit malfunction is detected.	• If DVD can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
CONFIG UNFINISH [U122A]	The writing of configuration data is incomplete.	Write configuration data with CONSULT-III.
ST ANGLE SEN CALIB [U1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.
FRONT DISP CONN [U1243]	When either one of the following items are detected: • front display unit power supply and ground circuits malfunction is detected. • communication circuits between AV control unit and front display unit.	• front display unit power supply and ground circuits. • Communication circuits between AV control unit and AV front display unit.
GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.

Error item	Description	Possible malfunction factor/Action to take
USB OVERCURRENT [U1263]	Detection of overcurrent in USB connecter.	Check USB harness between the AV control unit and USB connector.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT [U1300] • AROUND CAMERA CONN [U125B]	When either one of the following items are detected: • around view monitor control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and around view monitor control unit are malfunctioning.	• Around view monitor control unit power supply and ground circuits. • AV communication circuits between AV control unit and around view monitor control unit.
• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between AV control unit and sonar control unit.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • SONAR CONN [U125C]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • AROUND CAMERA CONN [U125B]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

DATA MONITOR

ALL SIGNALS
- Displays the status of the following vehicle signals inputted into the AV control unit.
- For each signal, actual signal can be compared with the condition recognized on the system.

Display Item	Display	Vehicle status	Remarks
VHCL SPD SIG	On	Vehicle speed >0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed =0 km/h (0 MPH)	
PKB SIG	On	Parking brake is applied.	
	Off	Parking brake is released.	
ILLUM SIG	On	Block the light beam from the auto light optical sensor when the light SW is ON.	—
	Off	Expose the auto light optical sensor to light when the light SW is OFF or ON.	
IGN SIG	On	Ignition switch ON	
	Off	Ignition switch in ACC position	
REV SIG	On	Selector lever in R position	Changes in indication may be delayed. This is normal.
	Off	Selector lever in any position other than R	
SIDE VIEW SW	Off	This item is displayed, but cannot be monitored.	—

Display Item	Display	Vehicle status	Remarks
ROOM LAMP*	On	5 seconds after opening any door.	Check 10 seconds after closing all doors.
	Off	Except for above.	

*:For vehicles without front driver door switch signal circuit, the ON/OFF indication is fixed to off.

SELECTION FROM MENU

Allows the technician to select which vehicle signals should be displayed and displays the status of the selected vehicle signals.

Item to be selected	Description
VHCL SPD SIG	The same as when “ALL SIGNALS” is selected.
PKB SIG	
ILLUM SIG	
IGN SIG	
REV SIG	
SIDE VIEW SW	
ROOM LAMP	

WORK SUPPORT

Adjusts the neutral position of the steering angle sensor.

CAUTION:

For vehicles with ESP, adjust the steering angle sensor neutral position on the ABS actuator control unit side.

Item	Description
ST ANGLE SENSOR ADJUSTMENT	Adjusts the neutral position of the steering angle sensor.

CONFIGURATION

Configuration has three functions as follows.

Function	Description
READ CONFIGURATION	• Reads the vehicle configuration of current AV control unit. • Saves the read vehicle configuration.
WRITE CONFIGURATION-Manual selection	Writes the vehicle configuration with manual selection.
WRITE CONFIGURATION-Config file	Writes the vehicle configuration with saved data.

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

Diagnosis Description

INFOID:0000000005213088

The diagnosis function of around view monitor control unit is displayed when selecting “Camera Cont.” of Confirmation/Adjustment mode in the multi AV system.

Around view monitor control unit diagnosis item

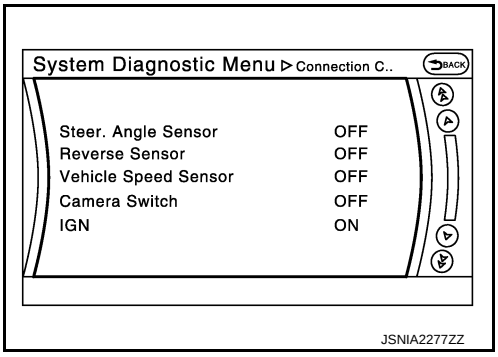
AV control unit Confirmation/Adjustment mode			Function
Camera Cont.	Connection Confirmation		The status of signals input to around view monitor control unit can be checked.
	Calibrating Camera Image	Rear Camera	Performs the calibration of rear camera.
		Pass-Side Camera	Performs the calibration of side camera LH.
		Front Camera	Performs the calibration of front camera.
		Dr-Side Camera	Performs the calibration of side camera.
		Initialize Camera Image Calibration*	The calibration can be initialized to NISSAN factory shipment condition.
	Fine Tuning of Birds-Eye View		• The confirmation and adjustment of the difference between each camera can be performed. • The system changes to the ZOOM function by the operation of shift and the ZOOM ratio of each camera can be changed.
	Correct Draw Line of Wide View	Rear-Wide View	The position of rear wide view guideline can be changed.

CAUTION:

***: Never perform other operations for approximately 10 seconds after performing "Initialize Camera Image Calibration".**

Connection Confirmation

The status of signals inputted to around view monitor control unit can be checked.



Connection Confirmation item list

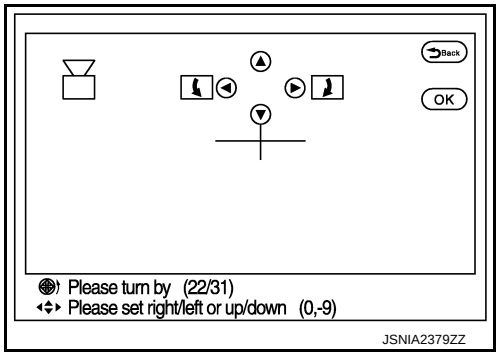
Diagnosis item	Display	Description
Steer. Angle Sensor	ON/OFF	• Input status of steering angle sensor is displayed by ON/OFF. • When all of steering signals 1, 2, and 3 are input, it is turned ON. It remains ON until connection confirmation mode is stopped.
Reverse Sensor	ON/OFF	Input status of reverse signal inputted to around view monitor control unit is displayed by ON/OFF in real time.
Vehicle Speed Sensor	ON/OFF	• Input status of vehicle speed signal inputted to around view monitor control unit is displayed by ON/OFF. • When the vehicle speed signal is input, it is turned ON. It remains ON until connection confirmation mode is stopped.
Camera Switch	ON/OFF	• The status of camera switch signal received via AV communication from NAVI control unit is displayed by ON/OFF. • When the camera switch signal is received once, it is turned ON. It remains ON until connection confirmation mode is stopped.
IGN	ON/OFF	Input status of ignition signal inputted to around view monitor control unit is displayed by ON/OFF in real time.

Diagnosis item	Display	Description
ILL	ON/OFF	Input status of illumination signal inputted to around view monitor control unit is displayed by ON/OFF in real time.
Type of Steer. Angle Sensor	Abslt.	The input type of steering angle sensor is displayed. (“Abslt.” is displayed on this model.)
Type of Steer. Gear ratio	1	The type of steering gear ratio is displayed. (“1” is displayed on this model.)
Left or Right Steer.	Right/Left	The steering position is displayed.
Rear Camera Image Output signal	OK/NG	The input status of rear camera image signal is displayed by OK/NG in real time.
Rear Camera COMM Status	OK/NG	The communication status with rear camera is displayed by OK/NG in real time.
Rear Camera COMM Line	OK/NG	The status of communication line with rear camera is displayed by OK/NG in real time.
Front Camera Image Output signal	OK/NG	The input status of front camera image signal is displayed by OK/NG in real time.
Front Camera COMM Status	OK/NG	The communication status with front camera is displayed by OK/NG in real time.
Front Camera COMM Line	OK/NG	The status of communication line with front camera is displayed by OK/NG in real time.
Pass-Side Camera Image Output signal	OK/NG	The input status of side camera RH image signal is displayed by OK/NG in real time.
Pass-Side Camera COMM Status	OK/NG	The communication status with side camera RH is displayed by OK/NG in real time.
Pass-Side Camera COMM Line	OK/NG	The status of communication line with side camera RH is displayed by OK/NG in real time.
Dr-Side Camera Image Output signal	OK/NG	The input status of side camera LH image signal is displayed by OK/NG in real time.
Dr-Side Camera COMM Status	OK/NG	The communication status with side camera LH is displayed by OK/NG in real time.
Dr-Side Camera COMM Line	OK/NG	The status of communication line with side camera LH is displayed by OK/NG in real time.

Calibrating Camera Image

- Perform the calibration of camera image caused by the incorrect mounting position of each camera, etc. Always perform calibration after performing the following work.
- When each camera or each camera mount (door mirror, front grille, etc.) is removed
- When replacing around view monitor control unit
- When performing the calibration initialization, it can be set to the NISSAN factory shipment condition.

Refer to AV-300, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement" for the calibration procedure.



Adjustment range

Rotating direction	: 31 patterns (16 on the center)
Upper/lower direction	: –99 – 99
Left/right direction	: –99 – 99

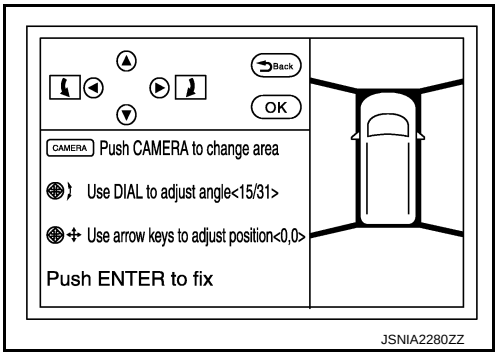
Calibrating Camera Image item

Items	Description
Rear Camera	Performs the calibration of rear camera.
Pass-Side Camera	Performs the calibration of side camera RH.
Front Camera	Performs the calibration of front camera.
Dr-Side Camera	Performs the calibration of side camera LH.
Initialize Camera Image Calibration*	The calibration can be initialized to the factory shipment setting.

CAUTION:
***: Never perform other operations for approximately 10 seconds after performing "Initialize Camera Image Calibration".**

Fine Tuning of Birds-Eye View

- The fine adjustment function of camera calibration can check and adjust the difference between each camera.
- Fine adjustments can be performed for each camera. Move the “+”-mark to select the camera by pressing the “CAMERA” switch.
- Perform the adjustment with the center dial and upper/lower/left/right switches.



JSNIA2280ZZ

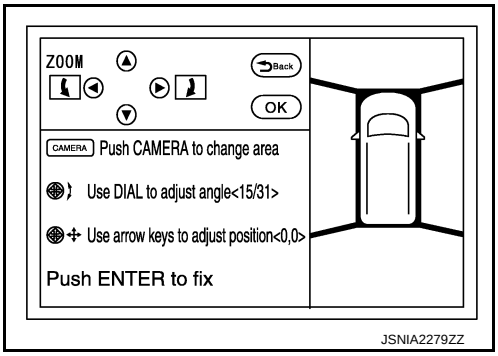
CAUTION:
Operate the center dial slowly because the changing of the screen takes approximately 1 second.
NOTE:

- It can be initialized to the NISSAN factory shipment setting with “Initialize Camera Image Calibration” of “Calibrating Camera Image”.
- The adjustment value is cancelled in this mode by performing “Initialize Camera Image Calibration”.

Adjustment range	
Rotating direction	: 31 patterns (16 on the center)
Upper/lower direction	: –99 – 99
Left/right direction	: –99 – 99

ZOOM function

- The ZOOM ratio of camera can be changed when calibrating the camera.
- It shifts to ZOOM function mode by shifting the selector lever to a position other than the “R” position → “R” position → other than “R” position in the “Fine Tuning of Birds-Eye View” mode.
- The changing of ZOOM ratio can be performed for each camera. Move the “+”-mark to select the camera by pressing “CAMERA” switch and press the left/right switch to change the ZOOM ratio.



JSNIA2279ZZ

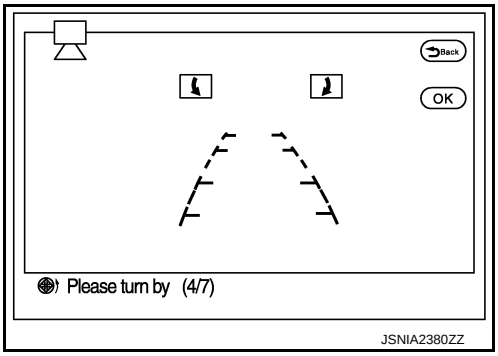
NOTE:

- When the position is not correct in “Fine Tuning of Birds-Eye View” mode, use this "ZOOM" function to adjust it.
- If this function is used, always adjust the upper/lower/left/right position again on the “Fine Tuning of Birds-Eye View” screen.

Correct Draw Line of Wide View

The display position of guiding lines when displayed on the rear-wide view can be changed.

Adjustment range	
Rotating direction	: 7 patterns



JSNIA2380ZZ

Correct Draw Line of Camera Image item

Items	Description
Rear-Wide View	The position of rear wide view guideline can be changed.

DIAGNOSIS SYSTEM [SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)]

CONSULT-III Function (SONAR)

INFOID:0000000005213089

DESCRIPTION

CONSULT-III can display each diagnostic item using the diagnostic test modes shown as follows:

Test mode	Function
Ecu Identification	Sonar control unit part number can be read.
Self Diagnostic Result	Sonar control unit checks the conditions and displays memorized error.
Data Monitor	Sonar control unit input/output data in real time.
Active Test	Gives a drive signal to a load to check the operation.
Work support	Changes setting of each function.

ECU IDENTIFICATION

Displays the part number of sonar control unit.

SELF-DIAGNOSTIC RESULTS

For details, refer to AV-437, "DTC Index".

DATA MONITOR

Monitor Item	Display	Description
SONAR OPE	On	Around view monitor is ON. (sonar system is ON)
	Off	Around view monitor is OFF. (sonar system is OFF)
BUZZER OUTPUT	On	Buzzer is output condition.
	Off	Buzzer is not output condition.
CR SEN [FL] CR SEN [FR] CR SEN [RL] CR SEN [RR]	ERROR	When a sensor is abnormal.
	LV.0	When a sensor is not detection.
	LV.2	The distance between the corner sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).
	LV.3	The distance between the corner sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).
	LV.4	The distance between corner sensor and an obstacle less than 40 cm (15.7 in).

ACTIVE TEST

Active test item	Function
BUZZER	This test is able to check buzzer operation.
SONAR SENSOR	This test is able to check each sonar sensor operation.

WORK SUPPORT

Work support item	Function
CORNER SEN DISTANCE SET	Corner sensor warning buzzer distance is adjustable to 4 phases.

CORNER SEN DISTANCE SET

Corner sensor warning buzzer distance can be set to 4 phases as follows.

Warning item	FARTHER	FAR	NORMAL	NEAR
Second warning	70 – 80 cm (27.5 – 31.4 in)	60 – 70 cm (23.6 – 27.5 in)	50 – 60 cm (19.6 – 23.6 in)	40 – 50 cm (15.7 – 19.6 in)

Warning item	FARTHER	FAR	NORMAL	NEAR
Third warning	50 – 70 cm (19.6 – 27.5 in)	40 – 60 cm (15.7 – 23.6 in)	30 – 50 cm (11.8 – 19.6 in)	30 – 40 cm (11.8 – 15.7 in)
Fourth warning	Less than 50 cm (19.6 in)	Less than 40 cm (15.7 in)	Less than 30 cm (11.8 in)	Less than 30 cm (11.8 in)

The default of this model is “FAR”.

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000005193992

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-39, "CAN Communication Signal Chart".

DTC Logic

INFOID:0000000005193993

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Probable malfunction location
U1000	CAN COMM CIRCUIT [U1000]	AV control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

Diagnosis Procedure

INFOID:0000000005193994

1. PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of “MULTI AV”.

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to LAN-29, "Trouble Diagnosis Procedure".
NO >> Refer to GI-34, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000005193995

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-496, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005193996

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Probable malfunction factor
U1010	CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1200 AV CONTROL UNIT

Description

INFOID:0000000005193997

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-496, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005193998

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1200	Cont Unit [U1200]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1201 AV CONTROL UNIT

Description

INFOID:0000000005193999

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-496, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194000

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1201	GYRO NO CONN [U1201]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1202 AV CONTROL UNIT

Description

INFOID:0000000005194001

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-496, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194002

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1202	G-SENSOR NO CONN [U1202]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1204 AV CONTROL UNIT

Description

INFOID:0000000005194003

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194004

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1204	GPS CONN [U1204]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005194005

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-496, "Exploded View".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1205 AV CONTROL UNIT

Description

INFOID:0000000005194006

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194007

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1205	GPS ROM [U1205]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005194008

1. PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer toAV-496, "Exploded View".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1206 AV CONTROL UNIT

Description

INFOID:0000000005194009

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194010

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1206	GPS RAM [U1206]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005194011

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-496, "Exploded View".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1207 AV CONTROL UNIT

Description

INFOID:0000000005194012

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194013

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1207	GPS RTC [U1207]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005194014

1. PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-496, "Exploded View".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1216 AV CONTROL UNIT

Description

INFOID:0000000005194015

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-496, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194016

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1216	CAN CONT [U1216]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1217 AV CONTROL UNIT

Description

INFOID:0000000005194017

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-496, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194018

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1217	BLUETOOTH MODULE [U1217]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1218 AV CONTROL UNIT

Description

INFOID:0000000005194019

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194020

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1218	HDD CONN [U1218]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005194021

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

U1219 AV CONTROL UNIT

Description

INFOID:0000000005194022

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194023

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1219	HDD READ [U1219]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005194024

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

U121A AV CONTROL UNIT

Description

INFOID:0000000005194025

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194026

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121A	HDD WRITE [U121A]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005194027

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

U121B AV CONTROL UNIT

Description

INFOID:0000000005194028

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194029

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121B	HDD COMM [U121B]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005194030

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

U121C AV CONTROL UNIT

Description

INFOID:0000000005194031

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194032

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121C	HDD ACCESS [U121C]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005194033

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

U121D AV CONTROL UNIT

Description

INFOID:0000000005194034

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194035

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121D	DSP CONN [U121D]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005194036

1.CHECK PLAYBACK OF A DISK (CD)

Can a disk (CD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

U121E AV CONTROL UNIT

Description

INFOID:0000000005194037

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194038

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121E	DSP COMM [U121E]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005194039

1.CHECK PLAYBACK OF A DISK (CD)

Can a disk (CD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

U1225 AV CONTROL UNIT

Description

INFOID:0000000005194040

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194041

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1225	USB CONTROLLER [U1225]	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.

U1227 AV CONTROL UNIT

Description

INFOID:0000000005194042

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194043

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1227	DVD COMM [U1227]	AV control unit malfunction is detected.	• If DVD can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005194044

1.CHECK PLAYBACK OF A DISK (DVD)

Can a disc (DVD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

U1228 AV CONTROL UNIT

Description

INFOID:0000000005194045

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-496, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194046

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1228	SUB CPU CONN [U1228]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1229 AV CONTROL UNIT

Description

INFOID:0000000005194047

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-496, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194048

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1229	iPod CERTIFICATION [U1229]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U122A AV CONTROL UNIT

Description

INFOID:0000000005194049

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194050

DTC	Display contents of CONSULT-III	DTC detection condition	Action to take
U122A	CONFIG UNFINISH [U122A]	The writing of configuration data is incomplete.	Write configuration data with CONSULT-III.

Diagnosis Procedure

INFOID:0000000005194051

1.PERFORM THE SELF-DIAGNOSIS

When U122A is detected, write configuration data with CONSULT-III.

>> Write configuration data with CONSULT-III. Refer to AV-299, "CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement".

U122E AV CONTROL UNIT

Description

INFOID:0000000005194052

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-496, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194053

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U122E	Built-in AUDIO CONN [U122E]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1232 STEERING ANGLE SENSOR

Description

INFOID:0000000005194056

Part name	Description
Steering angle sensor	It is connected to the AV control unit and transmits the steering angle signal via CAN communication.

DTC Logic

INFOID:0000000005194057

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1232	ST ANGLE SEN CALIB [1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.

Diagnosis Procedure

INFOID:0000000005194058

1.ADJUST THE PREDICTIVE COURSE LINE CENTER POSITION OF THE STEERING ANGLE SENSOR

When U1232 is detected, adjust the predictive course line center position of the steering angle sensor.

>> Adjusts the steering angle sensor neutral position on ABS actuator and electrical unit (control unit) side. Refer to BRC-11, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".

U1243 FRONT DISPLAY UNIT

Description

INFOID:0000000005194059

Part name	Description
Front display unit	• Display image is controlled by the serial communication from AV control unit. • RGB digital image signal is input from AV control unit. • Composite image signal is input from AV control unit. • Camera image signal is input from rear view camera. (with rear view monitor) • Camera image signal is input from around view monitor control unit. (with around view monitor) • Touch panel function can be operated for each system by touching a display directly.

DTC Logic

INFOID:0000000005194060

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1243	FRONT DISP CONN [U1243]	When either one of the following items are detected: • front display unit power supply and ground circuit malfunction is detected. • communication circuit between AV control unit and front display unit.	• Front display unit power supply and ground circuit. • Communication circuit between AV control unit and front display unit.

Diagnosis Procedure

INFOID:0000000005194061

1.CHECK FRONT DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check front display unit power supply and ground circuit. Refer to AV-382, "FRONT DISPLAY UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector and AV control unit harness connector.

Front display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M195	9	M210	89	Existed
	10		73	

4. Check continuity between front display unit harness connector and ground.

Front display unit		Ground	Continuity
Connector	Terminals		
M195	9		Not existed
	10		

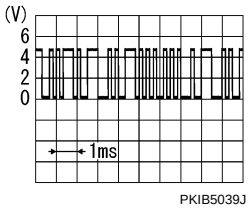
Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK COMMUNICATION SIGNAL

1. Connect front display unit connector and AV control unit connector.

2. Turn ignition switch ON.
3. Check signal between front display unit harness connector and ground.

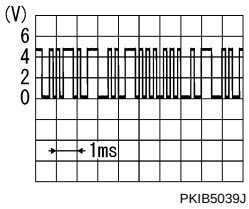
(+)		(–)	Condition	Reference value
Front display unit				
Connector	Terminal			
M195	9	Ground	When adjusting display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

4. CHECK COMMUNICATION SIGNAL

Check signal between front display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Front display unit				
Connector	Terminal			
M195	10	Ground	When adjusting display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace front display unit. Refer to AV-498, "Exploded View".

U1244 GPS ANTENNA

Description

INFOID:0000000005194062

Part name	Description
GPS antenna	GPS signal is received and transmitted to AV control unit.

DTC Logic

INFOID:0000000005194063

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1244	GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.

Diagnosis Procedure

INFOID:0000000005194064

1.GPS ANTENNA CHECK

Visually check GPS antenna and antenna feeder.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Disconnect GPS antenna connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit and ground.

(+)	(–)	Voltage (Approx.)
AV control unit		
Terminal		
153	Ground	5.0 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

U1263 USB

Description

INFOID:0000000005194065

Part name	Description
USB connector	Image signal* and sound signal of USB input is transmitted to AV control unit.

*:Image signals cannot be received from iPod®.

DTC Logic

INFOID:0000000005194066

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1263	USB OVERCURRENT [U1263]	Detection of overcurrent in USB connecter.	Check USB harness between the AV control unit and USB connector.

Diagnosis Procedure

INFOID:0000000005194067

1.CHECK USB HARNESS

Visually check USB harness.

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-496, "Exploded View".
NO >> Replace USB harness.

U1300 AV COMM CIRCUIT

Description

INFOID:0000000005194089

U1300 is indicated when malfunction occurs in communication signal of multi AV system. Indicated simultaneously, without fail, with the malfunction of control units connected to AV control unit with communication line. Determine the possible malfunction cause from the table below.

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
U1300 U125B	• AV COMM CIRCUIT [U1300] • AROUND CAMERA CONN [U125B]	When either one of the following items are detected: • around view monitor control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and around view monitor control unit are malfunctioning.	• Around view monitor control unit power supply and ground circuits. • AV communication circuits between AV control unit and around view monitor control unit.
U1300 U125C	• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between AV control unit and sonar control unit.
U1300 U1240 U125C	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • SONAR CONN [U125C]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.
U1300 U1240 U125B	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • AROUND CAMERA CONN [U125B]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

U1310 AV CONTROL UNIT

Description

INFOID:0000000005194090

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-496, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005194091

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1310	CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace the AV control unit if the malfunction occurs constantly.

B2700 CORNER SENSOR [FL]

Description

INFOID:0000000005213094

Component	Description
CORNER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000005213095

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2700	CORNER SENSOR [FL] [B2700]	Corner sensor (FL) is malfunctioning.	Replace corner sensor (FL).

B2701 SENSOR HARNESS OPEN [CR-FL]

Description

INFOID:0000000005213096

Component	Description
CORNER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000005213097

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2701	SENSOR HARNESS OPEN [CR-FL] [B2701]	Corner sensor (FL) harness circuit is open.	Check corner sensor (FL) circuit.

Diagnosis Procedure

INFOID:0000000005213098

1.CHECK HARNESS CORNER SENSOR (FL) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and corner sensor (FL) connector.
3. Check continuity between sonar control unit harness connector and corner sensor (FL) harness connector.

Sonar control unit		Corner sensor (FL)		Continuity
Connector	Terminal	Connector	Terminal	
M47	3	E154	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	3		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CORNER SENSOR (FL) GROUND CIRCUIT

Check continuity between sonar control unit harness connector and corner sensor (FL) harness connector.

Sonar control unit		Corner sensor (FL)		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	E154	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

B2702 CORNER SENSOR [FR]

Description

INFOID:0000000005213099

Component	Description
CORNER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000005213100

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2702	CORNER SENSOR [FR] [B2702]	Corner sensor (FR) is malfunctioning.	Replace corner sensor (FR).

B2703 SENSOR HARNESS OPEN [CR-FR]

Description

INFOID:0000000005213101

Component	Description
CORNER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000005213102

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2703	SENSOR HARNESS OPEN [CR-FR] [B2703]	Corner sensor (FR) harness circuit is open.	Check corner sensor (FR) circuit.

Diagnosis Procedure

INFOID:0000000005213103

1.CHECK HARNESS CORNER SENSOR (FR) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and corner sensor (FR) connector.
3. Check continuity between sonar control unit harness connector and corner sensor (FR) harness connector.

Sonar control unit		Corner sensor (FR)		Continuity
Connector	Terminal	Connector	Terminal	
M47	4	E152	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	4		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CORNER SENSOR (FR) GROUND CIRCUIT

Check continuity between sonar control unit harness connector and corner sensor (FR) harness connector.

Sonar control unit		Corner sensor (FR)		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	E152	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

B2704 CORNER SENSOR [RL]

Description

INFOID:0000000005213104

Component	Description
CORNER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000005213105

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2704	CORNER SENSOR [RL] [B2704]	Corner sensor (RL) is malfunctioning.	Replace corner sensor (RL).

B2705 SENSOR HARNESS OPEN [CR-RL]

Description

INFOID:0000000005213106

Component	Description
CORNER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000005213107

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2705	SENSOR HARNESS OPEN [CR-RL] [B2705]	Corner sensor (RL) harness circuit is open.	Check corner sensor (RL) circuit.

Diagnosis Procedure

INFOID:0000000005213108

1.CHECK HARNESS CORNER SENSOR (RL) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and corner sensor (RL) connector.
3. Check continuity between sonar control unit harness connector and corner sensor (RL) harness connector.

Sonar control unit		Corner sensor (RL)		Continuity
Connector	Terminal	Connector	Terminal	
M47	5	B259	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	5		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CORNER SENSOR (RL) GROUND CIRCUIT

Check continuity between sonar control unit harness connector and corner sensor (RL) harness connector.

Sonar control unit		Corner sensor (RL)		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	B259	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

B2706 CORNER SENSOR [RR]

Description

INFOID:0000000005213109

Component	Description
CORNER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000005213110

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2706	CORNER SENSOR [RR] [B2706]	Corner sensor (RR) is malfunctioning.	Replace corner sensor (RR).

B2707 SENSOR HARNESS OPEN [CR-RR]

Description

INFOID:0000000005213111

Component	Description
CORNER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000005213112

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2707	SENSOR HARNESS OPEN [CR-RR] [B2707]	Corner sensor (RR) harness circuit is open.	Check corner sensor (RR) circuit.

Diagnosis Procedure

INFOID:0000000005213113

1.CHECK HARNESS CORNER SENSOR (RR) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and corner sensor (RR) connector.
3. Check continuity between sonar control unit harness connector and corner sensor (RR) harness connector.

Sonar control unit		Corner sensor (RR)		Continuity
Connector	Terminal	Connector	Terminal	
M47	6	B256	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	6		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CORNER SENSOR (RR) GROUND CIRCUIT

Check continuity between sonar control unit harness connector and corner sensor (RR) harness connector.

Sonar control unit		Corner sensor (RR)		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	B256	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

POWER SUPPLY AND GROUND CIRCUIT
AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000005194092

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34*1
	74*2
Ignition switch ACC or ON	19

- *1: Gasoline engine models
- *2: Diesel engine models

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M208	19	OFF	Battery voltage
ACC power supply	M208	7	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between AV control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connectors.
3. Check continuity between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M208	20	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

FRONT DISPLAY UNIT

FRONT DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000005194093

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34*1
	74*2
Ignition switch ACC or ON	19

- *1: Gasoline engine models
- *2: Diesel engine models

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between front display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M195	11	OFF	Battery voltage
ACC power supply	M195	23	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between front display unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector.
3. Check continuity between front display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M195	12	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

MULTIFUNCTION SWITCH

MULTIFUNCTION SWITCH : Diagnosis Procedure

INFOID:0000000005194094

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between multifunction switch harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
ACC power supply	M72	3	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between multifunction switch and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect multifunction switch connector.
3. Check continuity between multifunction switch harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M72	1	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

SPEAKER AMP.

SPEAKER AMP. : Diagnosis Procedure

INFOID:0000000005199184

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between speaker amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
ACC power supply	B35	9	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between speaker amp. and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect speaker amp. connector.
3. Check continuity between speaker amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B35	7	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:0000000005212915

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34*1
	74*2
Ignition switch ACC	19

- *1: Gasoline engine models
- *2: Diesel engine models

Is inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUITS

Check voltage between around view monitor control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B46	2	OFF	Battery voltage
ACC power supply	B46	4	ACC	Battery voltage

Is inspection result normal?

YES >> GO TO 3.
NO >> Check harness between around view monitor control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector.
3. Check continuity between around view monitor control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B46	1	OFF	Existed

Is inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : Diagnosis Procedure

INFOID:0000000005212916

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between sonar control unit harness connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M47	13		Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace sonar control unit power supply harness.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector.
3. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	24		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace sonar control unit ground harness.

RGB DIGITAL IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000005216613

Transmit the image displayed with AV control unit with RGB digital image signal to the front display unit.

Diagnosis Procedure

INFOID:0000000005194096

1.CHECK CONTINUITY RGB DIGITAL IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector and AV control unit harness connector.

Front display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M397	27	M396	157	Existed
	28		158	

4. Check continuity between front display unit harness connector and ground.

Front display unit		Ground	Continuity
Connector	Terminals		
M397	27		Not existed
	28		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB DIGITAL IMAGE SIGNAL

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Front display unit				
Connector	Terminal			
M397	27	Ground	—	3.0 V
	28			

Is the inspection result normal?

YES >> Replace front display unit. Refer to AV-498, "Exploded View".
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

COMPOSITE IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000005194097

AV control unit transmits the playback DVD image signal and AUX image signal to the front display unit.

Diagnosis Procedure

INFOID:0000000005194098

1.CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and front display unit connector.
3. Check continuity between AV control unit harness connector and front display unit harness connector.

AV control unit		Front display unit		Continuity
Connector	Terminal	Connector	Terminal	
M210	68	M195	18	Existed

4. Check continuity between AV control unit harness connector and ground.

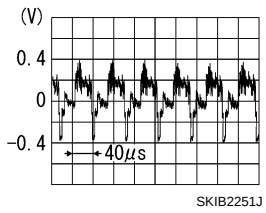
AV control unit		Ground	Continuity
Connector	Terminal		
M210	68		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMPOSITE IMAGE SIGNAL

1. Connect AV control unit connector and front display unit connector.
2. Turn ignition switch ON.
3. Check signal between auxiliary input jacks harness connector and ground.

(+)		(–)	Condition	Reference value
AV control unit				
Connector	Terminal			
M210	68	Ground	At DVD image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace front display unit. Refer to AV-498, "Exploded View".
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

AUX IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000005194099

- Transmits the image signal of AUX device from auxiliary input jacks to AV control unit.
- AV control unit transmits the image signal that is input to the front display unit.

Diagnosis Procedure

INFOID:0000000005194100

1.CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect auxiliary input jacks connector and AV control unit connector.
3. Check continuity between auxiliary input jacks harness connector and AV control unit harness connector.

Auxiliary input jacks		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M196*1	7	M209	26	Existed
M325*2				

- *1: A/T models
- *2 M/T models

4. Check continuity between auxiliary input jacks harness connector and ground.

Auxiliary input jacks		Ground	Continuity
Connector	Terminal		
M196*1	7		Not existed
M325*2			

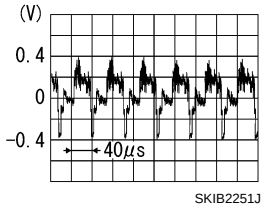
- *1: A/T models
- *2 M/T models

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AUX IMAGE SIGNAL

1. Connect auxiliary input jacks connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between auxiliary input jacks harness connector and ground.

(+)		(–)	Condition	Reference value
Auxiliary input jacks				
Connector	Terminal			
M196*1	7	Ground	At AUX image is displayed.	
M325*2				

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- *1: A/T models
- *2 M/T models

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-496, "Exploded View".
NO >> Check that there is no malfunction in the external device.

DISK EJECT SIGNAL CIRCUIT

Description

INFOID:0000000005194101

The eject signal is output to AV control unit when the eject switch of multifunction switch is pressed.

Diagnosis Procedure

INFOID:0000000005194102

1.CHECK CONTINUITY DISK EJECT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect multifunction switch connector and AV control unit connector.
3. Check continuity between multifunction switch harness connector and AV control unit harness connector.

Multifunction switch		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M72	14	M209	29	Existed

4. Check continuity between multifunction switch harness connector and ground.

Multifunction switch		Ground	Continuity
Connector	Terminal		
M72	14		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Connect multifunction switch connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M209	29	Ground	Pressing the eject switch	0 V
			Except for above	5.0 V

Is the inspection result normal?

YES >> Replace preset switch. Refer to AV-506, "Exploded View".
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

MICROPHONE SIGNAL CIRCUIT

Description

INFOID:0000000005194103

Supply power from AV control unit to microphone. The microphone transmits the sound/voice to the AV control unit.

Diagnosis Procedure

INFOID:0000000005194104

1.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and microphone connector.
3. Check continuity between AV control unit harness connector and microphone harness connector.

AV control unit		Microphone		Continuity
Connector	Terminals	Connector	Terminals	
M210	71	R17	2	Existed
	72		4	
	87		1	

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminals		
M210	72		Not existed
	87		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE MICROPHONE VCC

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

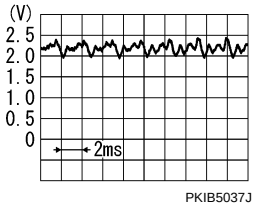
(+)		(–)	Voltage (Approx.)
AV control unit		Ground	
Connector	Terminal		
M210	72		5.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.
2. Check signal between AV control unit harness connector.

(+)		(–)		Condition	Reference value
AV control unit		AV control unit			
Connector	Terminal	Connector	Terminal		
M210	87	M210	71	Give a voice.	

PKIB5037J

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-496, "Exploded View".
NO >> Replace microphone. Refer to AV-510, "Exploded View".

CAMERA IMAGE SIGNAL CIRCUIT (WITH REAR VIEW MONITOR)

Description

INFOID:0000000005194105

- The AV control unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the front display unit when power is supplied from the AV control unit.

Diagnosis Procedure

INFOID:0000000005194106

1.CHECK CONTINUITY CAMERA POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and rear view camera connector.
3. Check continuity between AV control unit harness connector and rear view camera harness connector.

AV control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M209	22	D121	1	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M209	22		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE CAMERA POWER SUPPLY

1. Connect AV control unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to “R”.
4. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M209	22	Ground	Shift position is “R”.	6.0 V
			Except for above.	0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

3.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and rear view camera connector.
3. Check continuity between front display unit harness connector and rear view camera harness connector.

Front display unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M195	8	D121	3	Existed

4. Check continuity between front display unit harness connector and ground.

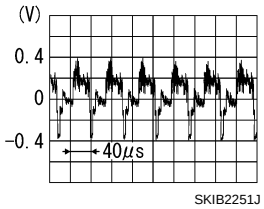
Front display unit		Ground	Continuity
Connector	Terminal		
M195	8		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK CAMERA IMAGE SIGNAL

1. Connect front display unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to “R”.
4. Check signal between front display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Front display unit				
Connector	Terminal			
M195	8	Ground	At camera image is displayed.	 SKIB2251J

Is inspection result normal?

YES >> Replace front display unit. Refer to AV-498, "Exploded View".
NO >> Replace rear view camera. Refer to AV-525, "Exploded View".

CAMERA IMAGE SIGNAL CIRCUIT (WITH AROUND VIEW MONITOR)

Description

INFOID:0000000005216041

Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.

Diagnosis Procedure

INFOID:0000000005216042

1.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and around view monitor control unit connector.
3. Check continuity between front display unit harness connector and around view monitor control unit harness connector.

Front display unit		Around view monitor control unit		Continuity
Connector	Terminal	Connector	Terminal	
M195	8	B46	27	Existed

4. Check continuity between front display unit harness connector and ground.

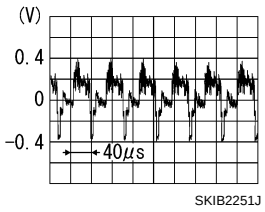
Front display unit		Ground	Continuity
Connector	Terminal		
M195	8		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK CAMERA IMAGE SIGNAL

1. Connect front display unit connector and around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector and ground.

(+) Front display unit		(–)	Condition	Reference value
Connector	Terminal			
M195	8	Ground	At camera image is displayed.	

SKIB2251J

Is inspection result normal?

YES >> Replace front display unit. Refer to AV-498, "Exploded View".
NO >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".

FRONT CAMERA COMMUNICATION SIGNAL CIRCUIT

Description

INFOID:0000000005213116

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

Diagnosis Procedure

INFOID:0000000005213117

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and front camera connector.
3. Check continuity between around view monitor control unit harness connector and front camera harness connector.

Around view monitor control unit		Front camera		Continuity
Connector	Terminal	Connector	Terminal	
B45	45	E155	6	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

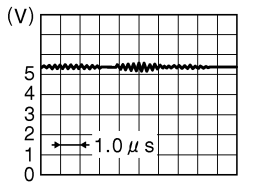
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	45		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and front camera connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+) Around view monitor control unit		(–)	Condition	Reference value
Connector	Terminal			
B45	45	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".
NO >> Replace front camera. Refer to AV-514, "Exploded View".

FRONT CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000005213118

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

Diagnosis Procedure

INFOID:0000000005213119

1.CHECK CONTINUITY FRONT CAMERA POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and front camera connector.
3. Check continuity between around view monitor control unit harness connector and front camera harness connector.

Around view monitor control unit		Front camera		Continuity
Connector	Terminals	Connector	Terminals	
B45	44	E155	2	Existed
	46		1	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	46		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE FRONT CAMERA POWER SUPPLY

1. Connect around view monitor control unit connector and front camera connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B45	46	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".

3.CHECK CONTINUITY FRONT CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and front camera connector.
3. Check continuity between around view monitor control unit harness connector and front camera harness connector.

Around view monitor control unit		Front camera		Continuity
Connector	Terminals	Connector	Terminals	
B45	41	E155	3	Existed
	42		4	

4. Check continuity between around view monitor control unit harness connector and ground.

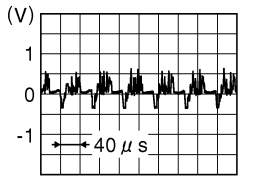
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B45	41, 42		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK FRONT CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit connector and front camera connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B45	41	B45	42	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0834GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".
NO >> Replace front camera. Refer to AV-514, "Exploded View".

REAR CAMERA COMMUNICATION SIGNAL CIRCUIT

Description

INFOID:0000000005213120

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

Diagnosis Procedure

INFOID:0000000005213121

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and rear camera connector.
3. Check continuity between around view monitor control unit harness connector and rear camera harness connector.

Around view monitor control unit		Rear camera		Continuity
Connector	Terminal	Connector	Terminal	
B46	35	D111	4	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

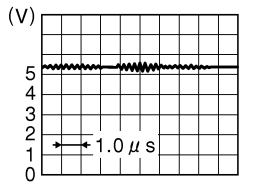
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	35		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and rear camera connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+) Around view monitor control unit		(–)	Condition	Reference value
Connector	Terminal			
B46	35	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".
NO >> Replace rear camera. Refer to AV-515, "Exploded View".

REAR CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000005213122

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

Diagnosis Procedure

INFOID:0000000005213123

1.CHECK CONTINUITY REAR CAMERA POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and rear camera connector.
3. Check continuity between around view monitor control unit harness connector and rear camera harness connector.

Around view monitor control unit		Rear camera		Continuity
Connector	Terminals	Connector	Terminals	
B46	36	D111	8	Existed
	38		7	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	36		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE REAR CAMERA POWER SUPPLY

1. Connect around view monitor control unit connector and rear camera connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B46	36	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".

3.CHECK CONTINUITY REAR CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and rear camera connector.
3. Check continuity between around view monitor control unit harness connector and rear camera harness connector.

Around view monitor control unit		Rear camera		Continuity
Connector	Terminals	Connector	Terminals	
B46	39	D111	5	Existed
	40		1	

4. Check continuity between around view monitor control unit harness connector and ground.

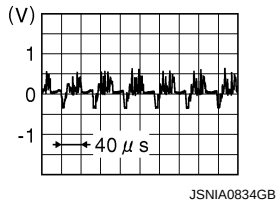
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B46	39, 40		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK REAR CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit connector and rear camera connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B46	39	B46	40	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0834GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".
NO >> Replace rear camera. Refer to AV-515, "Exploded View".

SIDE CAMERA LH COMMUNICATION SIGNAL CIRCUIT

LHD MODELS

LHD MODELS : Description

INFOID:0000000005213124

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

LHD MODELS : Diagnosis Procedure

INFOID:0000000005213125

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
B45	47	D3	3	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

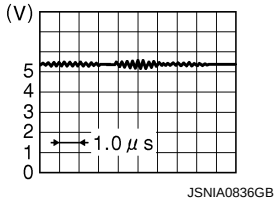
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	47		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Reference value
Around view monitor control unit				
Connector	Terminal			
B45	47	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".
NO >> Replace side camera LH. Refer to AV-516, "LHD MODELS : Exploded View".

RHD MODELS

RHD MODELS : Description

INFOID:0000000005213126

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

RHD MODELS : Diagnosis Procedure

INFOID:0000000005213127

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
B46	33	D2	3	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

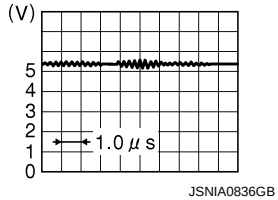
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	33		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Reference value
Around view monitor control unit				
Connector	Terminal			
B46	33	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".
NO >> Replace side camera LH. Refer to AV-517, "RHD MODELS : Exploded View".

SIDE CAMERA LH IMAGE SIGNAL CIRCUIT
LHD MODELS
LHD MODELS : Description

INFOID:0000000005213128

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

LHD MODELS : Diagnosis Procedure

INFOID:0000000005213129

1.CHECK CONTINUITY SIDE CAMERA LH POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminals	Connector	Terminals	
B45	48	D3	6	Existed
	50		18	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	48		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE SIDE CAMERA LH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B45	48	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".

3.CHECK CONTINUITY SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.

3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminals	Connector	Terminals	
B45	51	D3	5	Existed
	52		17	

4. Check continuity between around view monitor control unit harness connector and ground.

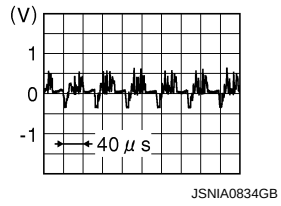
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B45	51, 52		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK SIDE CAMERA LH IMAGE SIGNAL

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B45	51	B45	52	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0834GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".
NO >> Replace side camera LH. Refer to AV-516, "LHD MODELS : Exploded View".

RHD MODELS

RHD MODELS : Description

INFOID:0000000005213130

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

RHD MODELS : Diagnosis Procedure

INFOID:0000000005213131

1. CHECK CONTINUITY SIDE CAMERA LH POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect control unit connector and door mirror (passenger side) connector.

3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminals	Connector	Terminals	
B46	32	D2	18	Existed
	34		6	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	34		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE SIDE CAMERA LH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B46	34	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".

3.CHECK CONTINUITY SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminals	Connector	Terminals	
B46	29	D2	5	Existed
	30		17	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B46	29, 30		Not existed

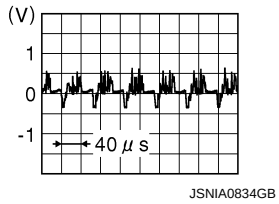
Is inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

4. CHECK SIDE CAMERA LH IMAGE SIGNAL

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B46	29	B46	30	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0834GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-516, "LHD MODELS : Exploded View".
NO >> Replace side camera LH. Refer to AV-517, "RHD MODELS : Exploded View".

SIDE CAMERA RH COMMUNICATION SIGNAL CIRCUIT

LHD MODELS

LHD MODELS : Description

INFOID:0000000005213132

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

LHD MODELS : Diagnosis Procedure

INFOID:0000000005213133

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
B46	33	D33	3	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

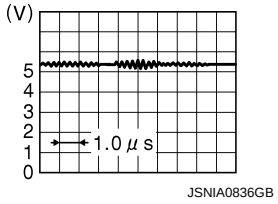
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	33		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Reference value
Around view monitor control unit				
Connector	Terminal			
B46	33	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".
NO >> Replace side camera RH. Refer to AV-519, "LHD MODELS : Exploded View".

RHD MODELS

RHD MODELS : Description

INFOID:0000000005213134

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

RHD MODELS : Diagnosis Procedure

INFOID:0000000005213135

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
B45	47	D48	3	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

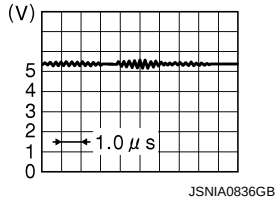
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	47		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+) Around view monitor control unit		(–)	Condition	Reference value
Connector	Terminal			
B45	47	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".
NO >> Replace side camera RH. Refer to AV-520, "RHD MODELS : Exploded View".

SIDE CAMERA RH IMAGE SIGNAL CIRCUIT
LHD MODELS
LHD MODELS : Description

INFOID:0000000005213136

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

LHD MODELS : Diagnosis Procedure

INFOID:0000000005213137

1.CHECK CONTINUITY SIDE CAMERA RH POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect control unit connector and door mirror (passenger side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminals	Connector	Terminals	
B46	32	D33	18	Existed
	34		6	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	34		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE SIDE CAMERA RH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B46	34	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".

3.CHECK CONTINUITY SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.

3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminals	Connector	Terminals	
B46	29	D33	5	Existed
	30		17	

4. Check continuity between around view monitor control unit harness connector and ground.

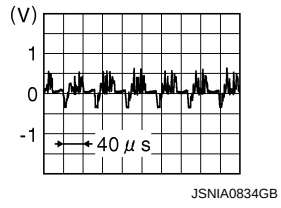
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B46	29, 30		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK SIDE CAMERA RH IMAGE SIGNAL

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B46	29	B46	30	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0834GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".
NO >> Replace side camera RH. Refer to AV-519, "LHD MODELS : Exploded View".

RHD MODELS

RHD MODELS : Description

INFOID:0000000005213138

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

RHD MODELS : Diagnosis Procedure

INFOID:0000000005213139

1. CHECK CONTINUITY SIDE CAMERA RH POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.

3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminals	Connector	Terminals	
B45	48	D48	6	Existed
	50		18	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	48		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE SIDE CAMERA RH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B45	48	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".

3.CHECK CONTINUITY SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminals	Connector	Terminals	
B45	51	D48	5	Existed
	52		17	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B45	51, 52		Not existed

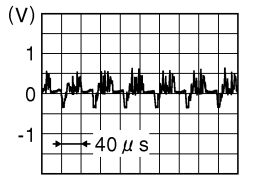
Is inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

4. CHECK SIDE CAMERA RH IMAGE SIGNAL

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B45	51	B45	52	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0834GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-513, "Exploded View".
NO >> Replace side camera RH. Refer to AV-520, "RHD MODELS : Exploded View".

STEERING SWITCH SIGNAL A CIRCUIT

Description

INFOID:0000000006084333

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000006084334

1.CHECK STEERING SWITCH SIGNAL A CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	6	M36	24	Existed

3. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M208	6		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit		AV control unit		
Connector	Terminal	Connector	Terminal	
M208	6	M208	15	5.0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-414, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to SR-16, "Exploded View".

Component Inspection

INFOID:0000000006084335

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

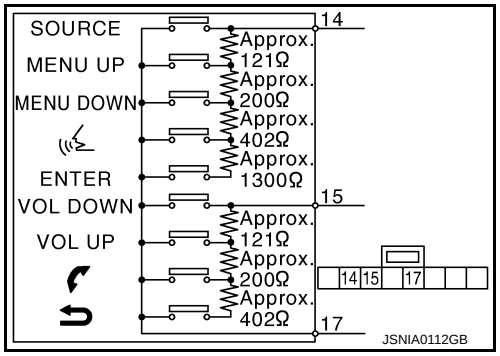
Standard

Between terminals 14 and 17

ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω

Between terminals 15 and 17

switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω



STEERING SWITCH SIGNAL B CIRCUIT

Description

INFOID:0000000006084339

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000006084340

1.CHECK STEERING SWITCH SIGNAL B CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	16	M36	31	Existed

3. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M208	16		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit		AV control unit		
Connector	Terminal	Connector	Terminal	
M208	16	M208	15	5.0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-416, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to SR-16, "Exploded View".

Component Inspection

INFOID:0000000006084341

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

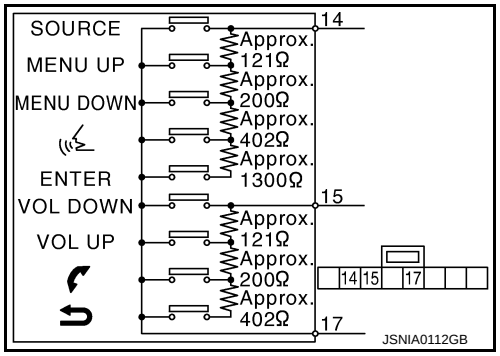
Standard

Between terminals 14 and 17

ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω

Between terminals 15 and 17

switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω



STEERING SWITCH GROUND CIRCUIT

Description

INFOID:0000000006084345

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000006084346

1.CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	15	M36	33	Existed

3. Connect AV control unit connector.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK GROUND CIRCUIT

1. Connect AV control unit connector.
2. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M208	15		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-496, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-418, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to SR-16, "Exploded View".

Component Inspection

INFOID:0000000006084347

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

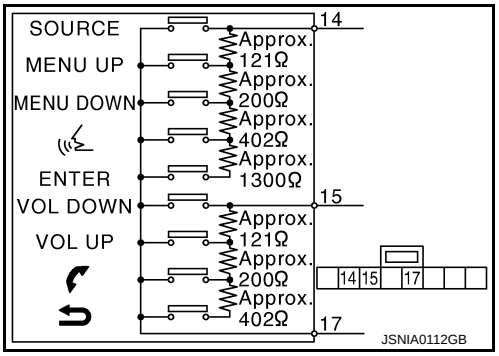
Standard

Between terminals 14 and 17

ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω

Between terminals 15 and 17

switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω



ECU DIAGNOSIS INFORMATION

AV CONTROL UNIT

Reference Value

INFOID:0000000005194116

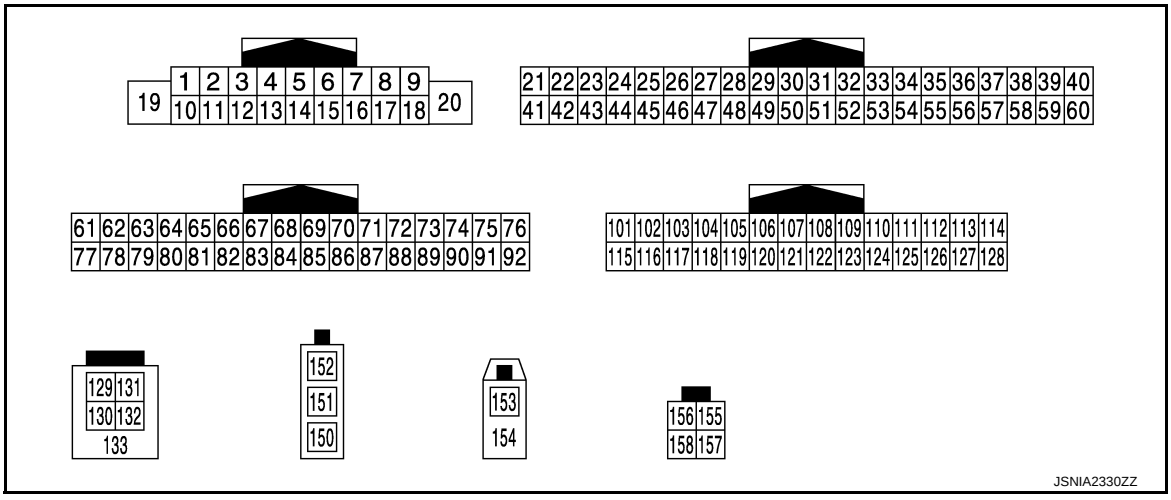
VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

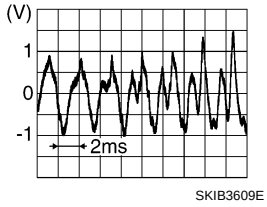
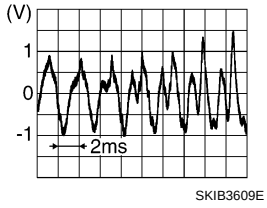
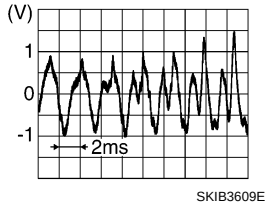
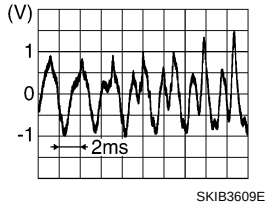
Monitor Item	Condition		Value/Status
VHCL SPD SIG	Ignition switch ON	Vehicle speed > 0 km/h (0 MPH)	On
		Vehicle speed = 0 km/h (0 MPH)	Off
PKB SIG	Ignition switch ON	Parking brake is applied.	On
		Parking brake is released.	Off
ILLUM SIG	Ignition switch ON	Light switch ON	On
		Light switch OFF	Off
IGN SIG	Ignition switch ON	—	On
	Ignition switch ACC	—	Off
REV SIG	Ignition switch ON	Selector lever in R position	On
		Selector lever in any position other than R	Off
SIDE VIEW SW	Ignition switch ON	This item is displayed, but cannot be monitored.	Off
ROOM LAMP*1	Ignition switch ON	Five seconds after opening any door.*2	On
		Except for above.	Off

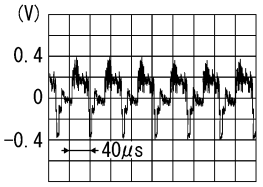
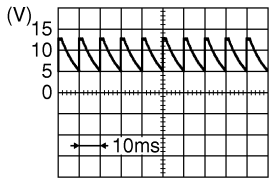
*1:For vehicles without driver door switch signal circuit, the ON/OFF indication is fixed to off.
*2:Check 10 seconds after closing all doors.

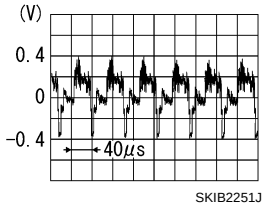
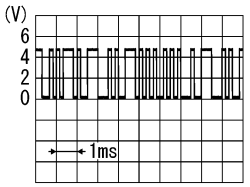
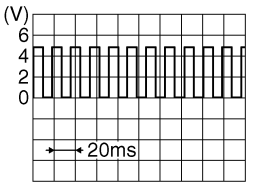
TERMINAL LAYOUT

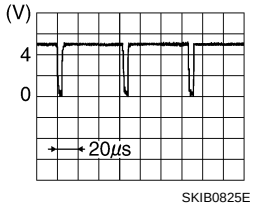
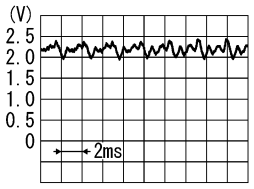
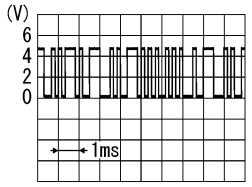
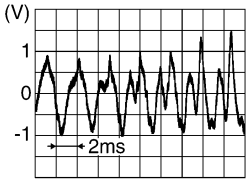
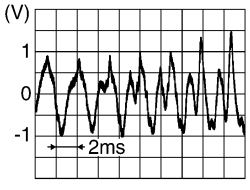


PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
2 (BR)	3 (G)*1 (R)*2	Sound signal front LH and center speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
4 (SB)*3 (LG)*4	5 (V)*3 (L)*4	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
6 (P)	15 (B)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing MENU UP switch.	1.0 V
					Keep pressing MENU DOWN switch.	2.0 V
					Keep pressing switch. (Except for Russia)	3.0 V
					Keep pressing switch. (For Russia)	3.0 V
					Keep pressing ENTER switch.	4.0 V
					Except for above.	5.0 V
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
11 (L)	12 (W)	Sound signal front RH and center speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
13 (L)	14 (P)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
16 (L)	15 (B)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	1.0 V
					Keep pressing switch. (Except for Russia)	2.0 V
					Keep pressing switch. (For Russia)	2.0 V
					Keep pressing switch.	3.0 V
					Except for above.	5.0 V
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
20 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
22 (R)	Ground	Camera power supply	Output	Ignition switch ON	At camera image is displayed.	6.0 V
					Except for above.	0 V
26 (Y)[*3] (BR)[*4]	Ground	AUX image signal	Input	Ignition switch ON	At AUX image is displayed.	 SKIB2251J
29 (SB)[*5] (Y)[*6]	Ground	Disk eject signal	Input	Ignition switch ON	Pressing the eject switch.	0 V
					Except for above.	5.0 V
42 (B)[*3] (W)[*4]	Ground	Camera ground	—	Ignition switch ON	—	0 V
46 (BR)[*3] (Y)[*4]	Ground	AUX image signal ground	—	Ignition switch ON	—	0 V
47	—	Shield	—	—	—	—
49 (BR)[*5] (B)[*6]	Ground	Switch ground	—	Ignition switch ON	—	0 V
64[*7] (GR)	Ground	Driver door switch signal	Input	Ignition switch ON	Door open (driver side)	0 V
					Door close (driver side)	 JPMIA0594GB

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
65 (V)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake is ON.	4.5 V
					Parking brake is OFF.	0 V
67 (B)*5 (L)*6	Ground	Composite image ground	—	Ignition switch ON	—	0 V
68 (R)*5 (P)*6	Ground	Composite image signal	Output	Ignition switch ON	At DVD image is displayed.	 SKIB2251J
71	—	Microphone shield	—	—	—	—
72 (G)*5 (R)*6	Ground	Microphone VCC	Output	Ignition switch ON	—	5.0 V
73 (R)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
74 (P)	—	CAN–L	Input/ Output	—	—	—
75 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
76 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
79 (R)	Ground	Illumination signal	Input	Ignition switch OFF	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12.0 V
80 (G)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
81 (O)	Ground	Reverse signal	Input	Ignition switch ON	R position	12.0 V
					Other than R position	0 V
82 (R)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** Maximum voltage may be 12.0 V due to specifications (connected units).  SKIA6649J
83	—	Shield	—	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
84 (W)	Ground	Composite image synchronizing signal	Output	Ignition switch ON	—	 SKIB0825E
87 (R)*5 (G)*6	71	Microphone signal	Input	Ignition switch ON	Give a voice	 PKIB5037J
88 (B)*4	—	Shield	—	—	—	—
89 (G)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
90 (L)	—	CAN–H	Input/ Output	—	—	—
91 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
92 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
104 (W)	119 (B)	AUX sound signal LH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E
117	—	Shield	—	—	—	—
118 (R)	119 (B)	AUX sound signal RH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E
129 (G)	—	USB ground	—	—	—	—
130 (R)	—	USB D– signal	Input/ Output	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
131 (W)	—	V BUS signal	Output	—	—	—
132 (L)	—	USB D+ signal	Input/ Output	—	—	—
133	—	Shield	—	—	—	—
150	—	AM-FM main	Input	—	—	—
151	—	FM sub	Input	—	—	—
152	Ground	Antenna amp. ON signal	Input	Ignition switch ON	—	12.0 V
153	Ground	GPS antenna signal	Input	Ignition switch ON	Not connected GPS antenna connector.	5.0 V
154	—	Shield	—	—	—	—
157	Ground	RGB digital image signal (–)	Output	Ignition switch ON	Not connected connector.	3.0 V
158	Ground	RGB digital image signal (+)	Output	Ignition switch ON	Not connected connector.	3.0 V

- *1: LHD models
- *2: RHD models
- *3: With gasoline engine
- *4: With diesel engine
- *5: LHD models with gasoline engine
- *6: Except LHD models with gasoline engine
- *7: Some vehicles do not include driver door switch signal circuit, depending on the vehicle specification.

Fail-Safe

INFOID:0000000005194118

When the ambiance temperature becomes extremely low or extremely high, AV control unit displays the message and limits the AV control unit function.

FAIL-SAFE CONDITIONS

When the ambiance temperature is –20°C (–4°F) or lower, or when it is 70°C (158°F) or higher

Display

The messages displayed on fail-safe conditions are as shown below:

Fail-safe mode	Display (display of the fail-safe condition)
When HDD temperature is low	HDD system is experiencing problems due to extreme low temperature. Normal operation will resume when temperature rises.
When HDD temperature is high	HDD system is experiencing problems due to extreme high temperature. Normal operation will resume when temperature drops.

DESCRIPTION OF CONTROLS

Function		When Fail-safe Function is activated
Air conditioner	Operation	Only multifunction switch (preset switch) can be operated.
	Display	• LED of multifunction switch (preset switch) illuminates. • Aimed temperature, blow angle, and flow rate are displayed in simplified mode.
Audio	Operation	Only ON/OFF and volume control operations by multifunction switch (preset switch) are possible.
	Display	No display (“Fail-safe mode” is displayed)

Function		When Fail-safe Function is activated
Camera	Operation	Image tone cannot be controlled.
	Display	Cannot be superimposed. (warning display, tone control display)
Hands-free phone	Operation	Cannot be operated.
Navigation	Operation	Cannot be operated.
Self diagnosis		The display in simplified mode of fail-safe condition
CONSULT-III diagnosis		Cannot be operated.

Ability Operation Mode
There is an ability operation mode for Fail-safes due to low or high ambiance temperature.
If HDD data can be read, fail-safe is shown, then normal displays are displayed only for functions which can be operated.

RELEASE CONDITIONS OF FAIL-SAFE

Fail-safe is released on following conditions and normal mode is restored.

When The Temperature of HDD Is Low or High
If the ambient temperature becomes out of fail-safe condition range, normal mode is restored.

DTC Index

INFOID:0000000005194119

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	AV-343, "Diagnosis Procedure"
U1010	CONTROL UNIT (CAN) [1010]	AV-344, "DTC Logic"
U1200	Cont Unit [U1200]	AV-345, "DTC Logic"
U1201	GYRO NO CONN [U1201]	AV-346, "DTC Logic"
U1202	G-SENSOR NO CONN [U1202]	AV-347, "DTC Logic"
U1204	GPS COMM [U1204]	AV-348, "Diagnosis Procedure"
U1205	GPS ROM [U1205]	AV-349, "Diagnosis Procedure"
U1206	GPS RAM [U1206]	AV-350, "Diagnosis Procedure"
U1207	GPS RTC [U1207]	AV-351, "Diagnosis Procedure"
U1216	CAN CONT [U1216]	AV-352, "DTC Logic"
U1217	BLUETOOTH MODULE [U1217]	AV-353, "DTC Logic"
U1218	HDD CONN [U1218]	AV-354, "Diagnosis Procedure"
U1219	HDD READ [U1219]	AV-355, "Diagnosis Procedure"
U121A	HDD WRITE [U121A]	AV-356, "Diagnosis Procedure"
U121B	HDD COMM [U121B]	AV-357, "Diagnosis Procedure"
U121C	HDD ACCESS [U121C]	AV-358, "Diagnosis Procedure"
U121D	DSP CONN [U121D]	AV-359, "Diagnosis Procedure"
U121E	DSP COMM [U121E]	AV-360, "Diagnosis Procedure"
U1225	USB CONTROLLER [U1225]	AV-361, "DTC Logic"
U1227	DVD COMM [U1227]	AV-362, "Diagnosis Procedure"
U1228	SUB CPU CONN [U1228]	AV-363, "DTC Logic"
U1229	iPod CERTIFICATION [U1229]	AV-364, "DTC Logic"
U122A	CONFIG UNFINISH [U122A]	AV-365, "Diagnosis Procedure"
U122E	Built-in AUDIO CONN [U122E]	AV-366, "DTC Logic"
U1232	ST ANGLE SEN CALIB [1232]	AV-367, "Diagnosis Procedure"
U1243	FRONT DISP CONN [U1243]	AV-368, "Diagnosis Procedure"

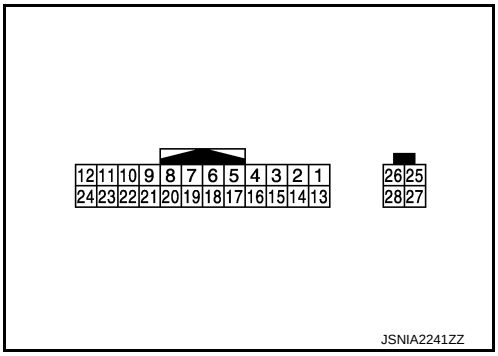
DTC	Display item	Refer to
U1244	GPS ANTENNA CONN [U1244]	AV-370, "Diagnosis Procedure"
U1263	USB OVERCURRENT [U1263]	AV-371, "Diagnosis Procedure"
U1310	CONTROL UNIT (AV) [U1310]	AV-373, "DTC Logic"
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	AV-372, "Description"
U1300 U125B	• AV COMM CIRCUIT [U1300] • AROUND CAMERA CONN [U125B]	AV-372, "Description"
U1300 U125C	• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	AV-372, "Description"
U1300 U1240 U125B	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • AROUND CAMERA CONN [U125B]	AV-372, "Description"

FRONT DISPLAY UNIT

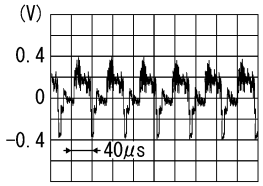
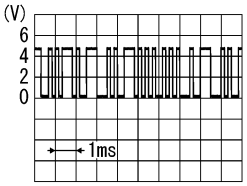
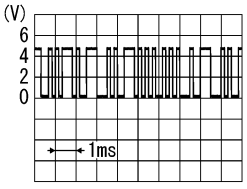
Reference Value

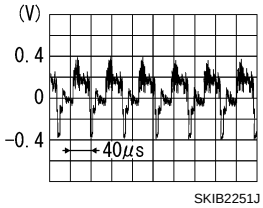
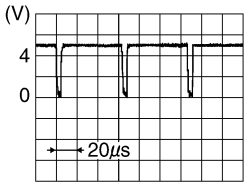
INFOID:0000000005194120

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
6	—	Shield	—	—	—	—
7 (B)*1	—	Shield	—	—	—	—
8 (W)	Ground	Camera image signal	Input	Ignition switch ON	At camera image is displayed.	 SKIB2251J
9 (G)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
10 (R)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
11 (P)*2 (Y)*3	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
18 (R)*2 (P)*3	Ground	Composite image signal	Input	Ignition switch ON	At DVD image is displayed.	 SKIB2251J
19 (B)*2 (L)*3	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
20 (W)	Ground	Composite image synchro-nizing signal	Input	Ignition switch ON	—	 SKIB0825E
22 (B)*1	—	Shield	—	—	—	—
23 (L)*2 (V)*3	Ground	ACC power supply	Input	—	—	—
27	—	RGB digital image signal (–)	Input	—	—	—
28	—	RGB digital image signal (+)	Input	—	—	—

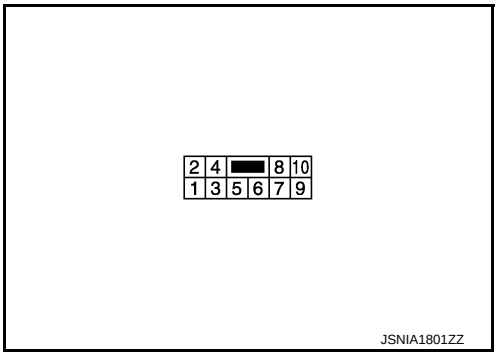
- *1: With diesel engine
- *2: LHD models with gasoline engine
- *3: Except LHD models with gasoline engine

SPEAKER AMP.

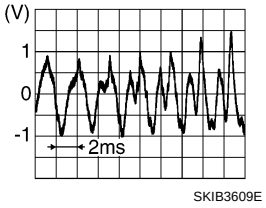
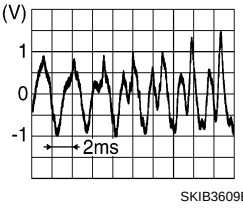
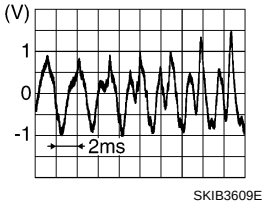
Reference Value

INFOID:0000000005216539

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
2 (Y)*1 (BR)*2	1 (G)*1 (R)*2	Sound signal center speaker LH	Input	Ignition switch ON	Sound output	
4 (V)*3 (L)*4	3 (LG)*3 (W)*4	Sound signal center speaker RH	Input	Ignition switch ON	Sound output	
7 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
9 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
10 (O)*3 (L)*4	8 (W)	Sound signal center speaker	Output	Ignition switch ON	Sound output	

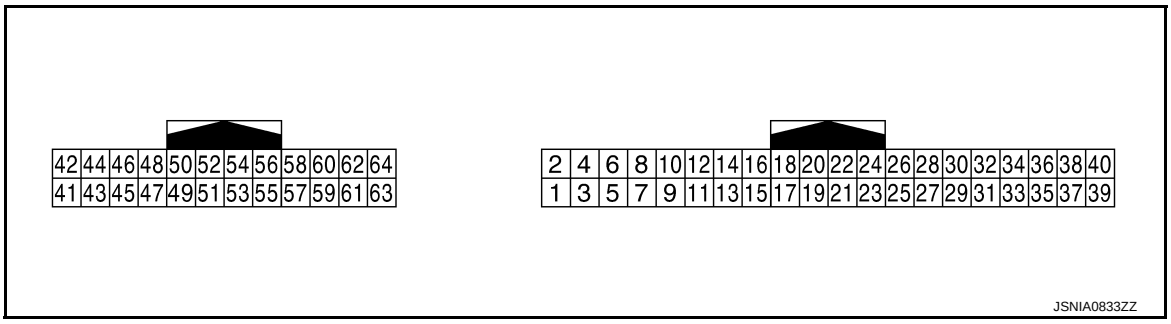
- *1: With gasoline engine
- *2: With diesel engine
- *3: RHD models with gasoline engine
- *4: Except RHD models with gasoline engine

AROUND VIEW MONITOR CONTROL UNIT

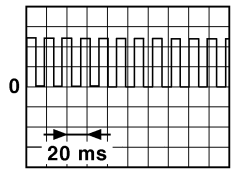
Reference Value

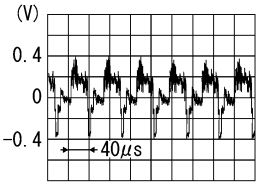
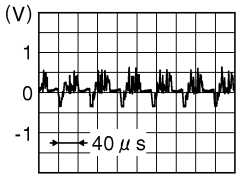
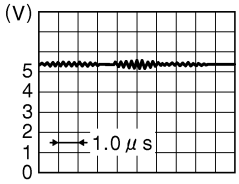
INFOID:0000000005216057

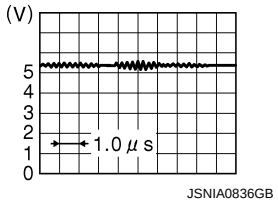
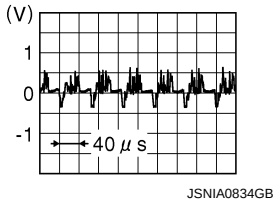
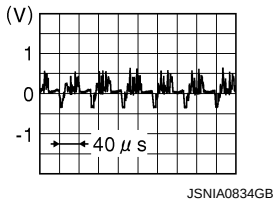
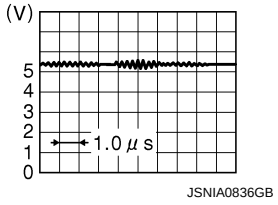
TERMINAL LAYOUT

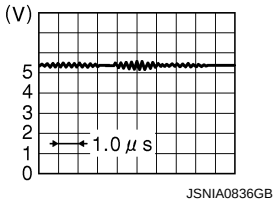
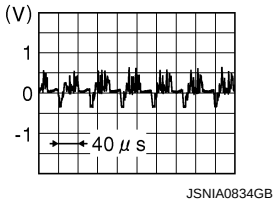


PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
3 (G)*1 (P)*2	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
4 (GR)*1 (LG)*2	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
5 (O)*1 (R)*2	Ground	Illumination signal	Input	Ignition switch OFF	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12.0 V
6 (SB)*1 (V)*2	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB
7 (V)*1 (P)*3 (O)*4	Ground	Reverse signal	Input	Ignition switch ON	R position	12.0 V
					Other than R position	0 V
9 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
13 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
17 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
18 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
21 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
22 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
23 (LG)	24 (G)	Auxiliary infrared LED power supply	Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	5.5 V
27 (W)	Ground	Camera image signal	Output	Ignition switch ON	At camera image display	 SKIB2251J
28 (B)*5	—	Shield	—	—	—	—
29 (Y)*1 (R)*2	30 (G)*1 (Y)*2	Side camera passenger side image signal	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0834GB
31	—	Shield	—	—	—	—
32 (B)*1 (W)*2	Ground	Side camera passenger side ground	—	Ignition switch ON	—	0 V
33 (W)*1 (BR)*2	Ground	Side camera passenger side communication signal	Input/ Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0836GB
34 (R)*1 (L)*2	Ground	Side camera passenger side power supply	Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
35 (L)*1 (W)*2	Ground	Rear camera communication signal	Input/ Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0836GB
36 (BR)*1 (G)*2	Ground	Rear camera power supply	Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	6.0 V
37	—	Shield	—	—	—	—
38 (R)*1 (L)*2	Ground	Rear camera ground	—	Ignition switch ON	—	0 V
39 (Y)	40 (W)*1 (BR)*2	Rear camera image signal	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0834GB
41 (Y)*1 (L)*2	42 (G)*1 (BR)*2	Front camera image signal	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0834GB
43	—	Shield	—	—	—	—
44 (B)*1 (Y)*2	Ground	Front camera ground	—	Ignition switch ON	—	0 V
45 (W)	Ground	Front camera communication signal	Input/ Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0836GB
46 (R)*1 (G)*2	Ground	Front camera power supply	Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
47 (L)*1 (BR)*2	Ground	Side camera driver side communication signal	Input/ Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0836GB
48 (BR)*1 (L)*2	Ground	Side camera driver side power supply	Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	6.0 V
49	—	Shield	—	—	—	—
50 (R)*1 (W)*2	Ground	Side camera driver side ground	—	Ignition switch ON	—	0 V
51 (Y)*1 (R)*2	52 (W)*1 (Y)*2	Side camera driver side image signal	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0834GB

- *1: LHD models with diesel engine
- *2: Except LHD models with diesel engine
- *3: RHD models with diesel engine
- *4: With gasoline engine
- *5: With diesel engine

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

Reference Value

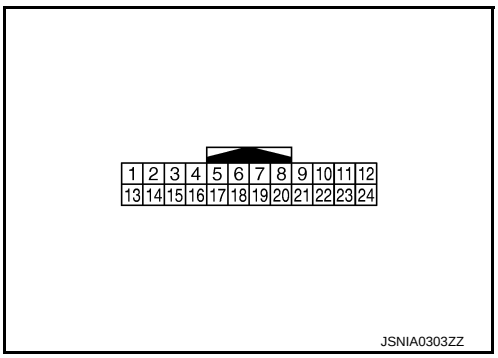
INFOID:0000000005216059

VALUES ON THE DIAGNOSIS TOOL

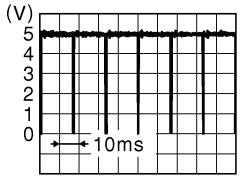
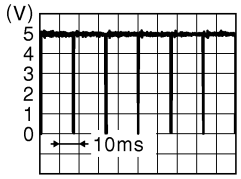
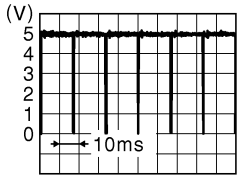
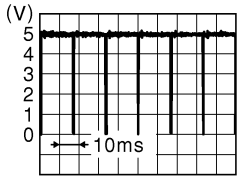
CONSULT-III MONITOR ITEM

Monitor Item	Condition		Value/Status
SONAR OPE	Ignition switch ON	Around view monitor operating (sonar operating).	On
		Around view monitor non-operating (sonar non-operating).	Off
BUZZER OUTPUT	Ignition switch ON	Buzzer is output condition.	On
		Buzzer is not output condition.	Off
CR SEN [FL]	Ignition switch ON	When a sensor is abnormal.	ERROR
		When a sensor is not detection.	LV.0
		The distance between the corner sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).	LV.2
		The distance between the corner sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).	LV.3
		The distance between corner sensor and an obstacle less than 40 cm (15.7 in).	LV.4
CR SEN [FR]	Ignition switch ON	When a sensor is abnormal.	ERROR
		When a sensor is not detection.	LV.0
		The distance between the corner sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).	LV.2
		The distance between the corner sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).	LV.3
		The distance between corner sensor and an obstacle less than 40 cm (15.7 in).	LV.4
CR SEN [RL]	Ignition switch ON	When a sensor is abnormal.	ERROR
		When a sensor is not detection.	LV.0
		The distance between the corner sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).	LV.2
		The distance between the corner sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).	LV.3
		The distance between corner sensor and an obstacle less than 40 cm (15.7 in).	LV.4
CR SEN [RR]	Ignition switch ON	When a sensor is abnormal.	ERROR
		When a sensor is not detection.	LV.0
		The distance between the corner sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).	LV.2
		The distance between the corner sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).	LV.3
		The distance between corner sensor and an obstacle less than 40 cm (15.7 in).	LV.4

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
3 (W)	12 (B)	Corner sensor signal front LH	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0837GB
4 (R)	12 (B)	Corner sensor signal front RH	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0837GB
5 (W)*1 (G)*2	12 (B)	Corner sensor signal rear LH	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0837GB
6 (R)*1 (Y)*2	12 (B)	Corner sensor signal rear RH	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0837GB
12 (B)	Ground	Sensor ground	—	Ignition switch ON	—	0 V
13 (V)*3 (L)*4	Ground	ACC power supply	Input	Ignition switch ACC	—	12.0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
18 (P)*5 (O)*6	—	K-line (CONSULT-III)	—	—	—	—
19 (G)	—	AV communication (H)	Input/ Output	—	—	—
20 (R)	—	AV communication (L)	Input/ Output	—	—	—
24 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

- *1: With gasoline engine
- *2: With diesel engine
- *3: LHD models
- *4: RHD models
- *5: LHD models with gasoline engine
- *6: Except LHD models with gasoline engine

Fail-Safe

INFOID:0000000005216061

- Sonar control unit has diagnosis function which can detect corner sensor malfunction and sensor harness disconnection.
- It transmits the malfunction status to around view monitor control unit and informs the malfunction to the user by displaying continuously red sonar indicator.

DTC Index

INFOID:0000000005216062

DTC	Display item	Malfunction is detected when...	Reference
B2700	CORNER SENSOR [FL] [B2700]	Corner sensor (FL) is malfunctioning.	AV-374, "DTC Logic"
B2701	SENSOR HARNESS OPEN [CR-FL] [B2701]	Corner sensor (FL) harness circuit is open.	AV-375, "Diagnosis Procedure"
B2702	CORNER SENSOR [FR] [B2702]	Corner sensor (FR) is malfunctioning.	AV-376, "DTC Logic"
B2703	SENSOR HARNESS OPEN [CR-FR] [B2703]	Corner sensor (FR) harness circuit is open.	AV-377, "Diagnosis Procedure"
B2704	CORNER SENSOR [RL] [B2704]	Corner sensor (RL) is malfunctioning.	AV-378, "DTC Logic"
B2705	SENSOR HARNESS OPEN [CR-RL] [B2705]	Corner sensor (RL) harness circuit is open.	AV-379, "Diagnosis Procedure"
B2706	CORNER SENSOR [RR] [B2706]	Corner sensor (RR) is malfunctioning.	AV-380, "DTC Logic"
B2707	SENSOR HARNESS OPEN [CR-RR] [B2707]	Corner sensor (RR) harness circuit is open.	AV-381, "Diagnosis Procedure"

NOTE:
"TIME" means the following.
- 0: Means detected malfunction at present. (From malfunction detection to turning ignition switch OFF)
- 1–39: Means detected malfunction in past.

WIRING DIAGRAM

BASE AUDIO WITH NAVIGATION AND AROUND VIEW MONITOR
LHD MODELS

LHD MODELS : Wiring Diagram

INFOID:0000000006106620

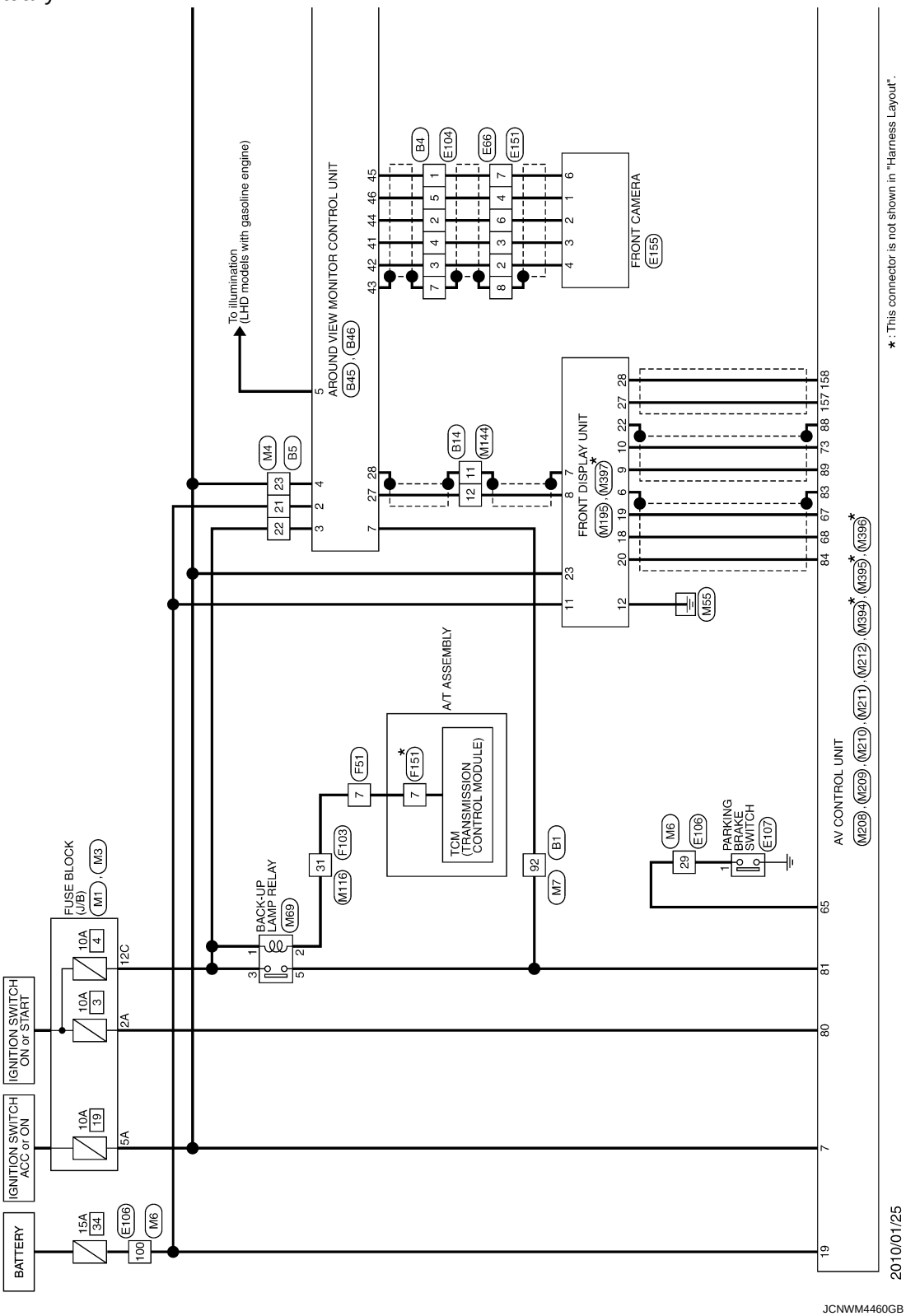
GASOLINE ENGINE MODELS

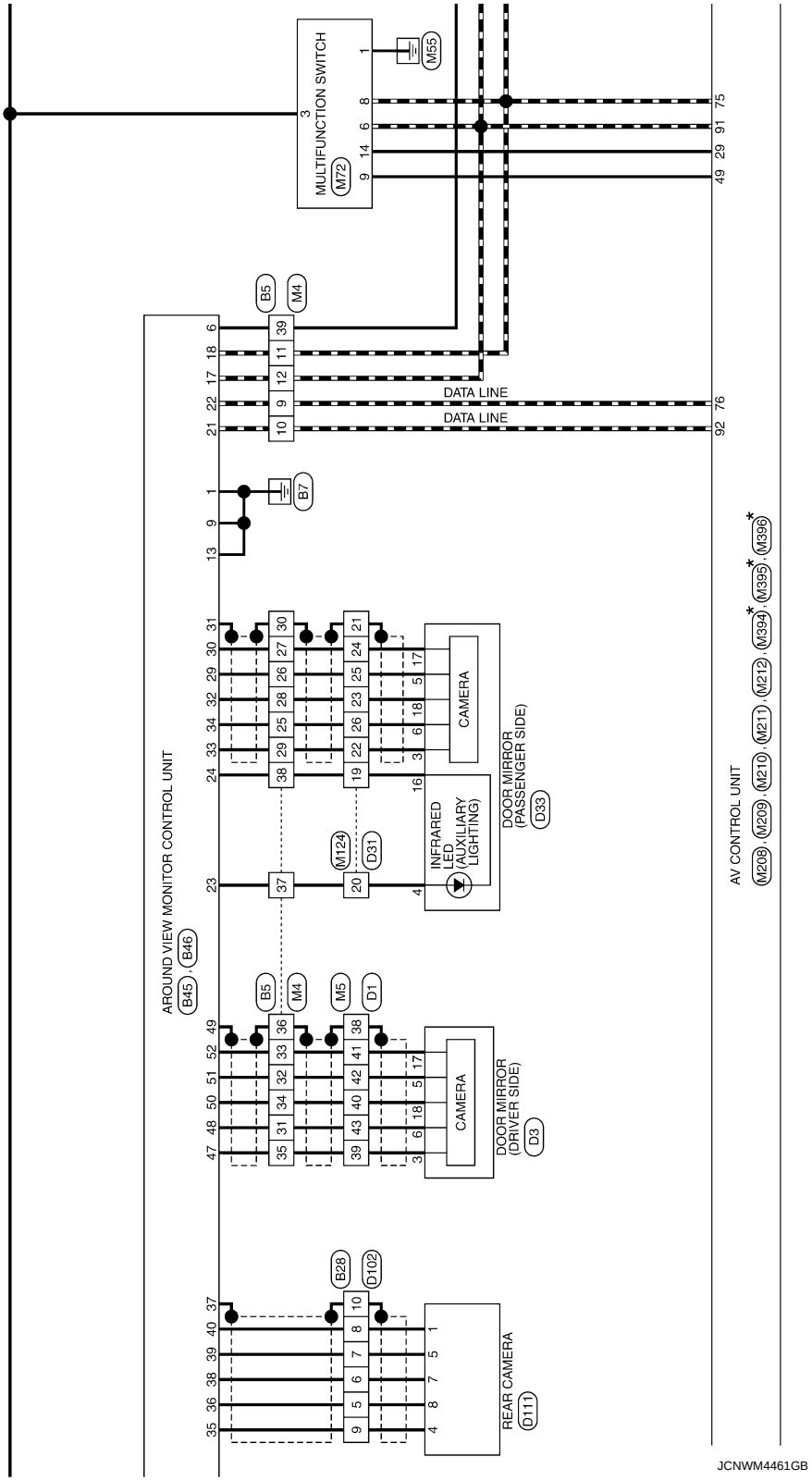
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

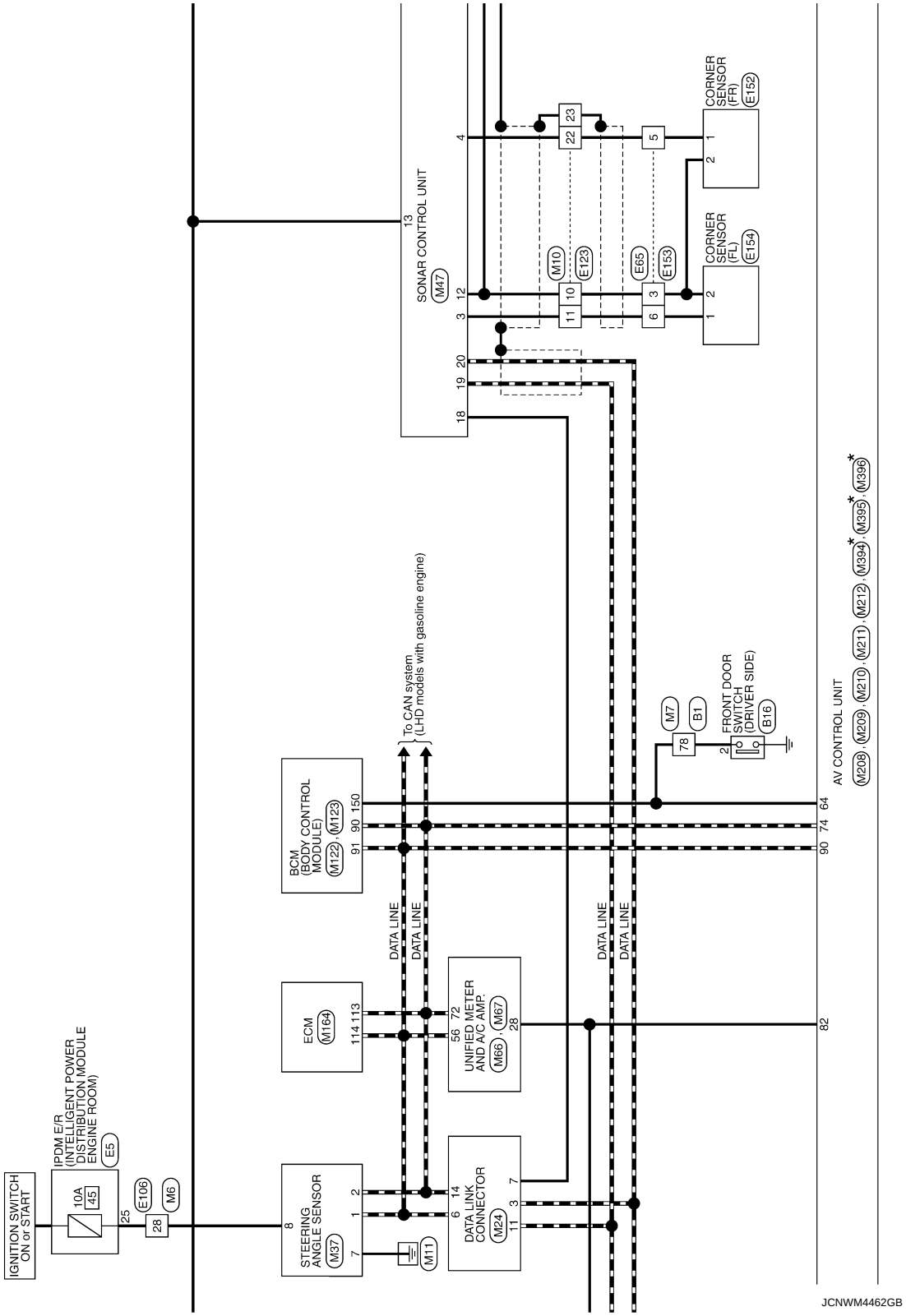
NOTE:

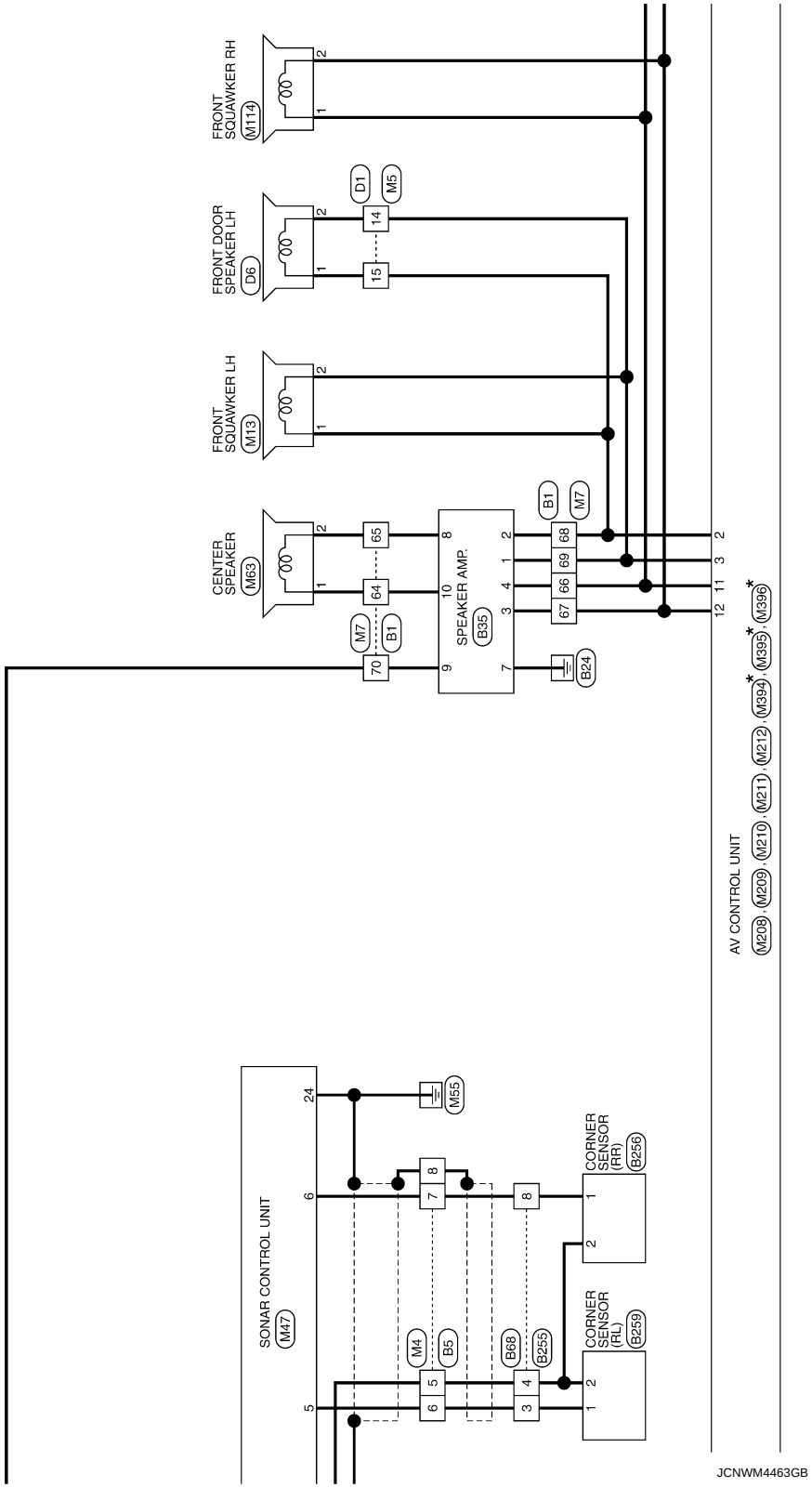
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

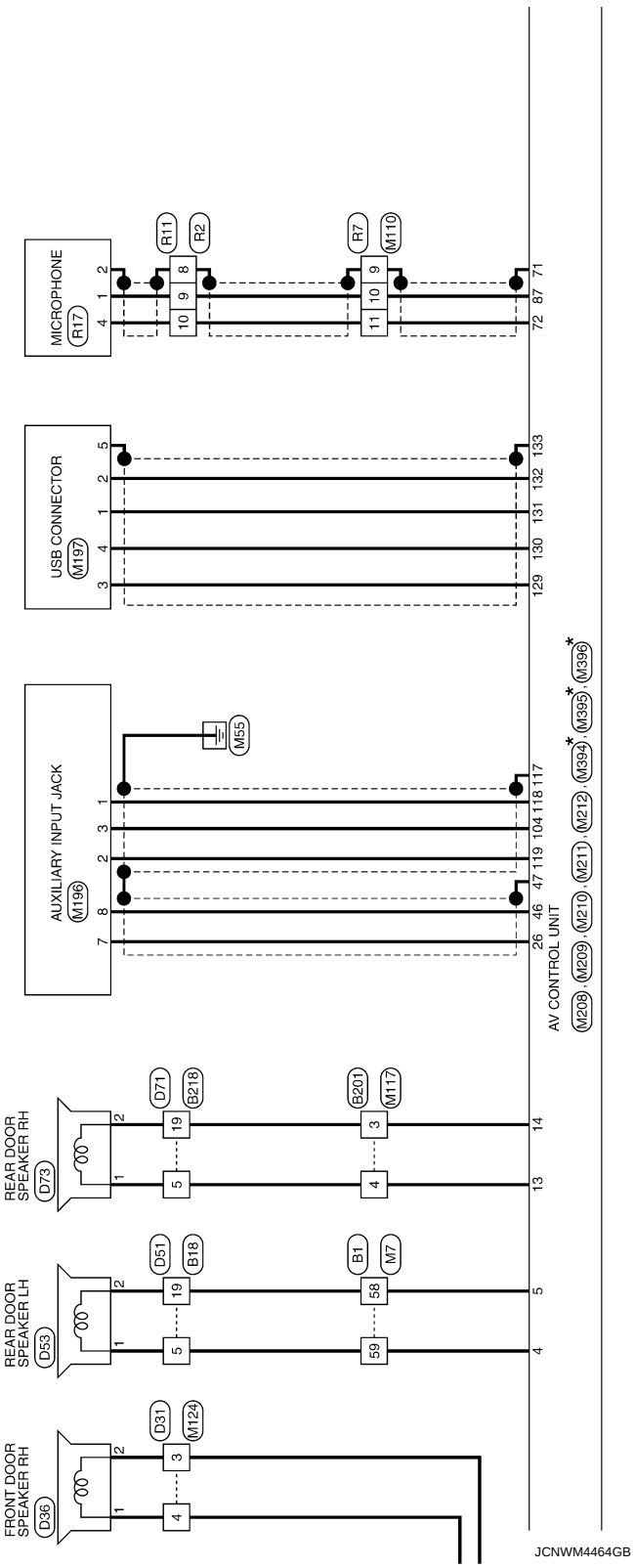
BASE AUDIO WITH NAVIGATION AND AROUND VIEW MONITOR (LHD MODELS WITH GASOLINE ENGINE)

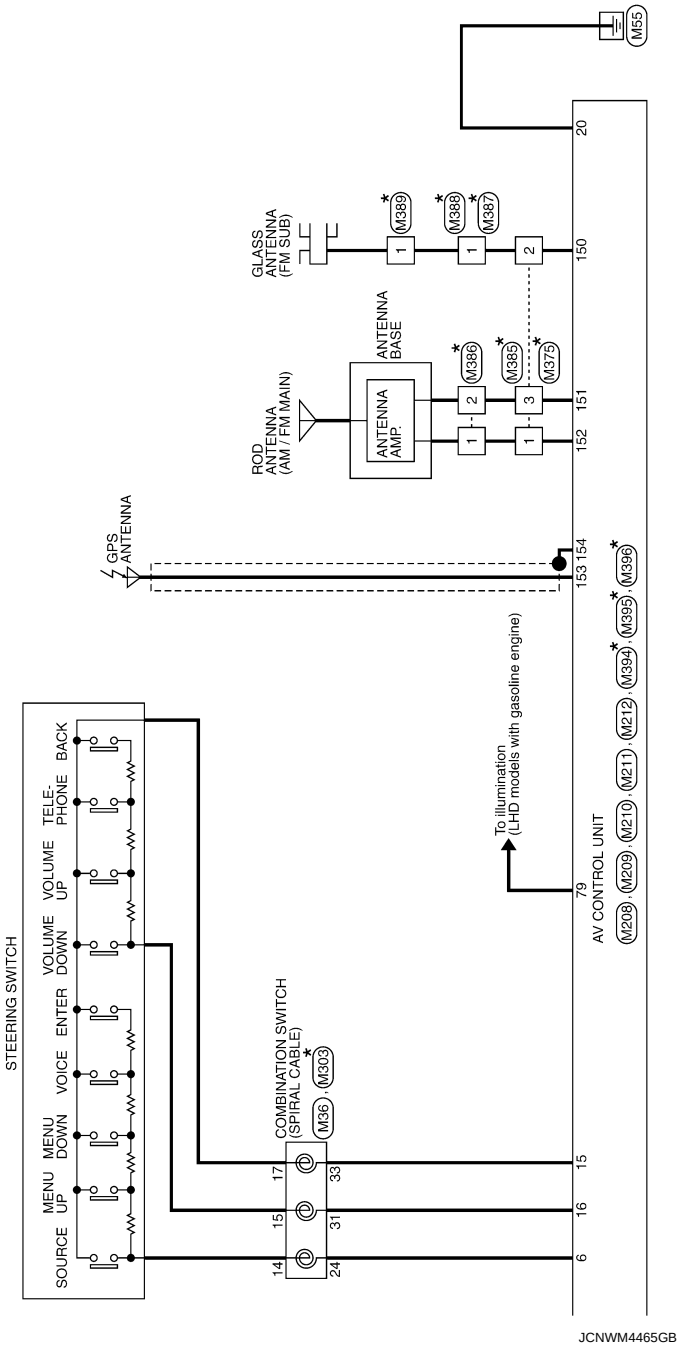



MULTIFUNCTION SWITCH
M72
M55
B5
M4
DATA LINE
DATA LINE
B7
AROUND VIEW MONITOR CONTROL UNIT
B45
B46
AV CONTROL UNIT
M208
M209
M210
M211
M212
M394*
M395*
M396*
CAMERA
DOOR MIRROR (PASSENGER SIDE)
D33
INFRARED LED (AUXILIARY LIGHTING)
M124
D31
M5
D1
DOOR MIRROR (DRIVER SIDE)
D3
B28
D102
REAR CAMERA
D111
JCNWM4461GB


IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
10A 45
25
E106
28
M6
STEERING ANGLE SENSOR
M37
8
7
1
2
M11
DATA LINK CONNECTOR
M24
6
14
3
7
11
ECM
M164
114
113
UNIFIED METER AND A/C AMP.
M66, M67
56
72
28
BCM (BODY CONTROL MODULE)
M122, M123
91
90
150
To CAN system (LHD models with gasoline engine)
DATA LINE
DATA LINE
DATA LINE
DATA LINE
SONAR CONTROL UNIT
M47
13
18
19
20
3
12
4
M10
E123
10
11
22
23
E65
E153
3
6
5
CORNER SENSOR (FR)
E152
CORNER SENSOR (FL)
E154
M7
B1
78
FRONT DOOR SWITCH (DRIVER SIDE)
B16
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394*, M395*, M396*
64
74
90
82
JCNWM4462GB


FRONT SQUAWKER RH
M114
FRONT DOOR SPEAKER LH
D6
D1
M5
FRONT SQUAWKER LH
M13
CENTER SPEAKER
M63
M7
B1
SPEAKER AMP.
B35
B24
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394*, M395*, M396*
SONAR CONTROL UNIT
M47
M55
M4
B5
B68
B255
CORNER SENSOR (RR)
B256
CORNER SENSOR (RL)
B259
JCNWM4463GB


MICROPHONE
R17
R11
R2
R7
M110
USB CONNECTOR
M197
AUXILIARY INPUT JACK
M196
M55
AV CONTROL UNIT
M208, M209, M210, M211, M212, *M394, *M395, *M396
REAR DOOR SPEAKER RH
D73
D71
B218
B201
M117
REAR DOOR SPEAKER LH
D53
D51
B18
B1
M7
FRONT DOOR SPEAKER RH
D36
D31
M124
JCNWM4464GB



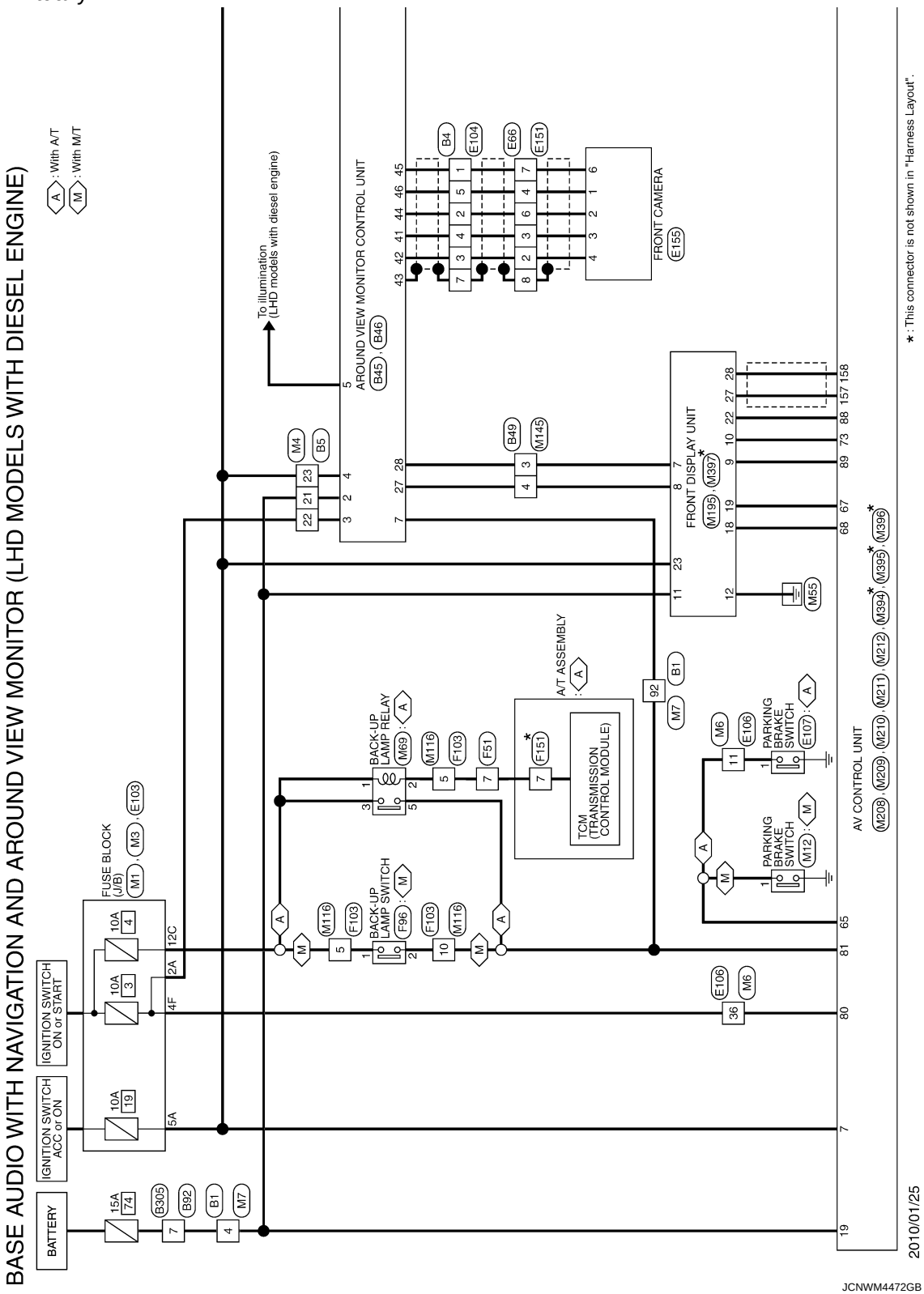
DIESEL ENGINE MODELS

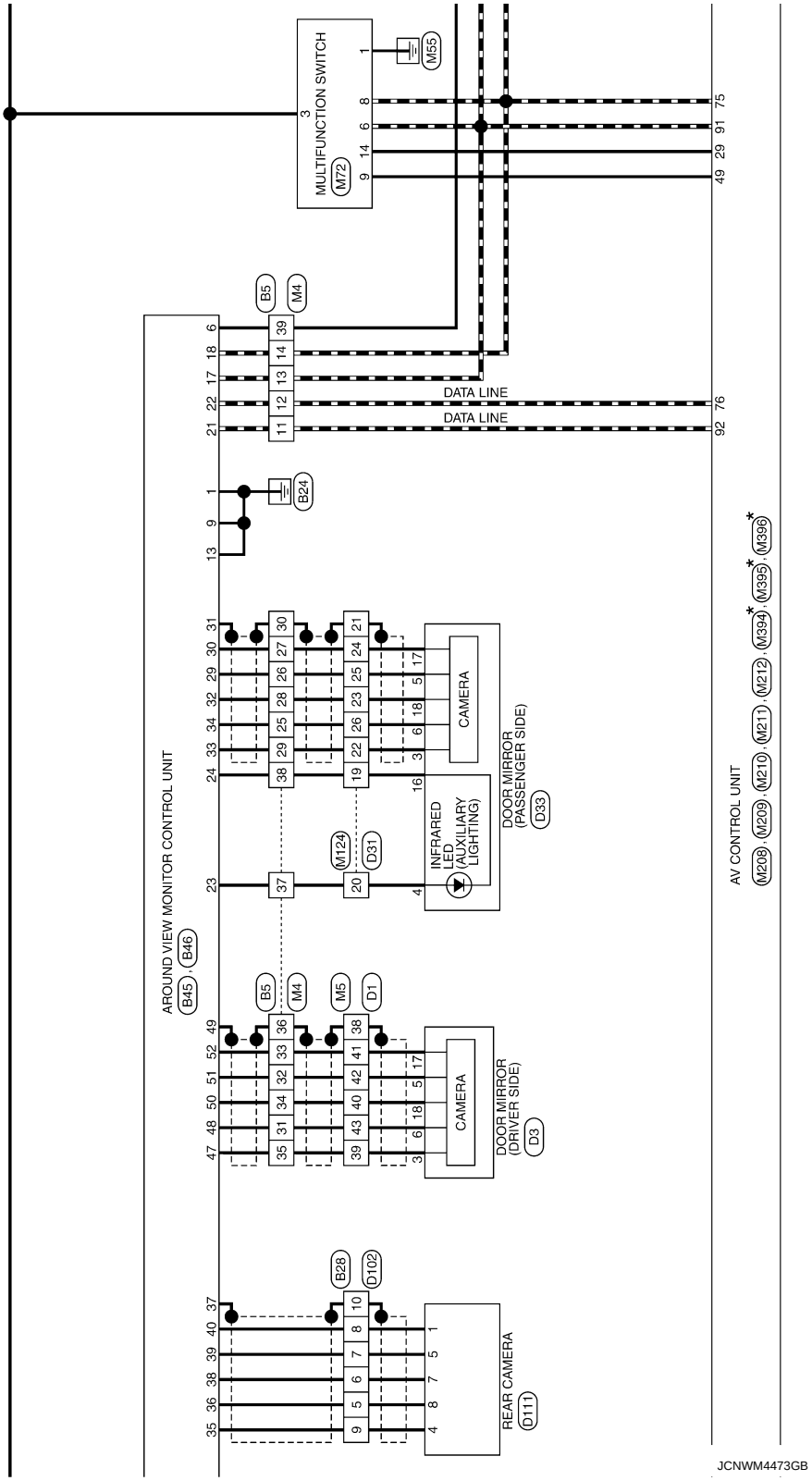
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

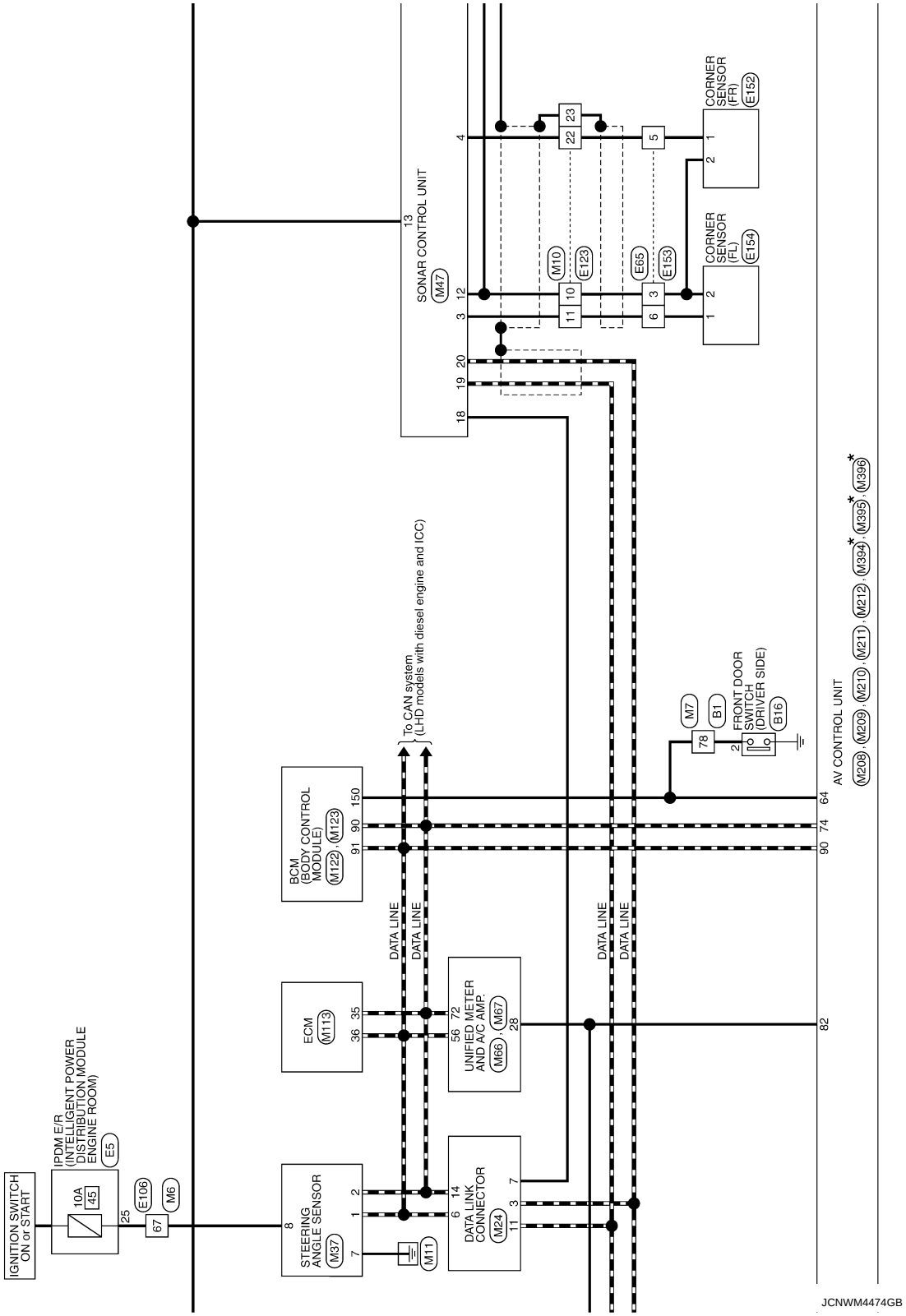
NOTE:

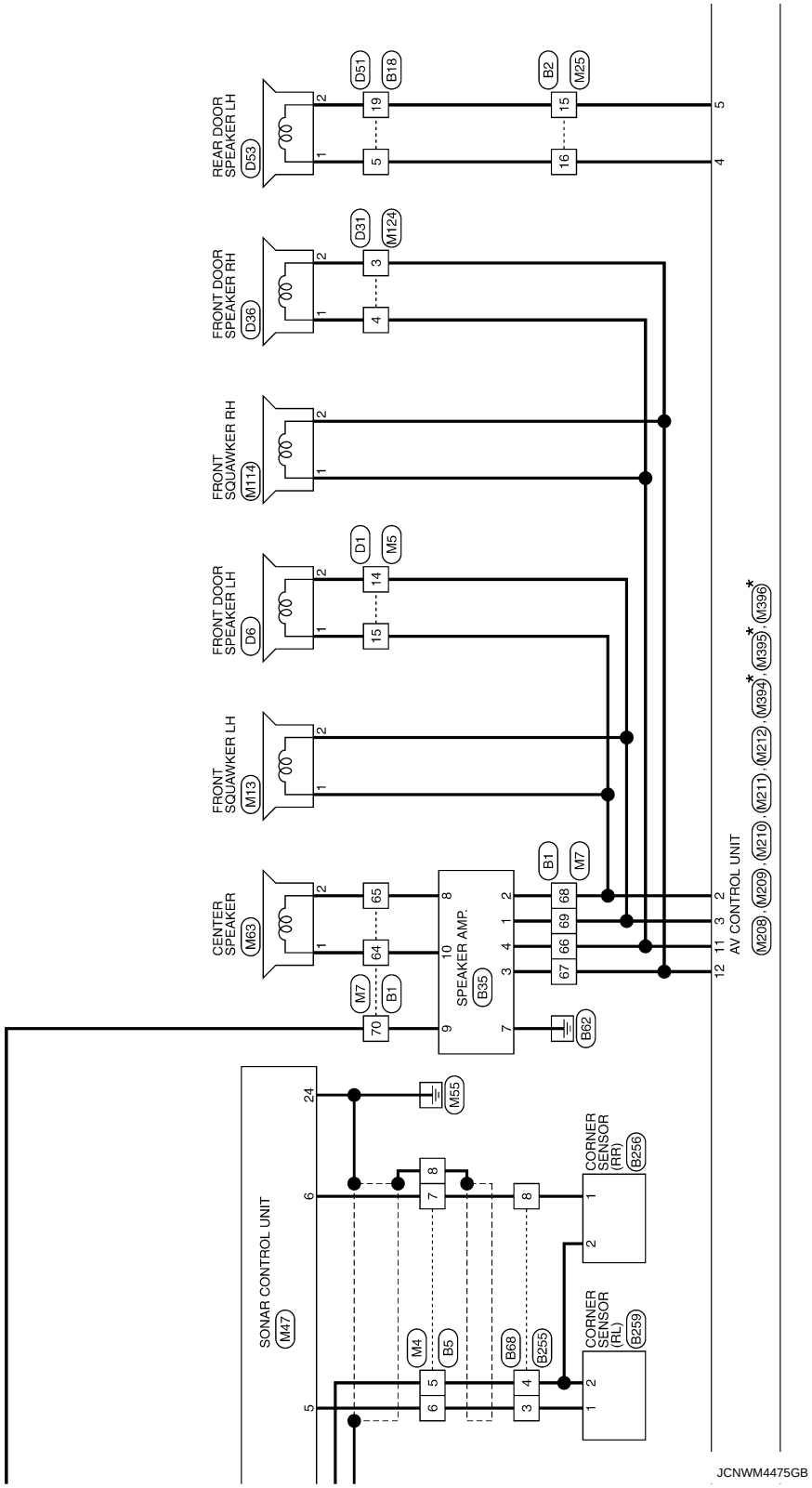
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

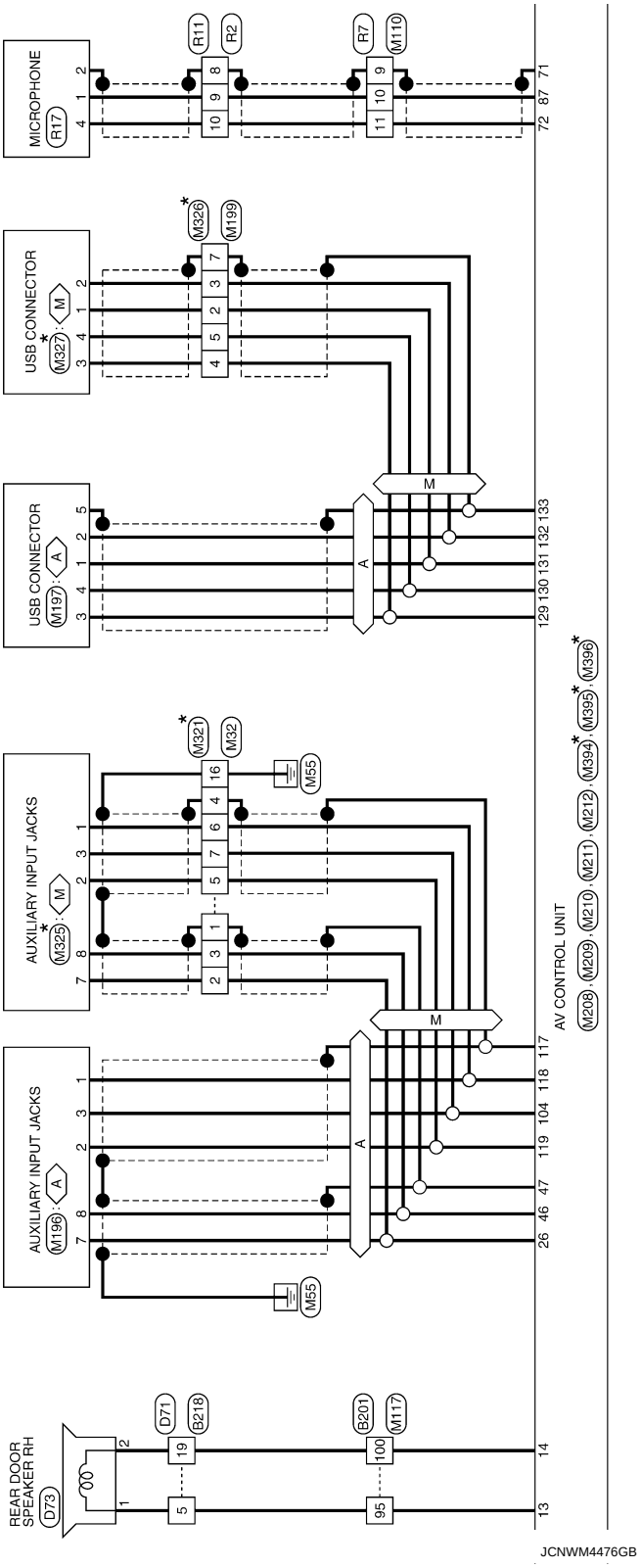
BASE AUDIO WITH NAVIGATION AND AROUND VIEW MONITOR (LHD MODELS WITH DIESEL ENGINE)

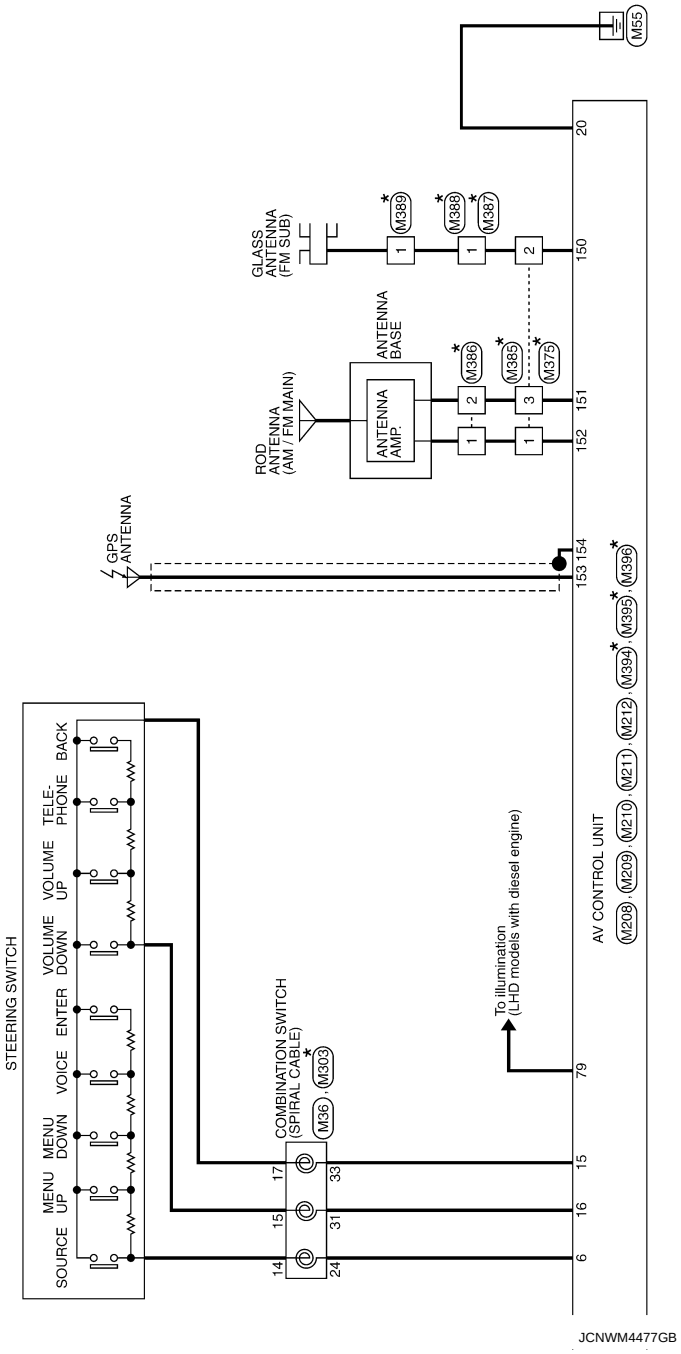



MULTIFUNCTION SWITCH
M72
M55
DATA LINE
DATA LINE
B24
AROUND VIEW MONITOR CONTROL UNIT
B45, B46
B5
M4
M5
D1
M124
D31
B28
D102
CAMERA
DOOR MIRROR (DRIVER SIDE)
D3
CAMERA
DOOR MIRROR (PASSENGER SIDE)
D33
INFRARED LED (AUXILIARY LIGHTING)
REAR CAMERA
D111
AV CONTROL UNIT
M208, M209, M210, M211, M212, *M394, *M395, *M396
JCNWM4473GB


IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
10A 45
25
E106
67
M6
STEERING ANGLE SENSOR
M37
8
7
1
2
M11
DATA LINK CONNECTOR
M24
6
14
3
7
11
ECM
M113
36
35
UNIFIED METER AND A/C AMP.
M66
M67
56
72
28
BCM (BODY CONTROL MODULE)
M122
M123
91
90
150
DATA LINE
DATA LINE
DATA LINE
DATA LINE
To CAN system (LHD models with diesel engine and ICC)
SONAR CONTROL UNIT
M47
13
4
12
3
20
19
18
M10
E123
11
10
E65
E153
6
3
22
23
5
CORNER SENSOR (FR)
E152
CORNER SENSOR (FL)
E154
M7
B1
78
2
FRONT DOOR SWITCH (DRIVER SIDE)
B16
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394*, M395*, M396*
64
74
90
82
JCNWM4474GB


REAR DOOR SPEAKER LH
D53
D51
B18
19
5
B2
M25
15
16
FRONT DOOR SPEAKER RH
D36
D31
M124
3
4
FRONT SQUAWKER RH
M114
FRONT DOOR SPEAKER LH
D6
D1
M5
14
15
FRONT SQUAWKER LH
M13
CENTER SPEAKER
M63
65
64
SPEAKER AMP.
B35
B1
M7
68
69
66
67
70
B62
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394*, M395*, M396*
SONAR CONTROL UNIT
M47
M55
CORNER SENSOR (RR)
B256
CORNER SENSOR (RL)
B259
M4
B5
B68
B253
JCNWM4475GB


MICROPHONE
R17
R11
R2
R7
M110
USB CONNECTOR
M197
A
M327
M
M326
M199
AUXILIARY INPUT JACKS
M196
A
M325
M
M321
M32
M55
AV CONTROL UNIT
M208
M209
M210
M211
M212
M394
M395
M396
REAR DOOR SPEAKER RH
D73
D71
B218
B201
M117
JCNWM4476GB



RHD MODELS

RHD MODELS : Wiring Diagram

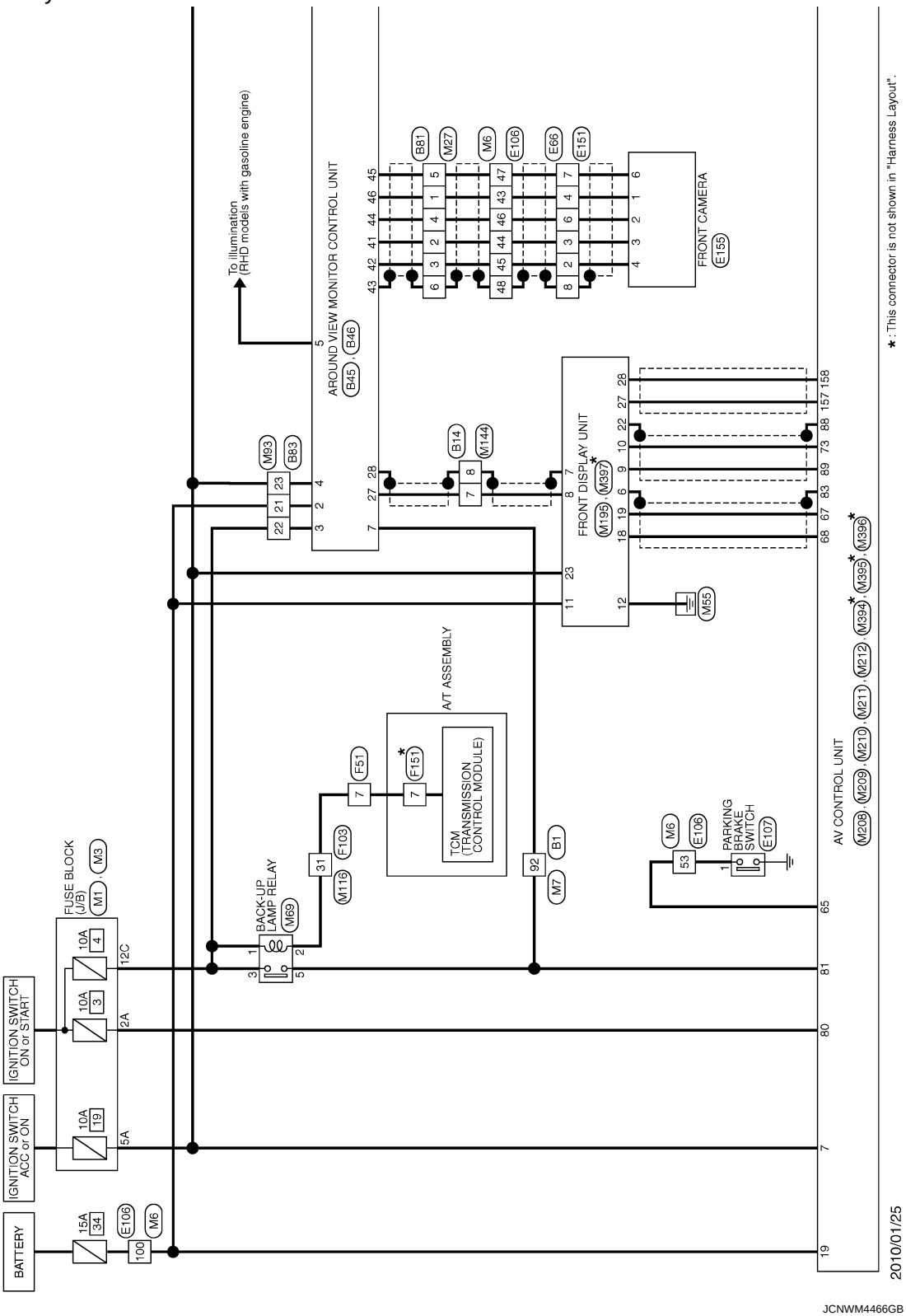
INFOID:0000000006106621

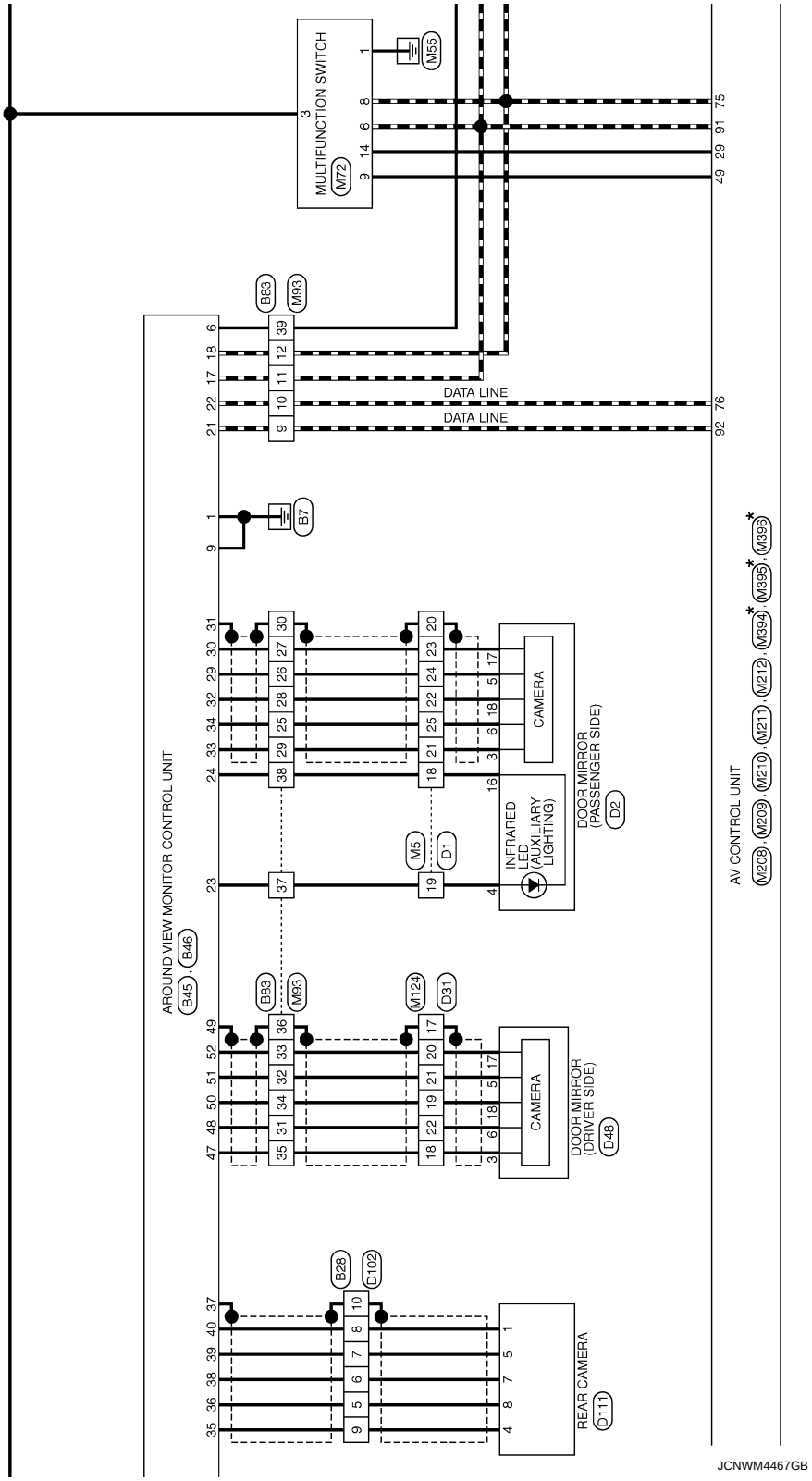
GASOLINE ENGINE MODELS

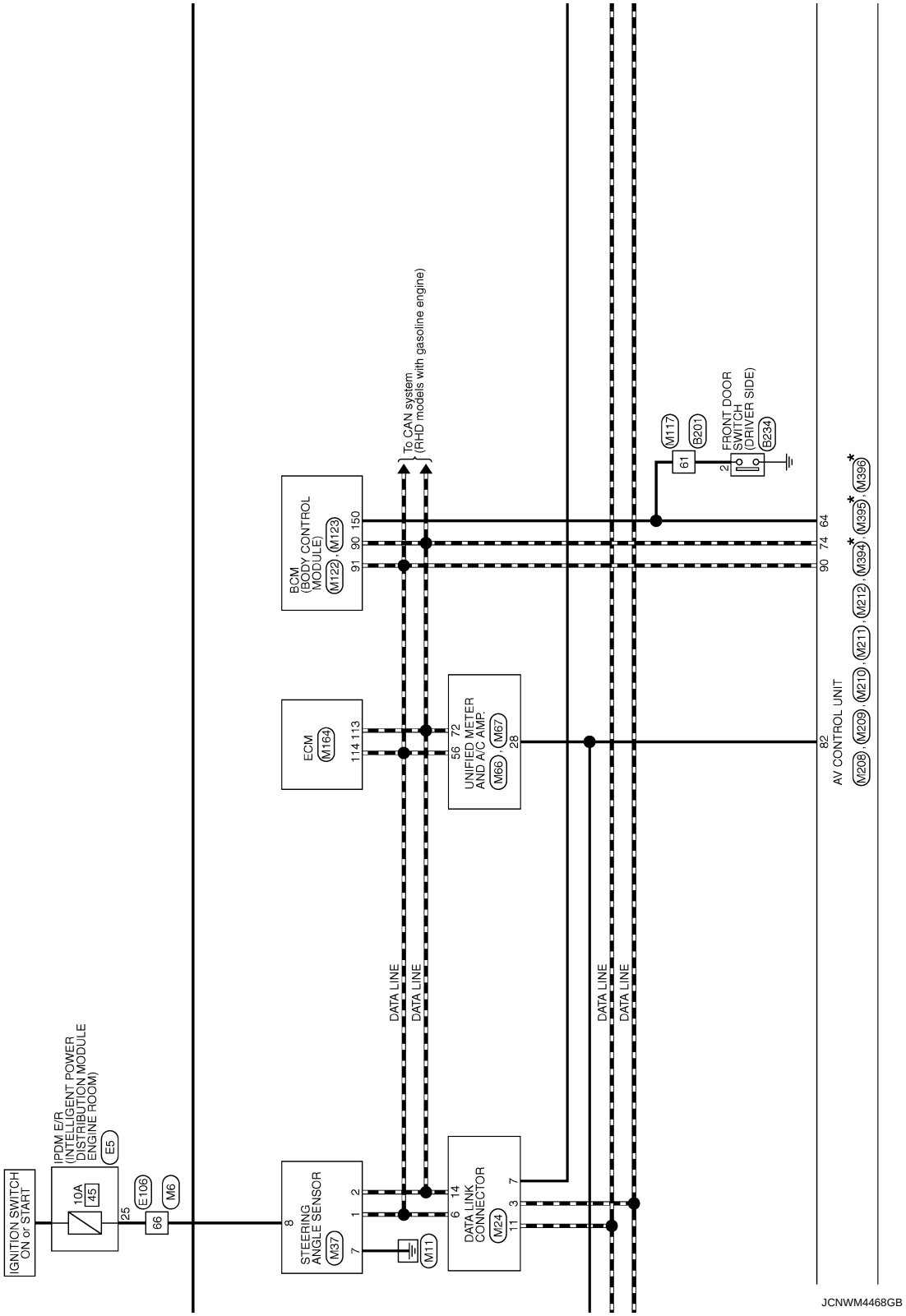
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

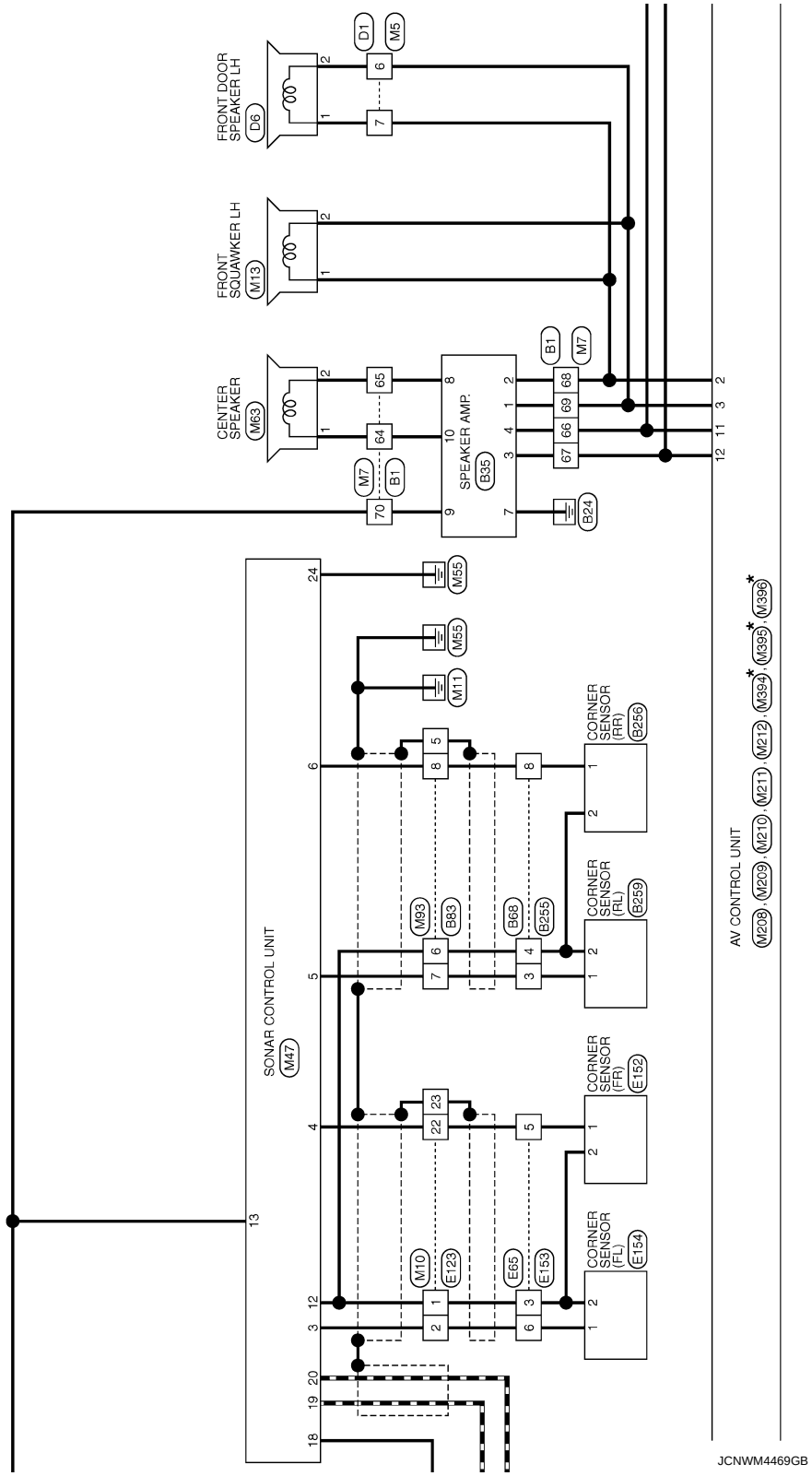
NOTE:
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

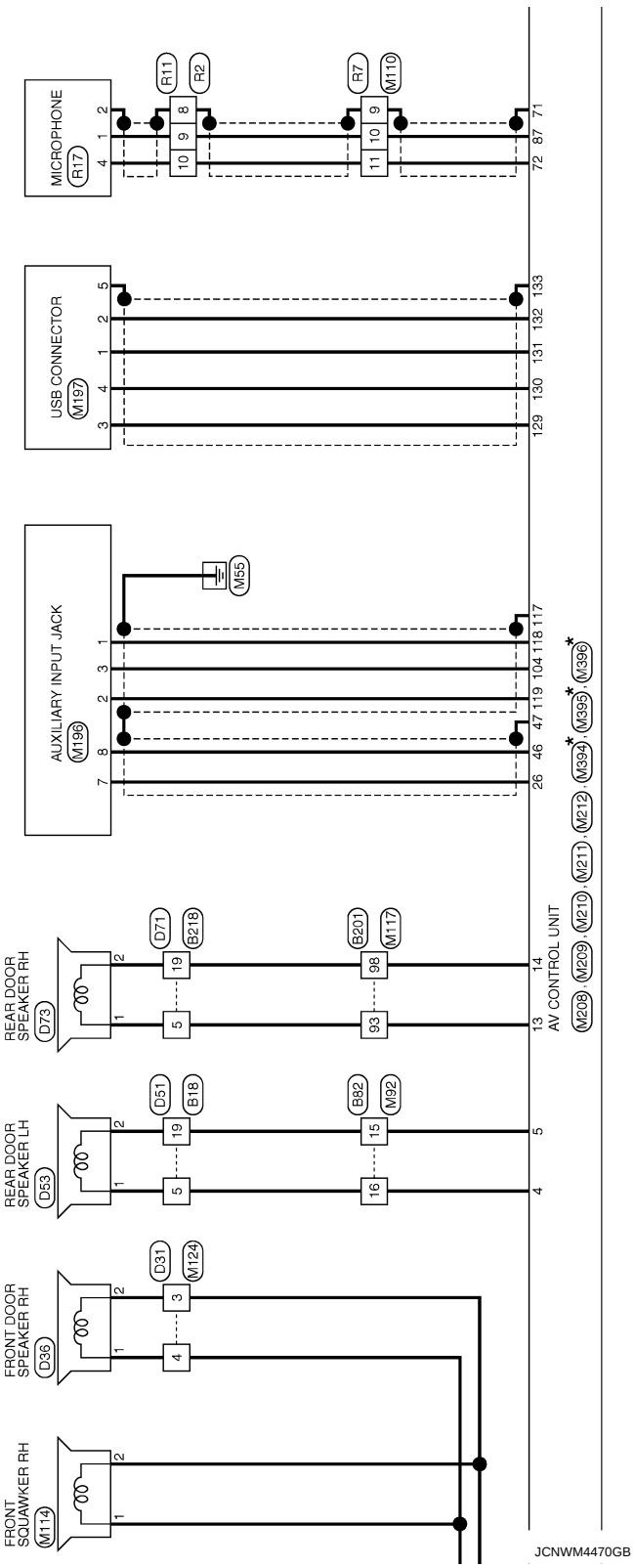
BASE AUDIO WITH NAVIGATION AND AROUND VIEW MONITOR (RHD MODELS WITH GASOLINE ENGINE)

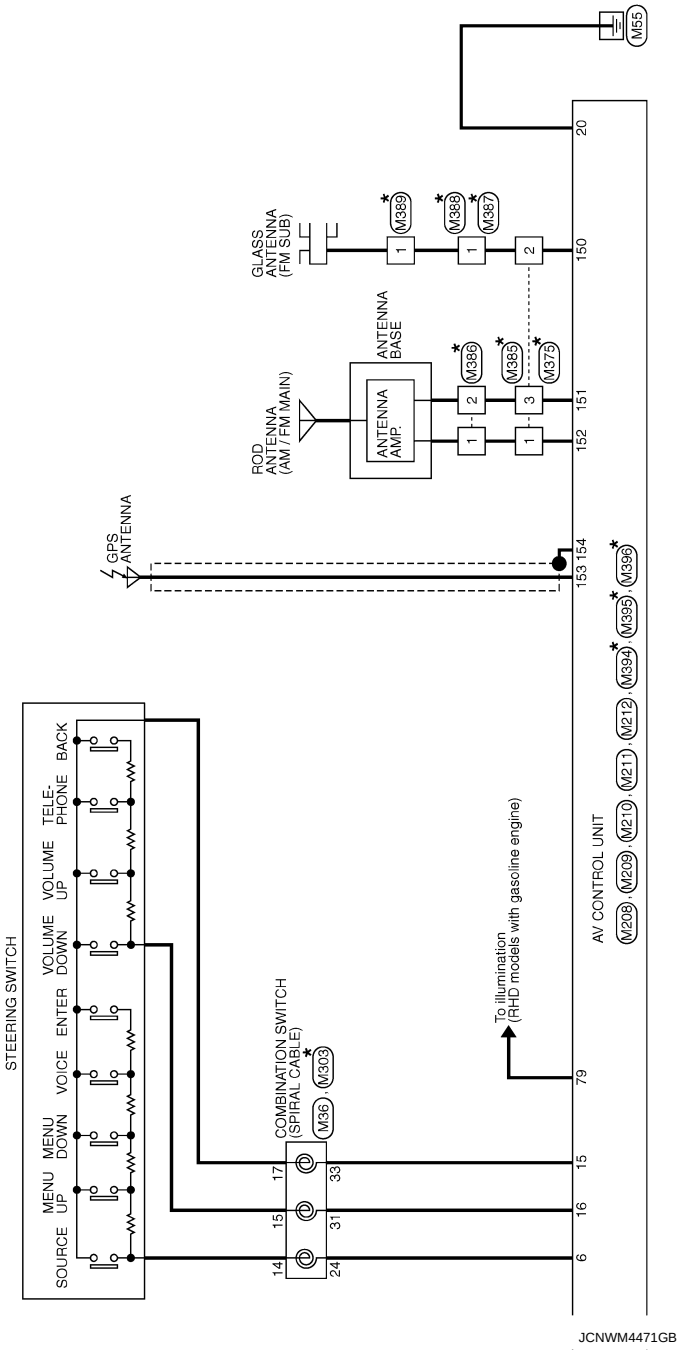



MULTIFUNCTION SWITCH
M72
M55
AROUND VIEW MONITOR CONTROL UNIT
B45
B46
AV CONTROL UNIT
M208
M209
M210
M211
M212
M394
M395
M396
B83
M93
DATA LINE
DATA LINE
B7
CAMERA
DOOR MIRROR (PASSENGER SIDE)
D2
INFRARED LED (AUXILIARY LIGHTING)
M5
D1
M124
D31
CAMERA
DOOR MIRROR (DRIVER SIDE)
D48
B28
D102
REAR CAMERA
D111
JCNWM4467GB


IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
10A 45
25
E106
66
M6
STEERING ANGLE SENSOR
M37
8
1
2
7
M11
DATA LINK CONNECTOR
M24
6
14
3
7
11
ECM
M164
114
113
UNIFIED METER AND A/C AMP.
M66
M67
56
72
28
BCM (BODY CONTROL MODULE)
M122
M123
91
90
150
To CAN system (RHD models with gasoline engine)
DATA LINE
DATA LINE
DATA LINE
DATA LINE
M117
61
B201
FRONT DOOR SWITCH (DRIVER SIDE)
B234
2
1
AV CONTROL UNIT
M208
M209
M210
M211
M212
M394
M395
M396
82
90
74
64
JCNWM4468GB


FRONT DOOR SPEAKER LH
D6
FRONT SQUAWKER LH
M13
CENTER SPEAKER
M63
SPEAKER AMP.
B35
SONAR CONTROL UNIT
M47
CORNER SENSOR (FR)
B256
CORNER SENSOR (FL)
B259
CORNER SENSOR (FR)
E152
CORNER SENSOR (FL)
E154
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394*, M395*, M396*
JCNWM4469GB


MICROPHONE
R17
R11
R2
R7
M110
USB CONNECTOR
M197
AUXILIARY INPUT JACK
M196
M55
REAR DOOR SPEAKER RH
D73
D71
B218
B201
M117
REAR DOOR SPEAKER LH
D53
D51
B18
B82
M92
FRONT DOOR SPEAKER RH
D36
D31
M124
FRONT SQUAWKER RH
M114
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394, M395, M396
JCNWM4470GB



JCNWM4471GB

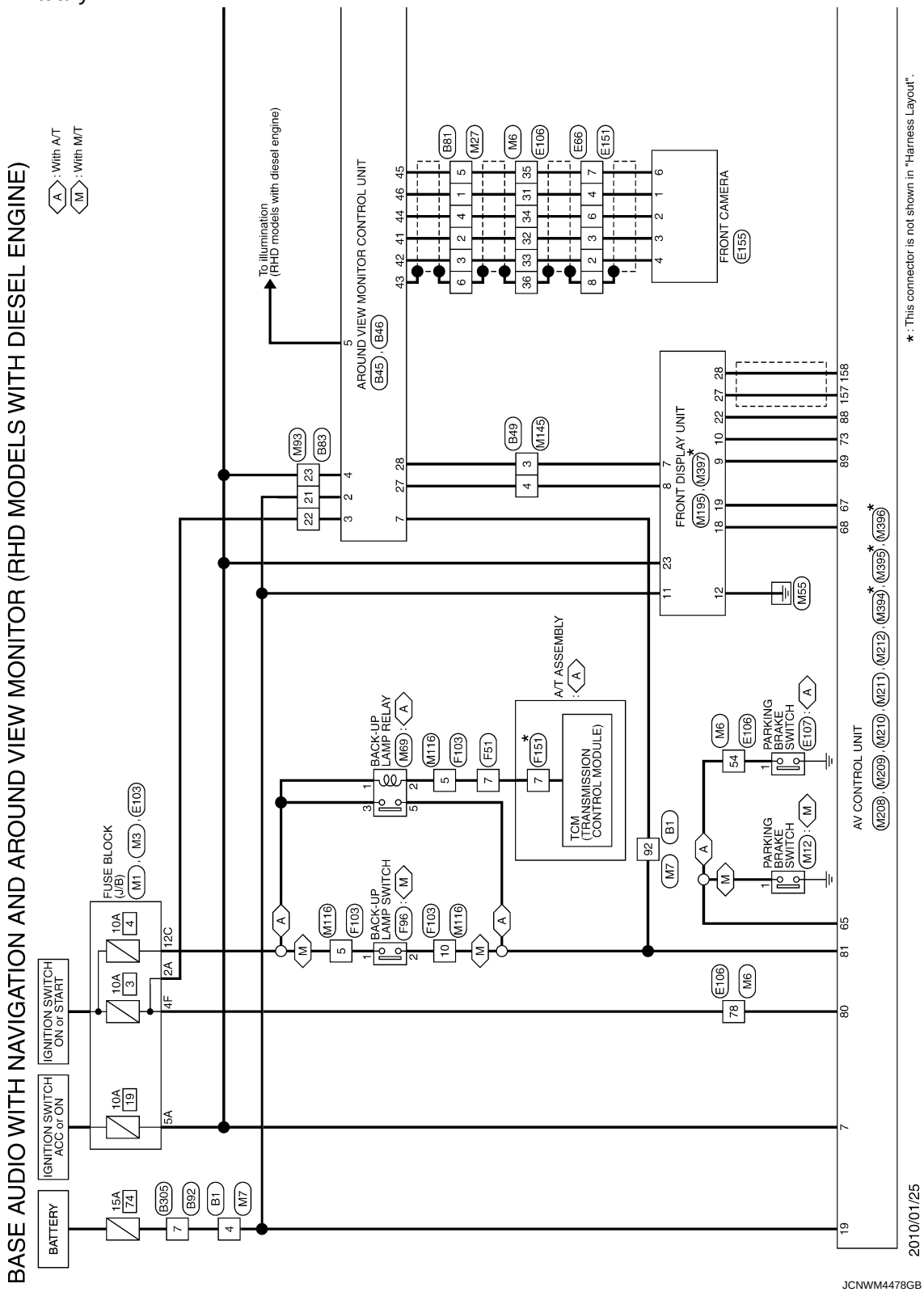
DIESEL ENGINE MODELS

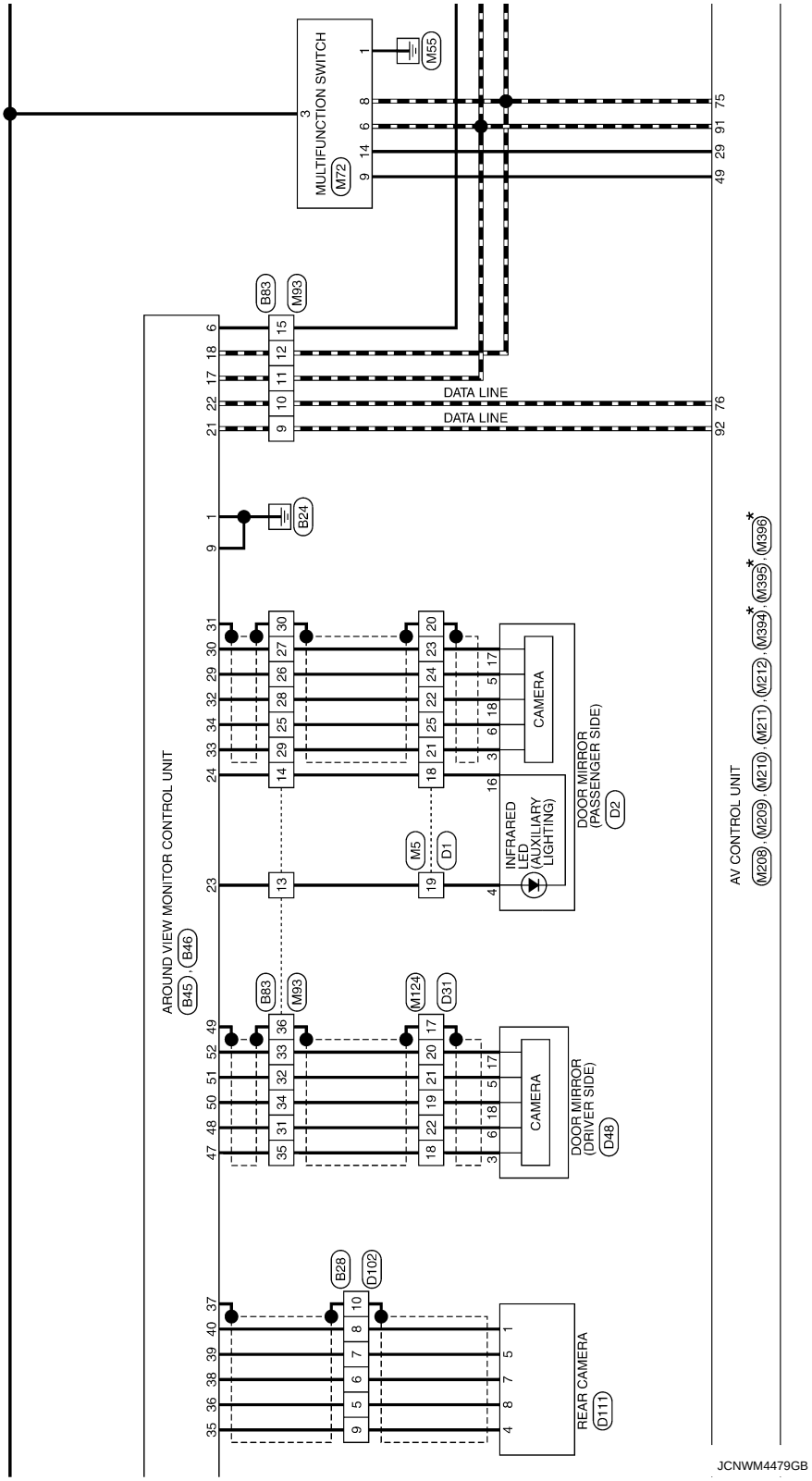
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

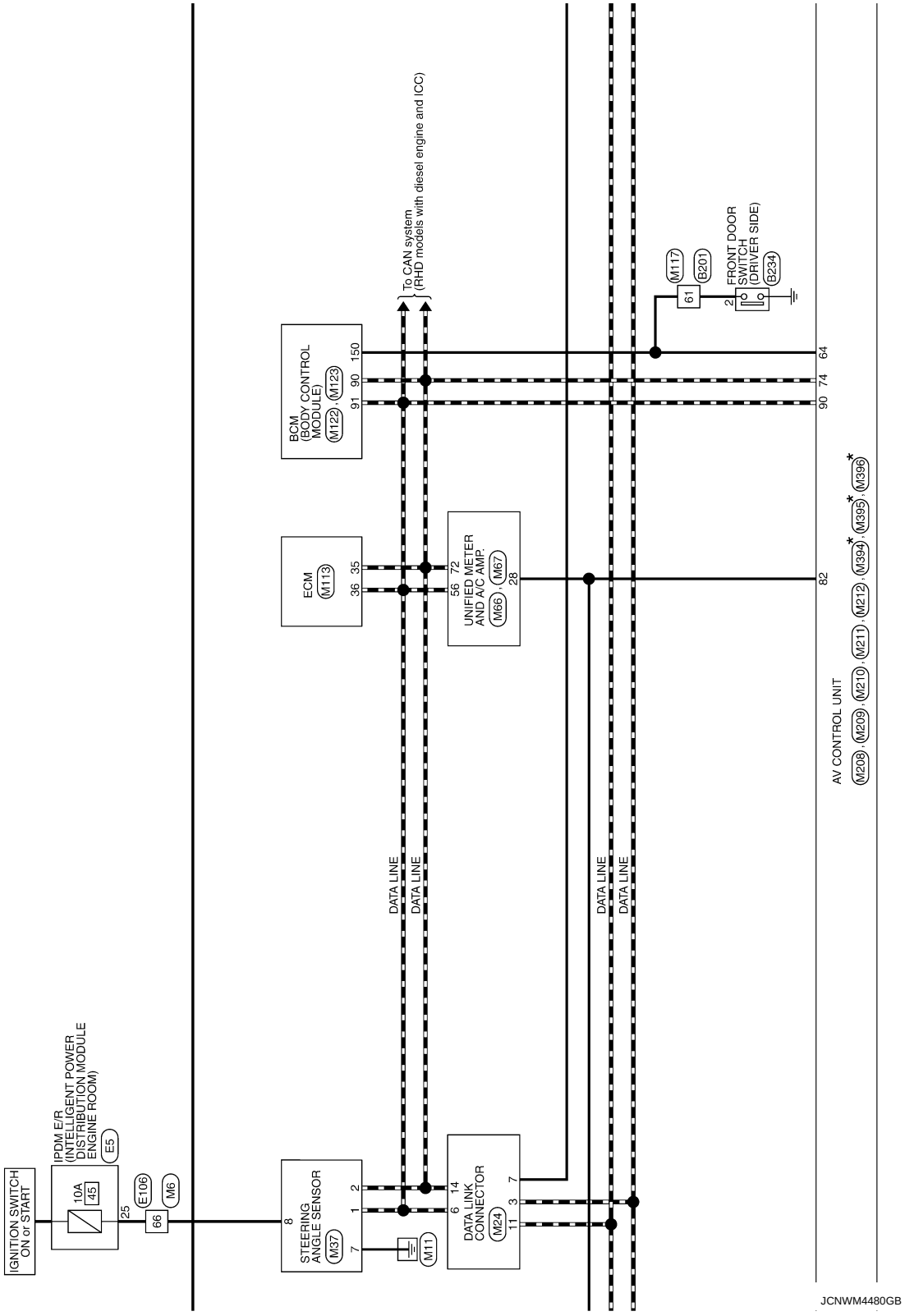
NOTE:

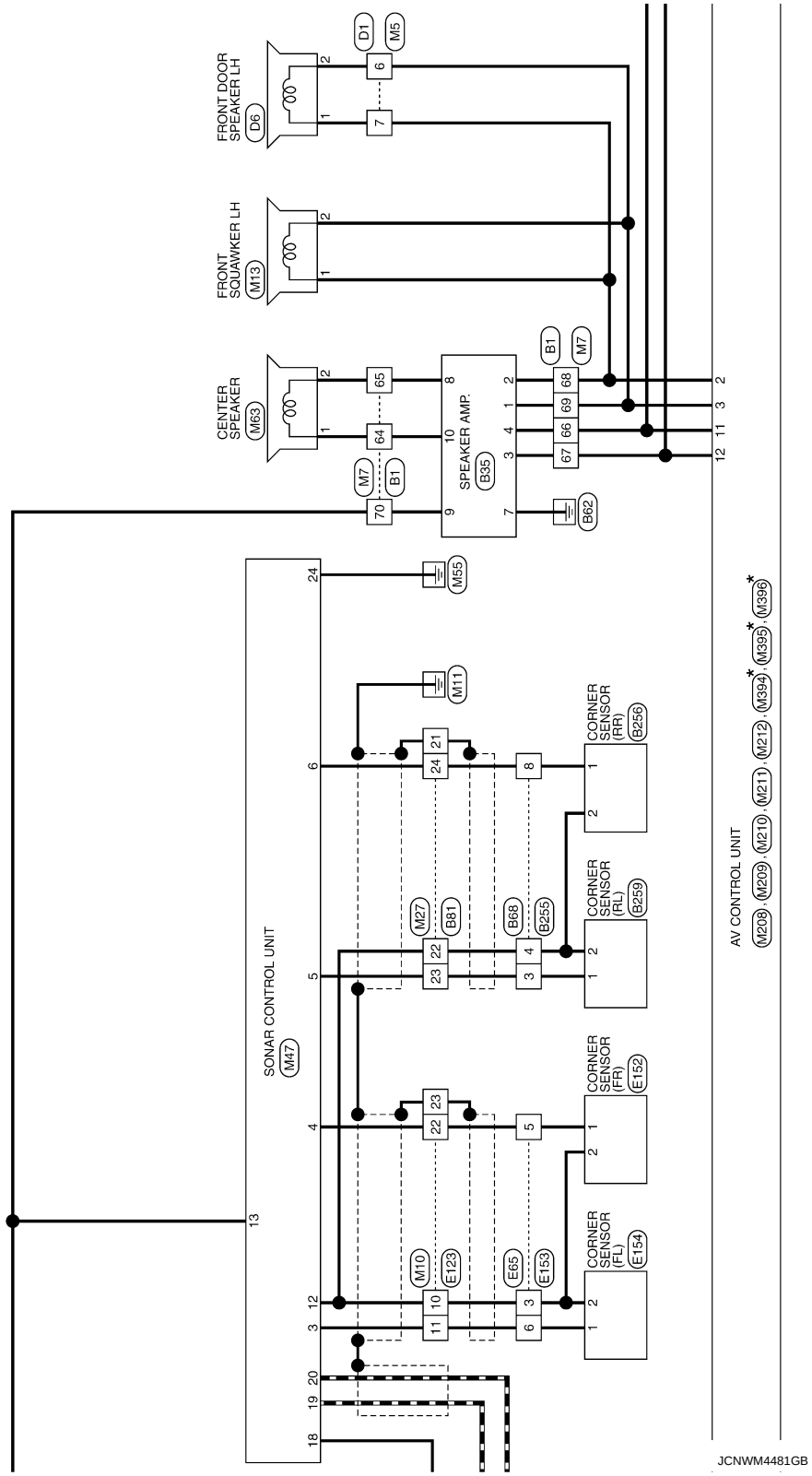
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

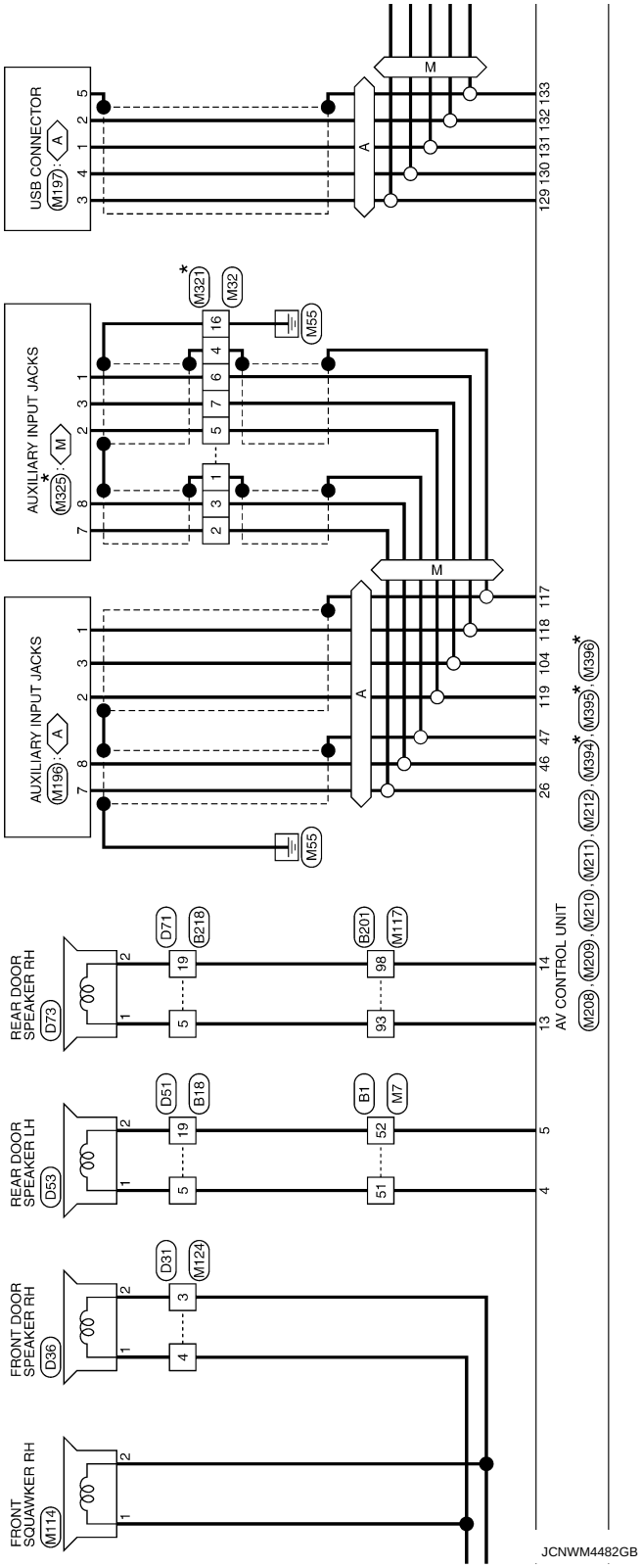
BASE AUDIO WITH NAVIGATION AND AROUND VIEW MONITOR (RHD MODELS WITH DIESEL ENGINE)

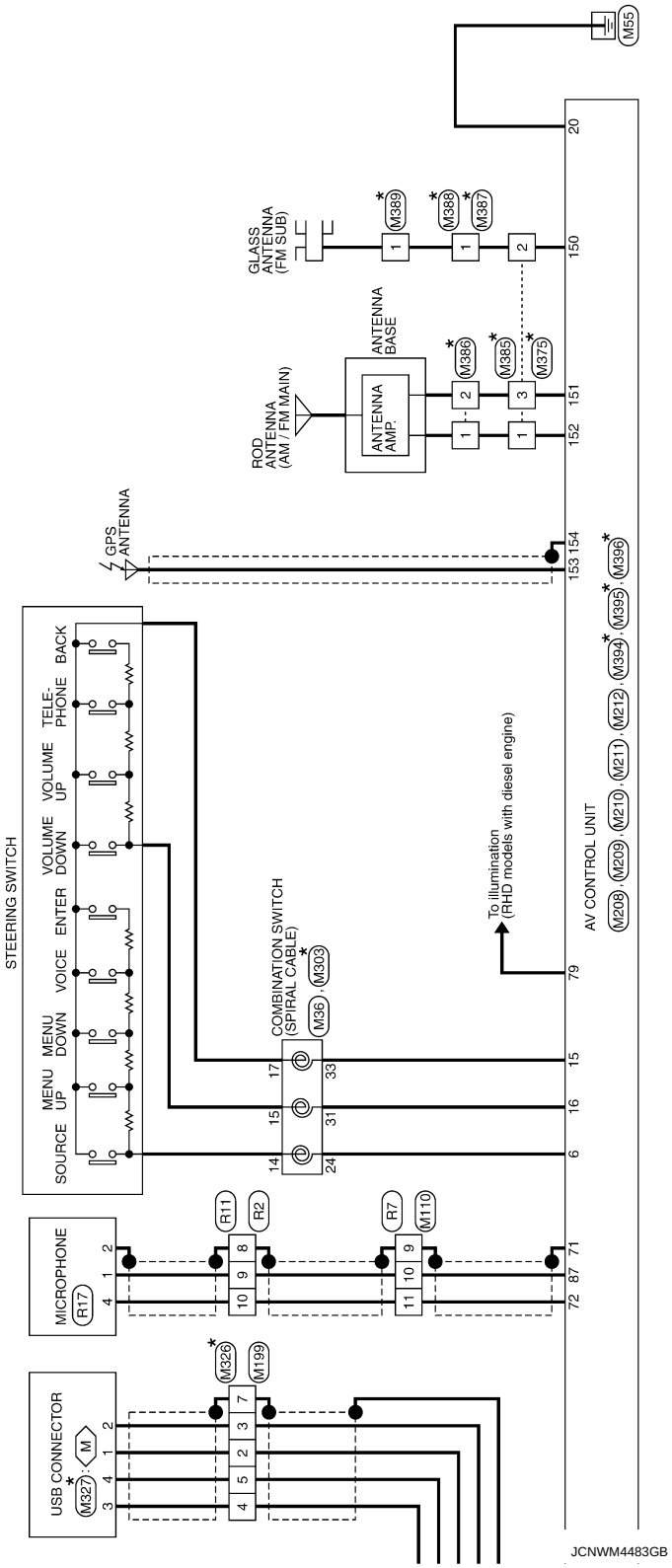



MULTIFUNCTION SWITCH
M72
M55
B83
M93
DATA LINE
DATA LINE
B24
AROUND VIEW MONITOR CONTROL UNIT
B45
B46
CAMERA
INFRARED LED (AUXILIARY LIGHTING)
DOOR MIRROR (PASSENGER SIDE)
D2
M5
D1
M124
D31
DOOR MIRROR (DRIVER SIDE)
D48
B28
D102
REAR CAMERA
D111
AV CONTROL UNIT
M208
M209
M210
M211
M212
M394
M395
M396
JCNWM4479GB


IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E5
10A 45
25
E106
66
M6
STEERING ANGLE SENSOR M37
8
1
7
M11
DATA LINE
DATA LINE
DATA LINK CONNECTOR M24
14
6
7
3
11
2
DATA LINE
DATA LINE
ECM M113
35
36
UNIFIED METER AND A/C AMP. M66 M67
72
56
28
82
BCM (BODY CONTROL MODULE) M122 M123
150
90
91
64
74
90
To CAN system (RHD models with diesel engine and ICC)
M117
61
B201
FRONT DOOR SWITCH (DRIVER SIDE) B234
2
AV CONTROL UNIT
M208, M209, M210, M211, M212, *M394, *M395, *M396
JCNWM4480GB


FRONT DOOR SPEAKER LH
D6
FRONT SQUAWKER LH
M13
CENTER SPEAKER
M63
SPEAKER AMP.
B35
B62
SONAR CONTROL UNIT
M47
CORNER SENSOR (FR)
B256
CORNER SENSOR (FL)
B259
CORNER SENSOR (FR)
E152
CORNER SENSOR (FL)
E154
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394*, M395*, M396*
JCNWM4481GB


USB CONNECTOR
M197
A
AUXILIARY INPUT JACKS
M196
A
AUXILIARY INPUT JACKS
M325
M
M321
M32
M55
M55
M
A
M
A
REAR DOOR SPEAKER RH
D73
REAR DOOR SPEAKER LH
D53
FRONT DOOR SPEAKER RH
D36
FRONT SQUAWKER RH
M114
D71
B218
B201
M117
D51
B18
B1
M7
D31
M124
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394, M395, M396
JCNWM4482GB


M55
GLASS ANTENNA (FM SUB)
M389
M388
M387
ANTENNA BASE
ROD ANTENNA (AM / FM MAIN)
ANTENNA AMP.
M386
M385
M375
GPS ANTENNA
STEERING SWITCH
SOURCE
MENU UP
MENU DOWN
VOICE
ENTER
VOLUME DOWN
VOLUME UP
TELE-PHONE
BACK
COMBINATION SWITCH (SPIRAL CABLE)
M36
M303
To illumination (RHD models with diesel engine)
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394, M395, M396
MICROPHONE
R17
R11
R2
R7
M110
USB CONNECTOR
M327
M
M326
M199
JCNWM4483GB

BASE AUDIO WITH NAVIGATION AND REAR VIEW MONITOR
LHD MODELS

LHD MODELS : Wiring Diagram

INFOID:0000000006109266

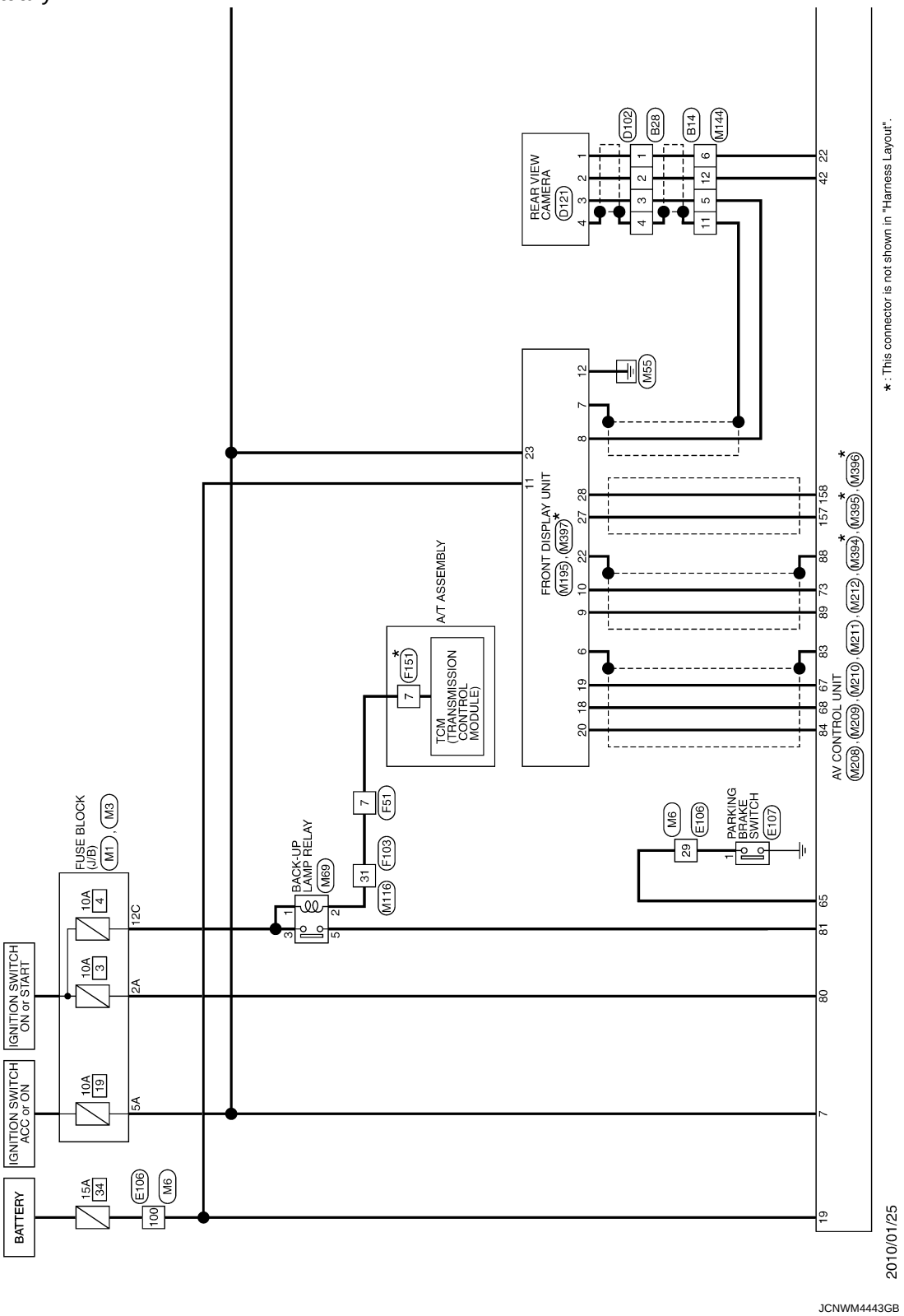
GASOLINE ENGINE MODELS

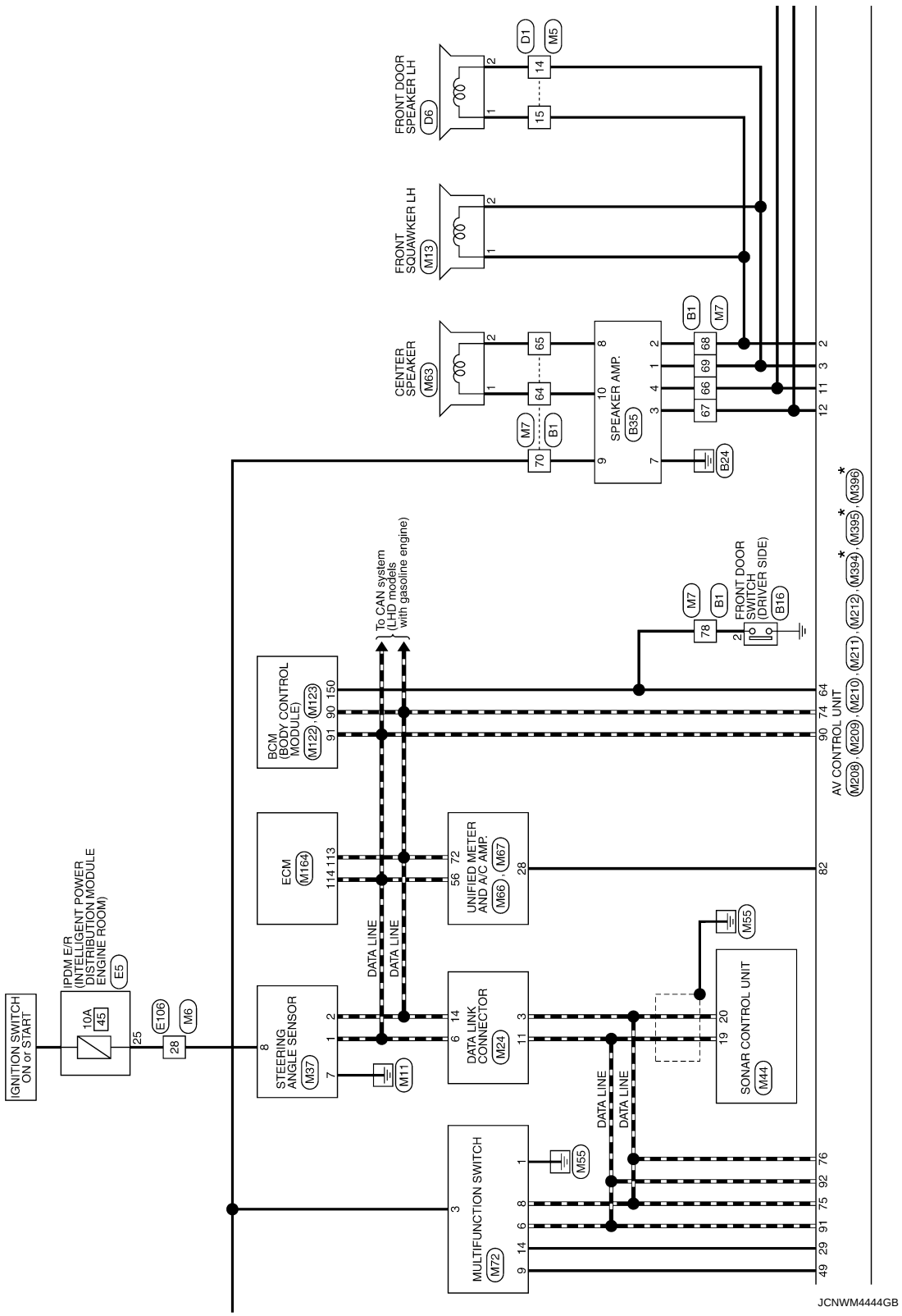
For connector terminal arrangements, harness layouts, and alphabets in a ⬭ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

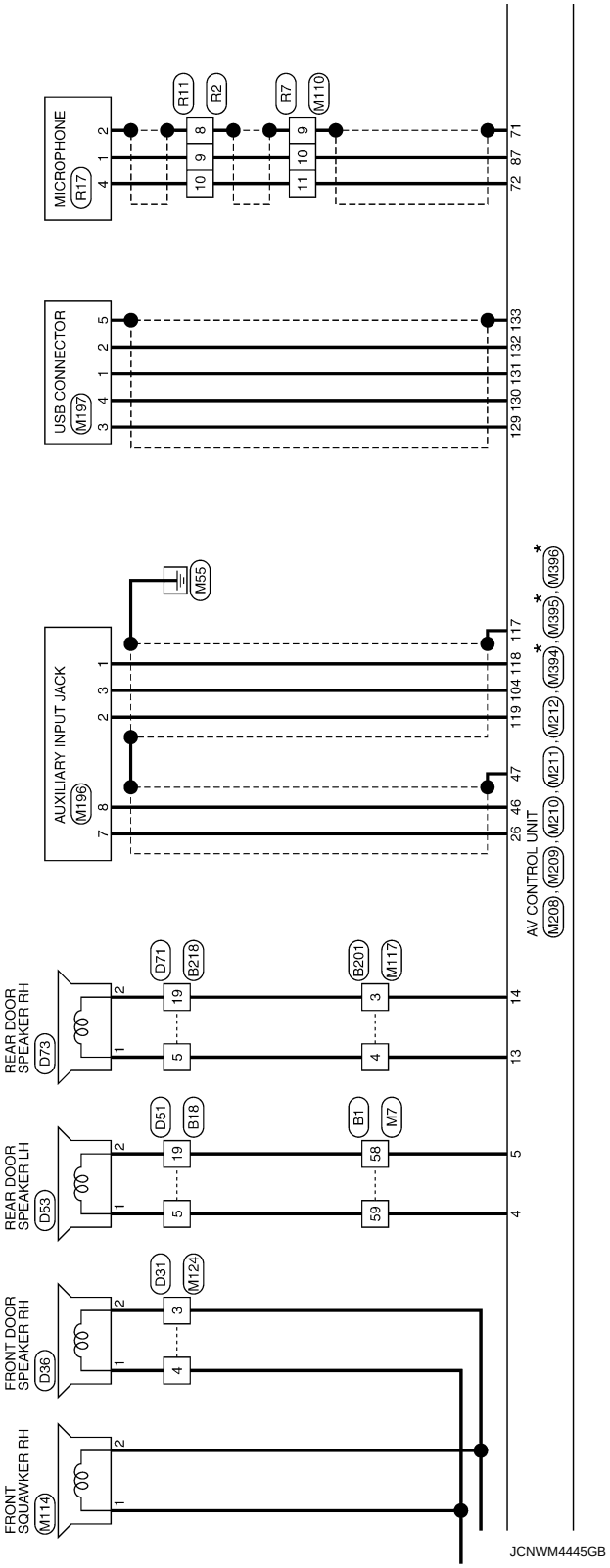
NOTE:

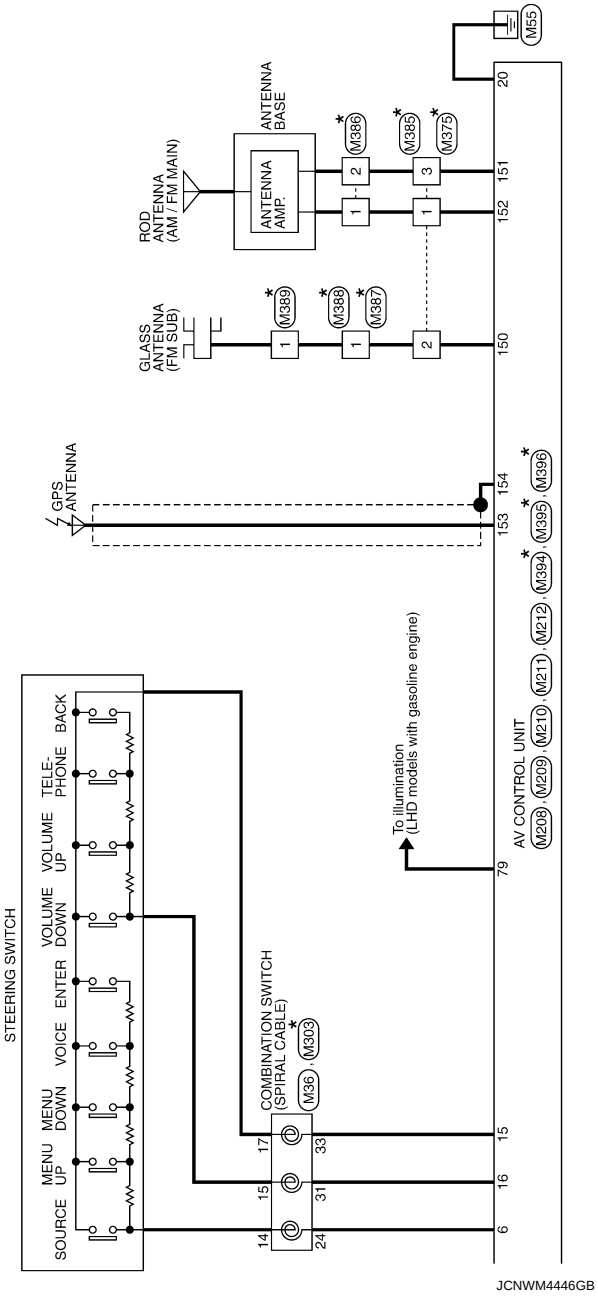
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

BASE AUDIO WITH NAVIGATION AND REAR VIEW MONITOR (LHD MODELS WITH GASOLINE ENGINE)




FRONT DOOR SPEAKER LH
D6
FRONT SQUAWKER LH
M13
CENTER SPEAKER
M63
SPEAKER AMP.
B35
FRONT DOOR SWITCH (DRIVER SIDE)
B16
To CAN system (LHD models with gasoline engine)
BCM (BODY CONTROL MODULE)
M122, M123
ECM
M164
UNIFIED METER AND A/C AMP.
M66, M67
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394*, M395*, M396*
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
10A 45
IGNITION SWITCH ON or START
E106
M6
STEERING ANGLE SENSOR
M37
M11
DATA LINE
DATA LINK CONNECTOR
M24
SONAR CONTROL UNIT
M44
M55
MULTIFUNCTION SWITCH
M72
JCNWM4444GB


MICROPHONE
R17
R11
R2
R7
M110
USB CONNECTOR
M197
AUXILIARY INPUT JACK
M196
M55
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394*, M395*, M396*
REAR DOOR SPEAKER RH
D73
D71
B218
B201
M117
REAR DOOR SPEAKER LH
D53
D51
B18
B1
M7
FRONT DOOR SPEAKER RH
D36
D31
M124
FRONT SQUAWKER RH
M114
JCNWM4445GB



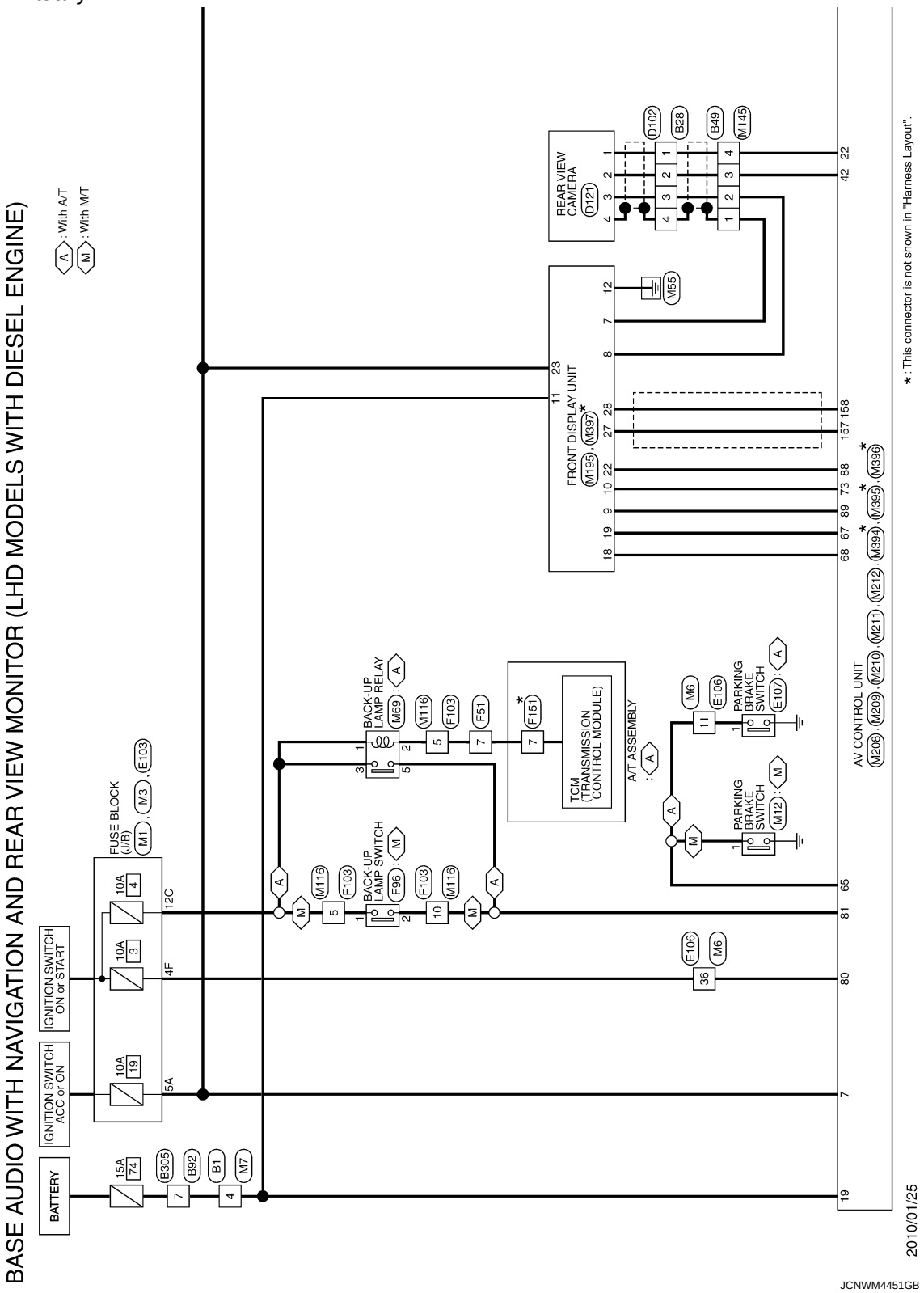
DIESEL ENGINE MODELS

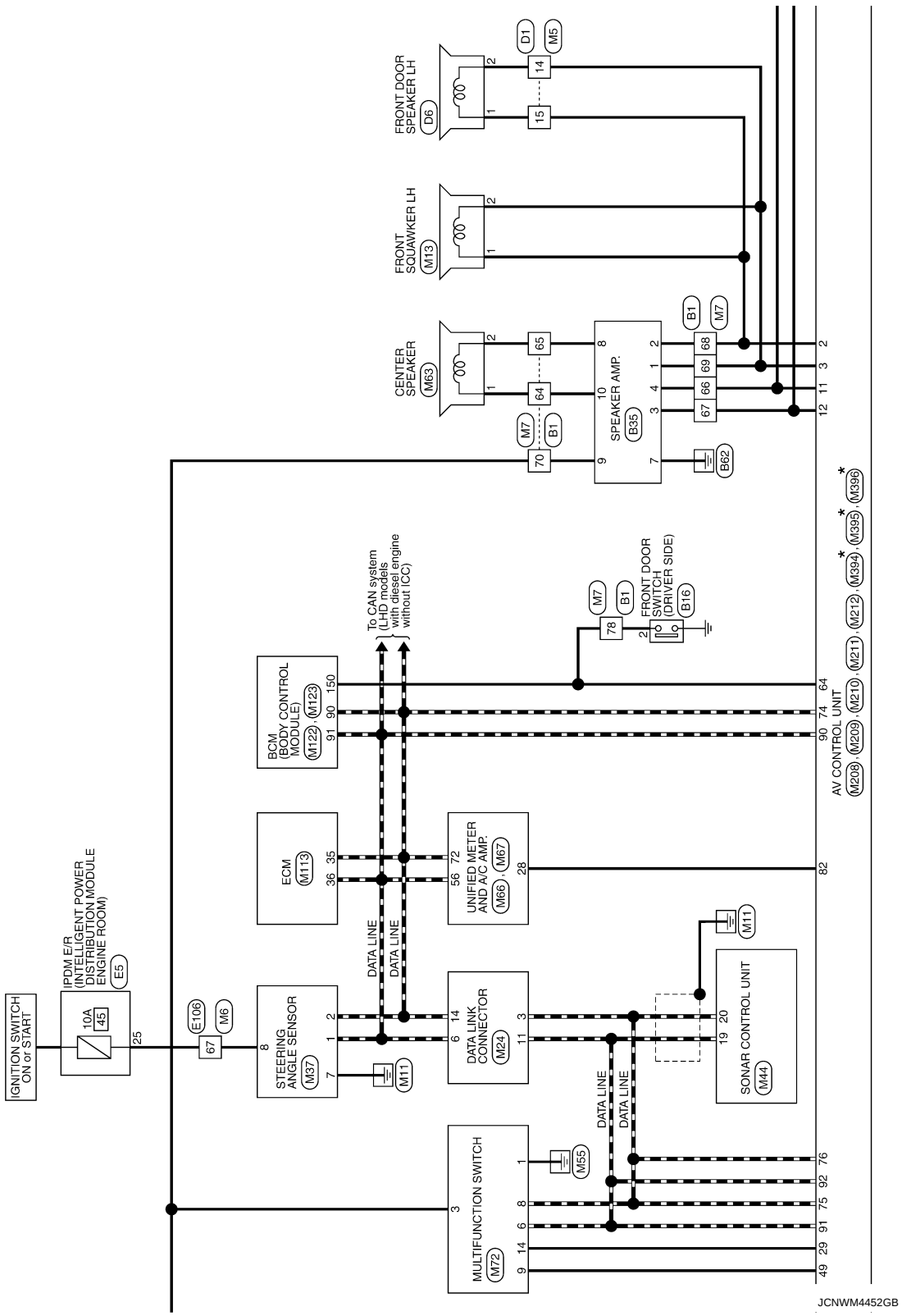
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

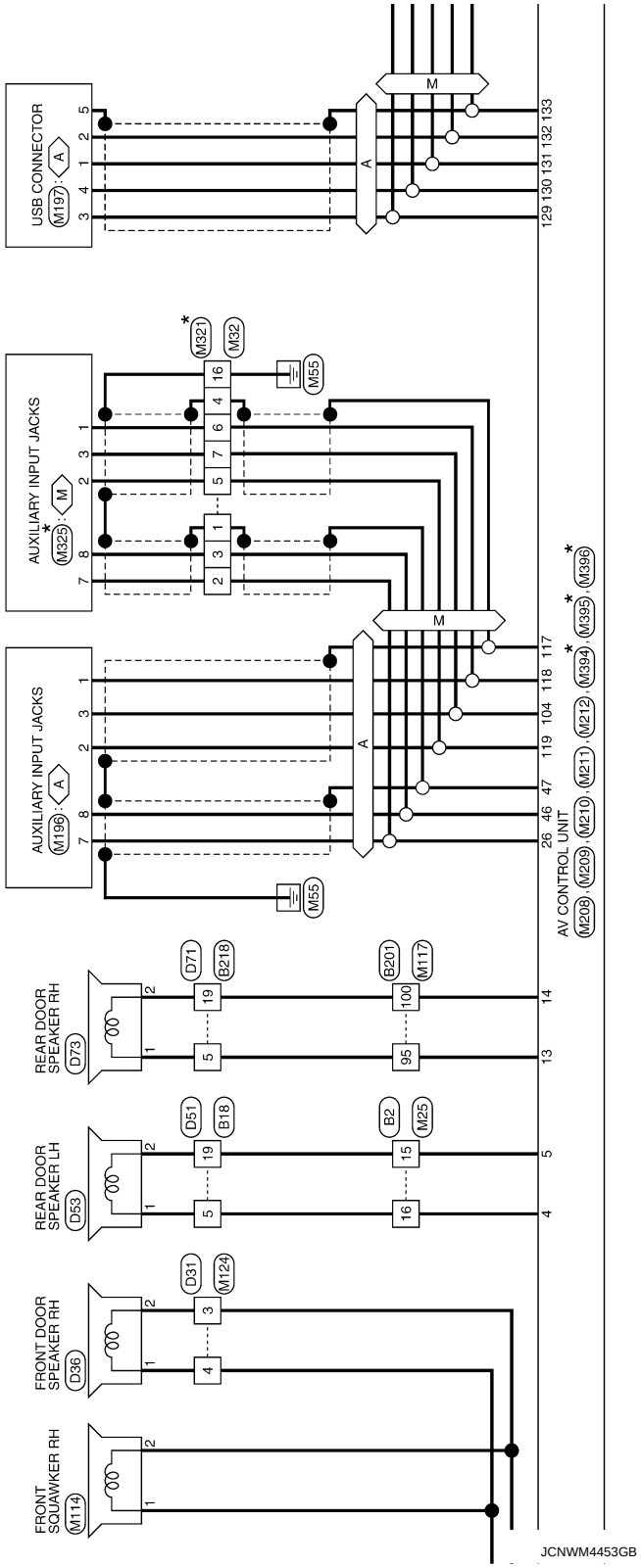
NOTE:

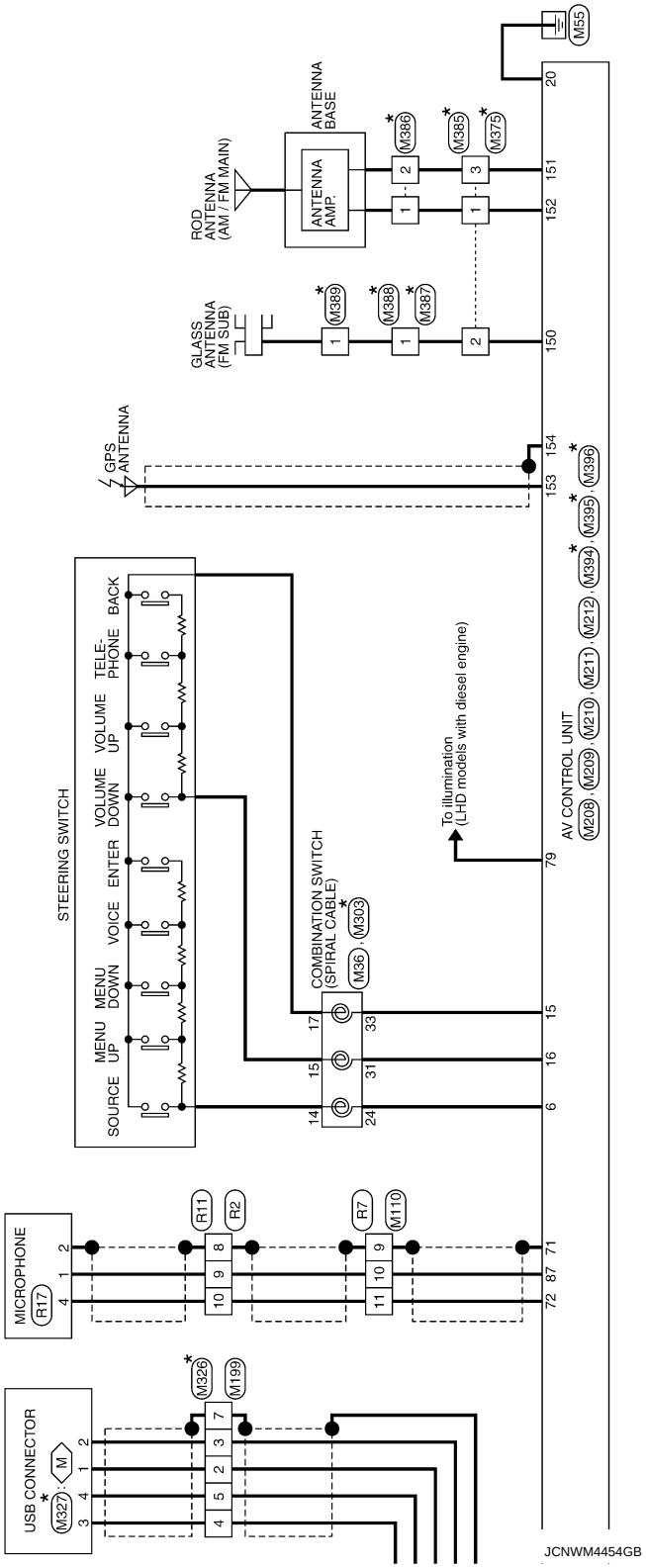
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

BASE AUDIO WITH NAVIGATION AND REAR VIEW MONITOR (LHD MODELS WITH DIESEL ENGINE)




FRONT DOOR SPEAKER LH
D6
FRONT SQUAWKER LH
M13
CENTER SPEAKER
M63
SPEAKER AMP.
B35
FRONT DOOR SWITCH (DRIVER SIDE)
B16
BCM (BODY CONTROL MODULE)
M122, M123
ECM
M113
UNIFIED METER AND A/C AMP.
M66, M67
STEERING ANGLE SENSOR
M37
DATA LINK CONNECTOR
M24
SONAR CONTROL UNIT
M44
MULTIFUNCTION SWITCH
M72
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394*, M395*, M396*
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
10A 45
IGNITION SWITCH ON or START
E106
M6
DATA LINE
To CAN system (LHD models with diesel engine without ICC)
JCNWM4452GB


USB CONNECTOR
M197
A
AUXILIARY INPUT JACKS
M
M325
M321
M32
M55
AUXILIARY INPUT JACKS
A
M196
M55
M
A
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394, M395, M396
REAR DOOR SPEAKER RH
D73
D71
B218
B201
M117
REAR DOOR SPEAKER LH
D53
D51
B18
B2
M25
FRONT DOOR SPEAKER RH
D36
D31
M124
FRONT SQUAWKER RH
M114
JCNWM4453GB



RHD MODELS

RHD MODELS : Wiring Diagram

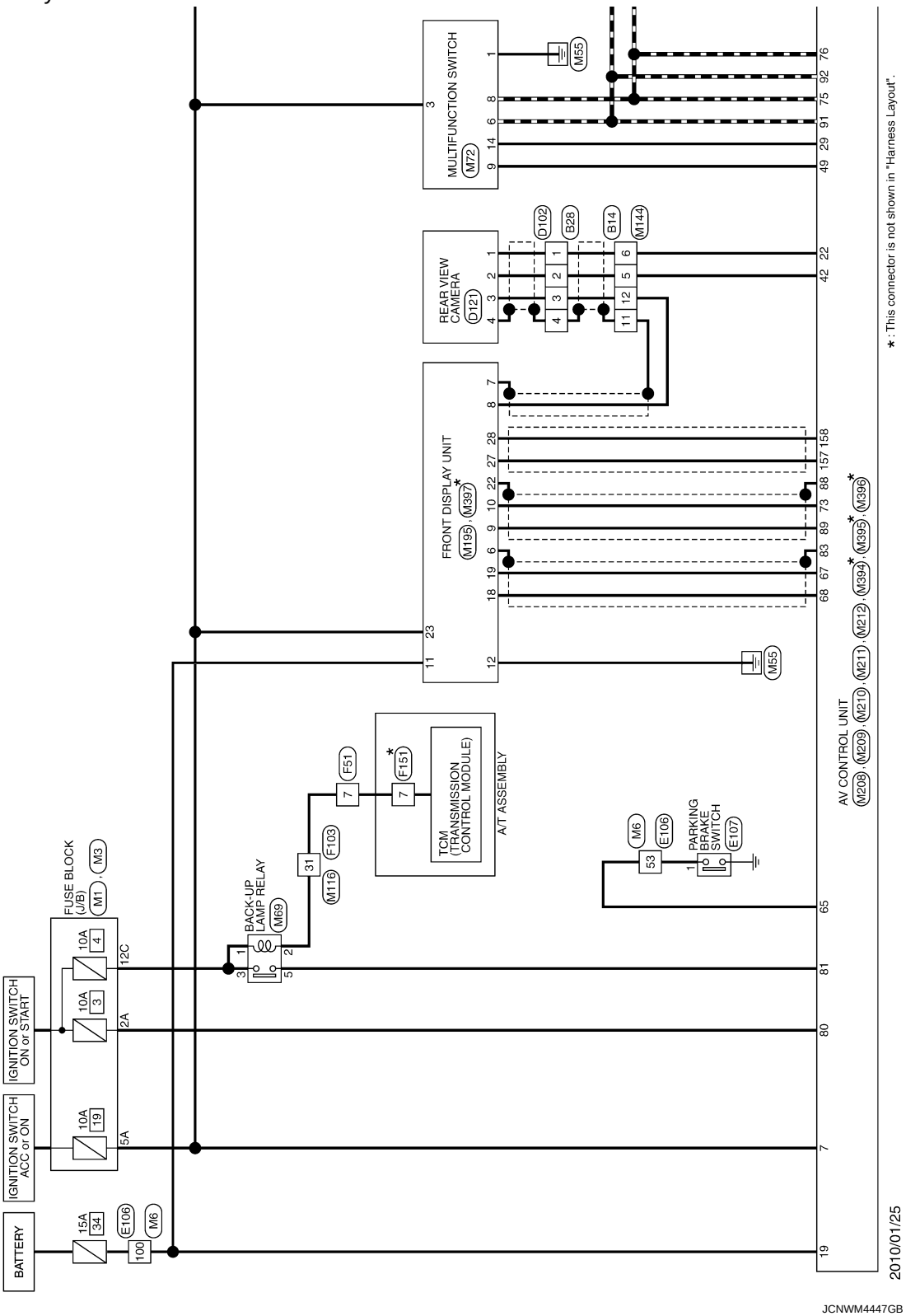
INFOID:0000000006109267

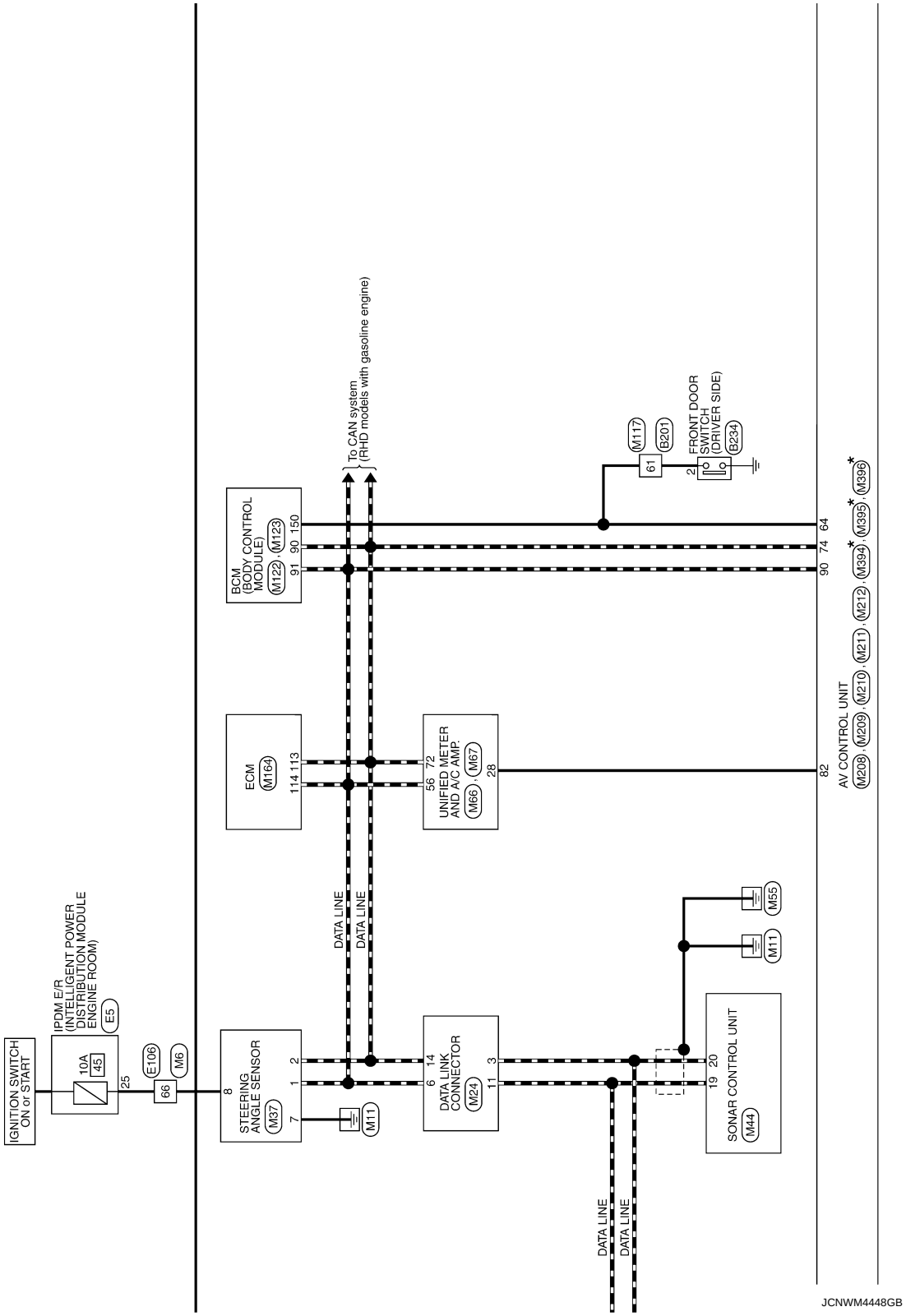
GASOLINE ENGINE MODELS

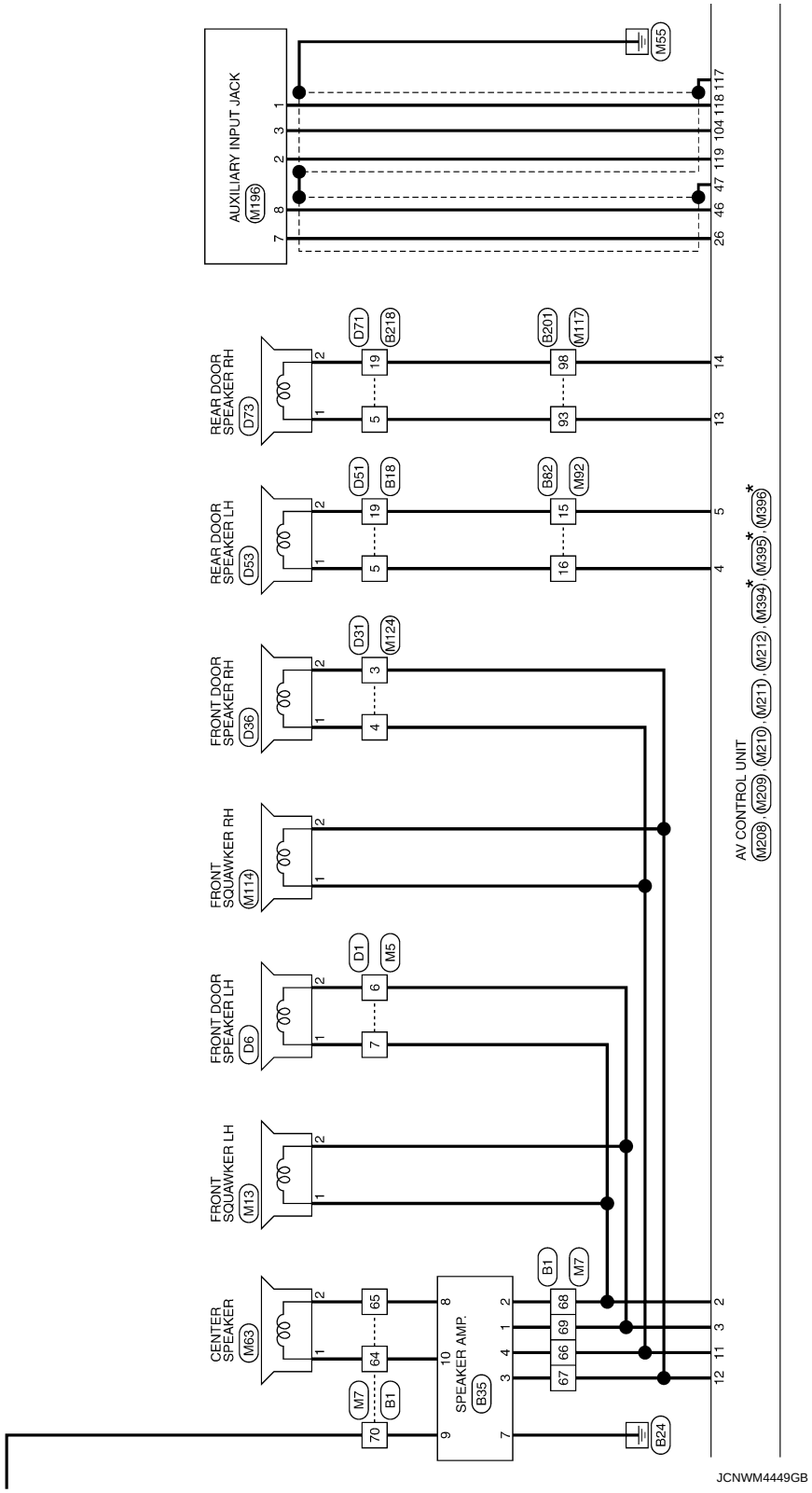
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

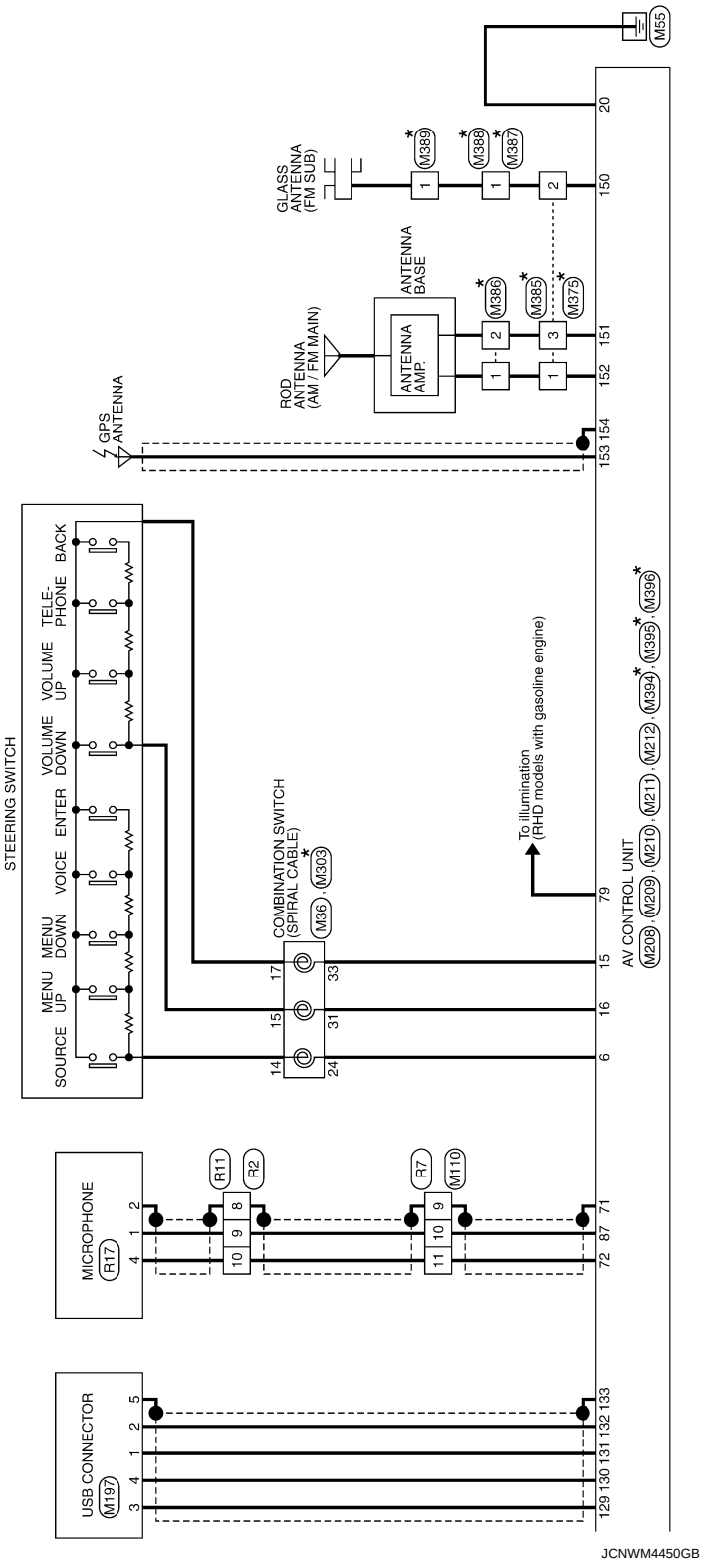
NOTE:
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

BASE AUDIO WITH NAVIGATION AND REAR VIEW MONITOR (RHD MODELS WITH GASOLINE ENGINE)




IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E5
10A 45
25
E106
66
M6
STEERING ANGLE SENSOR M37
8
1 2
7
M11
DATA LINE
DATA LINE
ECM M164
114 113
BCM (BODY CONTROL MODULE) M122, M123
91 90 150
To CAN system (RHD models with gasoline engine)
UNIFIED METER AND A/C AMP. M66, M67
56 72
28
DATA LINK CONNECTOR M24
6 14
11 3
M117
61
B201
FRONT DOOR SWITCH (DRIVER SIDE) B234
2
AV CONTROL UNIT M208, M209, M210, M211, M212, M394*, M395*, M396*
90 74 64
82
M55
M11
SONAR CONTROL UNIT M44
19 20
DATA LINE
DATA LINE
JCNWM4448GB


AUXILIARY INPUT JACK
M196
M55
REAR DOOR SPEAKER RH
D73
REAR DOOR SPEAKER LH
D53
FRONT DOOR SPEAKER RH
D36
FRONT SQUAWKER RH
M114
FRONT DOOR SPEAKER LH
D6
FRONT SQUAWKER LH
M13
CENTER SPEAKER
M63
SPEAKER AMP.
B35
B24
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394*, M395*, M396*
JCNWM4449GB



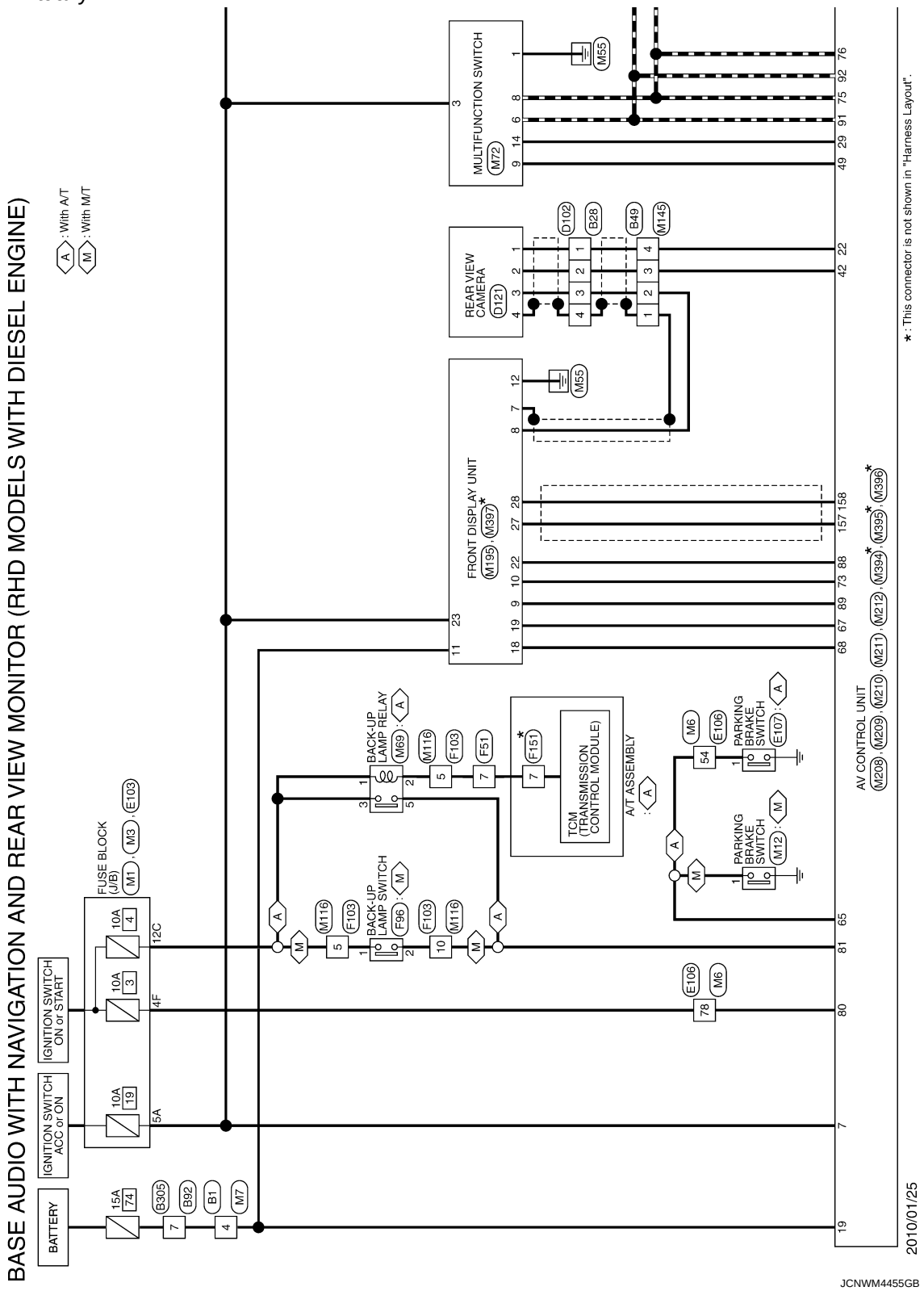
DIESEL ENGINE MODELS

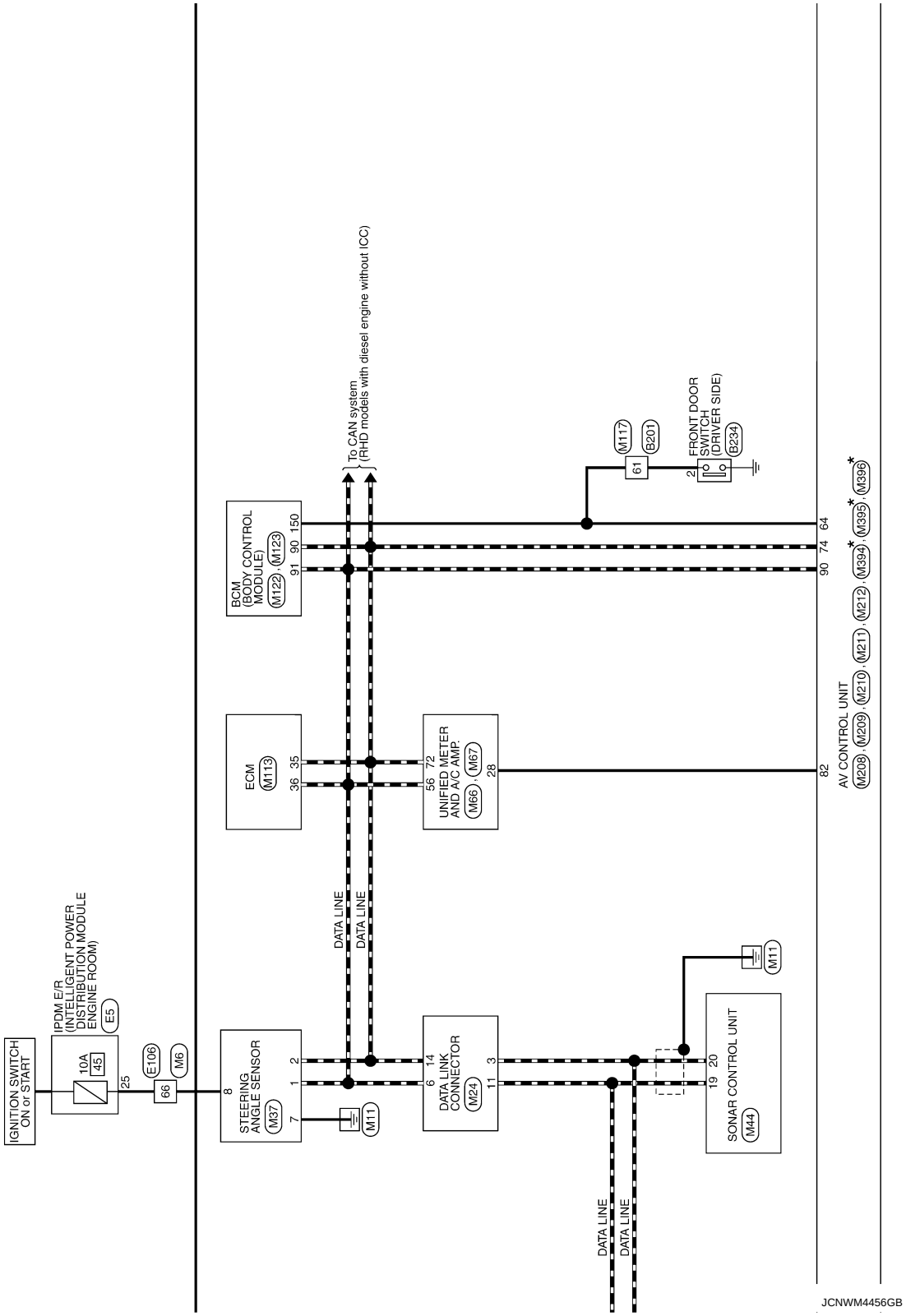
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

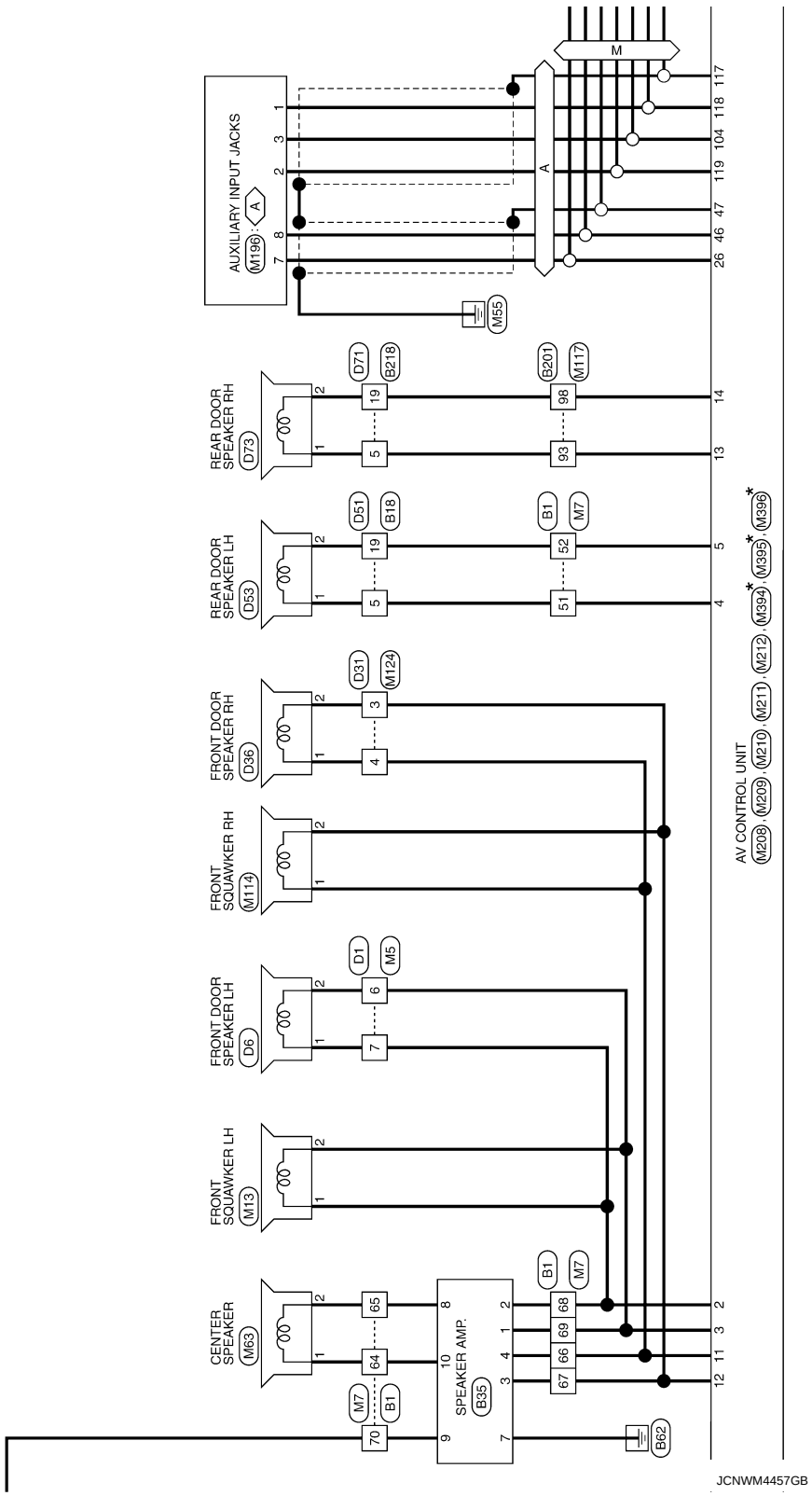
NOTE:

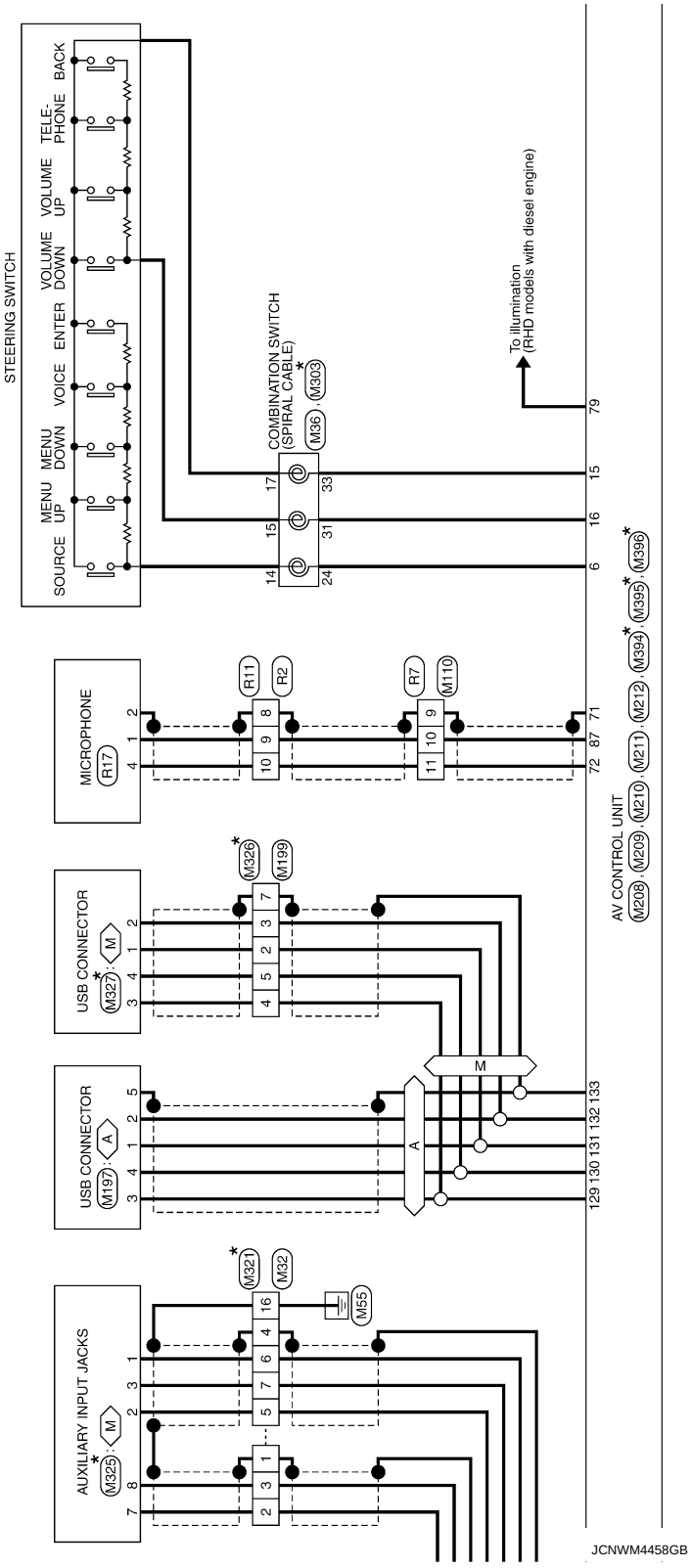
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

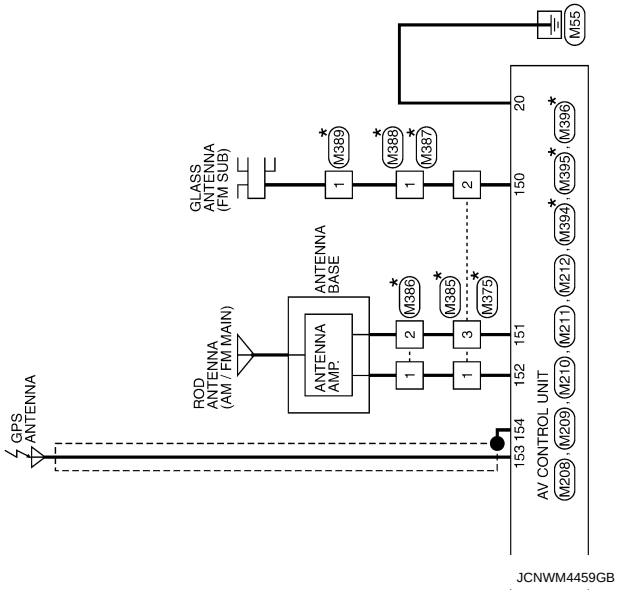
BASE AUDIO WITH NAVIGATION AND REAR VIEW MONITOR (RHD MODELS WITH DIESEL ENGINE)




IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E5
10A 45
25
E106
66
M6
STEERING ANGLE SENSOR M37
8
1 2
7
M11
DATA LINE
DATA LINE
To CAN system (RHD models with diesel engine without ICC)
BCM (BODY CONTROL MODULE) M122, M123
91 90 150
ECM M113
36 35
UNIFIED METER AND A/C AMP. M66, M67
56 72
28
DATA LINK CONNECTOR M24
6 14
11 3
SONAR CONTROL UNIT M44
19 20
M11
DATA LINE
DATA LINE
M117
61
B201
FRONT DOOR SWITCH (DRIVER SIDE) B234
2
AV CONTROL UNIT M208, M209, M210, M211, M212, *M394, *M395, *M396
82
90 74 64
JCNWM4456GB


AUXILIARY INPUT JACKS
M196
A
M55
REAR DOOR SPEAKER RH
D73
REAR DOOR SPEAKER LH
D53
FRONT DOOR SPEAKER RH
D36
FRONT SQUAWKER RH
M114
FRONT DOOR SPEAKER LH
D6
FRONT SQUAWKER LH
M13
CENTER SPEAKER
M63
SPEAKER AMP.
B35
B62
M
A
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394, M395, M396
JCNWM4457GB


STEERING SWITCH
SOURCE
MENU UP
MENU DOWN
VOICE
ENTER
VOLUME DOWN
VOLUME UP
TELE-PHONE
BACK
COMBINATION SWITCH (SPIRAL CABLE)
M36
M303
To illumination (RHD models with diesel engine)
MICROPHONE
R17
R11
R2
R7
M110
USB CONNECTOR
M197
M327
M326
M199
AUXILIARY INPUT JACKS
M325
M321
M32
M55
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394, M395, M396
JCNWM4458GB


M55
20
GLASS ANTENNA (FM SUB)
M389
M388
M387
150
M396
M395
M394
M212
M211
M210
M209
ANTENNA BASE
M386
M385
M375
ANTENNA AMP.
ROD ANTENNA (AM / FM MAIN)
151
152
153 154
GPS ANTENNA
AV CONTROL UNIT
M209
JCNWM4459GB

SYMPTOM DIAGNOSIS

MULTI AV SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000005194124

RELATED TO NAVIGATION

Symptoms	Check items	Probable malfunction location
Multifunction switch and preset switch operation does not work.	• All switches cannot be operated. • “MULTI AV” is displayed on system selection screen when the CONSULT-III is started.	• Multifunction switch power supply and ground circuit malfunction. Refer to AV-383, "MULTIFUNCTION SWITCH : Diagnosis Procedure". • AV communication circuit between AV control unit and multifunction switch. Perform CONSULT-III self-diagnosis. Refer to AV-334, "CONSULT - III Function (MULTI AV)".
	• All switches cannot be operated. • “MULTI AV” is not displayed on system selection screen when the CONSULT-III is initialized.	AV control unit power supply and ground circuit malfunction. Refer to AV-382, "AV CONTROL UNIT : Diagnosis Procedure".
	Only specified switch cannot be operated.	Multifunction switch or preset switch malfunction. Perform multifunction switch and preset switch self-diagnosis function. Refer to AV-322, "Diagnosis Description".
Fuel economy display is abnormal.	There is malfunction in the CONSULT-III “self-diagnosis result” of “MULTI AV”.	Perform detected DTC diagnosis. Refer to AV-426, "DTC Index".
	There is no malfunction in the CONSULT-III “self-diagnosis results” of “MULTI AV”.	Ignition signal circuit malfunction.
Start of the AV control unit takes time.*	—	Driver door switch signal circuit malfunction.
Guide sound is not heard or too low.	On the setting display select “system sound (guide sound volume, etc.),” and confirm that guide sound is ON.	AV control unit malfunction. Replace AV control unit. Refer to AV-496, "Exploded View".

*:Models with driver door switch signal circuit.

RELATED TO HANDS-FREE PHONE

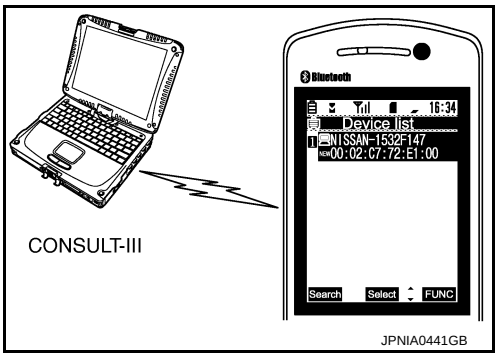
- Check that the cellular phone is the corresponding type (Bluetooth™ enabled) and Bluetooth™ turns ON.
- Malfunction may occur due to the version change of the phone type, etc. even though it is the corresponding type. The cell phone must support at least hands-free profile V1.0 and object push V1.0. Refer to cell phone instruction manual.
- When customers contact concerning Bluetooth™ compatible cell phone malfunction for the first time, always suggest customers to update cellular phone software if possible.
- Check that customer cellular phone is compatible on the published list. The dealer should contact its RBU/NSC for the list.
- Take note of any exceptions that the list may detail, i.e. no ringing tone or no phonebook transfer etc. If the customer phone is not listed then its full function cannot be guaranteed. NISSAN should not replace the AV control unit if the cell phone does not appear on the list or the cell phone is operating as described on the list e.g. no ringing tone, no phonebook transfer etc.
- Take note of any exceptions to other phones made by the same manufacturer as the customers. Any exceptions on one model by a specific manufacturer may be common to all models made by that manufacturer.

Simple Check for Bluetooth™ Communication

If cellular phone and AV control unit cannot be connected with Bluetooth™ communication, following procedure allows the technician to judge which device has malfunction.

1. Turn ON cellular phone, not connecting Bluetooth™ communication.
2. Start CONSULT-III, then start Windows®.

3. Set CONSULT-III near a cellular phone.
4. When operated Bluetooth™ registration by cellular phone, check if CONSULT-III* would be displayed on the device name.
   (If other Bluetooth™ device is located near cellular phone, a name of the device would be displayed also.)
   NOTE:
   *:Displayed device name is “NISSAN-********”.



- If no device name is displayed, cellular phone is malfunctioning. Repair the cellular phone first, then perform diagnosis.
- If CONSULT-III is displayed on device name, cellular phone is normal*. Perform diagnosis as per the following table.

*: There is no 100% guarantee that cellular phone operates all functions on AV control unit. Different phone manufacturers implement Bluetooth™ in different ways. Phones on Supported Phone List are tested and any minor exceptions are listed.

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection. (no connection is displayed on the display at the guide.)	Repeat the registration of cellular phone.	AV control unit malfunction. Replace AV control unit. Refer to AV-496, "Exploded View".
Hands-free phone cannot be established.	• Hands-free phone operation can be made, but the communication cannot be established. • Hands-free phone operation can be performed, however, voice between each other cannot be heard during the conversation.	AV control unit malfunction. Replace AV control unit. Refer to AV-496, "Exploded View".
The other party's voice cannot be heard by hands-free phone.	Check the “microphone speaker” in Inspection & Adjustment Mode if sound is heard.	AV control unit malfunction. Replace AV control unit. Refer to AV-496, "Exploded View".
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	AV control unit malfunction. Replace AV control unit. Refer to AV-496, "Exploded View".
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-391, "Diagnosis Procedure".
The system cannot be operated.	Steering switch's ”VOL UP”, “VOL DOWN”, “↩” switch works, but “📞” it does not work.	Steering switch malfunction. Replace steering switch. Refer to SR-16, "Exploded View".
	Steering switch's “📞”, ”VOL UP”, “VOL DOWN”, “↩” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-416, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-418, "Diagnosis Procedure".

RELATED TO CAMERA

Rear View Monitor

Symptoms	Check items	Probable malfunction location
Camera image is not shown.	—	Camera image signal circuit between rear view camera and front display unit malfunction. Refer to AV-393, "Diagnosis Procedure".
Camera image does not switch.	“Reverse” is not turned ON on “VehicleSignals” screen of “Confirmation/Adjustment”.	Reverse signal circuit malfunction.
	“Reverse” is turned ON on “Vehicle Signals”screen of “Confirmation/Adjustment”.	AV control unit malfunction. Replace AV control unit. Refer to AV-496, "Exploded View".

Symptoms	Check items		Probable malfunction location / Action to take
It does not switch to camera image even when the “CAMERA” switch is pressed or the selector lever is in the reverse position.	“Camera Cont.” of “Confirmation/Adjustment” can be selected.		Ignition signal circuit malfunction (around view monitor control unit).
	“Camera Cont.” of “Confirmation/Adjustment” cannot be selected.		• Around view monitor control unit power supply and ground circuits malfunction. Refer to AV-384, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure". • AV communication circuits malfunction. Refer to AV-334, "CONSULT - III Function (MULTI AV)".
The screen switches when pressing the “CAMERA” switch or shifting the selector lever to the reverse position, however, all views are not displayed.	Only superimposing is displayed. (Only the image displayed by AV control unit is displayed)		Camera image signal circuit between around view monitor control unit and front display unit malfunction. Refer to AV-395, "Diagnosis Procedure".
	Superimposing is not displayed.		Communication circuit between AV control unit and front display unit malfunction. Refer to AV-384, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".
Camera image is rolling.	—		Communication circuit between AV control unit and front display unit malfunction. Refer to AV-334, "CONSULT - III Function (MULTI AV)".
It cannot be switched to rear view monitor even when the selector lever is in the reverse position.	The front view is displayed normally.		Reverse signal circuit malfunction. (AV control unit)
The predicted course line display in front view and rear view is malfunctioning.	The “Steer. Angle Sensor” is not turned ON at “Connection Confirmation” of “Camera Cont.”		Steering angle sensor signal circuits.
• The front view screen is not displayed. • The front of Birds-Eye view screen is not displayed.	Check the item Front Camera in “Connection Confirmation” mode of “Camera Cont.”	• Image Output Signal: NG • COMM Status: NG • COMM Line: NG	• Front camera image signal circuit malfunction. • Front camera power supply and ground circuits malfunction. Refer to AV-397, "Diagnosis Procedure".
		• Image Output Signal: OK • COMM Status: NG • COMM Line: NG	Front camera communication signal circuit malfunction. Refer to AV-396, "Diagnosis Procedure".
• The rear view screen is not displayed. • The rear of Birds-Eye view screen is not displayed.	Check the item Rear Camera in “Connection Confirmation” mode of “Camera Cont.”	• Image Output Signal: NG • COMM Status: NG • COMM Line: NG	• Rear camera image signal circuit malfunction. • Rear camera power supply and ground circuits malfunction. Refer to AV-400, "Diagnosis Procedure".
		• Image Output Signal: OK • COMM Status: NG • COMM Line: NG	Rear camera communication signal circuits malfunction. Refer to AV-399, "Diagnosis Procedure".

Symptoms	Check items		Probable malfunction location / Action to take
• The front-side screen is not displayed. • The passenger side of Birds-Eye view screen is not displayed.	Check the item Pass-Side Camera in “Connection Confirmation” mode of “Camera Cont.”	• Image Output Signal: NG • COMM Status: NG • COMM Line: NG	LHD models • Side camera RH image signal circuit malfunction. • Side camera RH power supply and ground circuits malfunction. Refer to AV-410, "LHD MODELS : Diagnosis Procedure". RHD models • Side camera LH image signal circuit malfunction. • Side camera LH power supply and ground circuits malfunction. Refer to AV-405, "RHD MODELS : Diagnosis Procedure".
		• Image Output Signal: OK • COMM Status: NG • COMM Line: NG	LHD models • Side camera RH communication circuit malfunction. Refer to AV-408, "LHD MODELS : Diagnosis Procedure". RHD models • Side camera LH communication circuit malfunction. Refer to AV-403, "RHD MODELS : Diagnosis Procedure".
The driver side of Birds-eye view screen is not displayed.	Check the item Dr-Side Camera at “Connection Confirmation” mode of “Camera Cont.”	• Image Output Signal: NG • COMM Status: NG • COMM Line: NG	LHD models • Side camera LH image signal circuit malfunction. • Side camera LH power supply and ground circuits malfunction. Refer to AV-404, "LHD MODELS : Diagnosis Procedure". RHD models • Side camera RH image signal circuit malfunction. • Side camera RH power supply and ground circuits malfunction. Refer to AV-411, "RHD MODELS : Diagnosis Procedure".
		• Image Output Signal: OK • COMM Status: NG • COMM Line: NG	LHD models • Side camera LH communication circuit malfunction. Refer to AV-402, "LHD MODELS : Diagnosis Procedure". RHD models • Side camera RH communication circuit malfunction. Refer to AV-409, "RHD MODELS : Diagnosis Procedure".
When shift position is other than “R” the front-side and front screen or the Birds-Eye view and front screen remain displaying even if the vehicle speed increases.	—		Vehicle speed signal circuit malfunction (around view monitor control unit).

RELATED TO CAMERA ASSISTANCE SONAR

Symptoms	Check items	Probable malfunction location / Action to take
The malfunction is detected in the sonar indicator (Always displayed in red)	The malfunction is detected in only 1 indicator (Always displayed in red).	• Corner sensor malfunction in corresponding area. • Corner sensor harness circuit in corresponding area. Perform CONSULT-III self-diagnosis of “SONAR”. Refer to AV-341, "CONSULT-III Function (SONAR)".
	The malfunction is detected in all 4 indicators (Always displayed in red).	• Corner sensor ground circuit malfunction. Perform CONSULT-III self-diagnosis of “SONAR”. Refer to AV-341, "CONSULT-III Function (SONAR)". • Sonar control unit power supply and ground circuits malfunction. • AV communication circuits malfunction. Perform CONSULT-III self-diagnosis of “MULTI AV”. Refer to AV-334, "CONSULT - III Function (MULTI AV)".
The sonar indicator is normal, but the buzzer does not sound	—	Replace sonar control unit. Refer to AV-522, "Exploded View".

RELATED TO RGB IMAGE

Symptoms	Check items	Probable malfunction location
RGB image is not shown.	—	RGB digital image signal circuit malfunction. Refer to AV-387, "Diagnosis Procedure".

RELATED TO VOICE CONTROL

Symptoms	Check items	Probable malfunction location
The voice cannot be controlled even if the voice control screen is displayed.	Voice sounds at “Voice Microphone Test” of Confirmation/Adjustment mode.	AV control unit malfunction. Replace AV control unit. Refer to AV-496, "Exploded View".
	Voice does not sound at “Voice Microphone Test” of Confirmation/Adjustment mode.	Microphone circuit malfunction. Refer to AV-391, "Diagnosis Procedure".
The voice cannot be controlled (Voice control screen is not displayed).	Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN”, “ENTER” switch works, but “ ” it does not work.	Steering switch malfunction. Replace steering switch. Refer to SR-16, "Exploded View".
	Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN”, “ ”, “ENTER” switches do not work.	Steering switch signal A circuit malfunction. Refer to AV-414, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-418, "Diagnosis Procedure".

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to AV-390, "Diagnosis Procedure".

Symptoms	Check items	Probable malfunction location
Audio sound is not heard.	No sound from all speakers.	AV control unit malfunction. Replace AV control unit. Refer to AV-496, "Exploded View".
	Sound is not heard from center speaker.	• Speaker amp. power supply and ground circuit malfunction. Refer to AV-384, "SPEAKER AMP. : Diagnosis Procedure". • Sound signal center speaker circuit malfunction.
	Sound is heard only from specific places.	Sound signals circuit of suspect system.
AM/FM radio is not received.	Other audio sounds are normal.	• Antenna amp. ON signal circuit malfunction. • Antenna feeder malfunction.

RELATED TO STEERING SWITCH

Symptoms	Probable malfunction location
None of the steering switch operations work.	Steering switch ground circuit malfunction. Refer to AV-418, "Diagnosis Procedure".
Only specified switch cannot be operated.	Steering switch malfunction. Replace steering switch. Refer to SR-16, "Exploded View".
Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN”,“ ”, “ENTER”switches do not work.	Steering switch signal A circuit malfunction. Refer to AV-414, "Diagnosis Procedure".
Steering switch's “ ”, “VOL UP”, “VOL DOWN”, “ ” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-416, "Diagnosis Procedure".

RELATED TO USB

NOTE:

Check that there is no malfunction of USB equipment main body before performing a diagnosis.

Symptoms	Check items	Possible malfunction location / Action to take
iPod® or USB memory can not be recognized.	—	• USB harness malfunction. • USB connector malfunction.

iPod® is a trademark of Apple inc., registered in the U.S. and other countries.

RELATED TO DVD MODE

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to AV-390, "Diagnosis Procedure".
DVD image is not displayed.	—	Perform CONSULT-III self-diagnosis. Refer to AV-334, "CONSULT - III Function (MULTI AV)". When detecting no malfunction in those components, the following items are a possible cause. • Composite image signal circuits malfunction. Refer to AV-388, "Diagnosis Procedure".
DVD sound is not heard.	No sound from all speakers.	AV control unit malfunction. Replace AV control unit. Refer to AV-496, "Exploded View".
	Sound is not heard from center speaker.	• Speaker amp. power supply and ground circuit malfunction. Refer to AV-503, "Exploded View". • Sound signal center speaker circuit malfunction.
	Sound is heard only from specific places.	Sound signals circuit of suspect system.

RELATED TO AUXILIARY INPUT

NOTE:

Check that there is no malfunction of AUX equipment main body before performing a diagnosis.

Symptoms	Check items	Probable malfunction location
No voice sound is heard when AUX mode is selected.	Voice sound is heard when other modes are selected.	AUX sound signal circuit.
Image is not displayed when AUX mode is selected.	DVD image is displayed.	AUX image signal circuit malfunction. Refer to AV-389, "Diagnosis Procedure".
	DVD image is not displayed.	Composite image signal circuits malfunction. Refer to AV-388, "Diagnosis Procedure".

NORMAL OPERATING CONDITION

Description

INFOID:0000000005194125

NOTE:
For Navigation system operation information, refer to Navigation system Owner's Manual.

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The systems in the video mode.	Press “DISC-AUX” to change the mode.
	The display is turned off.	Press “☀/☽” to turn on the display.
	The interior of the vehicle becomes the a little less than 80°C (176°F) or high temperature, and the protection of the display acts, and a display is turned off.	Wait until the interior of the vehicle has cooled down.
Screen not clear.	Contrast setting is not appropriate.	Adjust the contrast of the display.
No voice guidance is available. Or The volume is too high or too low.	The volume is not set correctly, or it is turned off.	Adjust the volume of voice guidance.
	Voice guidance is not provided for certain streets (roads displayed in gray).	This is not a malfunction.
No map is displayed on the screen.	A screen other than map screen is displayed.	Press “MAP”.
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the navigation system.

NOTE:
Locations stored in the Address Book and other memory functions may be lost if the vehicle's battery is disconnected or becomes discharged. If this occurs, service the vehicle's battery as necessary and re-enter the information in the Address Book.

RELATED TO VOICE RECOGNITION

Related to Basic Operation

Symptom	Possible cause	Possible solution
The system does not recognize your command. or The system recognizes your command incorrectly	The interior of the vehicle is too noisy.	Close the windows or have other occupants quiet.
	The volume of your voice is too low.	Speak louder.
	The volume if your voice is too loud.	Speak softer.
	Your pronunciation is unclear.	Speak clearly.
	You are speaking before the voice recognition is ready	Press and release “ ” switch on the steering switch, and speak a command after the tone sounds.
	8 seconds or more have passed after you pressed and released “ ” switch on the steering switch.	Make sure to speak a command within 8 seconds after you press and release “ ” switch on the steering switch.
	Only a limited range of voice commands is usable for each screen.	Use a correct voice command appropriate for the current screen.
	The fan of the air conditioner is too loud.	Lower the fan speed as necessary as voice command can be recognized more easily.
The system cannot be operated.	The retractable hard top is open.	• Close the retractable hard top. • Open and close the retractable hard top before operating the system.

Related to Item Choice

The system should respond correctly to all voice commands without difficulty. If problems are encountered, follow the solutions given in this guide for the appropriate error.

Where the solutions are listed by number, try each solution in turn, starting with number one, until the problem is resolved.

Symptom/ error message	Solution
Displays “COMMAND NOT RECOGNIZED” or the system fails to interpret the command correctly.	1. Ensure that the command format is valid.
	2. Speak clearly without pausing between words and at a level appropriate to the ambient noise level.
	3. Ensure that the ambient noise level is not excessive, for example, windows open or defrost on. **NOTE:** If it is too noisy to use the phone, it is likely that voice commands will not be recognized.
	4. If optional words of the command have been omitted, then command should be tried with these in place.
The system consistently selects the wrong voicetag	1. Ensure that the voicetag requested matches what was originally stored. This can be confirmed by giving the “Addressbook” Directory or Phone Directory command.
	2. Replace one of the voicetags being confused with a different voicetag.

Related to Telephone

The system should respond correctly to all voice commands without difficulty. If problems are encountered, try the following solutions.

Where the solutions are listed by number, try each solution in turn, starting with number 1, until the problem is resolved.

Symptom	Solution
System fails to interpret the command correctly.	1. Ensure that the command is valid.
	2. Ensure that the command is spoken after the tone.
	3. Speak clearly without pausing between words and at level appropriate to the ambient noise level in the vehicle.
	4. Ensure that the ambient noise level is not excessive (for example, windows open or defroster on). **NOTE:** If it is too noisy to use the phone, it is likely that the voice commands will not be recognized.
	5. If more than one command was said at a time, try saying the commands separately.
	6. If the system consistently fails to recognize commands, the voice training procedure should be carried out to improve the recognition response for the speaker. See “Speaker adaptation (SA) mode” earlier in this section. Refer to “OWNER’S MANUAL”.
The system consistently selects the wrong voicetag	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the “List Names” command.
	2. Replace one of the names being confused with a new name.

RELATED TO AUDIO

- The majority of the audio malfunctions are the result of outside causes (bad CD, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and then determine the cause.

NOTE:

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA, AAC) or could be incorrectly mastered by the customer on a computer.
- Check if the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the “red book” Compact Disc Standard and may not play.

Symptom	Cause and Counter measure
Cannot play	Check if the CD was inserted correctly.
	Check if the CD is scratched or dirty.
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.
	If there is a mixture of music CD files (CD-DA data) and MP3/WMA/AAC files on a CD, only the music CD files (CD-DA data) will be played.
	Files with extensions other than ".MP3", ".WMA", "AAC" ".mp3", ".wma" or ".aac"cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format, This may occur depending on the variation or the setting of MP3/WMA/AAC writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the disc.
	Check if the CD is protected by copyright.
	Disks recorded in live file system format are not supported. (For Microsoft Windows Vista, check the settings.)
Poor sound quality	Check if the CD is scratched or dirty.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA/AAC CD, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.
Move immediately to the next song when playing	When a non-MP3/WMA/AAC file has been given an extension of ".MP3", ".WMA", "AAC", ".mp3", ".wma" or ".aac", or when play is prohibited by copyright protection, the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.

Noise resulting from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources, is not a malfunction.

NOTE:

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

RELATED TO DVD

Symptom	Possible cause	Possible solution
Not working as operated	Some operations may be rejected or may not function as intended because of the manufacturer's intent, depending on DVD.	This is not a malfunction.
Operation not accepted	If a requested operation is prohibited, then a message is displayed on the screen. (Message display depends on DVD.)	This is not a malfunction.

Symptom	Possible cause	Possible solution
DVD can not be played	Check that the DVD is inserted in the right place.	Upturn the DVD (facing the title upward).
	Check that there is no condensation inside the player.	Wait until the condensation evaporates (approximately one hour).
	DVD menu is displayed.	Select item to touch “ENTER”.
	Insertion of a DVD with a different region code.	DVDs with a different region code can not be played. Check DVD.
	Some DVD softwares may not be played because not all DVD softwares fully comply in the standard.	This is not a malfunction.
Interruption during playback or flicker in the display	Check that the DVD has no scratches and dirt.	Errors may not be corrected depending on the size of scratches.
		Wipe and clean the dirt on the disc.
Subtitles not shown	Subtitle setting is OFF.	Set subtitle.
	Subtitle is not included in the software.	Check DVD.
Not played in set language	If a language is not included in the DVD, then the DVD is played in a recommended language.	Check DVD.
Not played with set subtitle	If a set subtitle is not included in the DVD, then the DVD is played with a recommended subtitle.	Check DVD.
Angle unchangeable	Plural angles are not recorded in the software.	Check if the DVD is multi–angle capable.
Unusual screen display	Display mode to the output aspect ratio for the DVD software is inappropriate.	Switch to the appropriate display mode.
Distortion in picture	In the process of fast–forward or fast–reverse.	This is not a malfunction.
Low sound quality	Check that the DVD has no scratches and dirt.	Wipe and clean the dirt on the disc.
Subtitle and language not selectable (not played with set subtilte or in set language)	The DVD is not multilanguage–capable.	The inclusion of the number of languages depends on DVD. Languages may be selectable on the Menu screen. Check DVD.
	The DVD has a priority language or setting.	If the DVD has a priority language or settings, then settings changed with this device are not reflected.
Playback time is indicated, but no sound comes out.	Playback of Mix mode Truck 1. (Mix mode: Format including Truck 1 with data other than music and Trucks from Truck 2 with music data.)	Play music data included in trucks from Truck 2.

RELATED TO VEHICLE ICON

Symptom	Possible cause	Possible solution
Names of roads differ between Plan View and Birdview™.	This is because the quantity of the displayed information is reduced so that the screen does not become too crowded. There is also a chance that names of the roads may be displayed multiple times, and the names appearing on the screen may be different because of a processing procedure.	This is not a malfunction.
The vehicle icon is not displayed in the correct position.	The vehicle was transported after the ignition switch was pressed off, for example, by a ferry or car transporter.	Drive the vehicle for a while on a road where GPS signals can be received.
	The position and direction of the vehicle icon may be incorrect depending on the driving environments and the levels of positioning accuracy of the navigation system.	This is not a malfunction. Drive the vehicle for a while to automatically correct the position and direction of the vehicle icon.
When the vehicle is traveling on a new road, the vehicle icon is located on another road nearby.	Because the new road is not stored in the map data, the system automatically places the vehicle icon on the nearest road available.	Updated road information will be included in the next version of the map data.

Symptom	Possible cause	Possible solution
The screen does not switch to the night screen even after turning on the headlights.	The daytime screen was set the last time the headlights were turned on.	Set the screen to the night screen mode using <Day/Night> when you turn on the headlights.
The map does not scroll even when the vehicle is moving.	The current location map screen is not displayed.	Press “MAP”.
The vehicle icon is not displayed.	The current location map screen is not displayed.	Press “MAP”.
The location of the vehicle icon is misaligned from the actual position.	When using tire chains or replacing the tires, speed calculations based on the speed sensor may be incorrect.	Drive the vehicle for a while [at approximately 30 km/h (19 MPH) for about 30 minutes] to automatically correct the vehicle icon position. If this does not correct the vehicle icon position, contact an INFINITI dealer.
	The map data has a mistake or is incomplete (the vehicle icon position is always misaligned in the same area).	Updated road information will be included in the next version of the map data.

RELATED TO ROUTE CALCULATION AND VISUAL GUIDANCE

Symptom	Possible cause	Possible solution
Waypoints are not included in the auto reroute calculation.	Waypoints that you have already passed are not included in the auto reroute calculation.	If you want to go to that waypoint again, you need to edit the route.
Route information is not displayed.	Route calculation has not yet been performed.	Set the destination and perform route calculation.
	You are not driving on the suggested route.	Drive on the suggested route.
	Route guidance is set to off.	Turn on route guidance.
	Route information is not provided for certain types of roads (roads displayed in gray).	This is not a malfunction.
The auto reroute calculation (or detour calculation) suggests the same route as the one previously suggested.	Route calculations took priority conditions into consideration, but the same route was calculated.	This is not a malfunction.
A waypoint cannot be added.	Five waypoints are already set on the route, including ones that you have already passed.	A maximum of 5 waypoints can be set on the route. If you want to go to 6 or more waypoints, perform route calculations multiple times as necessary.
The suggested route is not displayed.	Roads near the destination cannot be calculated.	Reset the destination to a main or ordinary road, and recalculate the route.
	The starting point and destination are too close.	Set a more distant destination.
	The starting point and destination are too far away.	Divide your trip by selecting one or two intermediate destinations, and perform route calculations multiple times.
	There are time restricted roads (by the day of the week, by time) near the current vehicle location or destination.	Set [Use Time Restricted Roads] to off.
The part of the route that you have already passed is deleted.	A route is managed by sections between waypoints. If you passed the first waypoint, the section between the starting point and the waypoint is deleted. (It may not be deleted depending on the area.)	This is not a malfunction.
An indirect route is suggested.	If there are restrictions (such as one-way streets) on roads close to the starting point or destination, the system may suggest an indirect route.	Adjust the location of the starting of the starting point or destination.
	The system may suggest an indirect route because route calculation does not take into consideration some areas such as narrow streets (gray roads.)	Reset the destination to a main or ordinary road, and recalculate the route.

Symptom	Possible cause	Possible solution
The landmark information does not correspond to the actual information.	This may be caused by insufficient or incorrect map data.	Updated information will be included in the next version of the data.
The suggested route does not exactly connect to the starting point, waypoints, or destination.	There is no data for route calculation closes to these locations.	Set the starting point, waypoints and destination on a main road, and perform route calculation.

RELATED TO VOICE GUIDANCE

Symptom	Possible cause	Possible solution
Voice guidance is not available	Voice guidance is only available at certain intersections marked with? In some case, voice guidance is not available even when the vehicle should make a turn.	This is not a malfunction.
	The vehicle has deviated from the suggested route.	Go back to the suggested route or request route calculation again
	Voice guide is set to off.	Turn on voice guidance.
	Route guidance is set to off.	Turn on voice guidance.
The guidance contact does not correspond to the actual condition.	The contact of voice guidance may vary, depending on the types of intersections at which turn are made.	Follow all traffic rules and regulations.

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000006018378

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the “SRS AIR BAG”.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

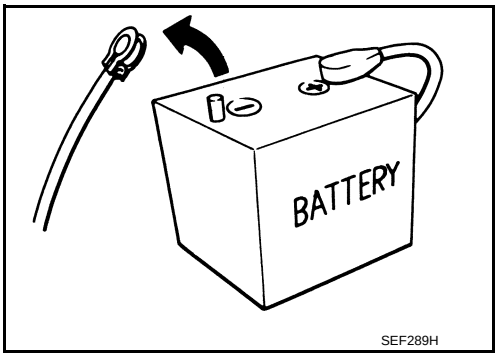
- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precaution for Battery Service (for V9X Models)

INFOID:0000000006081196

When disconnect the battery cable, pay attention to the following.

- Always use a 12 volt battery as power source.
- Do not attempt to disconnect battery cables while engine is running.
- **Before disconnecting battery cables, turn ignition switch OFF and wait at least 4 minutes.**
- **After high-load driving, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery cable.**
  NOTE:
  Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.



SEF289H

Precaution for Trouble Diagnosis

INFOID:0000000005194127

AV COMMUNICATION SYSTEM

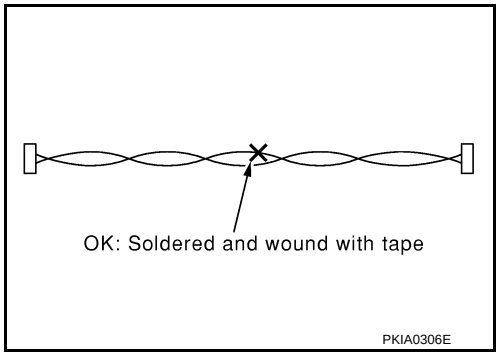
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

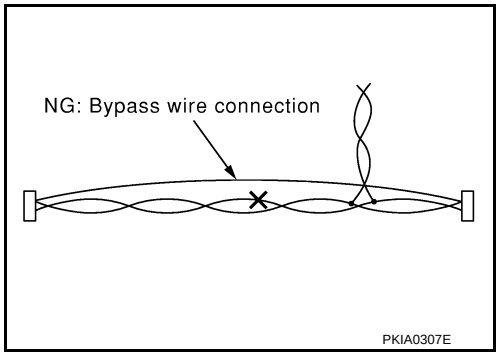
INFOID:0000000005194128

AV COMMUNICATION SYSTEM

- Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]



- Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)



REMOVAL AND INSTALLATION

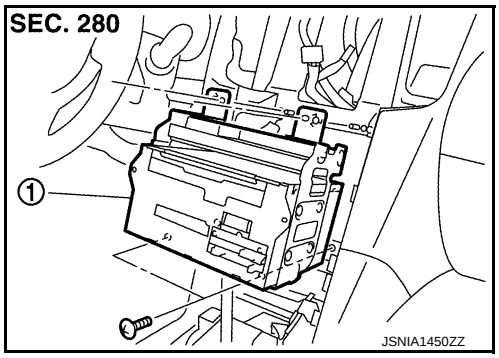
AV CONTROL UNIT

Exploded View

INFOID:0000000005194129

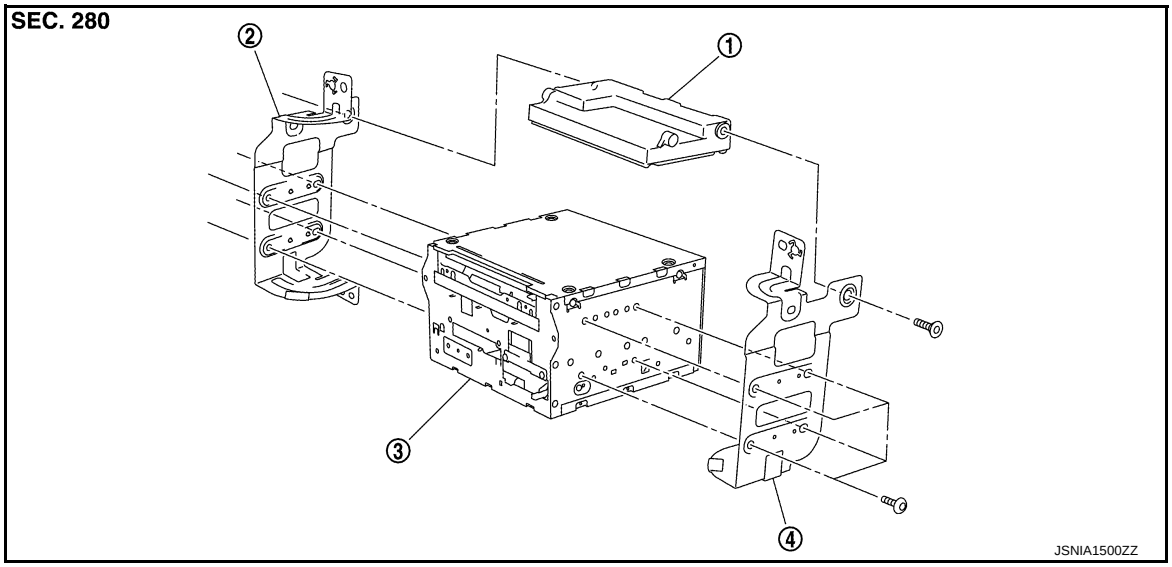
CAUTION:
Before replacing AV control unit, perform “READ CONFIGURATION” to save or print current vehicle specification. For details, refer to AV-298, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description".

REMOVAL



1: AV control unit

DISASSEMBLY



1. Unified meter and A/C amp.
2. Bracket LH
3. AV control unit
4. Bracket RH

Removal and Installation

INFOID:0000000005194130

REMOVAL

CAUTION:
Before replacing AV control unit, perform “READ CONFIGURATION” to save or print current vehicle specification. For details, refer to AV-298, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description".

1. Remove front display unit. Refer to AV-498, "Exploded View".
2. Remove AV control unit with a unified meter and A/C amp. as a single unit from the body.
3. Remove bracket screws, and then remove AV control unit.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

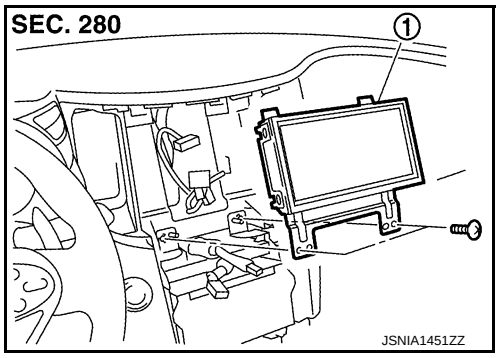
Be sure to perform “WRITE CONFIGURATION” when replacing AV control unit.

FRONT DISPLAY UNIT

Exploded View

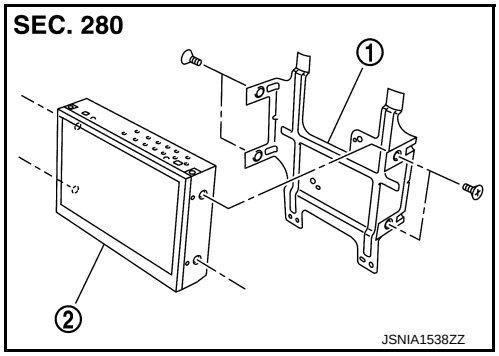
INFOID:0000000005194133

REMOVAL



1. Front display unit

DISASSEMBLY



1. Bracket
2. Front display unit

Removal and Installation

INFOID:0000000005194134

REMOVAL

1. Remove cluster lid D. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove front display unit mounting screws.
3. Disconnect connector, and remove front display unit.

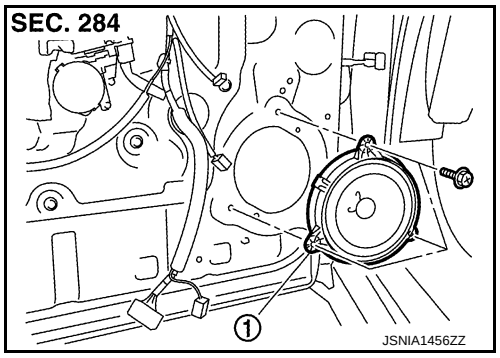
INSTALLATION

Installation is the reverse order of removal.

FRONT DOOR SPEAKER

Exploded View

INFOID:0000000005194135



1. Front door speaker

Removal and Installation

INFOID:0000000005194136

REMOVAL

1. Remove front door finisher. Refer to INT-13, "Exploded View".
2. Remove front door speaker mounting bolts.
3. Disconnect connector and remove front door speaker.

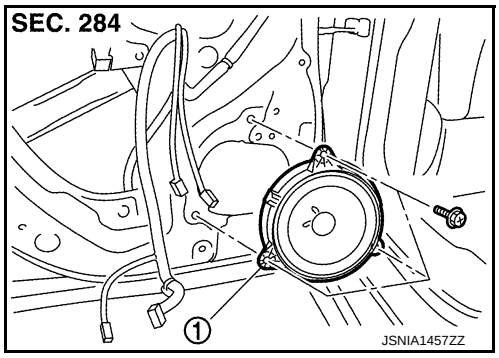
INSTALLATION

Installation is the reverse order of removal.

REAR DOOR SPEAKER

Exploded View

INFOID:0000000005194137



1. Rear door speaker

Removal and Installation

INFOID:0000000005194138

REMOVAL

1. Remove rear door finisher. Refer to INT-16, "Exploded View".
2. Remove rear door speaker mounting bolts.
3. Disconnect connector and remove rear door speaker.

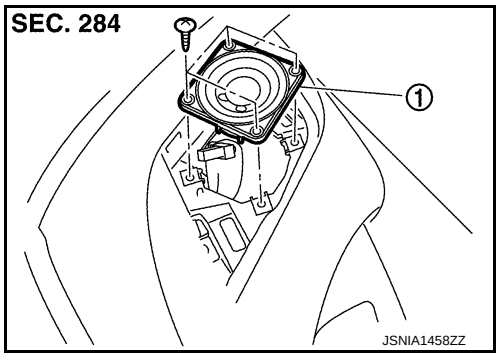
INSTALLATION

Installation is the reverse order of removal.

FRONT SQUAWKER

Exploded View

INFOID:0000000005194139



1. Front squawker

Removal and Installation

INFOID:0000000005194140

REMOVAL

1. Remove speaker grille. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove front squawker mounting screws.
3. Disconnect connector and remove front squawker.

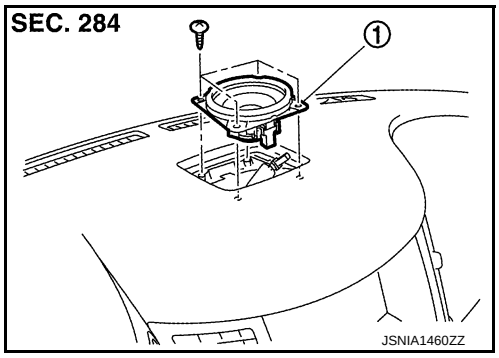
INSTALLATION

Installation is the reverse order of removal.

CENTER SPEAKER

Exploded View

INFOID:0000000005194143



1. Center speaker

Removal and Installation

INFOID:0000000005194144

REMOVAL

1. Remove center speaker grille. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove center speaker mounting screws, lift up the center speaker and disconnect connector.
3. Remove center speaker.

INSTALLATION

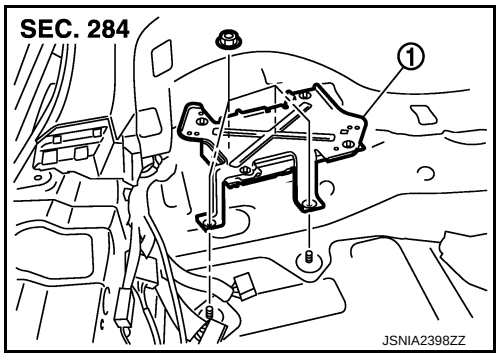
Installation is the reverse order of removal.

SPEAKER AMP.

Exploded View

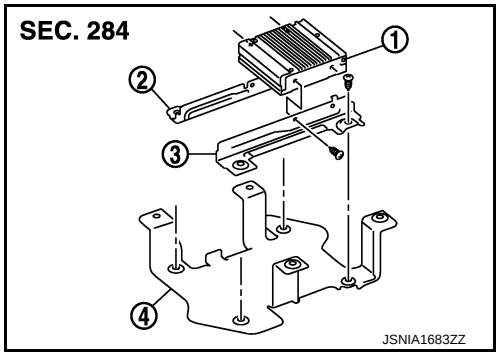
INFOID:0000000005198602

REMOVAL



1. Speaker amp.

DISASSEMBLY



1. Speaker amp.
2. Bracket LH
3. Bracket RH
4. Bracket

Removal and Installation

INFOID:0000000005198603

REMOVAL

1. Remove luggage floor spacer (LH). Refer to INT-30, "FOR EUROPE : Exploded View" (except for Russia), INT-34, "FOR RUSSIA : Exploded View" (for Russia) or INT-38, "V9X : Exploded View" (for V9X models).
2. Remove speaker amp. mounting nuts.
3. Disconnect connector and remove speaker amp.

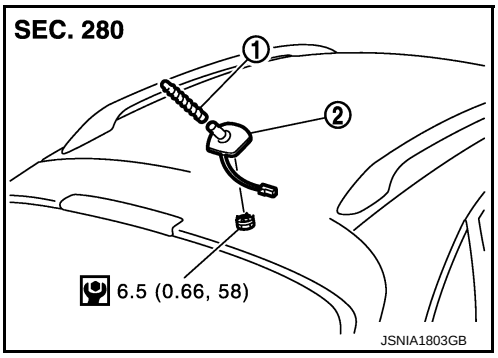
INSTALLATION

Installation is the reverse order of removal.

ANTENNA BASE

Exploded View

INFOID:0000000005194149



1. Antenna rod
2. Antenna base

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000005194150

REMOVAL

1. Remove headlining (rear). Keep a service area. Refer to INT-25, "Exploded View".
2. Remove antenna base mounting nut.
3. Disconnect connector and remove antenna base.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

Be careful about tightening torque. Antenna sensitivity becomes poor, and when it is excessive, roof panel may be deformed, when antenna base mounting nut tightening torque is loose.

MULTIFUNCTION SWITCH

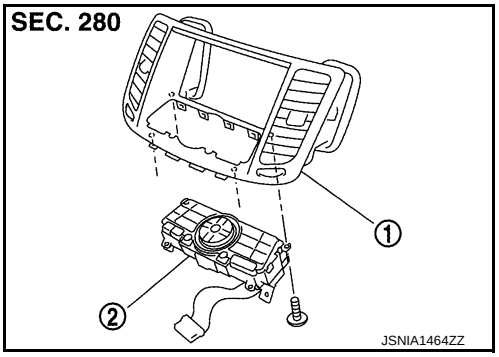
Exploded View

INFOID:0000000005194151

REMOVAL

Refer to IP-14, "A/T MODELS : Exploded View".

DISASSEMBLY



1. Cluster lid D
2. Multifunction switch

Removal and Installation

INFOID:0000000005194152

REMOVAL

1. Remove cluster lid D. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove multifunction switch mounting screws.
3. Disconnect connector and remove multifunction switch.

INSTALLATION

Installation is the reverse order of removal.

PRESET SWITCH

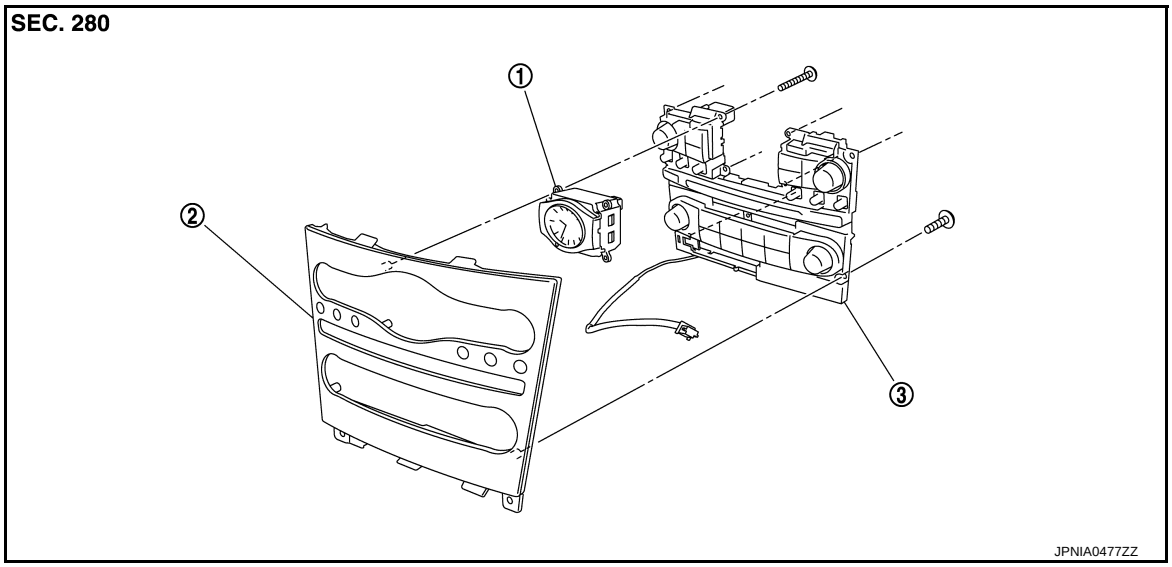
Exploded View

INFOID:0000000005194153

REMOVAL

Refer to IP-14, "A/T MODELS : Exploded View".

DISASSEMBLY



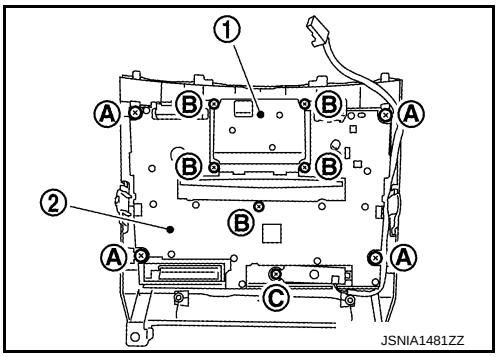
1. Clock
2. Cluster lid C
3. Preset switch

Removal and Installation

INFOID:0000000005194154

REMOVAL

1. Remove cluster lid C. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove preset switch mounting screws (A), (B) and (C).
3. Disconnect connector and remove preset switch.



1. Clock
2. Preset switch

INSTALLATION

Installation is the reverse order of removal.

NOTE:

When installing preset switch, do not allow the print wire that connects preset switch and multifunction switch to get caught in between audio unit and preset switch.

STEERING SWITCH

Exploded View

INFOID:0000000005369398

Refer to SR-16, "Exploded View".

Removal and Installation

INFOID:0000000005369399

REMOVAL

Refer to SR-16, "Removal and Installation".

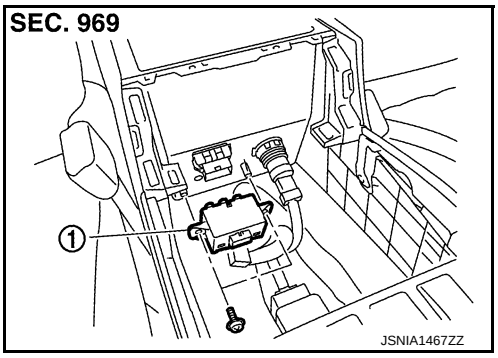
INSTALLATION

Install in the reverse order of removal.

AUXILIARY INPUT JACKS

Exploded View

INFOID:0000000005194155



1. Auxiliary input jacks

Removal and Installation

INFOID:0000000005194156

REMOVAL

1. Remove console box assembly. Refer to IP-37, "A/T MODELS : Exploded View".
2. Remove auxiliary mounting screws.
3. Disconnect connector and remove auxiliary input jacks.

INSTALLATION

Installation is the reverse order of removal.

USB CONNECTOR

Removal and Installation

INFOID:0000000005198497

REMOVAL

1. Remove console box assembly. Refer to IP-37, "A/T MODELS : Exploded View".
2. Press the pawl from the back of console box assembly to remove USB connector.

INSTALLATION

Install in the reverse order of removal.

MICROPHONE

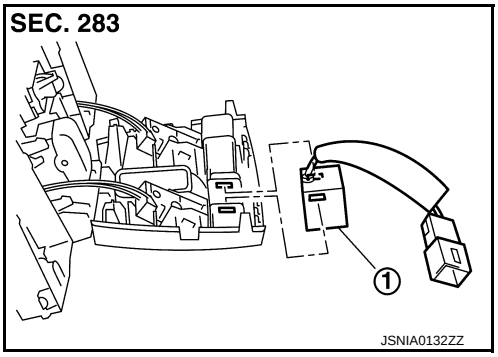
Exploded View

INFOID:0000000005194157

REMOVAL

Refer to INT-25, "Exploded View".

DISASSEMBLY



1. Microphone

Removal and Installation

INFOID:0000000005194158

REMOVAL

1. Remove map lamp assembly. Refer to INT-25, "Exploded View".
2. Remove microphone, stretching pawls of map lamp assembly.

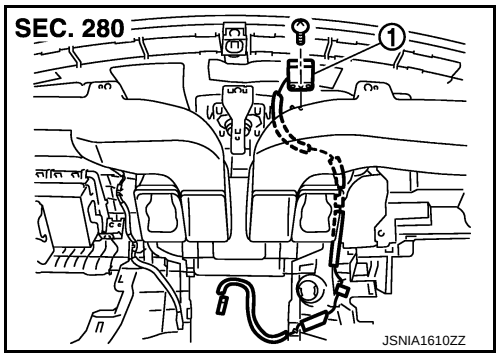
INSTALLATION

Installation is the reverse order of removal.

GPS ANTENNA

Exploded View

INFOID:0000000005194160



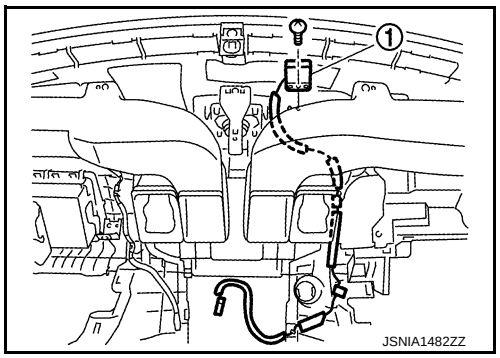
1. GPS antenna

Removal and Installation

INFOID:0000000005194161

REMOVAL

1. Remove instrument panel. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove GPS antenna mounting screw.
3. Remove GPS antenna (1).



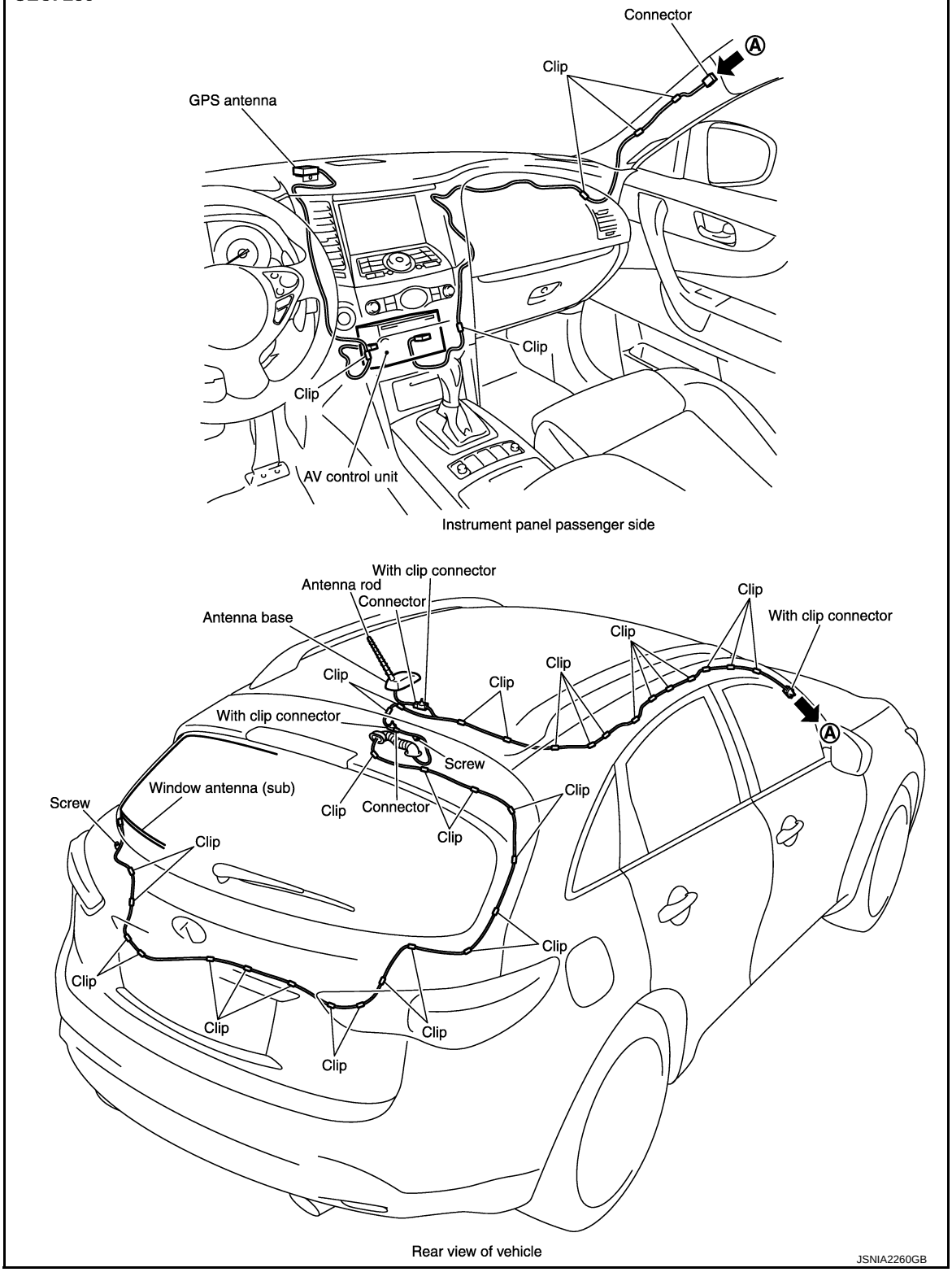
INSTALLATION

Installation is the reverse order of removal.

Feeder Layout

INFOID:0000000005194159

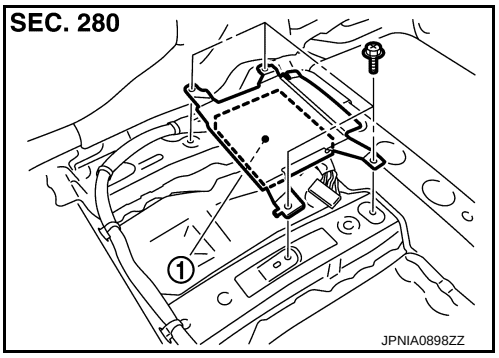
SEC. 280



AROUND VIEW MONITOR CONTROL UNIT

Exploded View

INFOID:0000000005194165



1. Around view monitor control unit

Removal and Installation

INFOID:0000000005194166

REMOVAL

1. Remove front seat (LH side). Refer to SE-90, "Exploded View".
2. Remove floor carpet. Keep a service area.
3. Remove around view monitor control unit mounting screws.
4. Disconnect connector and remove around view monitor control unit.

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-300, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".
3. Perform predictive course line center position adjustment. Refer to AV-300, "PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Special Repair Requirement".

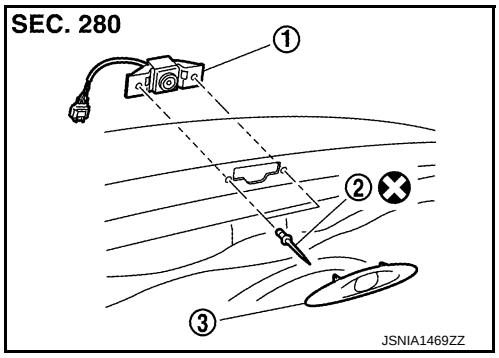
CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

FRONT CAMERA

Exploded View

INFOID:0000000005194167



1. Front camera
2. Rivet
3. Front camera finisher

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000005194168

REMOVAL

1. Remove front camera finisher.
2. Remove front camera mounting rivet.
3. Remove front camera.

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-300, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

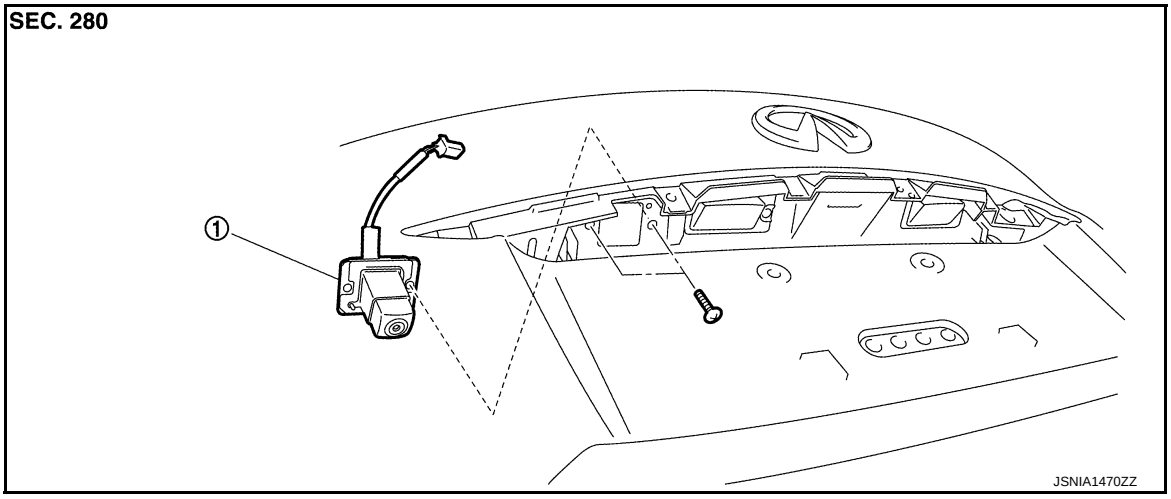
CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

REAR CAMERA

Exploded View

INFOID:0000000005194169



1. Rear camera

Removal and Installation

INFOID:0000000005194170

REMOVAL

1. Remove door handle cover upper. Refer to EXT-52, "Exploded View".
2. Remove rear camera mounting screws and rear camera harness connector.
3. Remove rear camera.

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-300, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

CAUTION:

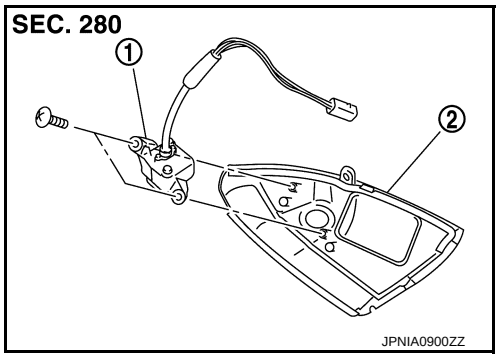
Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

SIDE CAMERA LH

LHD MODELS

LHD MODELS : Exploded View

INFOID:0000000005346898



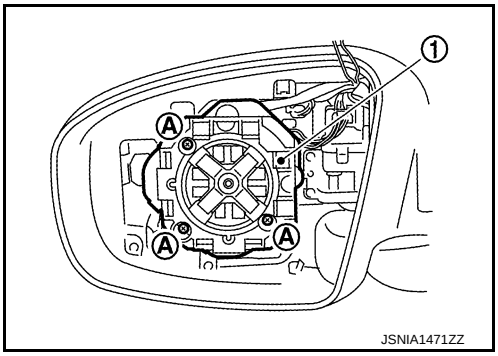
1. Side camera (LH)
2. Side camera finisher assembly

LHD MODELS : Removal and Installation

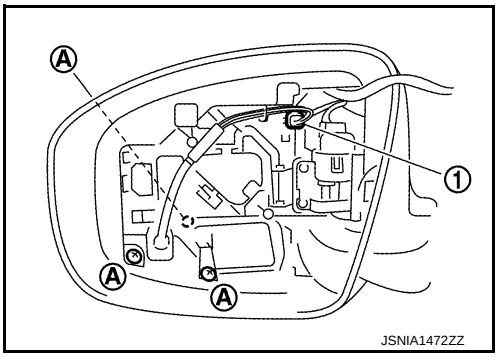
INFOID:0000000005346899

REMOVAL

1. Remove glass mirror (driver side). Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
2. Remove screws (A), and actuator connector, and then actuator (1).



3. Remove door mirror cover. Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
4. Remove screws (A) and connector (1), and then remove side camera finisher assembly (LH).



5. Remove side camera (LH) mounting screws
6. Remove side camera (LH).

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-300, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

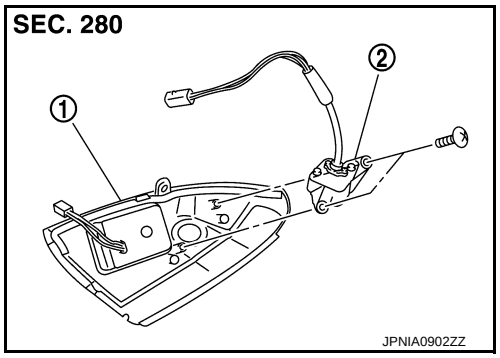
CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

RHD MODELS

RHD MODELS : Exploded View

INFOID:0000000005346900



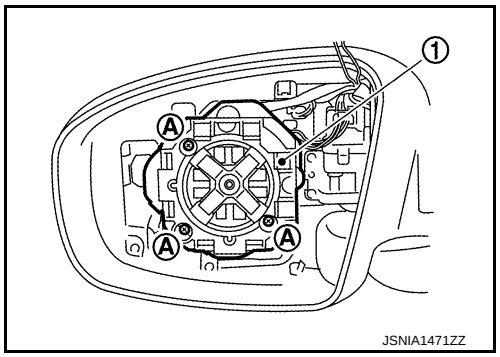
1. Side camera finisher assembly
2. Side camera (LH)

RHD MODELS : Removal and Installation

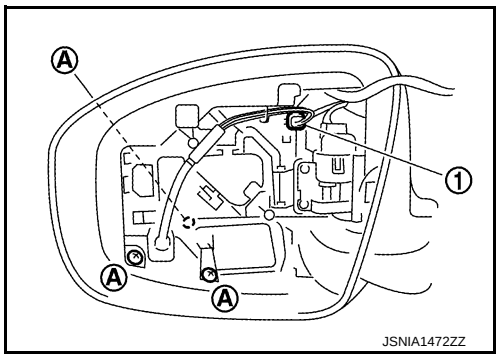
INFOID:0000000005346901

REMOVAL

1. Remove glass mirror (driver side). Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
2. Remove screws (A) and actuator connector, and then actuator (1).



3. Remove door mirror cover. Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
4. Remove screws (A) and connector (1), and then remove side camera finisher assembly (LH).



5. Remove side camera (LH) screws.
6. Remove side camera (LH).

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-300, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

CAUTION:

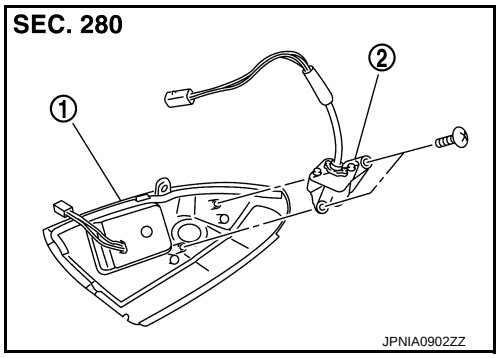
Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

SIDE CAMERA RH

LHD MODELS

LHD MODELS : Exploded View

INFOID:0000000005346902



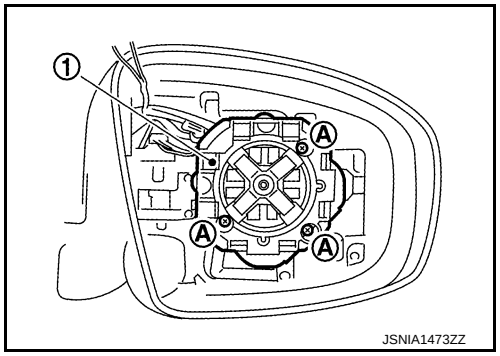
1. Side camera finisher assembly
2. Side camera (RH)

LHD MODELS : Removal and Installation

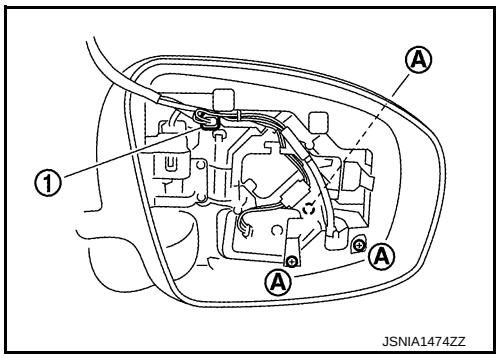
INFOID:0000000005346903

REMOVAL

1. Remove glass mirror (passenger side). Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
2. Remove screws (A) and actuator connector, and then actuator (1).



3. Remove door mirror cover. Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
4. Remove screws (A) and connector (1), and then remove side camera finisher assembly (RH).



5. Remove side camera (RH) screws.
6. Remove side camera (RH).

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-300, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

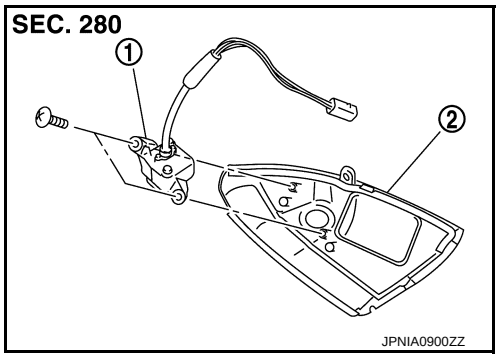
CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

RHD MODELS

RHD MODELS : Exploded View

INFOID:0000000005346904



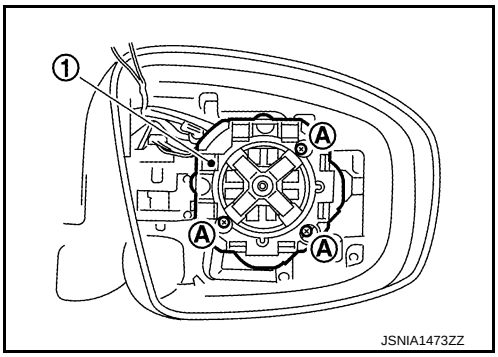
1. Side camera (RH)
2. Side camera finisher assembly

RHD MODELS : Removal and Installation

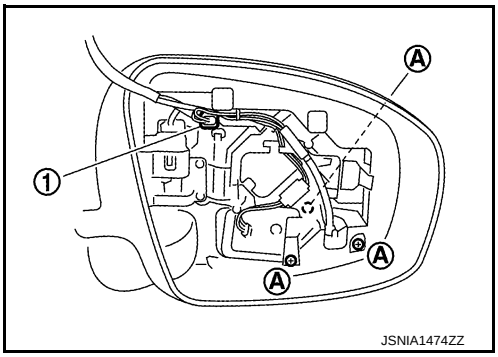
INFOID:0000000005346905

REMOVAL

1. Remove glass mirror (passenger side). Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
2. Remove screws (A), and actuator connector, and then actuator (1).



3. Remove door mirror cover. Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
4. Remove screws (A) and connector (1), and then remove side camera finisher assembly (RH).



5. Remove side camera (RH) mounting screws
6. Remove side camera (RH).

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-300, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

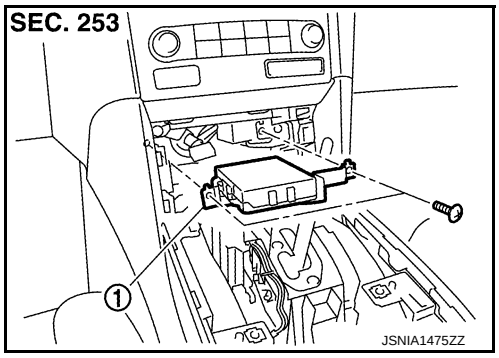
CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

Exploded View

INFOID:0000000005194175



1. Sonar control unit

Removal and Installation

INFOID:0000000005194176

REMOVAL

1. Remove AV control unit. Refer to AV-496, "Exploded View".
2. Remove screws and connector, and then sonar control unit.

INSTALLATION

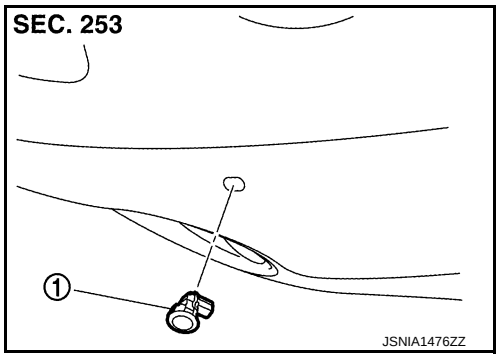
Install in the reverse order of removal.

SONAR SENSOR

FRONT

FRONT : Exploded View

INFOID:0000000005194177



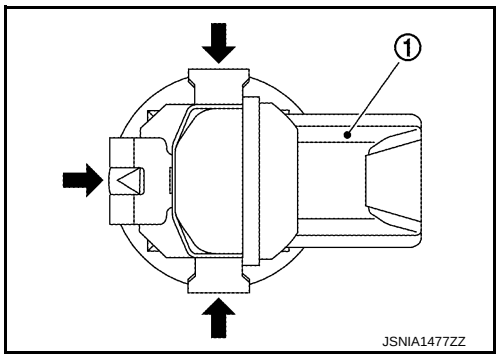
1. Sonar sensor (front)

FRONT : Removal and Installation

INFOID:0000000005194178

REMOVAL

1. Remove fender protector. Keep a service area. Refer to EXT-28, "FENDER PROTECTOR : Exploded View".
2. Remove sonar sensor connector.
3. Press the sonar sensor (1) outside the front bumper, pressing the metal clips on the back to the direction of black arrows.



INSTALLATION

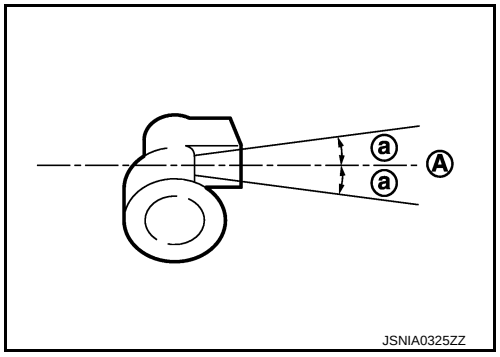
Install the bumper when the pawl engages.

CAUTION:

The connector direction is within ±10° from the horizontal position when assembling the bumper.

A : Horizontal position

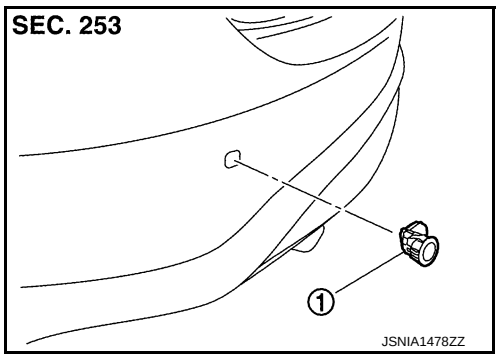
a : 10°



REAR

REAR : Exploded View

INFOID:0000000005194179



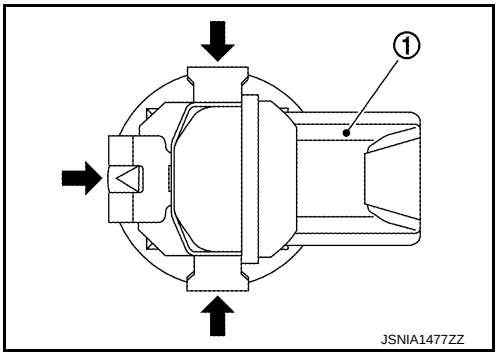
1. Sonar sensor (rear)

REAR : Removal and Installation

INFOID:0000000005194180

REMOVAL

1. Remove sonar sensor connector.
2. Press the sonar sensor (1) outside the front bumper, pressing the metal clips on the back to the direction of black arrows.



INSTALLATION

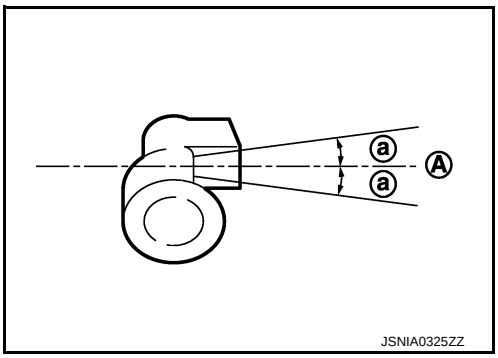
Install the bumper when the pawl engages.

CAUTION:

The connector direction is within ±10° from the horizontal position when assembling the bumper.

A : Horizontal position

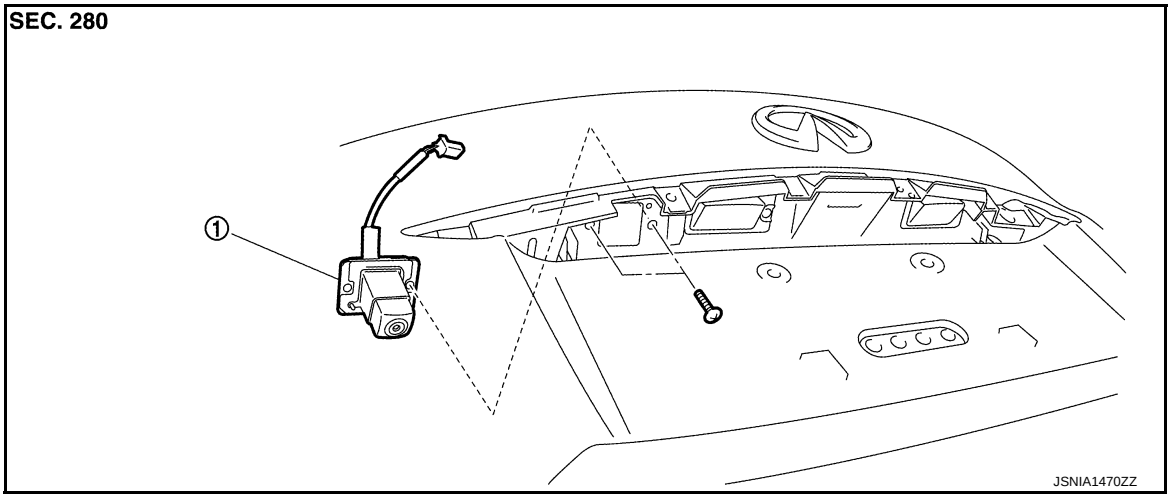
a : 10°



REAR VIEW CAMERA

Exploded View

INFOID:0000000005198458



1. Rear view camera

Removal and Installation

INFOID:0000000005198459

REMOVAL

1. Remove door handle cover. Refer to EXT-52, "Exploded View".
2. Remove rear view camera mounting screws and rear view camera harness connector.
3. Remove rear view camera.

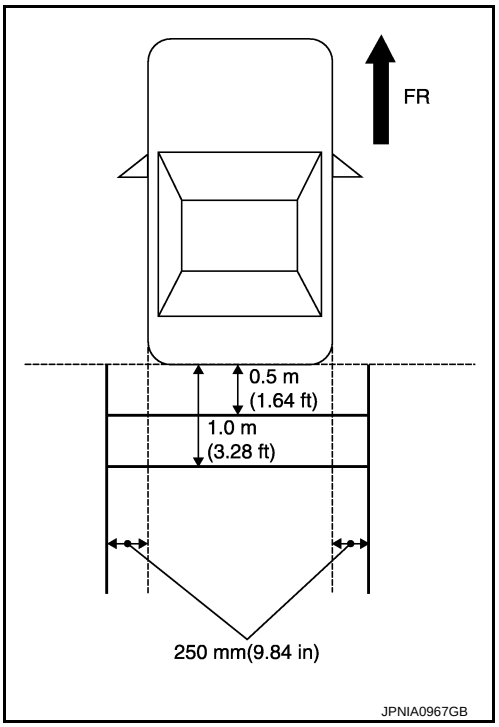
INSTALLATION

1. Installation is the reverse order of removal.
2. Adjust the guide line position if the guide line position is shifted after installing the rear view camera. Refer to AV-525, "Adjustment".

Adjustment

INFOID:0000000005198460

1. Draw lines on rearward area of the vehicle passing through the following points: 250 mm (9.84 in) from both sides of the vehicle, and 0.5 m (1.64 ft), 1.0 m (3.28 ft) from the rear end of the bumper.
2. Set into “Adjust offset of rear view camera” mode of Confirmation/Adjustment mode.

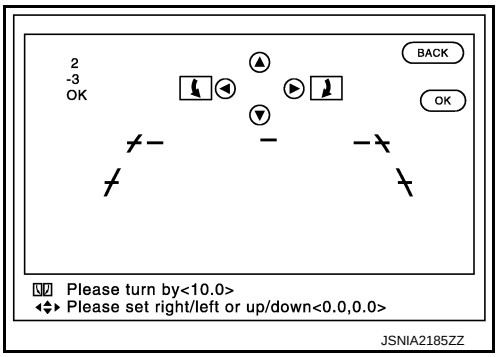


3. Rotate the center dial, and then select the guiding line pattern so that its angle is aligned with the correction line of the rear of the vehicle.

   Selected pattern : –10° to 10°

4. Make fine adjustment to the correction line of the rear of the vehicle with up/down/left/right switches so that its position is aligned with the guiding line. Press “OK” switch and record the adjusted guiding line position to the AV control unit.

   Up/Down adjustment range : –10° to 10°
   Left/Right adjustment range : –10° to 10°



CAUTION:
Never operate other function such as pressing BACK while writing index data.

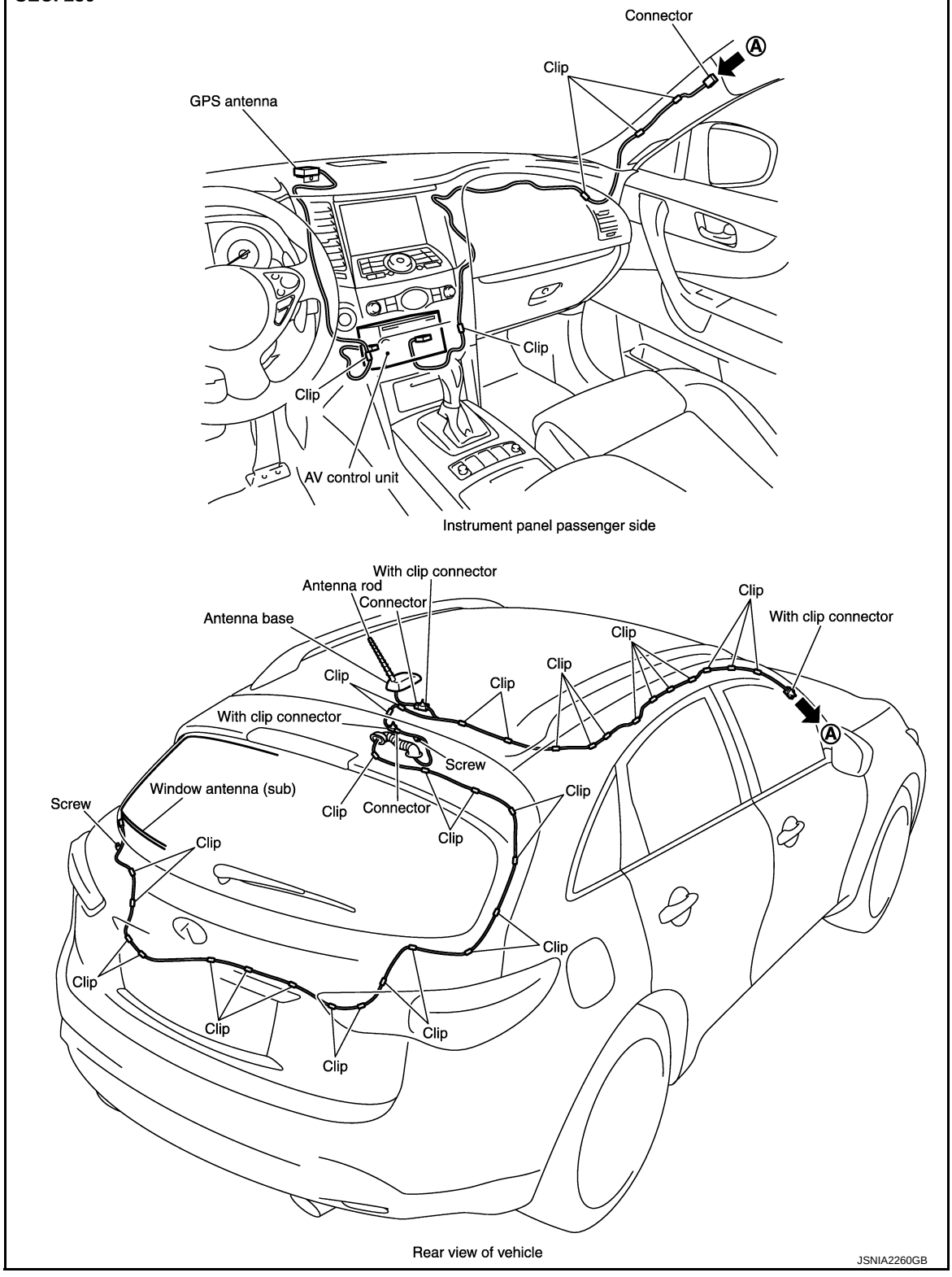
ANTENNA FEEDER

LHD MODELS

LHD MODELS : Feeder Layout

INFOID:0000000005196519

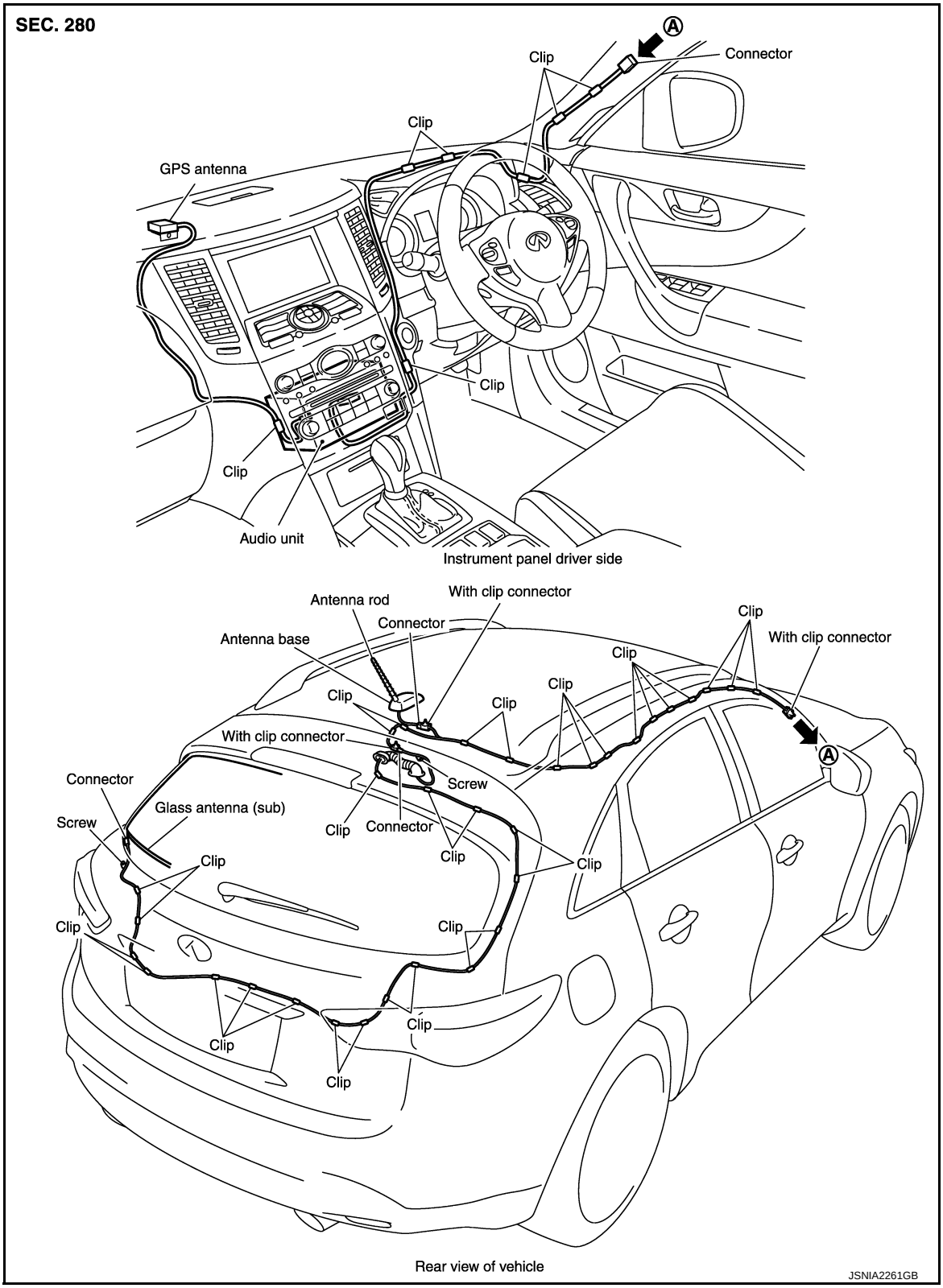
SEC. 280



RHD MODELS

RHD MODELS : Feeder Layout

INFOID:0000000005197154



HOW TO USE THIS MANUAL

APPLICATION NOTICE

Information

INFOID:0000000005191807

In this manual, “SONAR” means “PARKING SENSOR”.

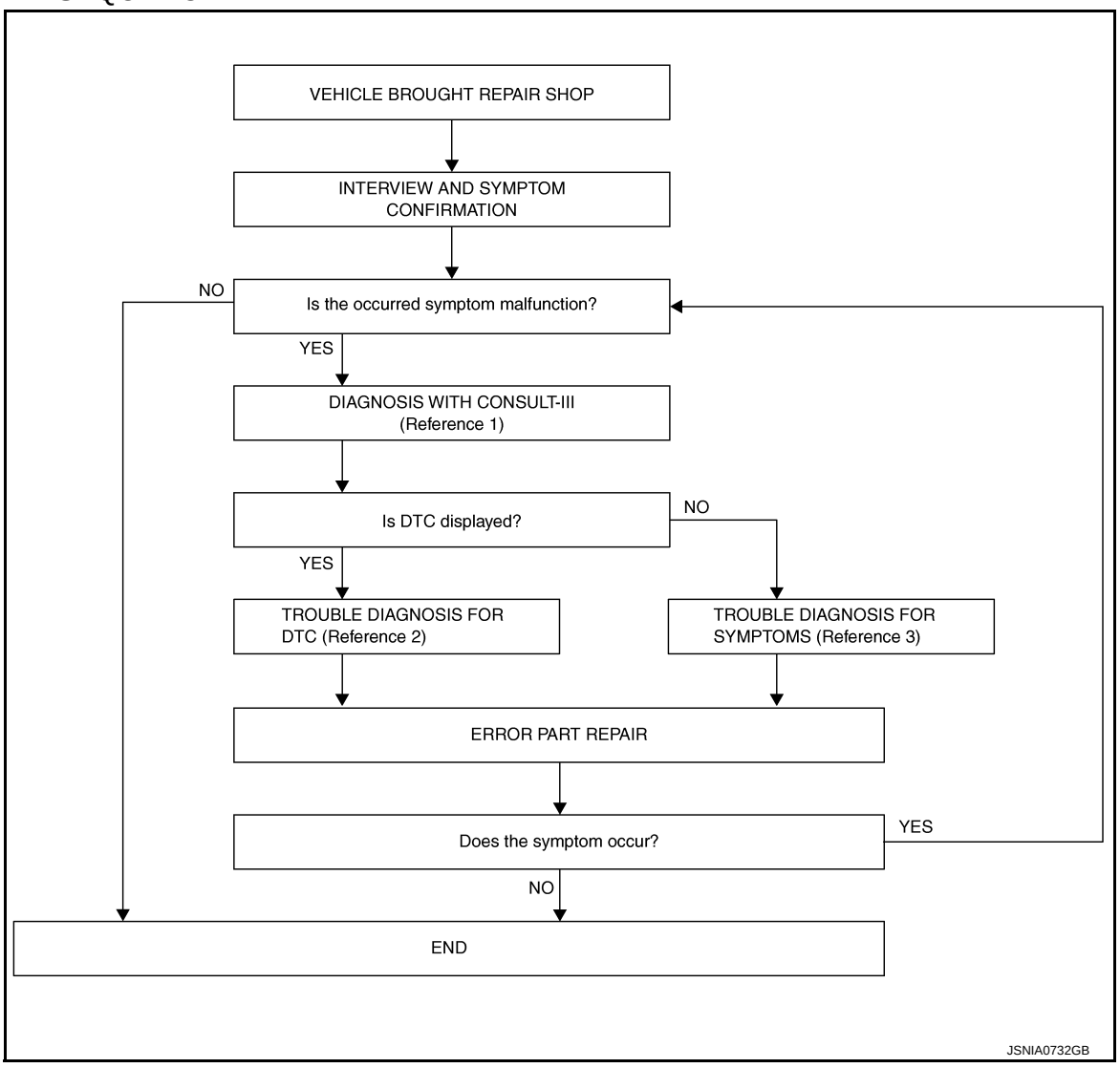
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow (Multi AV)

INFOID:0000000005191808

OVERALL SEQUENCE



- Reference 1··· Refer to AV-571, "CONSULT - III Function (MULTI AV)".
- Reference 2··· Refer to AV-667, "DTC Index".
- Reference 3··· Refer to AV-730, "Symptom Table".

DETAILED FLOW

1. INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.
NO >> INSPECTION END

2. DIAGNOSIS WITH CONSULT-III

1. Connect CONSULT-III and perform a self-diagnosis for “MULTI AV”. Refer to AV-571, "CONSULT - III Function (MULTI AV)".
   NOTE:
   Skip to step 4 of the diagnosis procedure if “MULTI AV” is not displayed.
2. Check if any DTC is displayed in the self-diagnosis results.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-667, "DTC Index".

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-730, "Symptom Table".

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “MULTI AV” with CONSULT-III.
   NOTE:
   Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

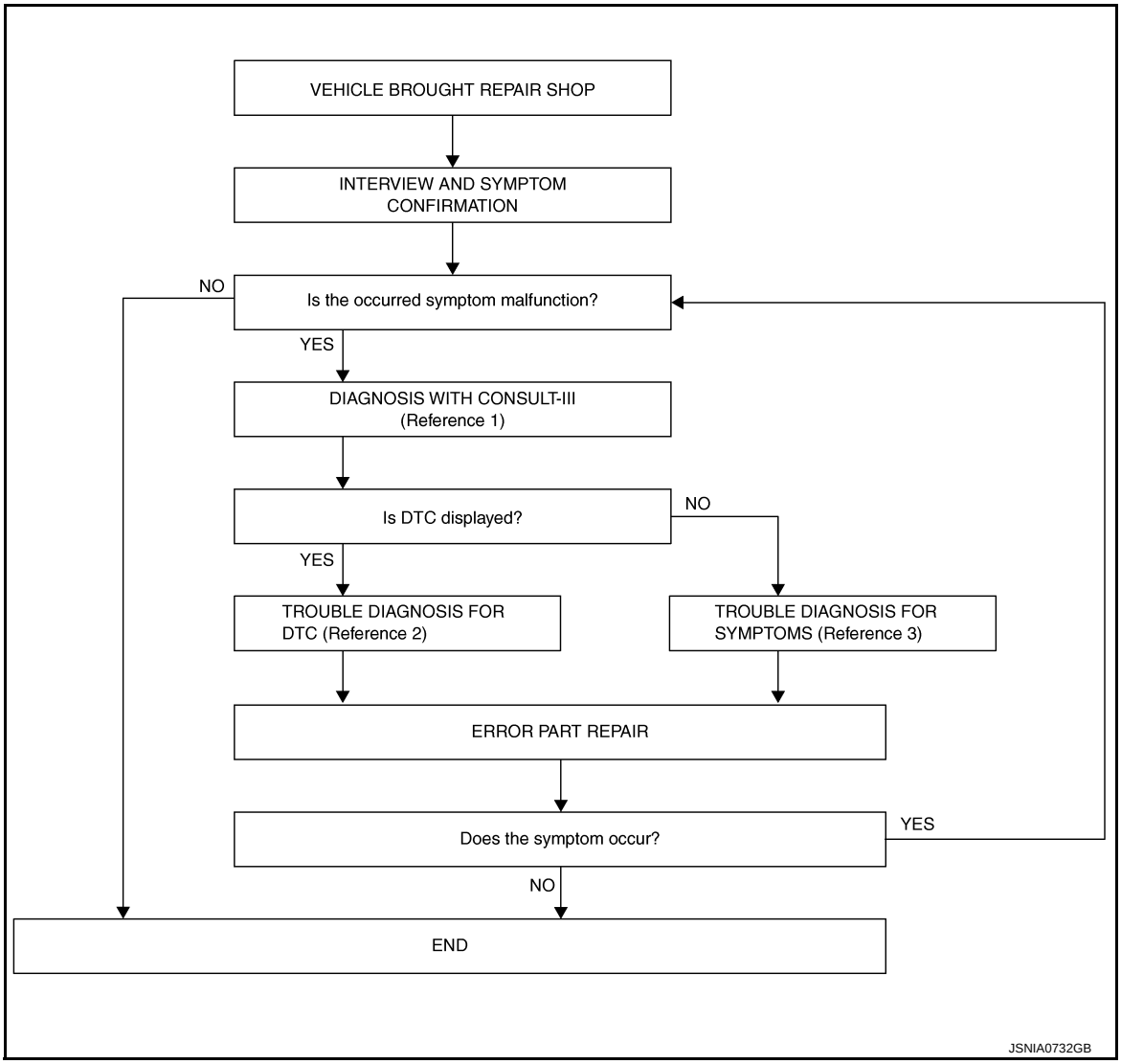
Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

Work Flow (Camera Assistance Sonar)

INFOID:0000000005216704

OVERALL SEQUENCE



- Reference 1··· Refer to AV-578, "CONSULT-III Function (SONAR)".
- Reference 2··· Refer to AV-683, "DTC Index".
- Reference 3··· Refer to AV-730, "Symptom Table".

DETAILED FLOW

1. INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.
NO >> INSPECTION END

2. DIAGNOSIS WITH CONSULT-III

1. Connect CONSULT-III and perform a self-diagnosis for “SONAR”. Refer to AV-578, "CONSULT-III Function (SONAR)".
   NOTE:
   Skip to step 4 of the diagnosis procedure if “SONAR” is not displayed.

2. Check if any DTC is displayed in the self-diagnosis results.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-683, "DTC Index".

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-730, "Symptom Table".

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “SONAR” with CONSULT-III.
   NOTE:
   Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000005191811

BEFORE REPLACEMENT

When replacing AV control unit, save or print current vehicle specification with CONSULT-III configuration before replacement.

AFTER REPLACEMENT

CAUTION:

When replacing AV control unit, you must perform “WRITE CONFIGURATION” with CONSULT-III.

- **Complete the procedure of “WRITE CONFIGURATION” in order.**
- **If you set incorrect “WRITE CONFIGURATION”, incidents might occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000005191812

1.SAVING VEHICLE SPECIFICATION

-CONSULT-III Configuration

Perform “READ CONFIGURATION” to save or print current vehicle specification. Refer to AV-534, "CONFIGURATION (AV CONTROL UNIT) : Description".

NOTE:

If “READ CONFIGURATION” can not be used, use the “WRITE CONFIGURATION - Manual selection”.

>> GO TO 2.

2.REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to AV-745, "Exploded View".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

-CONSULT-III Configuration

Perform “WRITE CONFIGURATION - Config file” or “WRITE CONFIGURATION - Manual selection” to write vehicle specification. Refer to AV-535, "CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement".

>> GO TO 4.

4.OPERATION CHECK

Check that the operation of the AV control unit and camera images (fixed guide lines and predictive course lines) are normal.

>> WORK END

CONFIGURATION (AV CONTROL UNIT)

CONFIGURATION (AV CONTROL UNIT) : Description

INFOID:0000000005191813

- Since vehicle specifications are not included in the AV control unit after replacement, it is required to write vehicle specifications with CONSULT-III.
- Configuration has three functions as follows.

Function	Description
READ CONFIGURATION	• Reads the vehicle configuration of current AV control unit. • Saves the read vehicle configuration.
WRITE CONFIGURATION-Manual selection	Writes the vehicle configuration with manual selection.
WRITE CONFIGURATION-Config file	Writes the vehicle configuration with saved data.

CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement

INFOID:0000000005191814

NOTE:
If “WRITE CONFIGURATION” is unsuccessful, perform “Accessory Number Initialization”. For details, refer to AV-559, "Diagnosis Description".
After performing “Accessory Number Initialization”, reboot the AV control unit to perform “WRITE CONFIGURATION”.

1. WRITING MODE SELECTION

CONSULT-III Configuration
Select “CONFIGURATION” of “MULTI AV”.

When writing saved data>>GO TO 2.
When writing manually>>GO TO 3.

2. PERFORM “WRITE CONFIGURATION-CONFIG FILE”

CONSULT-III Configuration
Perform “WRITE CONFIGURATION-Config file”.

>> WORK END

3. PERFORM “WRITE CONFIGURATION-MANUAL SELECTION”

CONSULT-III Configuration
Select “WRITE CONFIGURATION-Manual selection” to write vehicle specifications into the AV control unit. For data to write, refer to AV-535, "CONFIGURATION (AV CONTROL UNIT) : Configuration List".

>> GO TO 4.

4. OPERATION CHECK

Check that the operation of the AV control unit and camera images (fixed guide lines and predictive course lines) are normal.

>> WORK END

CONFIGURATION (AV CONTROL UNIT) : Configuration List

INFOID:0000000005191815

CAUTION:
Check vehicle specifications before servicing.

MANUAL SETTING ITEM	
Items	Setting value
STEERING	LHD
	RHD
CAMERA SYSTEM	NONE/AVM
	REAR CAMERA
	REAR+SIDE
SOUND SYSTEM	BASE
	BOSE

NOTE:
AVM: Around view monitor

PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT

PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Description

INFOID:0000000005191816

Adjust the center position of the predictive course line of the rear view monitor if it is shifted.

PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Special Repair Requirement

INFOID:0000000005191817

1.DRIVING

Drive the vehicle straight ahead 100 m (328.1 ft) or more at a speed of 30 km/h (18.6 MPH) or more.

>> END

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Description

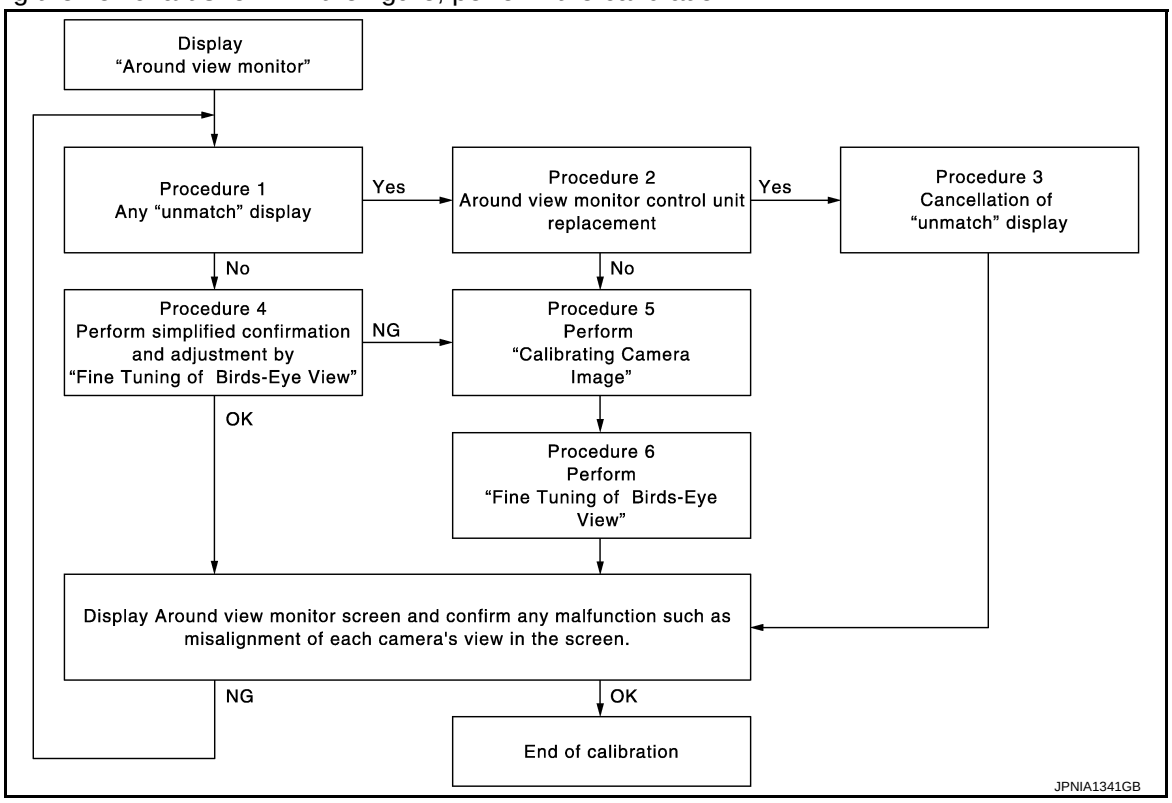
INFOID:0000000005214850

- Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.
- Align the white lines on the road near the vehicle at the boundary of each camera image by this camera calibration. The white lines far from the vehicle may not be aligned at the boundary of each camera image. The farther the line, the greater the difference is.

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement

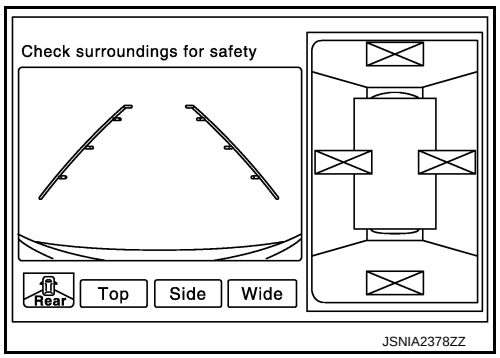
INFOID:0000000005214851

Calibration flowchart
Following the flowchart shown in the figure, perform the calibration.



NOTE:

In the un-match display, the un-match camera position is indicated as "⊠" on the birds-eye view.



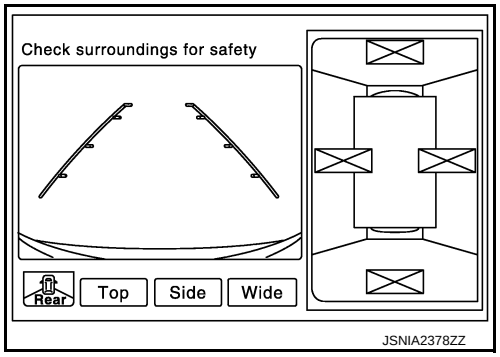
Calibration procedure

1. AROUND VIEW MONITOR SCREEN CONFIRMATION

Check that there is the un-match display in any camera.

Is the un-match display visible?

YES >> GO TO 2.
NO >> GO TO 4.



2. CHECK THAT AROUND VIEW MONITOR CONTROL UNIT IS REPLACED

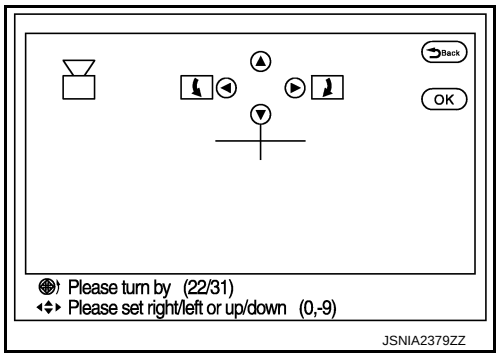
Check that the around view monitor control unit is replaced.

Is the around view monitor control unit replaced?

YES >> GO TO 3.
NO >> GO TO 5.

3. RELEASE UN-MATCH DISPLAY (PERFORM ONLY WHEN THE AROUND VIEW MONITOR CONTROL UNIT IS REPLACED)

1. Select "Camera Cont." of Confirmation/ Adjustment mode, and then set to "Calibrating Camera Image" mode.
2. Press the "ENTER" switch of the multifunction switch on each screen of "Rear Camera", "Front Camera", "Dr-Side Camera", "Pass-Side Camera".
   CAUTION:
   - **Do never operate the center dial and up/down/left/right switches. Only press the "ENTER" switch.**
   - **Never perform "Initialize Camera Image Calibration".**
3. Display the around view monitor screen, and check that there is no malfunction such as a difference between each camera image.



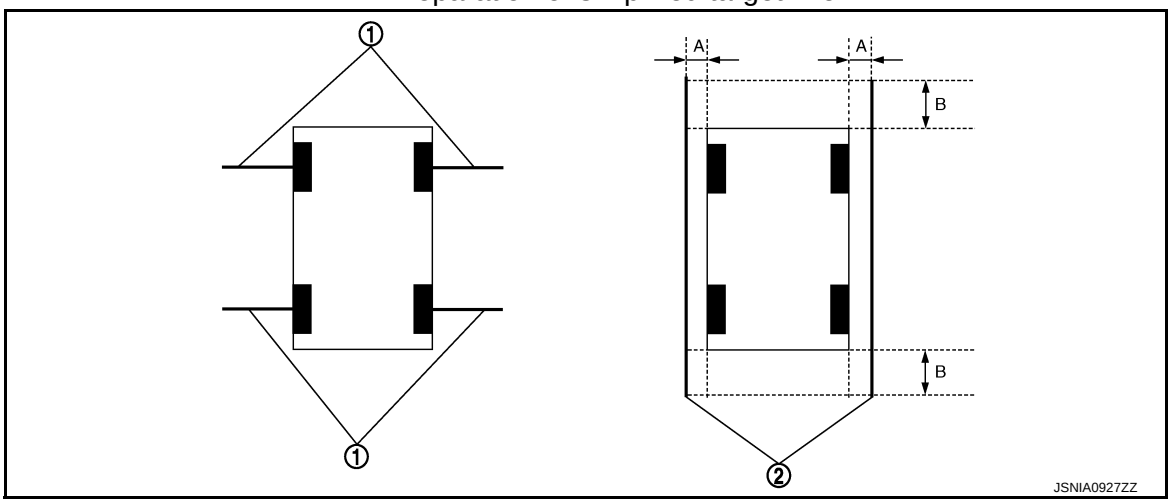
Is there a malfunction?

YES >> Calibration end
NO >> GO TO 1.

4. PERFORM SIMPLIFIED CONFIRMATION/ADJUSTMENT BY "FINE TUNING OF BIRDS-EYE VIEW"

1. Put target line 1 on the ground beside each axle using packing tape, etc.
2. Put target lines 2 equal to the vehicle total length + approximately 1.0 m (39.3 in) from the vehicle side (right and left) at approximately 30 cm (11.8 in) away from the vehicle (make the line as parallel with the vehicle as possible)

Preparation of simplified target line



1. Target lines 1
2. Target lines 2
A. Approx. 30 cm (11.8 in)
B. Approx. 1.0 m (39.3 in)

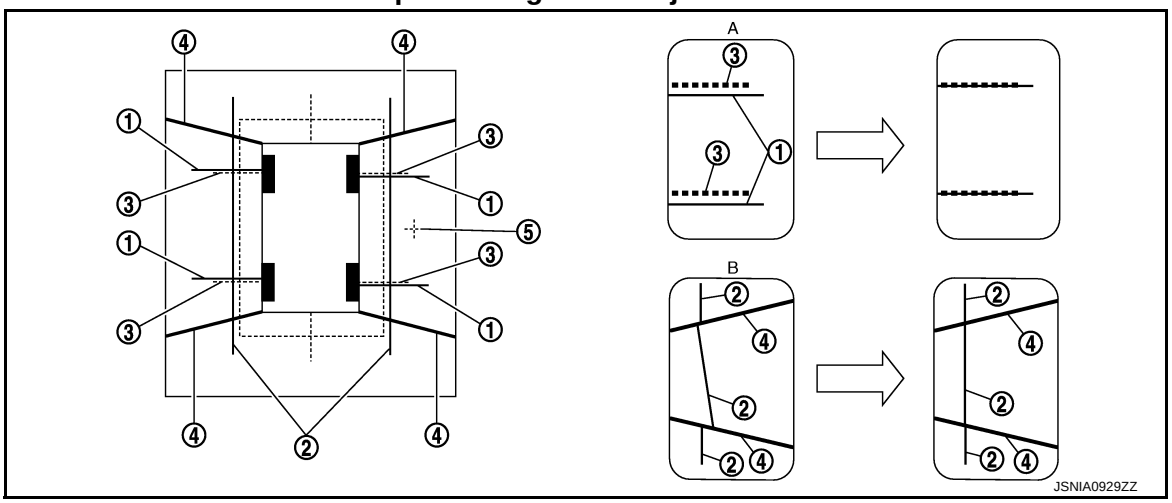
3. Select “Camera Cont.” of Confirmation/ Adjustment mode, and then set to “Fine Tuning of Birds-Eye View” mode.
4. Select left and right cameras by pressing the “CAMERA” switch, and perform the following confirmation.

- Check that target line 1 is aligned with the marker on the screen. Overlap the line aligned to the marker with the upper/lower switches if necessary.
- Check if there is a difference between target lines 2 between cameras. Adjust target lines 2 to be straight lines by operating the center dial and left/right switches if necessary.

CAUTION:

- **Never adjust the front camera and rear camera. Only adjust the right and left cameras.**
- **Operate the center dial slowly because the changing of the screen takes approximately 1 second.**

Simplified target line adjustment method



1. Target lines 1
2. Target lines 2
3. Marker for target line 1
4. Boundary between cameras
5. Crosshairs cursor (mark indicated the selected camera)
A. Adjustment method for target lines 1 (right)
B. Adjustment method for target lines 2 (right)

5. Adjust left and right cameras. Check that the difference between target line 1 and the marker on the screen, and between target lines 2 is solved.

NOTE:

- It can be initialized to the NISSAN factory default condition with “Initialize Camera Image Calibration” of “Calibrating Camera Image”.

- The adjustment value is cancelled on this mode by performing “Initialize Camera Image Calibration”.

Is the difference corrected?

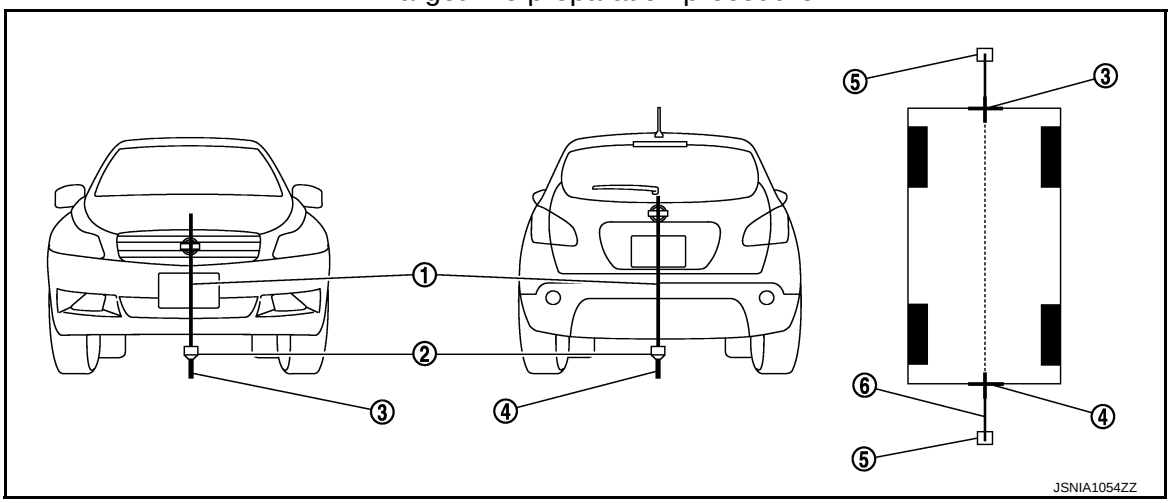
YES >> Finish the writing to around view monitor control unit by pressing “ENTER” switch.
NO >> GO TO 5.

5. PERFORM “CALIBRATING CAMERA IMAGE”

Preparation of target line

1. Hang a string with a weight as shown in the figure. Put the points FM0, RM0 (mark) on the ground at the center of the vehicle front end and rear end with white packing tape or a pen.
2. Route the vinyl string under the vehicle, and then pull and fix it on the point approximately 1.0 m (39.9 in) to the front and rear of the vehicle through the points FM0 and RM0 using packing tape.

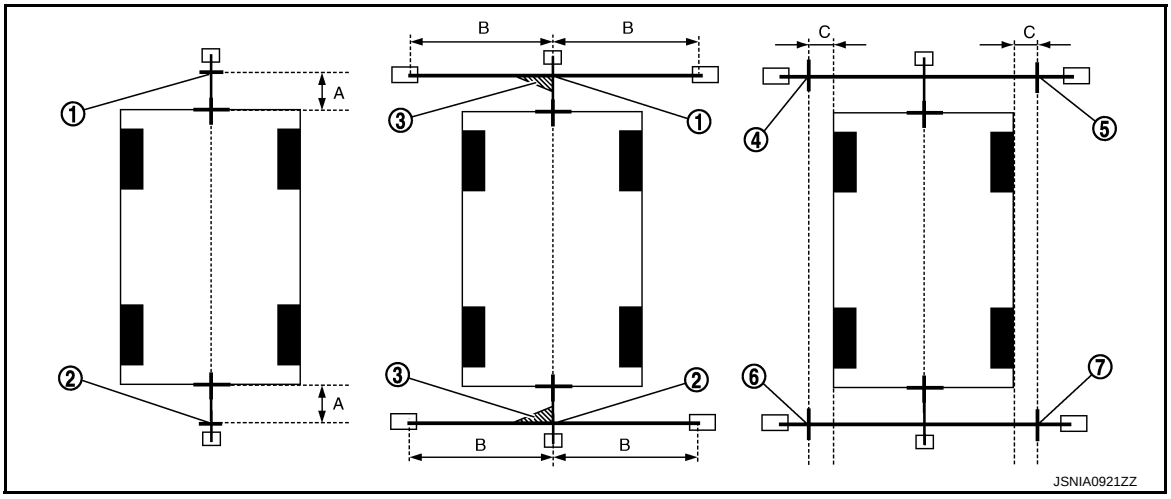
Target line preparation procedure 1



1. Thread
2. Weight
3. Point FM0 (mark)
4. Point RM0 (mark)
5. Packing tape (to fix the vinyl string)
6. Vinyl string

3. Put the points FM and RM (mark) 75 cm (29.5 in) from the points FM0 and RM0 individually.
4. Route the vinyl string through the points FM and RM using a triangle scale, and then fix it at approximately 1.5 m (59 in) on both sides with packing tape.
5. Put the points FL, FR, RL, and RR (mark) to both right and left [vehicle width / 2 + 30 cm (11.8 in)] from the points FM and RM.

Target line preparation procedure 2



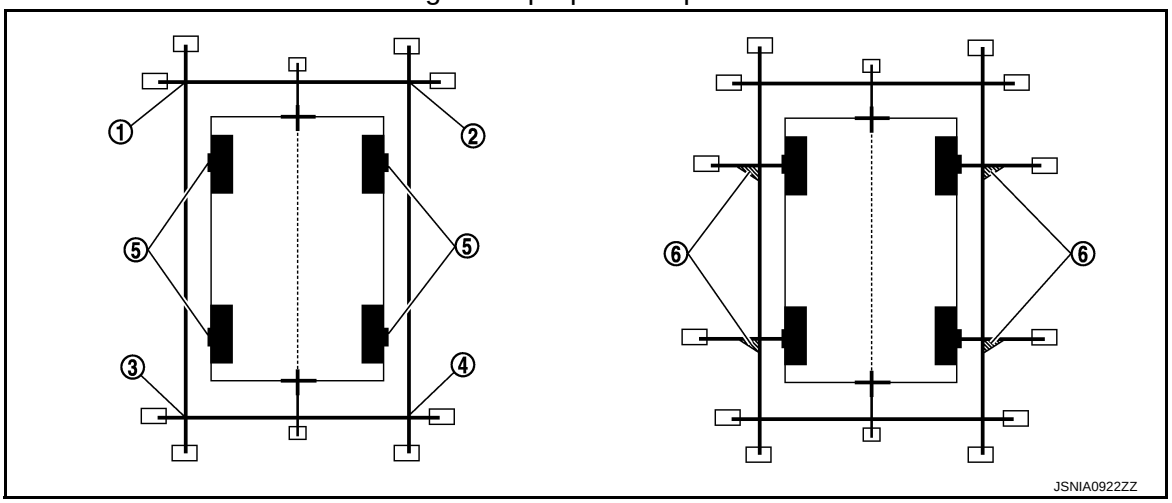
1. Point FM
2. Point RM
3. Triangle scale
4. Point FL (mark)
5. Point FR (mark)
6. Point RL (mark)

7. Point RR (mark)

A. 75 cm (29.5 in) B. Approx. 1.5 m (59 in) C. 30 cm (11.8 in) [Vehicle width/ 2 + 30 cm (11.8 in) from the points FM and RM]

6. Draw the lines of the points FL – RL and FR – RR with vinyl string, and fix it with packing tape.
7. Put a mark on the center of each axle, draw vertical lines to the lines of the points FL – RL and FR – RR from the marks on the center of the axle using a triangle scale, and then fix the lines using packing tape.

Target line preparation procedure 3

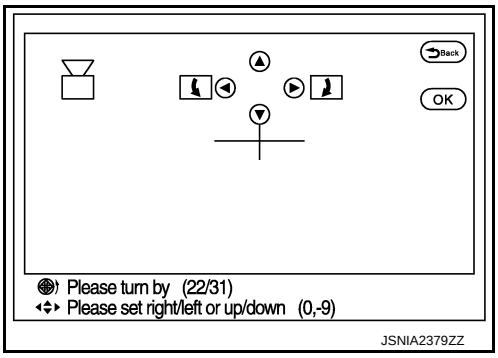


1. Point FL 2. Point FR 3. Point RL
4. Point RR 5. Center position of axle 6. Triangle scale

Perform “Calibrating Camera Image”

1. Select “Camera Cont.” of “Confirmation/ Adjustment” mode, and then set to “Calibrating Camera Image” mode.
2. Overlap the target lines drawn on the ground with the calibration marker on the screen by operating the center dial and upper/ lower/left/right switches of multifunction switch on each screen of “Rear Camera”, “Pass-Side Camera”, “Front Camera”, “Dr-Side Camera”.

Adjustment range	
Rotation direction (Center dial)	: 31 patterns (16 on the center)
Upper/lower direction (upper/lower switch)	: –99 – 99
Left/right direction (left/right switch)	: –99 – 99



3. “Writing...” is displayed by pressing the “ENTER” switch, and then the adjustment result is written to the around view monitor control unit.
CAUTION:
Check that “Writing...” is displayed. Do never perform other operations while “Writing...” is displayed.

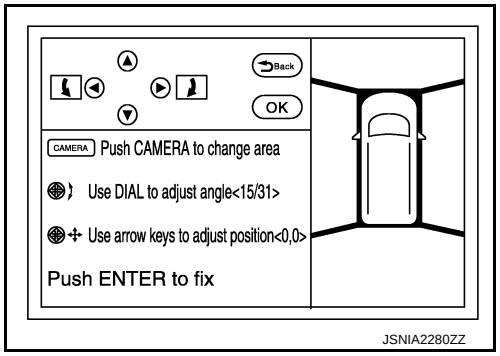
>> GO TO 6.

6. PERFORM “FINE TUNING OF BIRDS-EYE VIEW”

This mode is designed to align the boundary between each camera image that could not be aligned in the “Calibrating Camera Image” mode.

1. Select “Camera Cont.” of “Confirmation/ Adjustment” mode, and then set to “Fine Tuning of Birds-Eye View” mode.

2. Operate the center dial and upper/lower/left/right switch to overlap the marker on the screen and the target lines on the ground.
NOTE:
Move the “+”- mark on the camera position to adjustment by pressing the “CAMERA” switch.
3. When the target line is overlapped on the marker, press the “ENTER” switch to write the adjustment result to the around view monitor control unit.
CAUTION:
Check that “Writing...” is displayed. Do never perform other operations while “Writing...” is displayed.
NOTE:



- It can be initialized to the NISSAN factory default condition with “Initialize Camera Image Calibration” of “Calibrating Camera Image”.
- The adjustment value is cancelled on this mode by performing “Initialize Camera Image Calibration”.

>> Calibration end

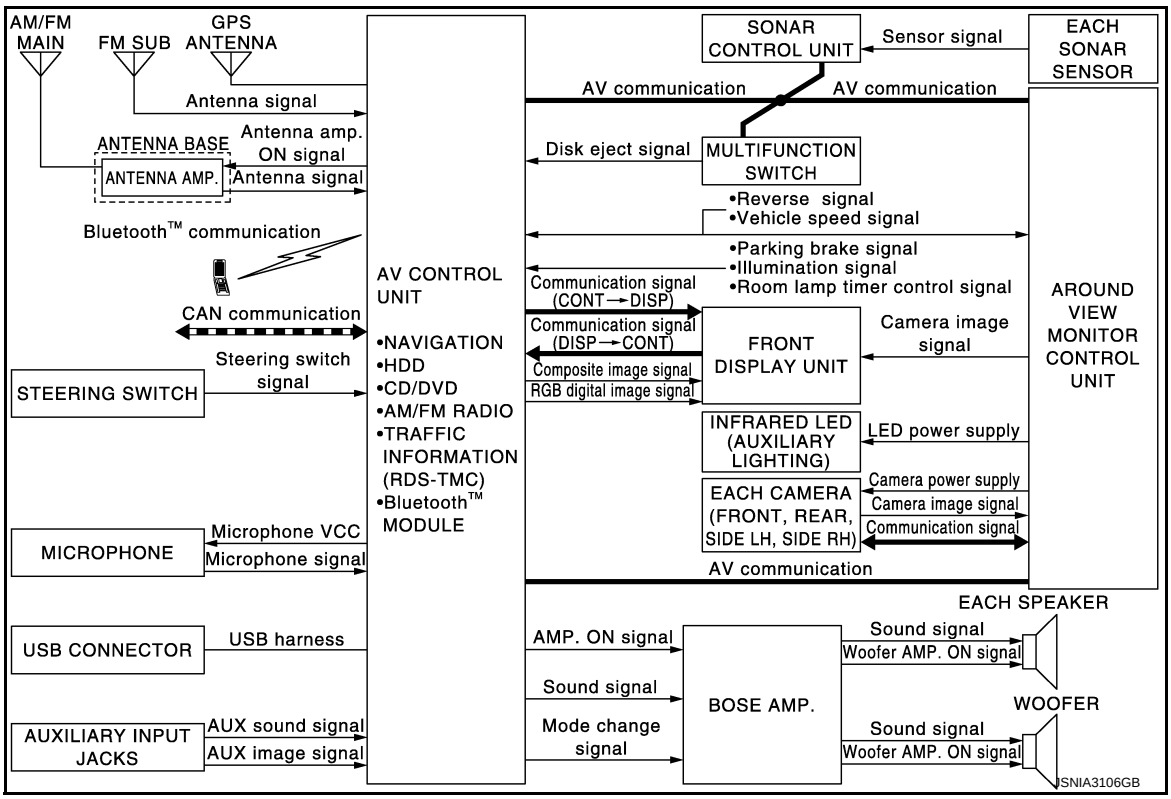
SYSTEM DESCRIPTION

MULTI AV SYSTEM

System Diagram

INFOID:0000000005191820

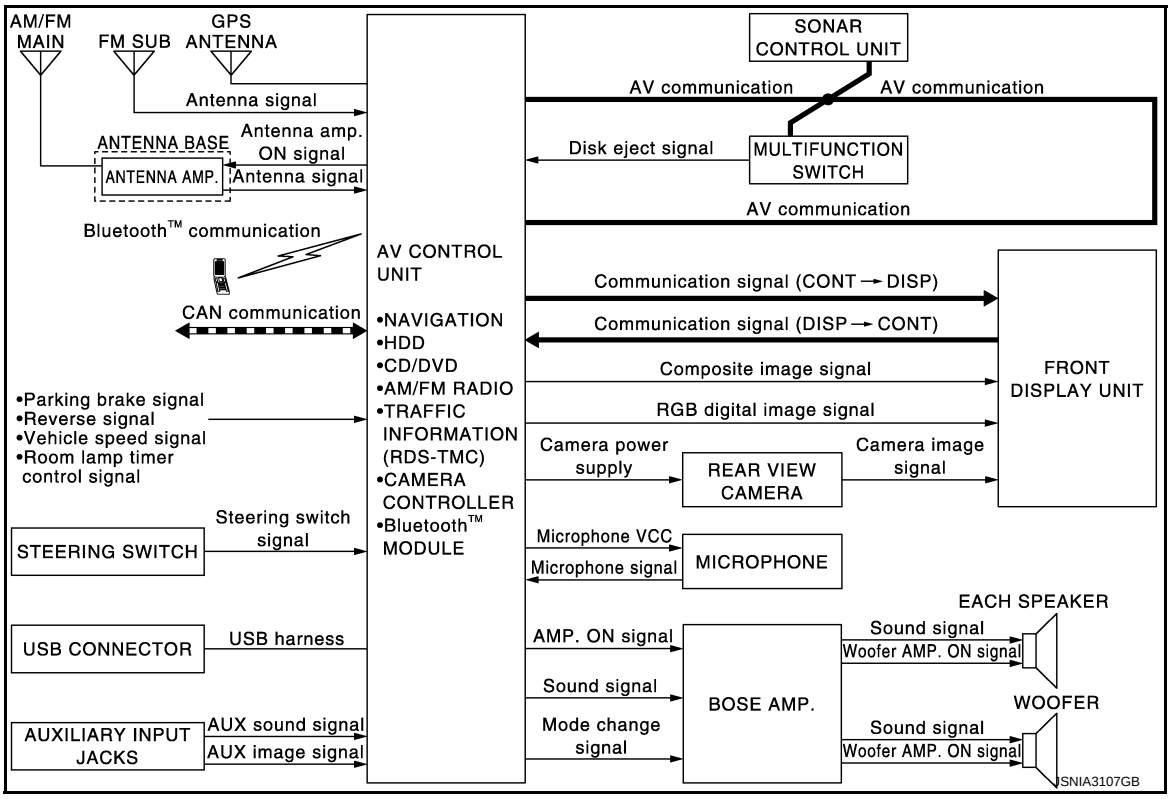
WITH AROUND VIEW MONITOR



NOTE:

- The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.
- An antenna base integrated with antenna amp. is adopted.

WITH REAR VIEW MONITOR



NOTE:

- The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.
- An antenna base integrated with antenna amp. is adopted.

System Description

INFOID:0000000005191821

Multi AV system means that the following systems are integrated.

FUNCTION NAME
Navigation system function
Audio function
DVD play function
Hands-free phone function
Auxiliary input function
USB connection function
Voice recognition function
Touch panel function
Rear view monitor function*1
Around view monitor function*2
Camera assistance sonar system*2
Vehicle information function
Sonar function*1

- *1: Without around view monitor system
- *2: With around view monitor system

COMMUNICATION SIGNAL

- AV control unit function by transmitting/receiving data one by one with each unit (slave unit) that configures them completely as a master unit by connecting between units that configure MULTI AV system with two AV communication lines (H, L).
- Two AV communication lines (H, L) adopt a twisted pair line that is resistant to noise.
- AV control unit is connected by CAN communication, and it receives data signal from ECM, unified meter and A/C amp. It computes and displays fuel economy information value with the obtained information.
- AV control unit is connected with display and serial communication, and it transmits the required signal of display and display control and receives the response signal from display.

NAVIGATION SYSTEM FUNCTION

Description

- The AV control unit controls navigation function while GPS tuner has built-in map data, GYRO (angle speed sensor), on the HDD (Hard Disk Drive).
- The AV control unit inputs operation signal with communication signal, through display (touch panel) and multifunction switch and steering switch.
- Guide sound is output to front speaker through BOSE amp. from AV control unit when operating navigation system.
- A vehicle position is calculated with the GYRO (angle speed sensor), vehicle sensor, signal from GPS satellite and map data stored on HDD (Hard Disk Drive), and transmits the map image signal (RGB image, RGB area, RGB image synchronizing) to the display.

Position Detection Principle

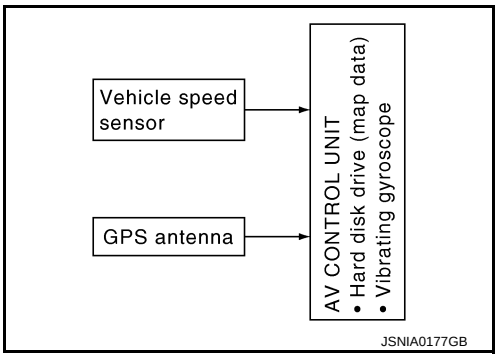
The navigation system periodically calculates the current vehicle position according to the following three types of signals.

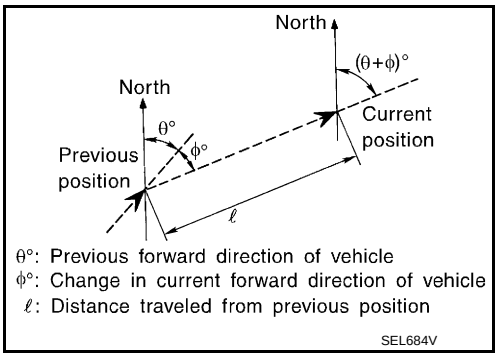
- Travel distance of the vehicle as determined by the vehicle speed sensor
- Vehicle turning angle determined by the gyroscope (angular speed sensor)
- The travel direction of the vehicle determined by the GPS antenna (GPS information)

The current position of the vehicle is then identified by comparing the calculated vehicle position with map data, which is stored in the HDD (Hard Disk Drive) (map-matching), and indicated on the screen with a current location mark. More accurate data is used by comparing position detection results from GPS to the map-matching.

The current position is calculated by detecting the travel distance from the previous calculation point, and its direction change.

- Travel distance
  The travel distance is generated from the vehicle speed sensor input signal. The automatic distance correction function is adopted for preventing a miss-detection of the travel distance because of tire wear etc.
- Travel direction
  The gyroscope (angular velocity sensor) and GPS antenna (GPS information) generate the change of the travel direction. Both have advantages and disadvantages as per the following descriptions.



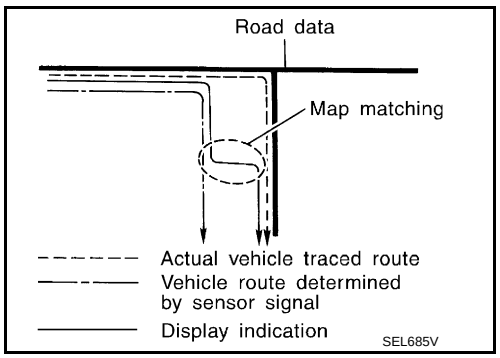


Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	The turning angle is precisely detected.	Errors are accumulated when driving a long distance without stopping.
GPS antenna (GPS information)	The travel direction (North/South/East/West) is detected.	The travel direction is not precisely detected when driving slowly.

Input signals are prioritized in each situation. However, this order of priority may change in accordance with more detailed travel conditions so that the travel direction is detected more accurately.

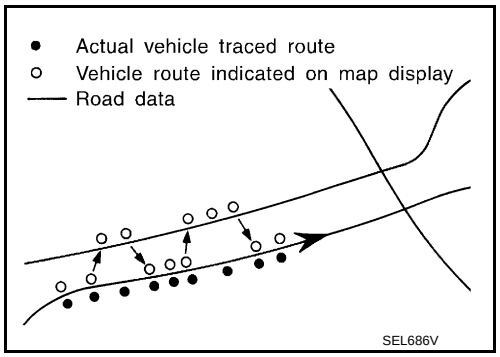
Map-matching

Map-matching repositions the vehicle on the road map when a new location is judged to be more accurate. This is done by comparing the current vehicle position (calculated by the normal position detection method) from the map data stored in the HDD (Hard Disk Drive).

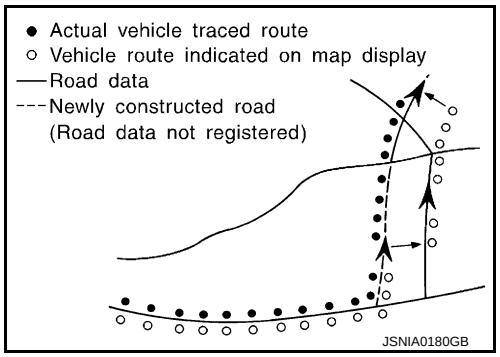


There is a possibility that the vehicle position may not be corrected in the following case, and when vehicle is driven over a certain distance or time in which GPS information is hard to receive. Correct manually the current location mark on the screen.

- In map-matching, several alternative routes are prepared and prioritized in addition to the road judged as currently driving on.
  Therefore, due to errors in the distance and/or direction, an incorrect road may be prioritized, and the current location mark may be repositioned to the incorrect road.
  If two roads are running in parallel, they are of the same priority. Therefore, the current location mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road, etc.



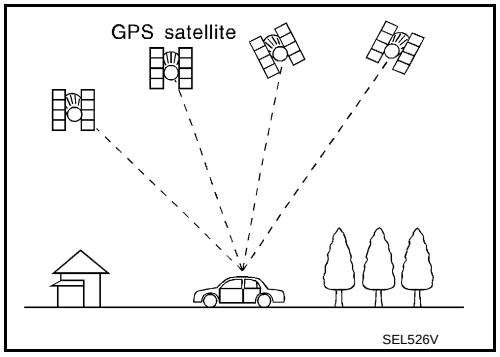
- Map-matching does not function correctly when road on which the vehicle is driving is new, etc. and not recorded in the map data. Also, map-matching does not function correctly when road pattern stored in the map data and the actual road pattern are different due to repair, etc.
  Therefore, the map-matching function judges other road as a currently driving road if the road is not in the map, and displays the current location mark on it. Later, the current location mark may be repositioned to the road if the correct road is detected.
- Effective range for comparing the vehicle position and travel direction calculated by the distance and direction with the road data is limited. Therefore, correction by map-matching is not possible when there is an excessive gap between current vehicle position and the position on the map.



GPS (Global Positioning System)

GPS (Global Positioning System) is developed for and is controlled by the US Department of Defense. The system utilizes GPS satellites (NAVSTAR), transmitting out radio waves while flying on an orbit around the earth at an altitude of approximately 21,000 km (13,049 mile).

The receiver calculates the travel position in three dimensions (latitude/longitude/altitude) according to the time lag of the radio waves that four or more GPS satellites transmit (three-dimensional positioning). The GPS receiver calculates the travel position in two dimensions (latitude/longitude) with the previous altitude data if the GPS receiver receives only three radio waves (two-dimensional positioning). GPS position correction is not performed while stopping the vehicle.



Accuracy of the GPS will deteriorate under the following conditions:

- In two-dimensional positioning, GPS accuracy will deteriorate when altitude of the vehicle position changes.
- The position of GPS satellite affects GPS detection precision. The position detection may not be precisely performed.

- The position detection is not performed if GPS receiver does not receive radio waves from GPS satellites. (Inside a tunnel, parking in a building, under an elevated highway etc.) GPS receiver may not receive radio waves from GPS satellites if any object is placed on the GPS antenna.

NOTE:

- The detection result has an error of approximately 10 m (32.81 ft) even with a high-precision three dimensional positioning.
- There may be cases when the accuracy is lowered and radio waves are stopped intentionally because the GPS satellite signal is controlled by the US trace control center.

AUDIO FUNCTION

The audio system is equipped with the following functions. Each function is operated with multifunction switch, preset switch, touch panel, steering switch or audio recognition. Operation status of audio is indicated at display.

FUNCTION
AM/FM radio
Traffic information (RDS-TMC)
CD
Bluetooth™ audio
Music Box (Hard Disk Drive)
Driver's Audio Stage

Operating Signal

Audio system operation can be performed with multifunction switch, preset switch, steering switch, touch panel function or voice recognition function.

- Operating signal is transmitted to AV control unit with AV communication when it is operated by multifunction switch or preset switch. The disk ejection operating signal is performed by hardwire.
- Operating signal is transmitted to AV control unit with steering switch signal when it is operated by steering switch.

Screen Display

Switching of display is performed with serial communication between front display unit and AV control unit.

AM/FM Radio Mode

- AM/FM radio tuner is built into AV control unit.
- Audio signal is received by rod antenna, next it is amplified by antenna amp., and finally it is input to AV control unit. Audio signal is input to BOSE amp., and BOSE amp. outputs to each speaker.

Traffic Information (RDS-TMC) Function

The traffic information broadcast can avoid delays due to traffic incidents.
Traffic jams, roadwork, closed roads around current location, etc. are represented graphically on the map by icons depicting the nature of the event. Incidents on the route are automatically noticed when they are approached.
The traffic information feature gives the driver the opportunity to forecast traffic incidents, determine how serious they are and, via the guidance mode, allows to detour around traffic problems.
The navigation system receives traffic information from best available sources and enables the RDS-TMC (Radio Data System-Traffic Message Channel) to inform and guide the driver.

- Traffic information function is built into AV control unit.
- Traffic information is received by rod antenna, next it is amplified by antenna amp., and finally it is input to AV control unit.

CD Mode

- CD function is built into AV control unit.
- AV control unit outputs audio signal to BOSE amp., and BOSE amp. outputs to each speaker when CD is inserted to AV control unit.

Bluetooth™ Audio Mode

- Bluetooth™ audio function is built into AV control unit.
- Bluetooth™ audio can play music data in the portable audio by means of Bluetooth™ communications between the portal audio and the AV control unit.

- AV control unit outputs audio signal to BOSE amp., and BOSE amp. outputs to each speaker.

Music Box Mode

- Music CD data is stored on HDD that is built into AV control unit, and it can be played.
- AV control unit outputs music (sound signal) that is stored on HDD to BOSE amp., and BOSE amp. outputs to each speaker.

Driver's Audio Stage

- Driver's Audio Stage controls the speaker's output characteristic by BOSE amp. so that the driver's seat is to be the center of sounds.
- ON/OFF signals of Driver's Audio Stage are transmitted from AV control unit to BOSE amp. using mode change signal.

DVD PLAY FUNCTION

- DVD is played by inserting DVD into the AV control unit.
- DVD image signals are transmitted to the front display unit and DVD sound signals are transmitted to each speaker via BOSE amp.

HANDS-FREE PHONE FUNCTION

- AV control unit includes hands-free phone function.
- Hands-free communication can be operated by connecting using Bluetooth™ communication with cellular phone.
- Operation is performed by steering switch, and operating condition is indicated on display.
- Guide sound that is heard during operation is input from AV control unit to BOSE amp., and is output from front speaker and center speaker.

When A Call Is Originated

Spoken voice sound output from the microphone (microphone signal) is input to AV control unit. AV control unit outputs to cellular phone with Bluetooth™ communication as a TEL voice signal. Voice sound is then heard at the other party.

When Receiving A Call

Voice sound is input to own cellular phone from the other party. TEL voice signal is output to door speaker, and the signal is input to BOSE amp. via AV control unit by establishing Bluetooth™ communication from cellular phone.

AUXILIARY INPUT FUNCTION

- Image and sound can be output from an external device by connecting a device with auxiliary input jacks.
- AUX image signals are transmitted to the front display unit and AUX sound signals are transmitted to each speaker via BOSE amp.

USB CONNECTION FUNCTION

- iPod® or music files and video data* in USB memory can be played.
- Sound signals are transmitted from USB connector to the AV control unit and to each speaker via BOSE amp.
- Video signals are transmitted from USB connector to the front display unit via the AV control unit.
- iPod® is recharged when connected to USB connector.
- Playable movie formats are “DivX” and “MPEG4 (ASF)”.

*: Image signals cannot be received from iPod®.

iPod® is a trademark of Apple inc., registered in the U.S. and other countries.

NOTE:

Use the enclosed USB harness when connecting iPod® to USB connector.

VOICE RECOGNITION FUNCTION

- Each operation of multi AV system can be performed by inputting sound to microphone.
- Start of sound recognition system can be performed by steering switch.
- System operation is available only when the retractable hard top is closed.

TOUCH PANEL SYSTEM

Each operation of multi AV system can be performed by directly touching a display.

REAR VIEW MONITOR FUNCTION

Camera Image Operation Principle

- The AV control unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the front display unit when power is supplied from the AV control unit.
- The AV control unit transmits a warning message, fixed guide lines, and predictive course lines to the front display unit by RGB digital video signals. Rear view monitor images are displayed by combining the RGB digital video signals and the camera image signals from the rear view camera.
- Predictive course lines are controlled by a steering angle sensor signal received the AV control unit via CAN communication.

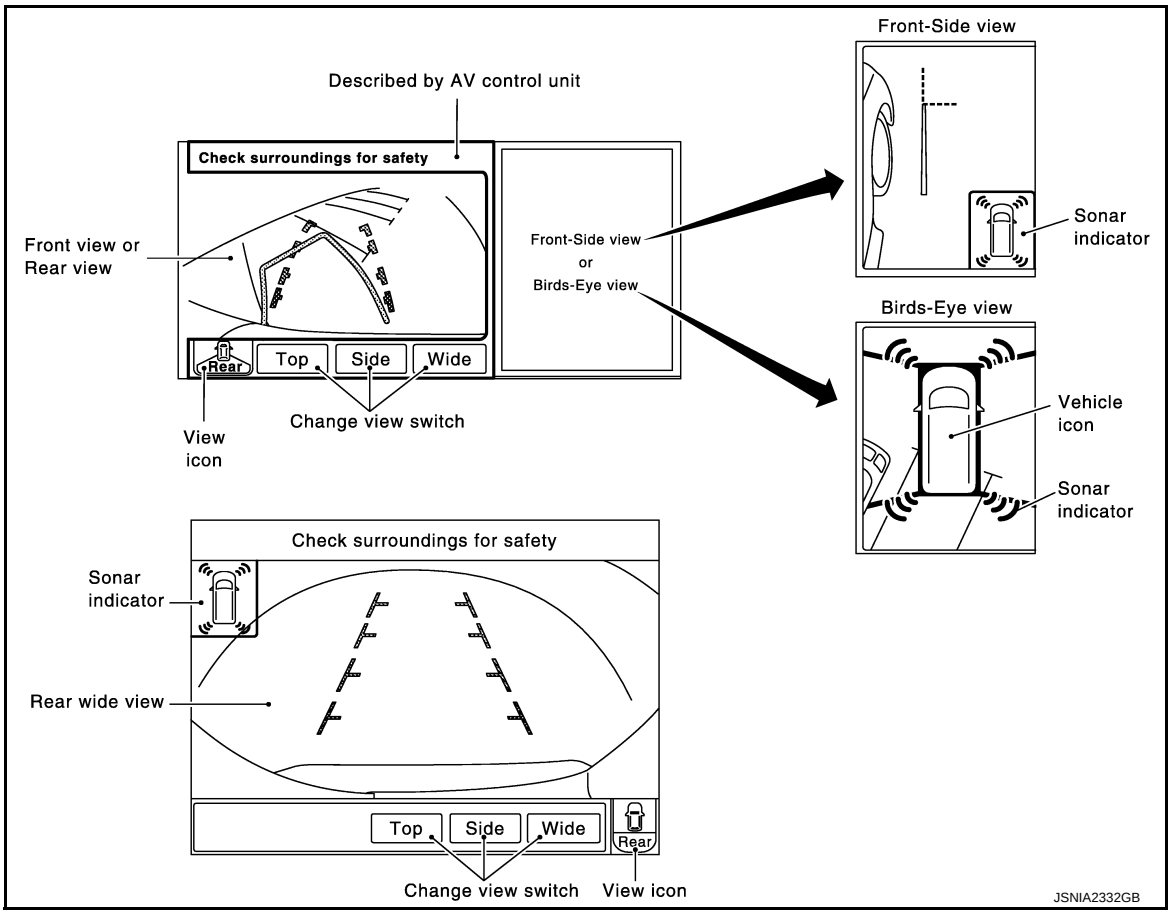
AROUND VIEW MONITOR FUNCTION

- This system is equipped with wide-angle high-resolution cameras on the front and rear of the vehicle and on both right and left door mirrors. The images from front view, rear view, front-side view [RH side (LHD models), LH side (RHD models)], and birds-eye view that shows the view from the top of the vehicle are displayed to monitor the vehicle surroundings.
- Around view monitor control unit cuts out and expands the image received from each camera to create each view.
- The sonar indicator is displayed on display (superimposed on the camera image) in combination with the camera assistance sonar system to warm of the approach of an obstacle.
- In front view and rear view, the vehicle width, distance lines and predictive course lines are superimposed and displayed. In front-side view, the vehicle distance guiding line and vehicle width guiding line are displayed.
- The Birds-Eye view converts the images from 4 cameras into the overhead view and displays the status of the vehicle on display. The vehicle icon and sonar indicator that are displayed on the Birds-Eye view display are rendered by around view monitor control unit.

Around View Monitor Screen

- Around view monitor combines and displays the travel direction view and “Birds-Eye view”, “Front-Side view” and then it displays the sonar indicator on the “Birds-Eye view”, “Front-Side view”“Rear wide view” .
- AV control unit renders the “Change View” switch, view icon, warning message on display.

Screen constitution

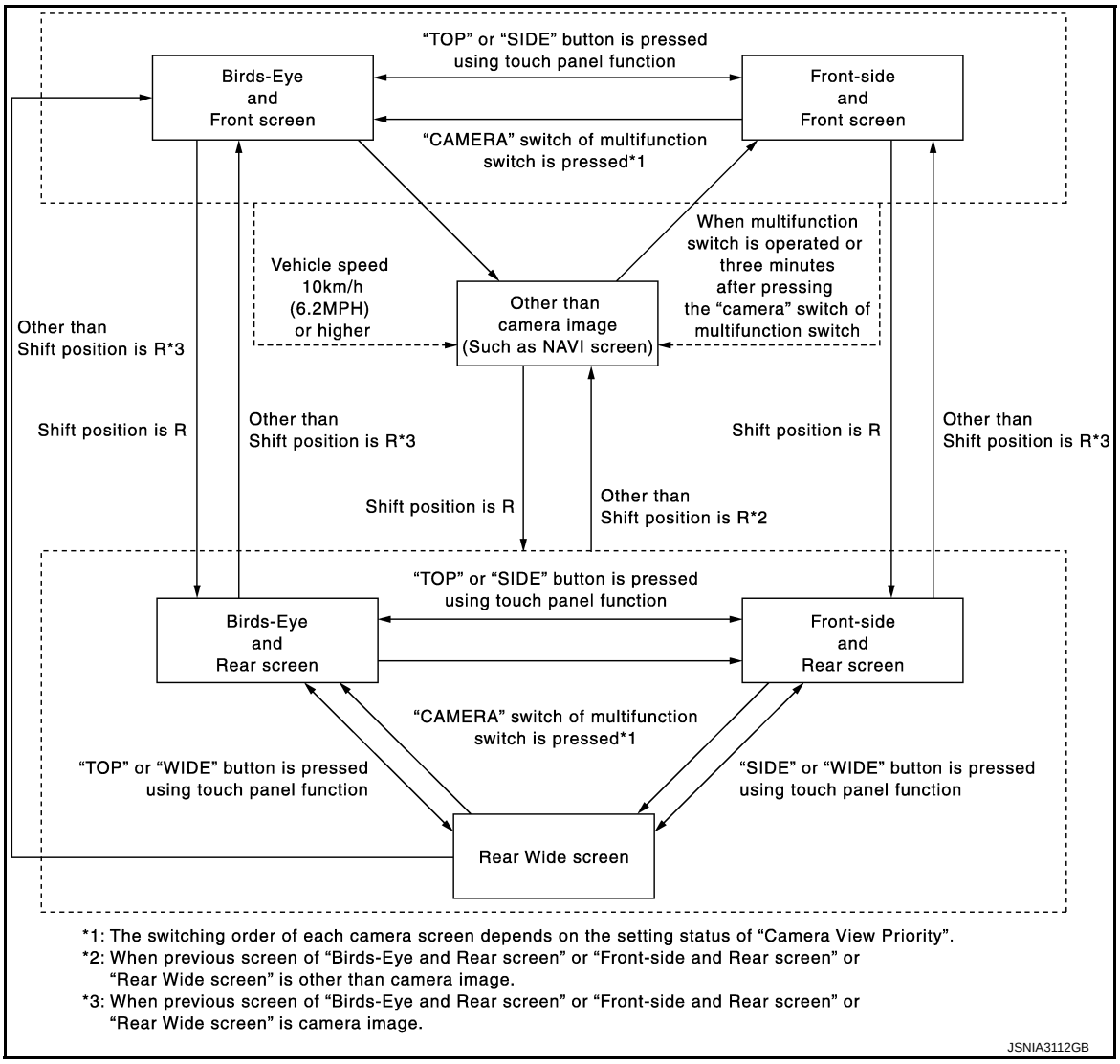


Operation Description

- Around view monitor operates by pressing the “CAMERA” switch of multifunction switch and shifting the selector switch to the reverse position.
- When the selector lever is in any position other than the reverse position, the screen is switched to the around view monitor by pressing the “CAMERA” switch.
- The screen is switched to the around view monitor by shifting the selector lever to the reverse position.
- In the around view monitor, Birds-Eye view, Front-side view and rear wide view (rear only) can be switched by pressing the “CAMERA” switch.
- The around view monitor is cancelled 3 minutes after pressing the “CAMERA” switch, and then the screen returns to the screen before displaying the around view monitor when selector lever is in a position other than the reverse position.
- ON/OFF setting of sonar indicator display on the Front-Side view screen can be performed.
- In the Birds-Eye view, the invisible area is displayed on the image to specify the boundary of the 4 cameras. The invisible area is displayed in yellow in the Birds-Eye view after turning the ignition switch ON.
- The sonar (both of buzzer and indicator) operates only when the camera screen is displayed.

NOTE:
The first, second, and third camera image displayed when switched to the camera image display depends on the settings of “Camera View Priority”.

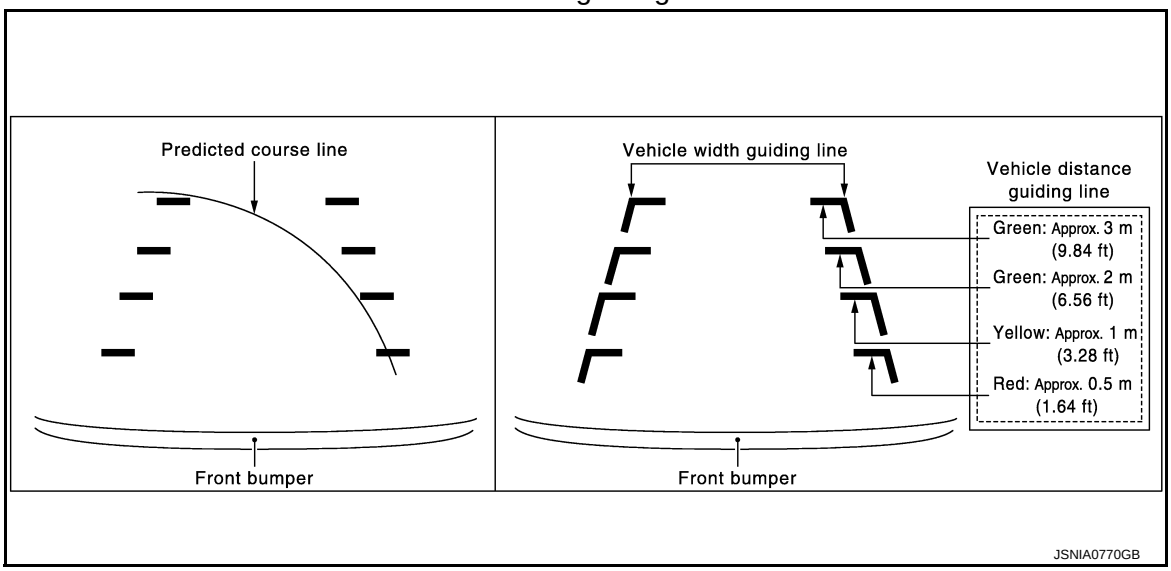
Around view monitor screen transition



FRONT VIEW
- The front view image is from the front camera.
- When the selector lever is in any position other than the reverse position, the front view is displayed by pressing the “CAMERA” switch. It improves the visibility of obstacles in front of the vehicle and helps driving by the images displayed from Birds-Eye view and Front-Side view.

- Display the vehicle width guiding line and vehicle distance guiding line in front view and display the predictive course line according to the steering angle.
- If the steering angle is within approximately 90 degrees, the predictive course lines on the left/right side are displayed. If the steering angle is exceeding approximately 90 degrees, only the predictive course line on the outside (in the opposite side of steering direction) is displayed.
- AV control unit is connected to the steering angle sensor and receives the steering angle signal via CAN communication. AV control unit is transmits steering angle signal to around view monitor control unit via AV communication.
- Around view monitor control unit controls the direction and distance of the predictive course line according to the sensor signal from steering angle sensor.

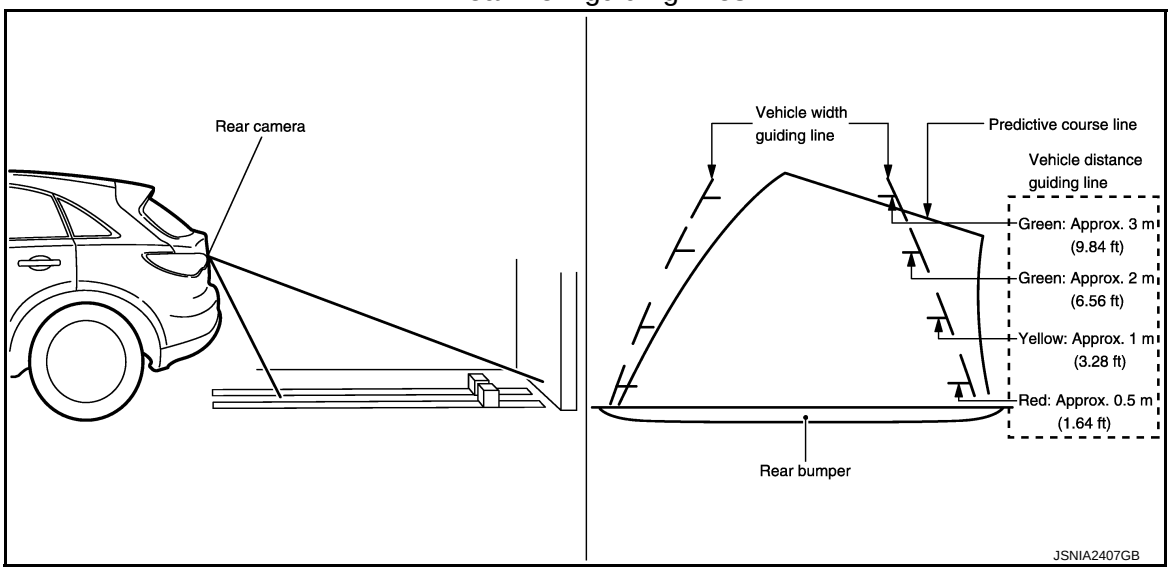
Front view guiding lines



REAR VIEW

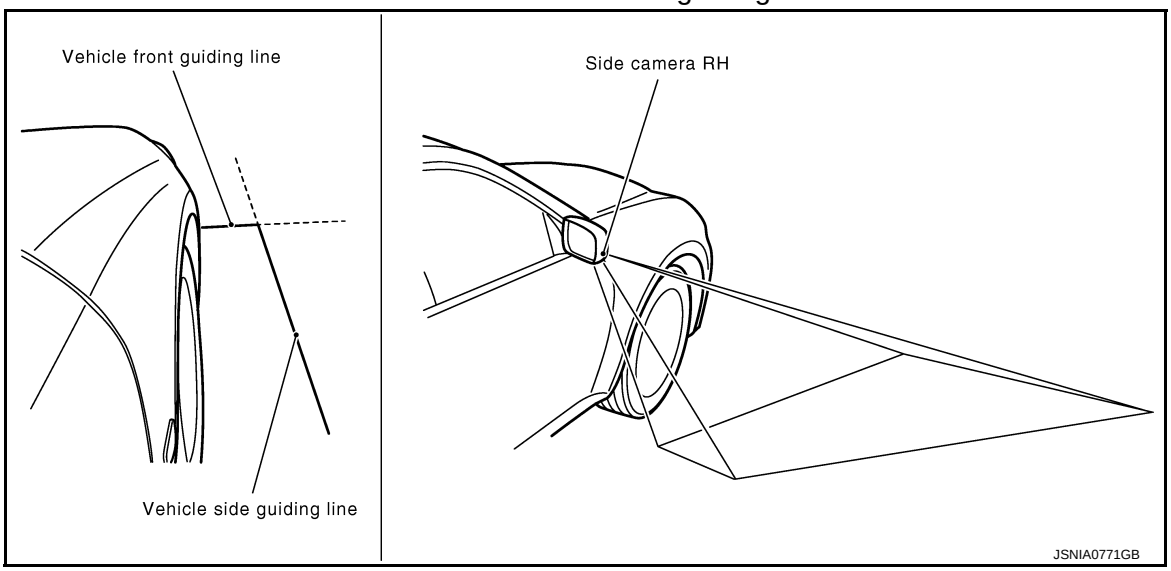
- The rear view image is from the rear camera.
- When the selector lever is in the reverse position, the rear view is displayed. Backing and parking are improved by the images from Birds-Eye view and Front-Side view. The rear wide view function allows the display of an image with a 180° horizontal angle.
- Display the vehicle width guiding line and vehicle distance guiding line in Rear view and display the predictive course line according to the steering angle (except when using the rear wide view function).
- The predictive course line is not displayed at the steering neutral position.
- AV control unit is connected to the steering angle sensor and receives the steering angle signal via CAN communication. AV control unit is transmits steering angle signal to around view monitor control unit via AV communication.
- Around view monitor control unit controls the direction and distance of predictive course line according to the sensor signal from steering angle sensor.

Rear view guiding lines



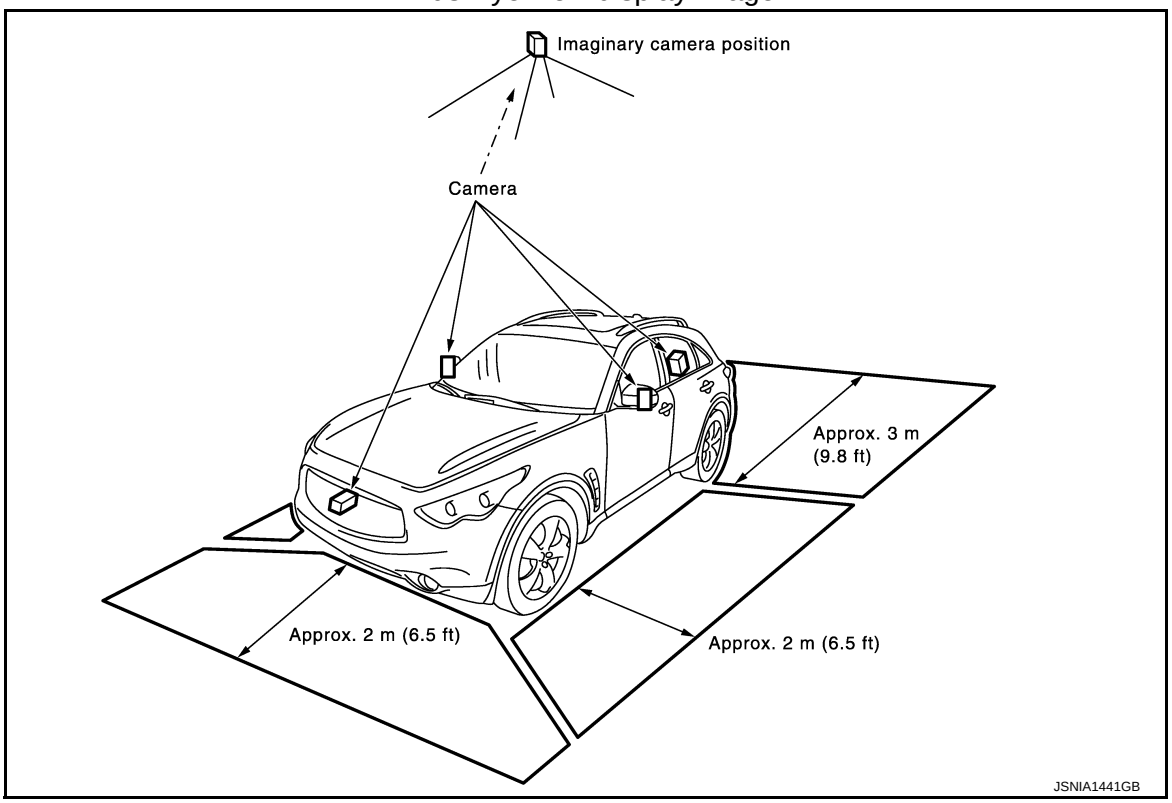
FRONT-SIDE VIEW
- The front-side view image is from the side camera RH (LHD models) or side camera LH (RHD models).
- In Front-Side view, display the vehicle distance guiding line and vehicle width guiding line.
- The infrared LED illumination is installed on the door mirror RH (LHD models) or door mirror LH (RHD models) to illuminate around the front wheels.

Front-side view area and guiding line

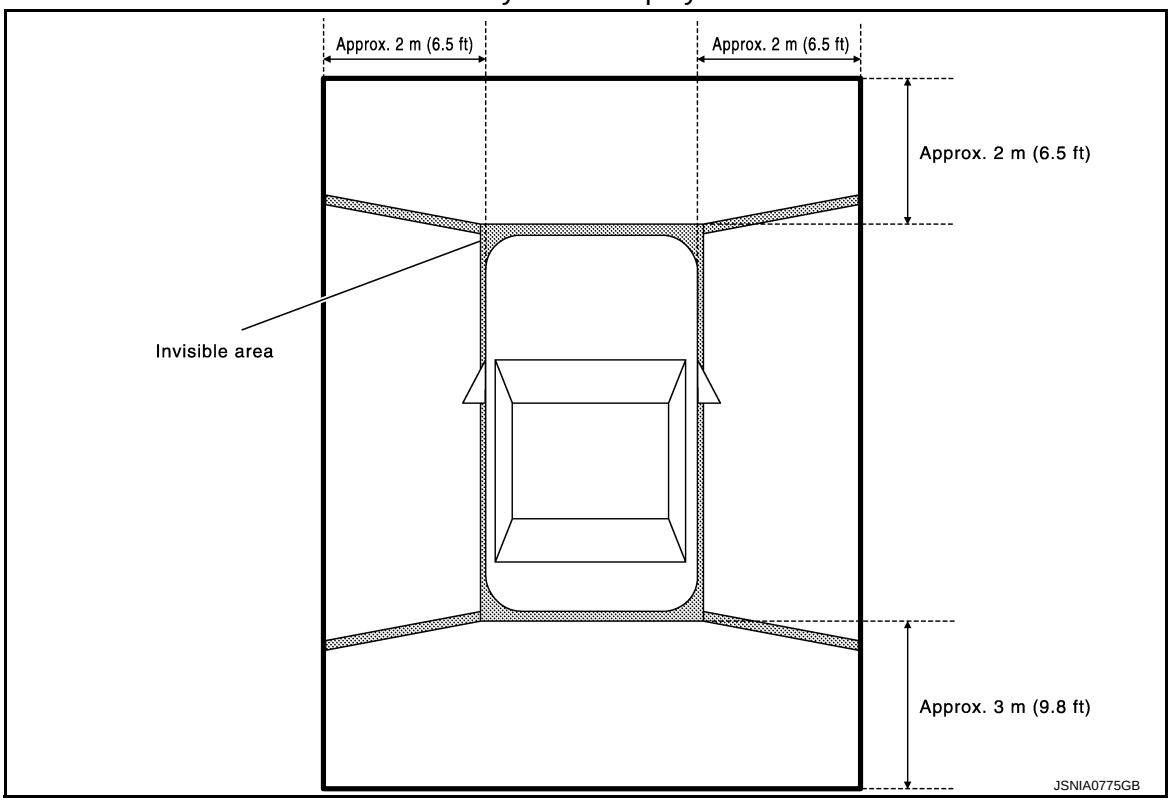


BIRDS-EYE VIEW
- The image from the 4 cameras is cut out and converted into the overhead view, and the surroundings of the vehicle is displayed in birds-eye view.
- In Birds-Eye view, the invisible area is displayed on the image to specify the boundary of the 4 cameras.
- The invisible area is displayed in yellow in the Birds-Eye view after turning the ignition switch ON as an information for the user. (OFF setting can be performed)

Birds-Eye view display image



Birds-Eye view display area



Camera Image Operation Principle

- If the information writing to around view monitor control unit and the information from the camera are not matched, the applicable camera position is indicated as an error on the Birds-Eye view display. (Calibration operation is necessary when replacing each camera or when replacing around view monitor control unit.)
- Around view monitor control unit receives the camera switch signal from AV control unit via AV communication by pressing the “CAMERA” switch of multifunction switch.

- Around view monitor control unit that receives the camera switch signal supplies the power to each camera and inputs the camera image from each camera.
- When the selector lever is in the reverse position, around view monitor control unit receives the reverse signal, supplies the power to each camera, and inputs the camera image from each camera.
- Around view monitor control unit that receives the camera image signal from each camera cuts out the required screen for each view, superimposes the camera image, vehicle icon, guiding lines, sonar indicator, and outputs them to the front display unit.

CAMERA ASSISTANCE SONAR FUNCTION

- Install the corner sensor on the front bumper and rear bumper. It detects the obstacles around the vehicle when the around view monitor is displayed. It warns of the approach to the obstacles with the buzzer and indicator in the display linked with the around view monitor system.
- It displays the distance between the bumper and obstacle with the color of sonar indicator in the display and the blinking cycle of indicator in 3 stages.
- The buzzer warns of the distance to the obstacles with the cycle in 3 stages.

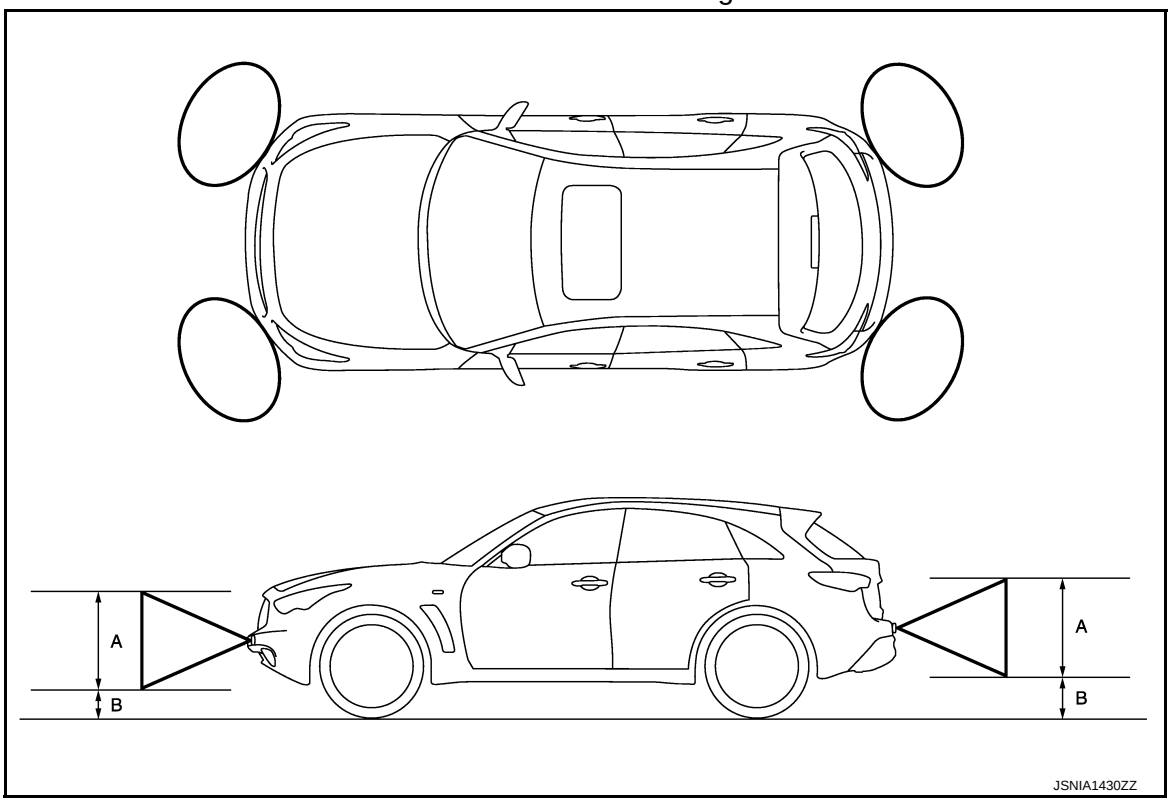
System Operation Description

- Around view monitor control unit transmits the sonar operation signal via AV communication to sonar control unit to control the operation of sonar indicator and sonar buzzer.
- Sonar control unit that receives the sonar operation signal from around view monitor control unit transmits the detection signal and detection distance signal according to the signal from corner sensor via AV communication to around view monitor control unit. Around view monitor control unit operates the applicable sonar indicator.
- When receiving a sonar operation signal from the around view monitor control unit, the sonar control unit converts a signal transmitted from the corner sensor into a detection distance signal and transmits it to the AV control unit via AV communication. When receiving the detection signal, the AV control unit activates each speaker via BOSE amp.
- Sonar control unit has the diagnosis function. It can detect the corner sensor malfunction or sensor harness open circuit. It transmits the diagnosis results to around view monitor control unit and always displays the sonar indicator in red to inform the user.

Obstacle Detection Distance

- Sonar control unit changes the outputs of the sonar indicator and warning buzzer in 3 stages according to the obstacle detection distance from the corner sensor.
- The sonar control unit can change the setting of obstacle detection distance in 4 stages.

Obstacle detection image



A. Approx. 50 cm (19.6 in) B. Approx. 15 cm (5.9 in)

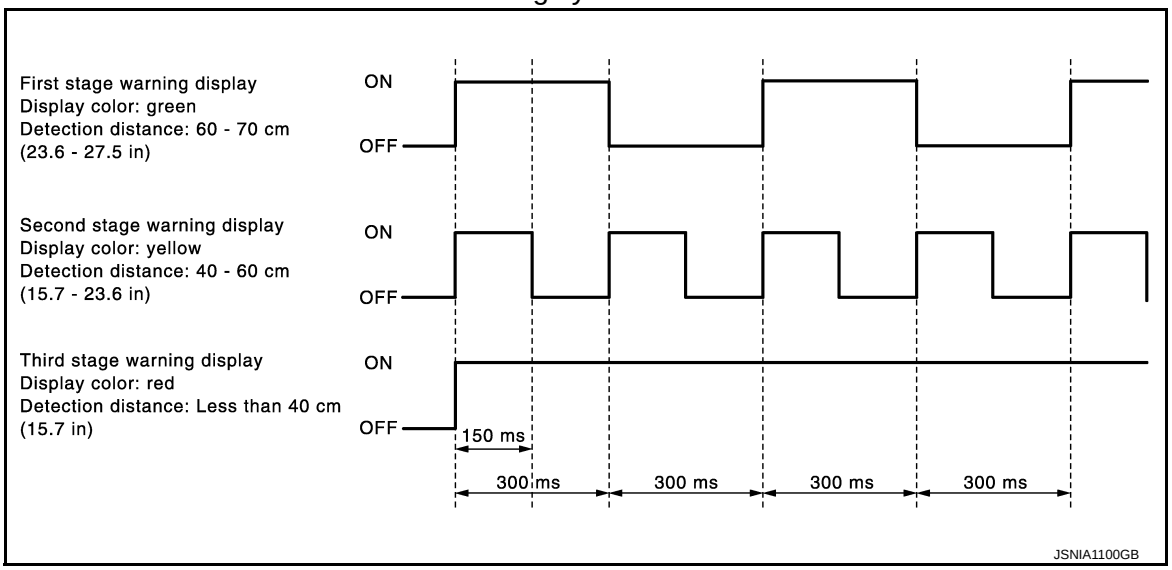
Detection distance

Warning item	Sensitivity level 1 (Faster warning)	Sensitivity level 2 (Default value)	Sensitivity level 3 (Slower warning)	Sensitivity level 4 (Slowest warning)
First stage warning	70 – 80 cm (27.5 – 31.4 in)	60 – 70 cm (23.6 – 27.5 in)	50 – 60 cm (19.6 – 23.6 in)	40 – 50 cm (15.7 – 19.6 in)
Second stage warning	50 – 70 cm (19.6 – 27.5 in)	40 – 60 cm (15.7 – 23.6 in)	30 – 50 cm (11.8 – 19.6 in)	30 – 40 cm (11.8 – 15.7 in)
Third stage warning	Less than 50 cm (19.6 in)	Less than 40 cm (15.7 in)	Less than 30 cm (11.8 in)	Less than 30 cm (11.8 in)

Sonar Indicator Display

- Around view monitor control unit that receives the detection signal and detection distance signal from sonar control unit displays the sonar indicator on display.
- Around view monitor control unit changes the color or blinking cycle of the indicator according to the detection distance.

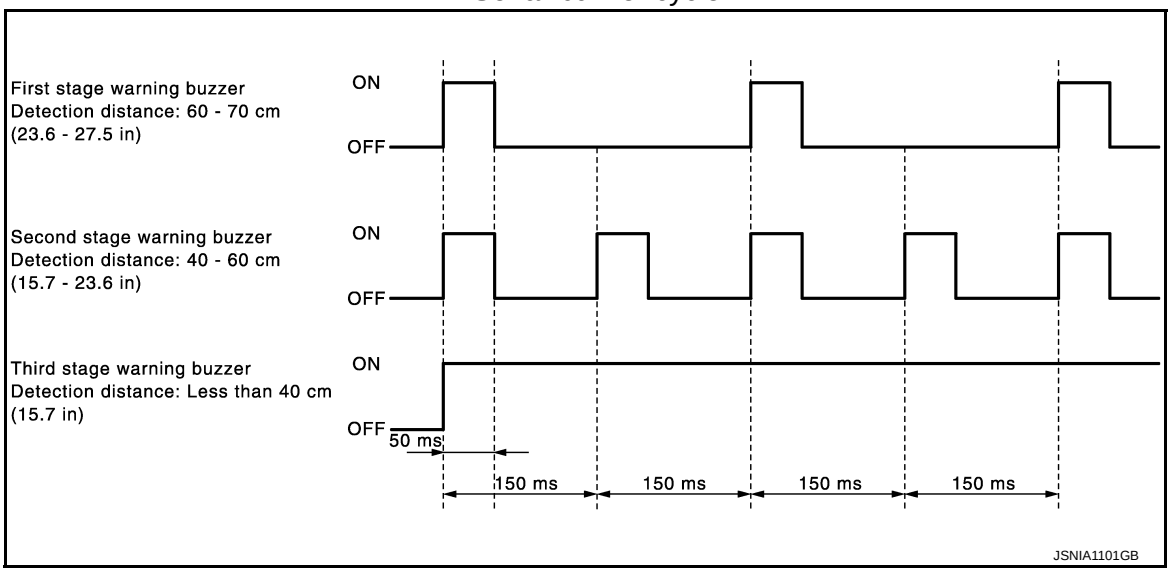
Color and blinking cycle of sonar indicator



Sonar Buzzer Operation

- Each sonar sensor transmits a sensor signal to the sonar control unit when detecting an obstacle.
- The sonar control unit converts a signal received from each sonar sensor into distance and transmits detection distance signal to the AV control unit via AV communication.
- The AV control unit transmits a buzzer signal to the BOSE amp. corresponding to each sonar sensor based on the received signal.
- When receiving a buzzer signal, the BOSE amp. transmits the buzzer signal to the each speaker. When each speaker receives a buzzer signal, a buzzer sounds.
- When the front corner sensor detects an obstacle, a buzzer is heard from the speakers on the front side.
- When the rear corner sensor detects an obstacle, a buzzer is heard from the speakers on the rear side.
- It changes the buzzer cycle in 3 stages according to the detection distance.

Sonar buzzer cycle



VEHICLE INFORMATION FUNCTION

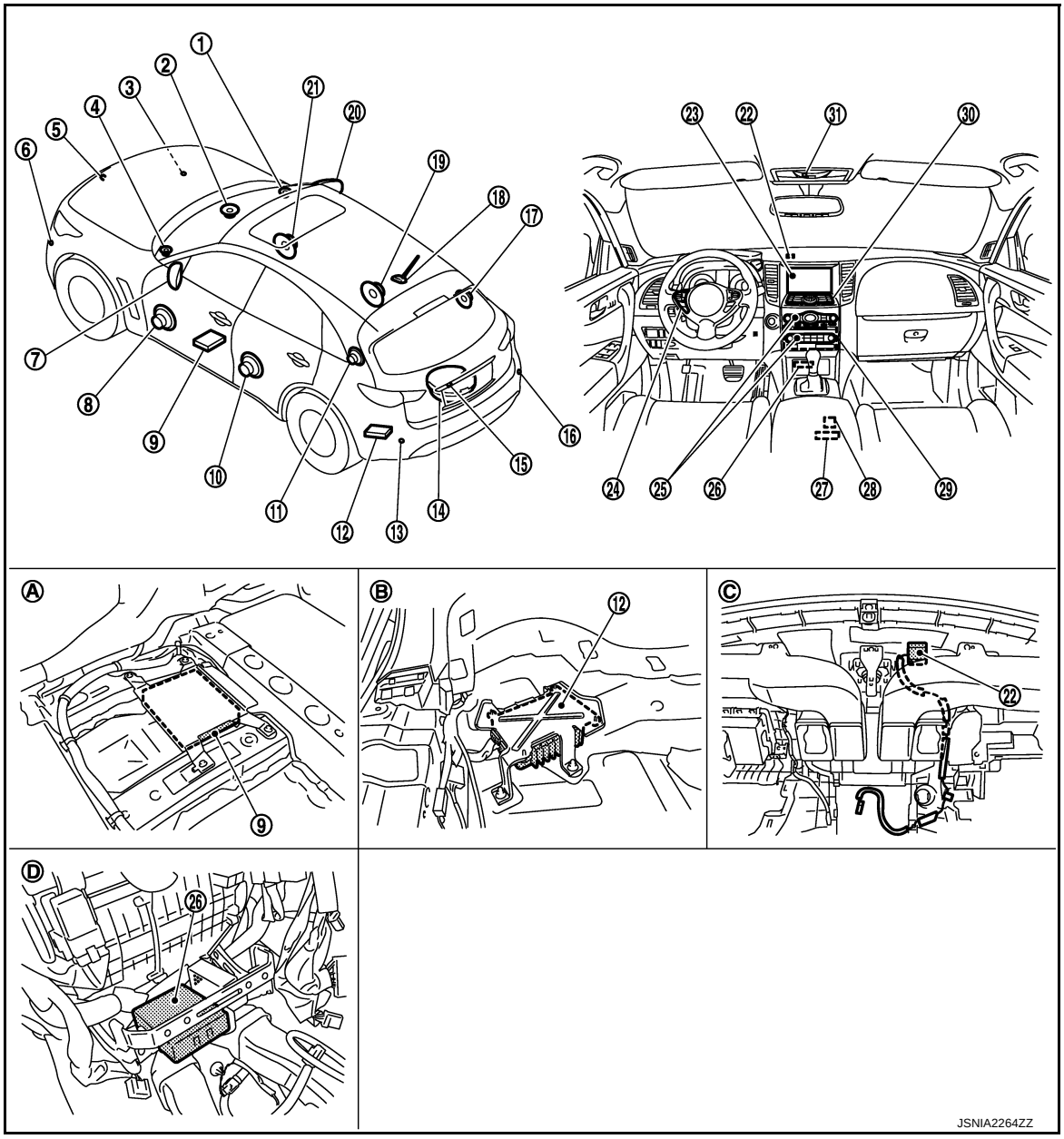
- Status of audio, climate control system, fuel economy, maintenance and navigation are displayed.
- AV control unit displays the fuel consumption status while receiving data signal through CAN communication from ECM, unified meter and A/C amp.
- AV control unit is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function.

SONAR FUNCTION

For further information about the sonar system, refer to SN-7, "System Description".

Component Parts Location

INFOID:0000000005193932



1. Front squawker RH	2. Center speaker	3. Corner sensor front RH
4. Front squawker LH	5. Front camera	6. Corner sensor front LH
7. Side camera LH	8. Front door speaker LH	9. Around view monitor control unit (with around view monitor)
10. Rear door speaker LH	11. Rear squawker LH	12. BOSE amp.
13. Corner sensor rear LH	14. Woofer	15. • Rear camera (with around view monitor) • Rear view camera (with rear view monitor)
16. Corner sensor rear RH	17. Rear squawker RH	18. Antenna base
19. Rear door speaker RH	20. Side camera RH and infrared LED (auxiliary lighting)	21. Front door speaker RH
22. GPS antenna	23. Front display unit	24. Steering switch
25. Preset switch	26. Sonar control unit (with around view monitor)	27. Auxiliary input jack

28. USB connector
29. AV control unit
30. Multifunction switch
31. Microphone
A. Under front seat (LH side)
B. Luggage floor (LH side)
C. Instrument panel rear side
D. Console pocket assembly removed condition

Component Description

INFOID:0000000005191823

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor*1, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • The RGB digital image signal and composite image signal are output to front display unit. • Camera power supply is transmitted to rear view camera (with rear view monitor). • Camera image signal is input from rear view camera (with rear view monitor). • Amp. ON signal, sound signal and mode change signal transmitted to BOSE amp. • Update of map data is performed with the DVD-ROM.
front display unit	• Display image is controlled by the serial communication from AV control unit. • RGB digital image signal is input from AV control unit. • Composite image signal is input from AV control unit. • Camera image signal is input from rear view camera (with rear view monitor). • Camera image signal is input from around view monitor control unit (with around view monitor). • Touch panel function can be operated for each system by touching a display directly.
BOSE amp.	• Inputs sound signal from AV control unit, and outputs sound signal to each speaker. • Input mode change signal from AV control unit.
Front door speaker	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
Rear door speaker	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
Front squawker	• Outputs sound signal from BOSE amp. • Outputs mid range sounds.
Rear squawker	• Outputs sound signal from BOSE amp. • Outputs mid range sounds.
Center speaker	• Outputs sound signal from BOSE amp. • Outputs mid range sounds.
Woofer	• Inputs power (woofer amp. ON) and sound signal from BOSE amp. • Outputs low range sounds.
Multifunction switch	• Operation panel is equipped with the centralized switch where audio, auxiliary input and navigation, etc. operations are integrated. • Connected with preset switch via cable, and operation signal is transmitted to AV control unit via AV communication.
Preset switch	• Operation panel is equipped with the centralized switch where audio and air conditioner, etc. operations are integrated. • Connected with multifunction switch via cable, and operation signal is transmitted to AV control unit via AV communication. • The disk ejection operating signal is performed by hardwire.

Part name	Description
Around view monitor control unit	• It supplies power to front camera, rear camera, and side camera. And then it superimposes the images from each camera and outputs them to front display unit. • Superimpose the guiding line, predicted course line and sonar indicator to the camera image that outputs to front display unit. • It performs the reception/transmission of communication signal with each camera. • It transmits the sonar operation signal from sonar control unit and receives the sonar information from sonar control unit via AV communication. • It transmits the information received/transmitted with sonar control unit via AV communication to AV control unit.
Front camera	• It inputs the power supply from around view monitor control unit and outputs the image of the vehicle front to around view monitor control unit. • It performs the reception/transmission of the communication signal with around view monitor control unit.
Rear camera	• It inputs the power supply from around view monitor control unit and outputs the image of the vehicle rear to around view monitor control unit. • It performs the reception/transmission of the communication signal with around view monitor control unit.
Side camera LH	• It inputs the power supply from around view monitor control unit and outputs the image of the vehicle LH to around view monitor control unit. • It performs the reception/transmission of the communication signal with around view monitor control unit.
Side camera RH	• It inputs the power supply from around view monitor control unit and outputs the image of the vehicle RH to around view monitor control unit. • It performs the reception/transmission of the communication signal with around view monitor control unit.
Infrared LED (Auxiliary lighting)	• It illuminates around the front RH wheel by the power supply from around view monitor control unit to improve nighttime visibility of front-side view (LHD models). • It illuminates around the front LH wheel by the power supply from around view monitor control unit to improve nighttime visibility of front-side view (RHD models). • The infrared LED is an invisible light ray.
Sonar control unit (Camera assistance sonar system)	• It is connected with around view monitor control unit via AV communication and receives the sonar operation signal from around view monitor control unit. • It transmits the sonar detection status to around view monitor control unit via AV communication. • It judges the warning level according to the signal from corner sensor.
Corner sensor	The obstacle distance is detected. The signal is transmitted to sonar control unit.
Rear view camera (Rear view monitor system)	• Camera power supply is input from AV control unit. • The image of vehicle rear view is transmitted to front display unit.
Steering switch	• Operations for audio, hands-free phone, voice control and navigation, etc. are possible. • Steering switch signal (operation signal) is output to AV control unit.
Microphone	• Used for hands-free phone operation and voice recognition. • Microphone signal is transmitted to AV control unit. • Power (Microphone VCC) is supplied from AV control unit.
Auxiliary input jacks	Image signal and sound signal of auxiliary input is transmitted to AV control unit.
GPS antenna	GPS signal is received and transmitted to AV control unit.
Antenna base	• An antenna base integrated with radio antenna amp. is adopted. • Radio signal received by rod antenna is amplified and transmitted to AV control unit. • Power (antenna amp. ON signal) is supplied from AV control unit.
USB connector	Image signal*2 and sound signal of USB input is transmitted to AV control unit.
Sonar control unit	• Controlled by AV communication transmitted from AV control unit. • Trouble diagnosis is supported with CONSULT-III (K-LINE).

• *1: Without around view monitor

• *2: Image signals cannot be received from iPod®.

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Diagnosis Description

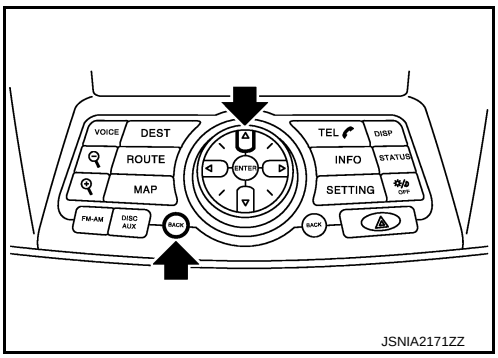
INFOID:0000000005191824

MULTIFUNCTION SWITCH AND PRESET SWITCH SELF-DIAGNOSIS FUNCTION

The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

Self-diagnosis Mode

- Press the “BACK” switch and the “UP” switch of the 8-direction switches within 10 seconds after turning the ignition switch from OFF to ACC and hold them for 3 seconds or more. Then the buzzer sounds, all indicators of the preset switch illuminate, and the self-diagnosis mode starts.
- The continuity of each switch at the ON position can be checked by pressing the switch. The buzzer sounds if the switch is normal.
  NOTE:
  The hazard switch and disk eject switch cannot be checked.



Finishing Self-diagnosis Mode

Self-diagnosis mode is canceled when turning the ignition switch OFF.

MULTI AV SYSTEM ON BOARD DIAGNOSIS FUNCTION

- The AV control unit diagnosis function starts up with multifunction switch operation and the AV control unit performs a diagnosis for each unit in the system during the on board diagnosis.
- Perform a CONSULT-III diagnosis if the on board diagnosis does not start, e.g., the screen does not display anything, the multifunction switch does not function, etc.

ON BOARD DIAGNOSIS

Description

- The trouble diagnosis function has a self-diagnosis mode for conducting trouble diagnosis automatically and a confirmation/adjustment mode for operating manually.
- The self-diagnosis mode performs diagnoses on the AV control unit, connections between system components as well as connections between AV control unit and GPS antenna. Then it displays the diagnosis results on the display.
- The confirmation/adjustment mode allows the technician to check, modify or adjust the vehicle signals and set values, as well as to monitor the system error records and system communication status. The checking, modifying or adjusting generally require human intervention and judgment (the system cannot make judgment automatically).

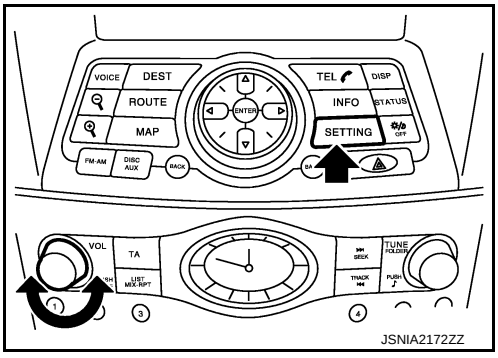
On Board Diagnosis Item

Mode	Description
Self Diagnosis	• AV control unit diagnosis. • Diagnoses the connections across system components, between AV control unit and GPS antenna.

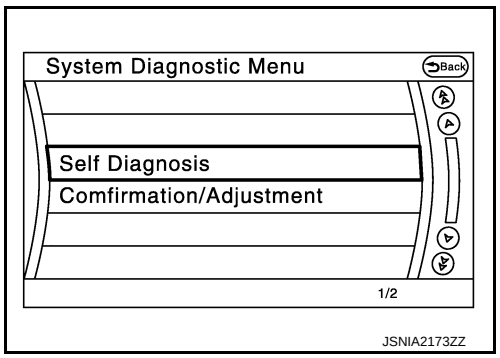
Mode			Description
Confirmation/ Adjustment	Display Diagnosis		The following check functions are available: color tone check by color bar display and white display, light and shade check by gray scale display and touch panel calibration response check.
	Vehicle Signals		Diagnosis of signals can be performed for vehicle speed, parking brake, lights, ignition, reverse, side view switch and room lamp.
	Climate Control		Start auto air conditioner system self-diagnosis.
	Navigation	Steering Angle Adjustment	When there is a difference between the actual turning angle and the vehicle mark turning angle, it can be adjusted.
		Speed Calibration	When there is a difference between the current location mark and the actual location, it can be adjusted.
	Error History		The system malfunction and the frequency when occurring in the past are displayed. When the malfunctioning item is selected, the time and place that the selected malfunction last occurred are displayed.
	Synchronizer FES Clock		–
	Speaker Test		The connection of a speaker can be confirmed by test tone.
	Vehicle CAN Diagnosis		The transmitting/receiving of CAN communication can be monitored.
	AV COMM Diagnosis		The communication condition of each unit of Multi AV system can be monitored.
	Hands-free Phone		The received volume adjustment of hands-free phone, microphone speaker check, and erase memory can be performed.
	Camera Cont.	With rear view monitor	The four functions of “Correct Draw Line of Rear view Camera”, “Alter/ Confirm Configuration”, “Reset Configuration” and “Camera Syst Type” are available.
		With around view monitor	It can perform the confirmation of a signal connection to around view monitor control unit, the calibration of each camera, Correct Draw Line of Camera Image, and Fine Tuning of Birds-Eye View.
	Delete Unit Connection Log		Erase the connection history of unit and error history.
	Initialize Settings		Initializes the AV control unit memory.
	Version Information		Version information of the AV control unit is displayed.

STARTING PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “SETTING” button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   - Shifting from current screen to previous screen is performed by pressing “BACK” button.



4. The trouble diagnosis initial screen is displayed, and then the items of “Self Diagnosis” and “Confirmation/Adjustment” can be selected.



SELF-DIAGNOSIS MODE

1. Start the self-diagnosis function and select “Self Diagnosis”.
- Self-diagnosis subdivision screen is displayed, and the self-diagnosis mode starts.
- The bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis.

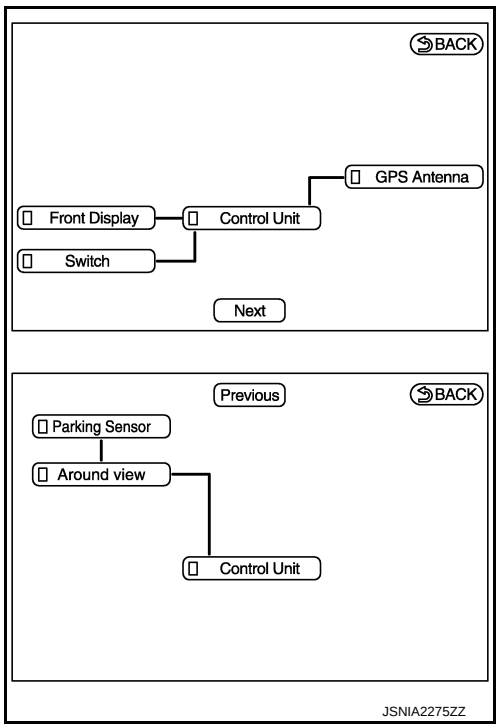
2. Diagnosis results are displayed after the self-diagnosis is completed. The unit names and the connection lines are color-coded according to the diagnostic results.

Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction Note	Red	Green

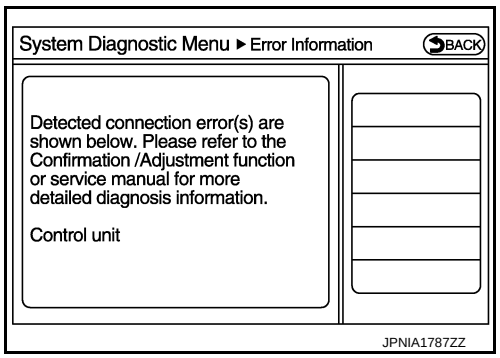
NOTE:

Control unit (AV control unit) is displayed in red.

- Replace AV control unit if “Self-Diagnosis did not run because of a control unit malfunction” is indicated. The symptom is AV control unit internal error. Refer to AV-745, "Exploded View".
- If multiple errors occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > gray.



- The comments of the self-diagnosis results can be viewed with a component in the diagnosis result screen.



Detection Range of Self-diagnosis Mode

- The self-diagnosis mode allows the technician to diagnose the connection in the communication line between AV control unit and each unit and the internal operation of the AV control unit.
- Because the start condition of diagnosis function is a switch operation, the on board diagnosis function cannot be started up if any malfunction is detected in the communication circuit between AV control unit and multifunction switch.

SELF-DIAGNOSIS RESULTS

Check the applicable display at the following table, and then repair the malfunctioning parts.

Only Unit Part Is Displayed In Red.

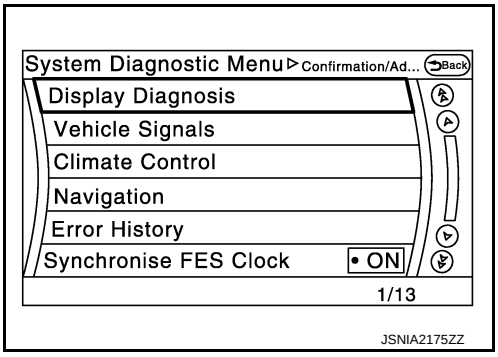
Screen switch	Description	Possible malfunction location / Action to take
Control Unit	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.

A Connecting Cable Between Units Is Displayed In Yellow.

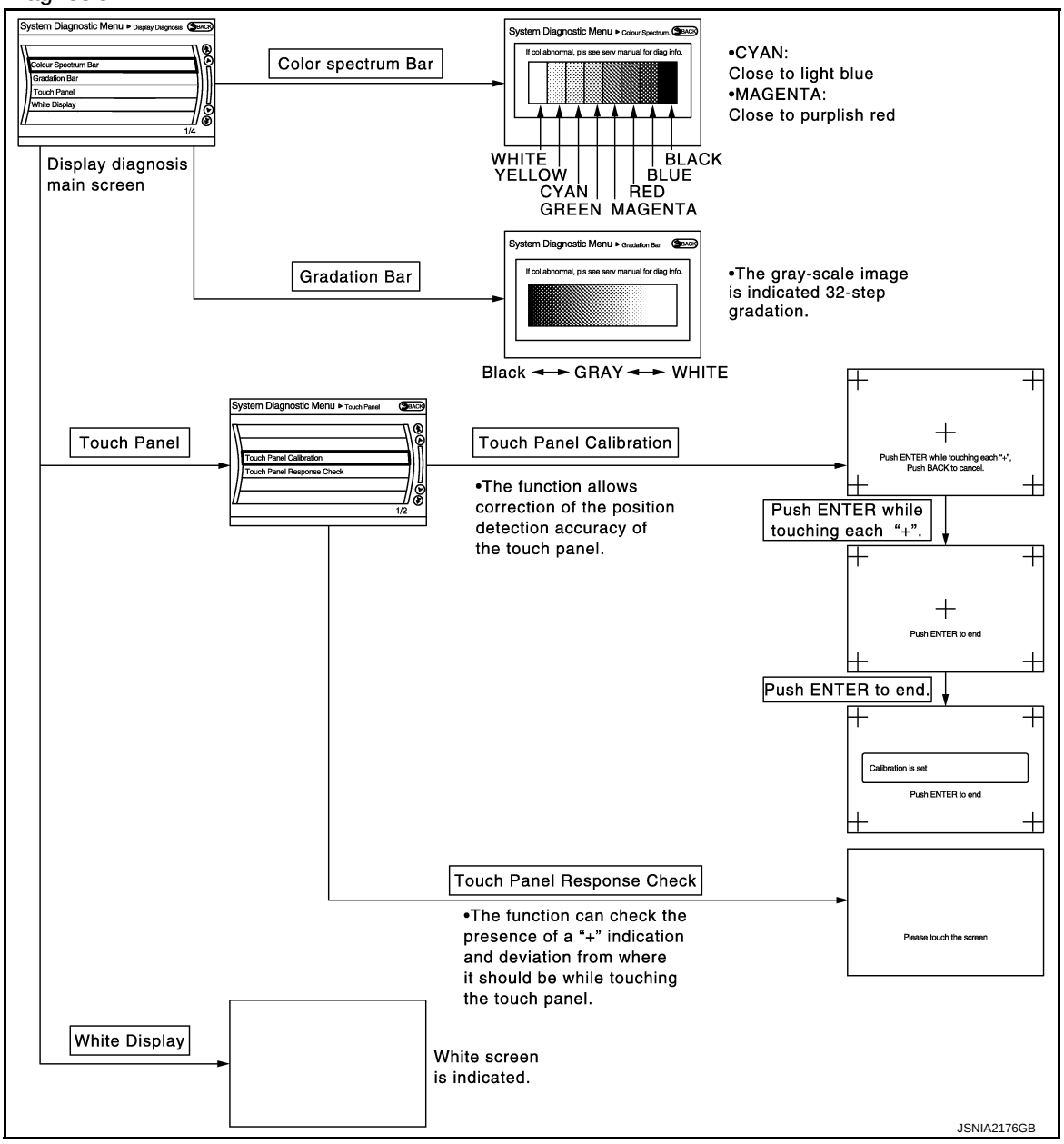
Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control unit ⇔ Front Display	Malfunction is detected in serial communication circuits between AV control unit and front display unit.	Serial communication circuits between AV control unit and front display unit.
Control unit ⇔ GPS Antenna	GPS antenna connection malfunctions detected.	GPS antenna
Control unit ⇔ Around view	When either one of the following items are detected: • around view monitor control unit power supply and ground circuits are malfunctioning. • AV communication circuits between around view monitor control unit and AV control unit are malfunctioning.	• Around view monitor control unit power supply and ground circuits. • AV communication circuits between around view monitor control unit and AV control unit.
Around view ⇔ Parking sensor	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between AV control unit and sonar control unit.

CONFIRMATION/ADJUSTMENT MODE

1. Start the diagnosis function and select “Confirmation/Adjustment”. The confirmation/adjustment mode indicates where each item can be checked or adjusted.
2. Select each switch on the “Confirmation/Adjustment Mode” screen to display the relevant trouble diagnosis screen. Press the “Back” switch to return to the initial Confirmation/Adjustment Mode screen.

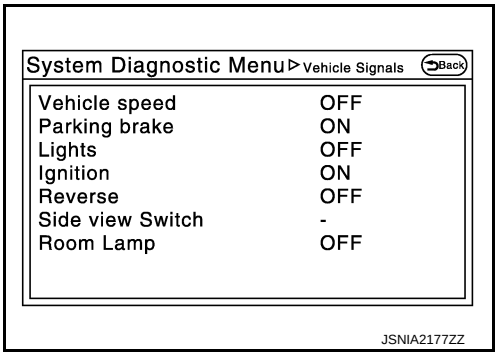


Display Diagnosis



Vehicle Signals

A comparison check can be made of each actual vehicle signal and the signals recognized by the system.

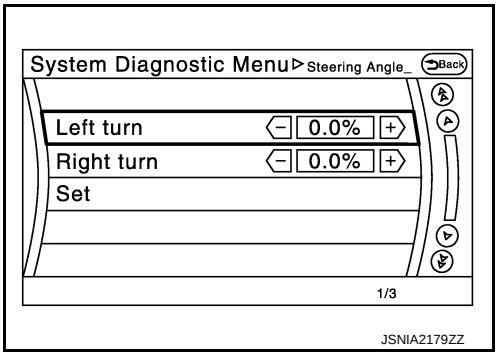


Diagnosis item	Display	Vehicle status	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
Parking brake	ON	Parking brake is applied.	
	OFF	Parking brake is released.	
Lights	ON	Light switch ON	—
	OFF	Light switch OFF	
Ignition	ON	Ignition switch ON	—
	OFF	Ignition switch in ACC position	
Reverse	ON	Shift the selector lever to “R” position	Changes in indication may be delayed. This is normal.
	OFF	Shift the selector lever other than “R” position	
SIDE VIEW SW	—	—	This item is displayed, but cannot be monitored.
ROOM LAMP*	ON	5 seconds after opening any door.	Check 10 seconds after closing all doors.
	OFF	Except for above.	

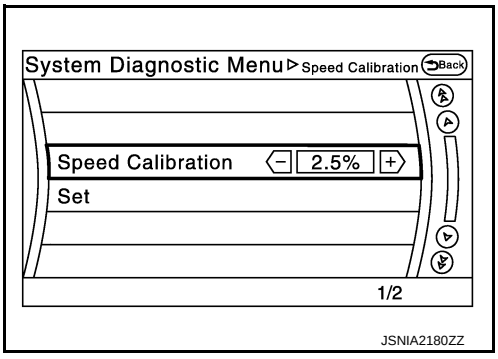
*:For vehicles without front driver door switch signal circuit, the ON/OFF indication is fixed to off.

Climate Control
Refer to “HEATER & AIR CONDITIONING CONTROL SYSTEM” for details.

Navigation
STEERING ANGLE ADJUSTMENT
The steering angle output value detected with the gyroscope is adjusted.



SPEED CALIBRATION
During normal driving, distance error caused by tire wear and tire pressure change is automatically adjusted for by the automatic distance correction function. This function, on the other hand, is for immediate adjustment, in cases such as driving with tire chain fitted on tires.



Error History
The self-diagnosis results are judged depending on whether any error occurs from when “Self-diagnosis” is selected until the self-diagnosis results are displayed.
However, the diagnosis results are judged normal if an error has occurred before the ignition switch is turned ON and then no error has occurred until the self-diagnosis start. Check the “Error Record” to detect any error that may have occurred before the self-diagnosis start because of this situation.
The error record displays the time and place of the most recent occurrence of that error. However, take note of the following points.

- If there is a malfunction with the GPS antenna circuit board in the AV control unit, the correct date and time of occurrence may not be able to be displayed.
- Place of the error occurrence is represented by the position of the current location mark at the time an error occurred. If current location mark has deviated from the correct position, then the place of the error occurrence cannot be located correctly.
- The frequency of occurrence is displayed in a count up manner. The actual count up method differs depending on the error item.

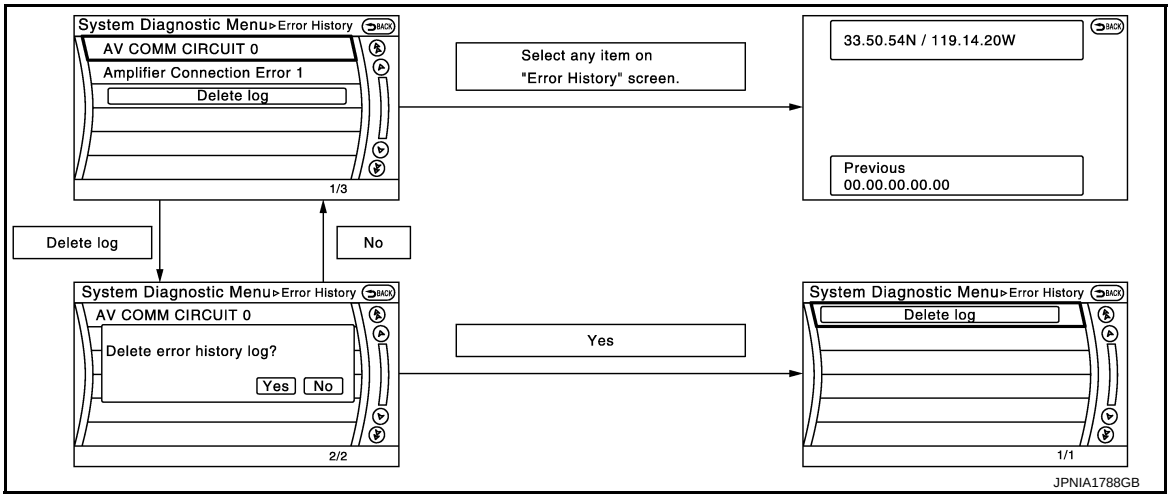
Count up method A

- The counter resets to 0 if an error occurs when IGN switch is turned ON. The counter increases by 1 if the condition is normal at a next IGN ON cycle.
- The counter upper limit is 39. Any counts exceeding 39 are ignored.“ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT-III.

Count up method B

- The counter increases by 1 if an error occurs when IGN switch is ON. The counter will not decrease even if the condition is normal at the next IGN ON cycle.
- The counter upper limit is 50. Any counts exceeding 50 are ignored. “ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT-III.

Display type of occurrence frequency	Error history display item
Count up method A	CAN communication line, control unit (CAN), AV communication line, control unit (AV)
Count up method B	Other than the above



Error item

Some error items may be displayed simultaneously according to the cause. If some error items are displayed simultaneously, the detection of the cause can be performed by the combination of display items

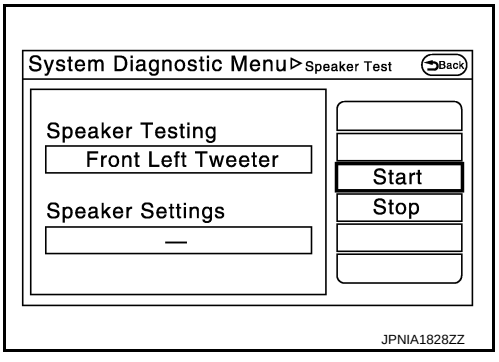
Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT	CAN communication malfunction is detected.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-571, "CONSULT - III Function (MULTI AV)".

Error item	Description	Possible malfunction factor/Action to take
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	
FLASH-ROM Error Of Control Unit	AV control unit malfunction is detected.	
Connection Of Gyro		
Connection of G Sensor		
CAN Controller Memory Error		
Bluetooth Module Connection Error		
Sub CPU Connection Error		
iPod authentification chip error		
Audio connection error		
DSP Connection Error	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
DSP Communication Error		
HDD Connection Error	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
HDD Read Error		
HDD Write Error		
HDD Communication Error		
HDD Access Error		
GPS Communication Error	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.
GPS ROM Error		
GPS RAM Error		
GPS RTC Error		
Unfinished configuration	The writing of configuration data is incomplete.	Write configuration data with CONSULT-III.
USB Controller Communication Error	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.
DVD Mechanism Communication Error	AV control unit malfunction is detected.	• If DVD can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
Steer. Angle Sensor Calibration	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.
Front Display Connection Error	When either one of the following items are detected: • front display unit power supply and ground circuits malfunction is detected. • malfunction is detected in communication circuits between AV control unit and front display unit.	• front display unit power supply and ground circuits. • Communication circuits between AV control unit and front display unit.
USB electric current Error	Detection of overcurrent in USB connector.	Check USB harness between the AV control unit and USB connector.
GPS Antenna Error	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.

Error item	Description	Possible malfunction factor/Action to take
• AV COMM CIRCUIT • Sonar Connection Error	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between AV control unit and sonar control unit.
• AV COMM CIRCUIT • Switches Connection Error	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT • AVM Connection Error	When either one of the following items are detected: • around view monitor control unit power supply and ground circuits are malfunctioning. • AV communication circuits between multifunction switch and around view monitor control unit are malfunctioning.	• Around view monitor control unit power supply and ground circuits. • AV communication circuits between multifunction switch and around view monitor control unit.
• AV COMM CIRCUIT • AVM Sonar Connection Error	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between AV control unit and sonar control unit.
• AV COMM CIRCUIT • Switches Connection Error • Sonar Connection Error	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT • Switches Connection Error • AVM Connection Error	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

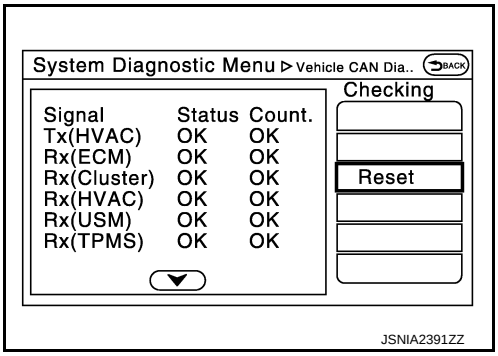
Speaker Test

Select “SPEAKER DIAGNOSIS” to display the Speaker Diagnosis screen. Press “Start” to generate a test tone in a speaker. Press “Start” to generate a test tone in the next speaker. Press “Stop” to stop the test tones.



Vehicle CAN Diagnosis

- CAN communication status and error counter is displayed.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if “Reset” is pressed.

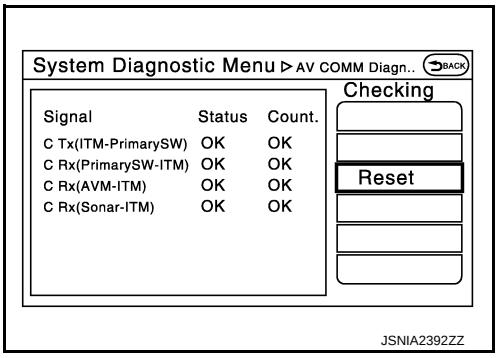


Items	Display (Current)	Malfunction counter (Past)
Tx(HVAC)	OK / ???	OK / 0 – 39
Rx(ECM)	OK / ???	OK / 0 – 39
Rx(Cluster)	OK / ???	OK / 0 – 39
Rx(HVAC)	OK / ???	OK / 0 – 39
Rx(USM)	OK / ???	OK / 0 – 39
Rx(TPMS)	OK / ???	OK / 0 – 39
Rx(STRG)	OK / ???	OK / 0 – 39

NOTE:
“???” indicates UNKWN.

AV COMM Diagnosis

- Displays the communication status between AV control unit (master unit) and each unit.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if “Reset” is pressed.



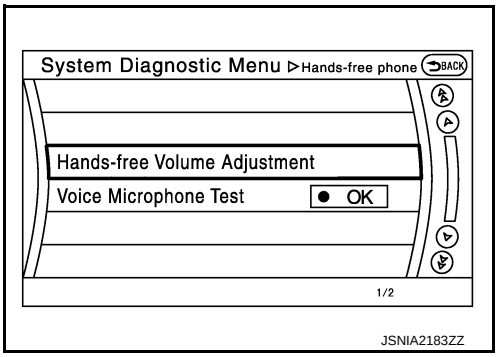
Items	Status (Current)	Counter (Past)
C Tx(ITM–PrimarySW)	OK / ???	OK / 0 – 39
C Rx(PrimarySW–ITM)	OK / ???	OK / 0 – 39
C Rx(AVM–ITM)*	OK / ???	OK / 0 – 39
C Rx(Sonar–ITM)	OK / ???	OK / 0 – 39

*: With around view monitor

NOTE:
“???” indicates UNKWN

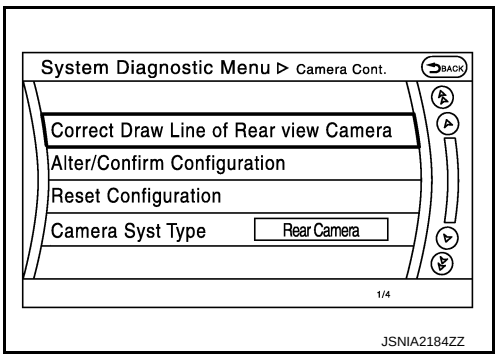
Hands-Free Phone

The hands-free phone reception volume adjustment and microphone and speaker test functions are also available.



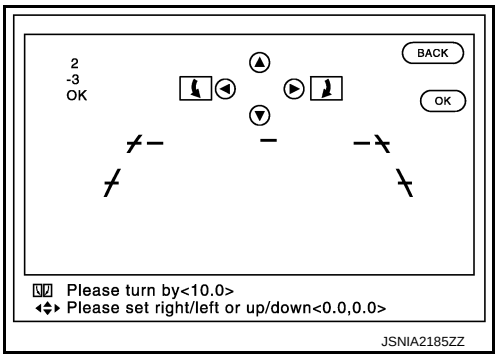
Camera Cont. (With rear view monitor)

The four functions of “Correct Draw Line of Rear view Camera”, “Alter/Confirm Configuration”, “Reset Configuration” and “Camera Syst Type” are available.



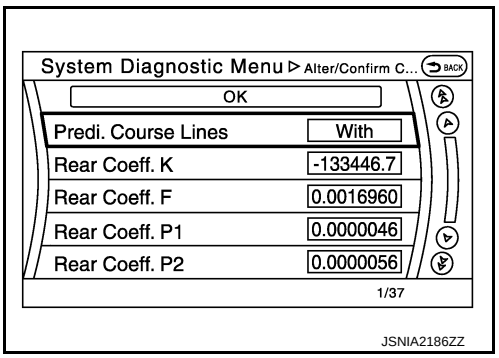
Correct Draw Line of Rear view Camera

- Use this mode to adjust the guide line display position of the rear view monitor if necessary after removing the rear view monitor camera.



Alter/Confirm Configuration

- Configuration stored in the AV control unit can be checked and modified.

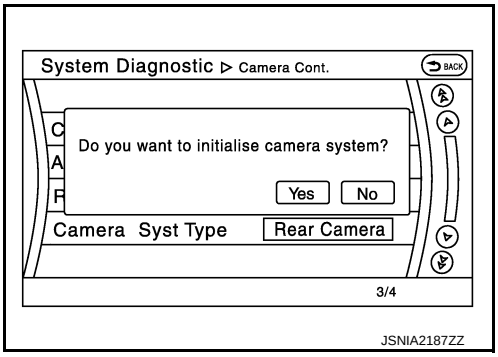


Configuration list

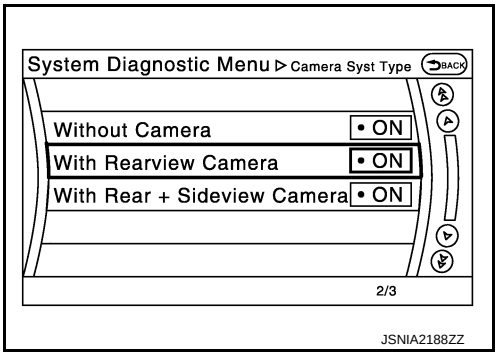
Setting item	Setting	Setting item	Setting
Predi. Course Lines	With	Wheelbase	2.8000000
Rear Coeff. K	–133446.7	Total Length	0.0000000
Rear Coeff. F	0.0016960	Steering Gear Ratio	21.276596
Rear Coeff. P1	0.0000046	Side Coeff. K	0.0000000
Rear Coeff. P2	0.0000056	Side Coeff. F	0.0000000
Rear Coeff. C1	823.00000	Side Coeff. P1	0.0000000
Rear Coeff. C2	480.00000	Side Coeff. P2	0.0000000
Rear Coeff. D1	800.00000	Side Coeff. C1	0.0000000
Rear Coeff. D2	494.00000	Side Coeff. C2	0.0000000
Car Width	1.8029000	Side Coeff. D1	0.0000000
Rear Offset	0.2116000	Side Coeff. D2	0.0000000
Rear Height	0.9106300	Side Offset	0.0000000
Rear L/R Angle	0.0000000	Overall Height	0.0000000
Rear Up/Dn Angle	48.740001	Side L/R Angle	0.0000000

Setting item	Setting	Setting item	Setting
Rear Roll Angle	0.0000000	Side Up/Dn Angle	0.0000000
Bumper Rear Dist.	0.1280900	Side Roll Angle	0.0000000
Bumper Rear Ax Dist	0.9538000	Side Front End Dist	0.0000000
Steer. Max Angle	641.70214	Total Width	0.0000000
Min. Turning Red.	5.6999998	—	—

Reset Configuration
- Configuration stored in the AV control unit can be initialized.

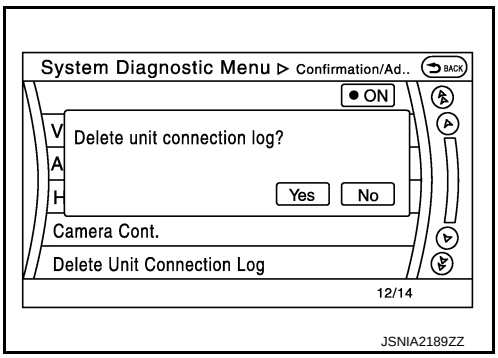


Camera Syst Type
- Type of camera system is selectable.



Camera Cont. (With around view monitor)
Refer to AV-575, "Diagnosis Description".

Delete Unit Connection Log
Deletes any unit connection records and error records from the AV control unit memory. (Clear the records of the unit that has been removed.)

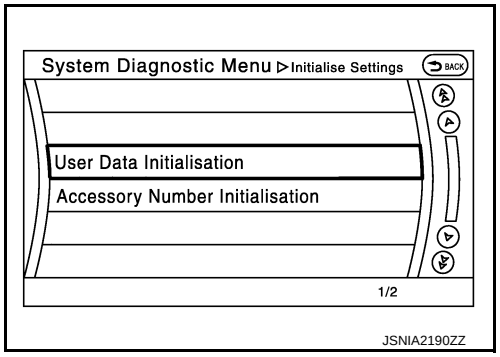


Initialize Settings

"User Data Initialization" and "Accessory Number Initialization" are possible.

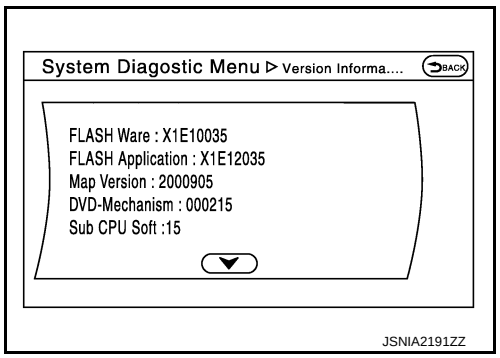
CAUTION:

- **Never perform Accessory Number Initialization except when configuration is unsuccessful.**
- **Accessory Number Initialization requires configuration. For details, refer to AV-534, "CONFIGURATION (AV CONTROL UNIT) : Description".**



Version Information

Version information of the AV control unit is displayed.



CONSULT - III Function (MULTI AV)

INFOID:0000000005191825

CONSULT-III FUNCTIONS

CONSULT-III performs the following functions via the communication with the AV control unit.

Diagnosis mode	Description
Ecu Identification	The part number of AV control unit can be checked.
Self Diagnostic Result	Performs a diagnosis on the AV control unit and a connection diagnosis for the communication circuit of the Multi AV system, and displays the current and past malfunctions collectively.
Data Monitor	The diagnosis of vehicle signal that is input to the AV control unit can be performed.
Work Support	Steering angle sensor can be adjusted.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing AV control unit.

AV COMMUNICATION

When "AV communication" of "CAN Diag Support Monitor" is selected, the following function will be performed.

AV communication	AV&NAVI C/U	Displays the communication status from AV control unit to each unit as well as the error counter.
	AUDIO	Displays the AV control unit communication status and the error counter.

ECU IDENTIFICATION

The part number of AV control unit is displayed.

SELF DIAGNOSIS RESULT

- In CONSULT-III self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates "CRNT". The past malfunction indicates "PAST".
- The timing is displayed as "0" if any of the error codes [U1000], [U1010], [U1300] and [U1310] is detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.

Self-diagnosis Results Display Item

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detected.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-580, "Diagnosis Procedure".
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	
Cont Unit [U1200]	AV control unit malfunction is detected.	
GYRO NO CONN [U1201]		
G-SENSOR NO CONN [U1202]		
CAN CONT [U1216]		
BLUETOOTH MODULE [U1217]		
SUB CPU CONN [U1228]		
iPod CERTIFICATION [U1229]		
Built-in AUDIO CONN [U122E]		
HDD CONN [U1218]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
HDD READ [U1219]		
HDD WRITE [U121A]		
HDD COMM [U121B]		
HDD ACCESS [U121C]		
GPS COMM [U1204]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.
GPS ROM [U1205]		
GPS RAM [U1206]		
GPS RTC [U1207]		
USB CONTROLLER [U1225]	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.
DSP CONN [U121D]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
DSP COMM [U121E]		
DVD COMM [U1227]	AV control unit malfunction is detected.	• If DVD can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
CONFIG UNFINISH [U122A]	The writing of configuration data is incomplete.	Write configuration data with CONSULT-III.
ST ANGLE SEN CALIB [U1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.
FRONT DISP CONN [U1243]	When either one of the following items are detected: • front display unit power supply and ground circuits malfunction is detected. • communication circuits between AV control unit and front display unit.	• front display unit power supply and ground circuits. • Communication circuits between AV control unit and AV front display unit.
GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.

Error item	Description	Possible malfunction factor/Action to take
USB OVERCURRENT [U1263]	Detection of overcurrent in USB connecter.	Check USB harness between the AV control unit and USB connector.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT [U1300] • AROUND CAMERA CONN [U125B]	When either one of the following items are detected: • around view monitor control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and around view monitor control unit are malfunctioning.	• Around view monitor control unit power supply and ground circuits. • AV communication circuits between AV control unit and around view monitor control unit.
• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between AV control unit and sonar control unit.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • SONAR CONN [U125C]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • AROUND CAMERA CONN [U125B]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

DATA MONITOR

ALL SIGNALS

- Displays the status of the following vehicle signals inputted into the AV control unit.
- For each signal, actual signal can be compared with the condition recognized on the system.

Display Item	Display	Vehicle status	Remarks
VHCL SPD SIG	On	Vehicle speed >0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed =0 km/h (0 MPH)	
PKB SIG	On	Parking brake is applied.	
	Off	Parking brake is released.	
ILLUM SIG	On	Block the light beam from the auto light optical sensor when the light SW is ON.	—
	Off	Expose the auto light optical sensor to light when the light SW is OFF or ON.	
IGN SIG	On	Ignition switch ON	
	Off	Ignition switch in ACC position	
REV SIG	On	Selector lever in R position	Changes in indication may be delayed. This is normal.
	Off	Selector lever in any position other than R	
SIDE VIEW SW	Off	This item is displayed, but cannot be monitored.	—

Display Item	Display	Vehicle status	Remarks
ROOM LAMP*	On	5 seconds after opening any door.	Check 10 seconds after closing all doors.
	Off	Except for above.	

*:For vehicles without front driver door switch signal circuit, the ON/OFF indication is fixed to off.

SELECTION FROM MENU

Allows the technician to select which vehicle signals should be displayed and displays the status of the selected vehicle signals.

Item to be selected	Description
VHCL SPD SIG	The same as when “ALL SIGNALS” is selected.
PKB SIG	
ILLUM SIG	
IGN SIG	
REV SIG	
SIDE VIEW SW	
ROOM LAMP	

WORK SUPPORT

Adjusts the neutral position of the steering angle sensor.

CAUTION:

For vehicles with ESP, adjust the steering angle sensor neutral position on the ABS actuator control unit side.

Item	Description
ST ANGLE SENSOR ADJUSTMENT	Adjusts the neutral position of the steering angle sensor.

CONFIGURATION

Configuration has three functions as follows.

Function	Description
READ CONFIGURATION	• Reads the vehicle configuration of current AV control unit. • Saves the read vehicle configuration.
WRITE CONFIGURATION-Manual selection	Writes the vehicle configuration with manual selection.
WRITE CONFIGURATION-Config file	Writes the vehicle configuration with saved data.

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

Diagnosis Description

INFOID:0000000005202046

The diagnosis function of around view monitor control unit is displayed when selecting “Camera Cont.” of Confirmation/Adjustment mode in the multi AV system.

Around view monitor control unit diagnosis item

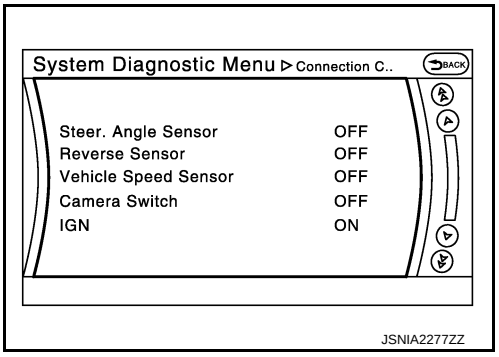
AV control unit Confirmation/Adjustment mode			Function
Camera Cont.	Connection Confirmation		The status of signals input to around view monitor control unit can be checked.
	Calibrating Camera Image	Rear Camera	Performs the calibration of rear camera.
		Pass-Side Camera	Performs the calibration of side camera LH.
		Front Camera	Performs the calibration of front camera.
		Dr-Side Camera	Performs the calibration of side camera.
		Initialize Camera Image Calibration*	The calibration can be initialized to NISSAN factory shipment condition.
	Fine Tuning of Birds-Eye View		• The confirmation and adjustment of the difference between each camera can be performed. • The system changes to the ZOOM function by the operation of shift and the ZOOM ratio of each camera can be changed.
	Correct Draw Line of Wide View	Rear-Wide View	The position of rear wide view guideline can be changed.

CAUTION:

***: Never perform other operations for approximately 10 seconds after performing "Initialize Camera Image Calibration".**

Connection Confirmation

The status of signals inputted to around view monitor control unit can be checked.



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Connection Confirmation item list

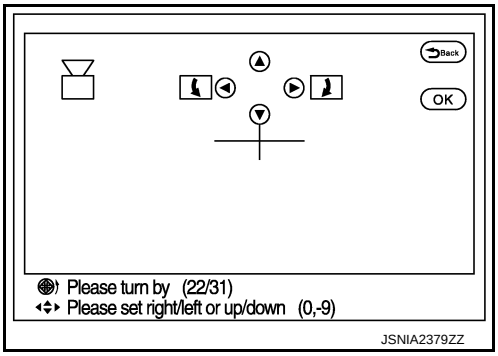
Diagnosis item	Display	Description
Steer. Angle Sensor	ON/OFF	• Input status of steering angle sensor is displayed by ON/OFF. • When all of steering signals 1, 2, and 3 are input, it is turned ON. It remains ON until connection confirmation mode is stopped.
Reverse Sensor	ON/OFF	Input status of reverse signal inputted to around view monitor control unit is displayed by ON/OFF in real time.
Vehicle Speed Sensor	ON/OFF	• Input status of vehicle speed signal inputted to around view monitor control unit is displayed by ON/OFF. • When the vehicle speed signal is input, it is turned ON. It remains ON until connection confirmation mode is stopped.
Camera Switch	ON/OFF	• The status of camera switch signal received via AV communication from NAVI control unit is displayed by ON/OFF. • When the camera switch signal is received once, it is turned ON. It remains ON until connection confirmation mode is stopped.
IGN	ON/OFF	Input status of ignition signal inputted to around view monitor control unit is displayed by ON/OFF in real time.

Diagnosis item	Display	Description
ILL	ON/OFF	Input status of illumination signal inputted to around view monitor control unit is displayed by ON/OFF in real time.
Type of Steer. Angle Sensor	Abslt.	The input type of steering angle sensor is displayed. (“Abslt.” is displayed on this model.)
Type of Steer. Gear ratio	1	The type of steering gear ratio is displayed. (“1” is displayed on this model.)
Left or Right Steer.	Right/Left	The steering position is displayed.
Rear Camera Image Output signal	OK/NG	The input status of rear camera image signal is displayed by OK/NG in real time.
Rear Camera COMM Status	OK/NG	The communication status with rear camera is displayed by OK/NG in real time.
Rear Camera COMM Line	OK/NG	The status of communication line with rear camera is displayed by OK/NG in real time.
Front Camera Image Output signal	OK/NG	The input status of front camera image signal is displayed by OK/NG in real time.
Front Camera COMM Status	OK/NG	The communication status with front camera is displayed by OK/NG in real time.
Front Camera COMM Line	OK/NG	The status of communication line with front camera is displayed by OK/NG in real time.
Pass-Side Camera Image Output signal	OK/NG	The input status of side camera RH image signal is displayed by OK/NG in real time.
Pass-Side Camera COMM Status	OK/NG	The communication status with side camera RH is displayed by OK/NG in real time.
Pass-Side Camera COMM Line	OK/NG	The status of communication line with side camera RH is displayed by OK/NG in real time.
Dr-Side Camera Image Output signal	OK/NG	The input status of side camera LH image signal is displayed by OK/NG in real time.
Dr-Side Camera COMM Status	OK/NG	The communication status with side camera LH is displayed by OK/NG in real time.
Dr-Side Camera COMM Line	OK/NG	The status of communication line with side camera LH is displayed by OK/NG in real time.

Calibrating Camera Image

- Perform the calibration of camera image caused by the incorrect mounting position of each camera, etc. Always perform calibration after performing the following work.
- When each camera or each camera mount (door mirror, front grille, etc.) is removed
- When replacing around view monitor control unit
- When performing the calibration initialization, it can be set to the NISSAN factory shipment condition.

Refer to AV-536, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement" for the calibration procedure.



Adjustment range

Rotating direction : 31 patterns (16 on the center)

Upper/lower direction : –99 – 99

Left/right direction : –99 – 99

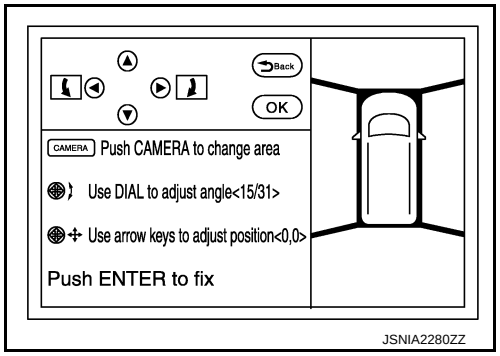
Calibrating Camera Image item

Items	Description
Rear Camera	Performs the calibration of rear camera.
Pass-Side Camera	Performs the calibration of side camera RH.
Front Camera	Performs the calibration of front camera.
Dr-Side Camera	Performs the calibration of side camera LH.
Initialize Camera Image Calibration*	The calibration can be initialized to the factory shipment setting.

CAUTION:
***: Never perform other operations for approximately 10 seconds after performing "Initialize Camera Image Calibration".**

Fine Tuning of Birds-Eye View

- The fine adjustment function of camera calibration can check and adjust the difference between each camera.
- Fine adjustments can be performed for each camera. Move the “+”-mark to select the camera by pressing the “CAMERA” switch.
- Perform the adjustment with the center dial and upper/lower/left/right switches.

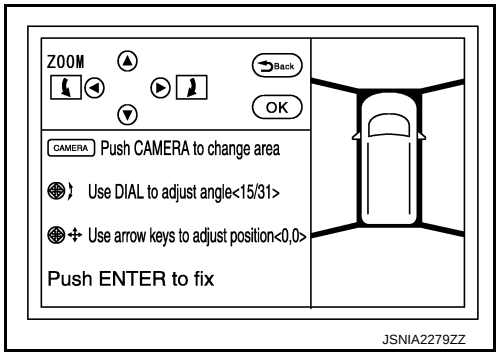


CAUTION:
Operate the center dial slowly because the changing of the screen takes approximately 1 second.
NOTE:
- It can be initialized to the NISSAN factory shipment setting with “Initialize Camera Image Calibration” of “Calibrating Camera Image”.
- The adjustment value is cancelled in this mode by performing “Initialize Camera Image Calibration”.

Adjustment range	
Rotating direction	: 31 patterns (16 on the center)
Upper/lower direction	: –99 – 99
Left/right direction	: –99 – 99

ZOOM function

- The ZOOM ratio of camera can be changed when calibrating the camera.
- It shifts to ZOOM function mode by shifting the selector lever to a position other than the “R” position → “R” position → other than “R” position in the “Fine Tuning of Birds-Eye View” mode.
- The changing of ZOOM ratio can be performed for each camera. Move the “+”-mark to select the camera by pressing “CAMERA” switch and press the left/right switch to change the ZOOM ratio.

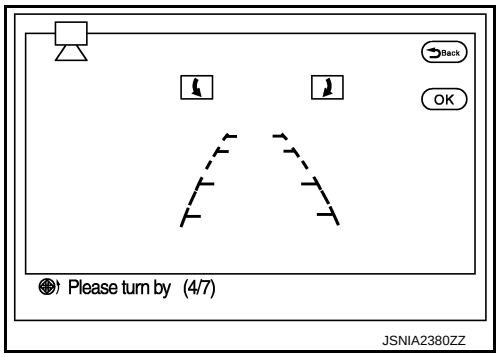


NOTE:
- When the position is not correct in “Fine Tuning of Birds-Eye View” mode, use this "ZOOM" function to adjust it.
- If this function is used, always adjust the upper/lower/left/right position again on the “Fine Tuning of Birds-Eye View” screen.

Correct Draw Line of Wide View

The display position of guiding lines when displayed on the rear-wide view can be changed.

Adjustment range	
Rotating direction	: 7 patterns



Correct Draw Line of Camera Image item

Items	Description
Rear-Wide View	The position of rear wide view guideline can be changed.

DIAGNOSIS SYSTEM [SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)]

CONSULT-III Function (SONAR)

INFOID:0000000005202047

DESCRIPTION

CONSULT-III can display each diagnostic item using the diagnostic test modes shown as follows:

Test mode	Function
Ecu Identification	Sonar control unit part number can be read.
Self Diagnostic Result	Sonar control unit checks the conditions and displays memorized error.
Data Monitor	Sonar control unit input/output data in real time.
Active Test	Gives a drive signal to a load to check the operation.
Work support	Changes setting of each function.

ECU IDENTIFICATION

Displays the part number of sonar control unit.

SELF-DIAGNOSTIC RESULTS

For details, refer to AV-683, "DTC Index".

DATA MONITOR

Monitor Item	Display	Description
SONAR OPE	On	Around view monitor is ON. (sonar system is ON)
	Off	Around view monitor is OFF. (sonar system is OFF)
BUZZER OUTPUT	On	Buzzer is output condition.
	Off	Buzzer is not output condition.
CR SEN [FL] CR SEN [FR] CR SEN [RL] CR SEN [RR]	ERROR	When a sensor is abnormal.
	LV.0	When a sensor is not detection.
	LV.2	The distance between the corner sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).
	LV.3	The distance between the corner sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).
	LV.4	The distance between corner sensor and an obstacle less than 40 cm (15.7 in).

ACTIVE TEST

Active test item	Function
BUZZER	This test is able to check buzzer operation.
SONAR SENSOR	This test is able to check each sonar sensor operation.

WORK SUPPORT

Work support item	Function
CORNER SEN DISTANCE SET	Corner sensor warning buzzer distance is adjustable to 4 phases.

CORNER SEN DISTANCE SET

Corner sensor warning buzzer distance can be set to 4 phases as follows.

Warning item	FARTHER	FAR	NORMAL	NEAR
Second warning	70 – 80 cm (27.5 – 31.4 in)	60 – 70 cm (23.6 – 27.5 in)	50 – 60 cm (19.6 – 23.6 in)	40 – 50 cm (15.7 – 19.6 in)

Warning item	FARTHER	FAR	NORMAL	NEAR
Third warning	50 – 70 cm (19.6 – 27.5 in)	40 – 60 cm (15.7 – 23.6 in)	30 – 50 cm (11.8 – 19.6 in)	30 – 40 cm (11.8 – 15.7 in)
Fourth warning	Less than 50 cm (19.6 in)	Less than 40 cm (15.7 in)	Less than 30 cm (11.8 in)	Less than 30 cm (11.8 in)

The default of this model is “FAR”.

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000005191826

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-39, "CAN Communication Signal Chart".

DTC Logic

INFOID:0000000005191827

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Probable malfunction location
U1000	CAN COMM CIRCUIT [U1000]	AV control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

Diagnosis Procedure

INFOID:0000000005191828

1. PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of “MULTI AV”.

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to LAN-29, "Trouble Diagnosis Procedure".
NO >> Refer to GI-34, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

Description

INFOID:0000000005191829

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-745, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191830

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Probable malfunction factor
U1010	CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1200 AV CONTROL UNIT

Description

INFOID:0000000005191831

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-745, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191832

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1200	Cont Unit [U1200]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1201 AV CONTROL UNIT

Description

INFOID:0000000005191833

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-745, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191834

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1201	GYRO NO CONN [U1201]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1202 AV CONTROL UNIT

Description

INFOID:0000000005191835

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-745, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191836

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1202	G-SENSOR NO CONN [U1202]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1204 AV CONTROL UNIT

Description

INFOID:0000000005191837

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191838

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1204	GPS CONN [U1204]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005191839

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-745, "Exploded View".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1205 AV CONTROL UNIT

Description

INFOID:0000000005191840

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191841

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1205	GPS ROM [U1205]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005191842

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer toAV-745, "Exploded View".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1206 AV CONTROL UNIT

Description

INFOID:0000000005191843

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191844

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1206	GPS RAM [U1206]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005191845

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-745, "Exploded View".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1207 AV CONTROL UNIT

Description

INFOID:0000000005191846

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191847

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1207	GPS RTC [U1207]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005191848

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-745, "Exploded View".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1216 AV CONTROL UNIT

Description

INFOID:0000000005191849

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-745, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191850

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1216	CAN CONT [U1216]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1217 AV CONTROL UNIT

Description

INFOID:0000000005191851

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-745, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191852

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1217	BLUETOOTH MODULE [U1217]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1218 AV CONTROL UNIT

Description

INFOID:0000000005191853

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191854

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1218	HDD CONN [U1218]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005191855

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

U1219 AV CONTROL UNIT

Description

INFOID:0000000005191856

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191857

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1219	HDD READ [U1219]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005191858

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

U121A AV CONTROL UNIT

Description

INFOID:0000000005191859

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191860

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121A	HDD WRITE [U121A]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005191861

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

U121B AV CONTROL UNIT

Description

INFOID:0000000005191862

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191863

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121B	HDD COMM [U121B]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005191864

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

U121C AV CONTROL UNIT

Description

INFOID:0000000005191865

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191866

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121C	HDD ACCESS [U121C]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005191867

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

U121D AV CONTROL UNIT

Description

INFOID:0000000005191868

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191869

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121D	DSP CONN [U121D]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005191870

1.CHECK PLAYBACK OF A DISK (CD)

Can a disk (CD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

U121E AV CONTROL UNIT

Description

INFOID:0000000005191871

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191872

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121E	DSP COMM [U121E]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005191873

1.CHECK PLAYBACK OF A DISK (CD)

Can a disk (CD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

U1225 AV CONTROL UNIT

Description

INFOID:0000000005191874

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191875

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1225	USB CONTROLLER [U1225]	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.

U1227 AV CONTROL UNIT

Description

INFOID:0000000005191876

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191877

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1227	DVD COMM [U1227]	AV control unit malfunction is detected.	• If DVD can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000005191878

1.CHECK PLAYBACK OF A DISK (DVD)

Can a disc (DVD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

U1228 AV CONTROL UNIT

Description

INFOID:0000000005191879

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-745, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191880

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1228	SUB CPU CONN [U1228]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1229 AV CONTROL UNIT

Description

INFOID:0000000005191881

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-745, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191882

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1229	iPod CERTIFICATION [U1229]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U122A AV CONTROL UNIT

Description

INFOID:0000000005191883

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191884

DTC	Display contents of CONSULT-III	DTC detection condition	Action to take
U122A	CONFIG UNFINISH [U122A]	The writing of configuration data is incomplete.	Write configuration data with CONSULT-III.

Diagnosis Procedure

INFOID:0000000005191885

1.PERFORM THE SELF-DIAGNOSIS

When U122A is detected, write configuration data with CONSULT-III.

>> Write configuration data with CONSULT-III. Refer to AV-535, "CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement".

U122E AV CONTROL UNIT

Description

INFOID:0000000005191886

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-745, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191887

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U122E	Built-in AUDIO CONN [U122E]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1232 STEERING ANGLE SENSOR

Description

INFOID:0000000005191890

Part name	Description
Steering angle sensor	It is connected to the AV control unit and transmits the steering angle signal via CAN communication.

DTC Logic

INFOID:0000000005191891

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1232	ST ANGLE SEN CALIB [1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.

Diagnosis Procedure

INFOID:0000000005191892

1.ADJUST THE PREDICTIVE COURSE LINE CENTER POSITION OF THE STEERING ANGLE SENSOR

When U1232 is detected, adjust the predictive course line center position of the steering angle sensor.

>> Adjusts the steering angle sensor neutral position on ABS actuator and electrical unit (control unit) side. Refer to BRC-11, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".

U1243 FRONT DISPLAY UNIT

Description

INFOID:0000000005191893

Part name	Description
Front display unit	• Display image is controlled by the serial communication from AV control unit. • RGB digital image signal is input from AV control unit. • Composite image signal is input from AV control unit. • Camera image signal is input from rear view camera. (with rear view monitor) • Camera image signal is input from around view monitor control unit. (with around view monitor) • Touch panel function can be operated for each system by touching a display directly.

DTC Logic

INFOID:0000000005191894

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1243	FRONT DISP CONN [U1243]	When either one of the following items are detected: • front display unit power supply and ground circuit mal-function is detected. • communication circuit between AV control unit and front display unit.	• Front display unit power supply and ground circuit. • Communication circuit between AV control unit and front display unit.

Diagnosis Procedure

INFOID:0000000005191895

1.CHECK FRONT DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check front display unit power supply and ground circuit. Refer to AV-619, "FRONT DISPLAY UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector and AV control unit harness connector.

Front display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M195	9	M210	89	Existed
	10		73	

4. Check continuity between front display unit harness connector and ground.

Front display unit		Ground	Continuity
Connector	Terminals		
M195	9		Not existed
	10		

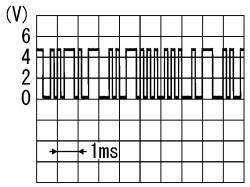
Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK COMMUNICATION SIGNAL

1. Connect front display unit connector and AV control unit connector.

2. Turn ignition switch ON.
3. Check signal between front display unit harness connector and ground.

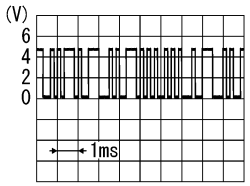
(+)		(–)	Condition	Reference value
Front display unit				
Connector	Terminal			
M195	9	Ground	When adjusting display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

4. CHECK COMMUNICATION SIGNAL

Check signal between front display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Front display unit				
Connector	Terminal			
M195	10	Ground	When adjusting display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace front display unit. Refer to AV-747, "Exploded View".

U1244 GPS ANTENNA

Description

INFOID:0000000005191896

Part name	Description
GPS antenna	GPS signal is received and transmitted to AV control unit.

DTC Logic

INFOID:0000000005191897

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1244	GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.

Diagnosis Procedure

INFOID:0000000005191898

1.GPS ANTENNA CHECK

Visually check GPS antenna and antenna feeder.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Disconnect GPS antenna connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit and ground.

(+)	(–)	Voltage (Approx.)
AV control unit		
Terminal		
153	Ground	5.0 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

U1263 USB

Description

INFOID:0000000005191899

Part name	Description
USB connector	Image signal* and sound signal of USB input is transmitted to AV control unit.

*:Image signals cannot be received from iPod®.

DTC Logic

INFOID:0000000005191900

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1263	USB OVERCURRENT [U1263]	Detection of overcurrent in USB connecter.	Check USB harness between the AV control unit and USB connector.

Diagnosis Procedure

INFOID:0000000005191901

1.CHECK USB HARNESS

Visually check USB harness.

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-745, "Exploded View".
NO >> Replace USB harness.

U1300 AV COMM CIRCUIT

Description

INFOID:0000000005191923

U1300 is indicated when malfunction occurs in communication signal of multi AV system. Indicated simultaneously, without fail, with the malfunction of control units connected to AV control unit with communication line. Determine the possible malfunction cause from the table below.

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
U1300 U125B	• AV COMM CIRCUIT [U1300] • AROUND CAMERA CONN [U125B]	When either one of the following items are detected: • around view monitor control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and around view monitor control unit are malfunctioning.	• Around view monitor control unit power supply and ground circuits. • AV communication circuits between AV control unit and around view monitor control unit.
U1300 U125C	• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between AV control unit and sonar control unit.
U1300 U1240 U125C	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • SONAR CONN [U125C]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.
U1300 U1240 U125B	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • AROUND CAMERA CONN [U125B]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

U1310 AV CONTROL UNIT

Description

INFOID:0000000005191924

Replace the AV control unit if the malfunction occurs constantly. Refer to AV-745, "Exploded View".

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, voice control, navigation, rear view monitor, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function. • It inputs the illumination signals that are required for the display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • Camera power supply is transmitted to rear view camera. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000005191925

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1310	CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace the AV control unit if the malfunction occurs constantly.

B2700 CORNER SENSOR [FL]

Description

INFOID:0000000005212971

Component	Description
CORNER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000005212972

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2700	CORNER SENSOR [FL] [B2700]	Corner sensor (FL) is malfunctioning.	Replace corner sensor (FL).

B2701 SENSOR HARNESS OPEN [CR-FL]

Description

INFOID:0000000005212973

Component	Description
CORNER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000005212974

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2701	SENSOR HARNESS OPEN [CR-FL] [B2701]	Corner sensor (FL) harness circuit is open.	Check corner sensor (FL) circuit.

Diagnosis Procedure

INFOID:0000000005212975

1.CHECK HARNESS CORNER SENSOR (FL) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and corner sensor (FL) connector.
3. Check continuity between sonar control unit harness connector and corner sensor (FL) harness connector.

Sonar control unit		Corner sensor (FL)		Continuity
Connector	Terminal	Connector	Terminal	
M47	3	E154	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	3		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CORNER SENSOR (FL) GROUND CIRCUIT

Check continuity between sonar control unit harness connector and corner sensor (FL) harness connector.

Sonar control unit		Corner sensor (FL)		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	E154	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

B2702 CORNER SENSOR [FR]

Description

INFOID:0000000005212976

Component	Description
CORNER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000005212977

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2702	CORNER SENSOR [FR] [B2702]	Corner sensor (FR) is malfunctioning.	Replace corner sensor (FR).

B2703 SENSOR HARNESS OPEN [CR-FR]

Description

INFOID:0000000005212978

Component	Description
CORNER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000005212979

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2703	SENSOR HARNESS OPEN [CR-FR] [B2703]	Corner sensor (FR) harness circuit is open.	Check corner sensor (FR) circuit.

Diagnosis Procedure

INFOID:0000000005212980

1.CHECK HARNESS CORNER SENSOR (FR) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and corner sensor (FR) connector.
3. Check continuity between sonar control unit harness connector and corner sensor (FR) harness connector.

Sonar control unit		Corner sensor (FR)		Continuity
Connector	Terminal	Connector	Terminal	
M47	4	E152	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	4		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CORNER SENSOR (FR) GROUND CIRCUIT

Check continuity between sonar control unit harness connector and corner sensor (FR) harness connector.

Sonar control unit		Corner sensor (FR)		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	E152	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

B2704 CORNER SENSOR [RL]

Description

INFOID:0000000005212981

Component	Description
CORNER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000005212982

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2704	CORNER SENSOR [RL] [B2704]	Corner sensor (RL) is malfunctioning.	Replace corner sensor (RL).

B2705 SENSOR HARNESS OPEN [CR-RL]

Description

INFOID:0000000005212983

Component	Description
CORNER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000005212984

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2705	SENSOR HARNESS OPEN [CR-RL] [B2705]	Corner sensor (RL) harness circuit is open.	Check corner sensor (RL) circuit.

Diagnosis Procedure

INFOID:0000000005212985

1.CHECK HARNESS CORNER SENSOR (RL) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and corner sensor (RL) connector.
3. Check continuity between sonar control unit harness connector and corner sensor (RL) harness connector.

Sonar control unit		Corner sensor (RL)		Continuity
Connector	Terminal	Connector	Terminal	
M47	5	B259	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	5		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CORNER SENSOR (RL) GROUND CIRCUIT

Check continuity between sonar control unit harness connector and corner sensor (RL) harness connector.

Sonar control unit		Corner sensor (RL)		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	B259	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

B2706 CORNER SENSOR [RR]

Description

INFOID:0000000005212986

Component	Description
CORNER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000005212987

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2706	CORNER SENSOR [RR] [B2706]	Corner sensor (RR) is malfunctioning.	Replace corner sensor (RR).

B2707 SENSOR HARNESS OPEN [CR-RR]

Description

INFOID:0000000005212988

Component	Description
CORNER SENSOR	The obstacle distance is detected. The signal is transmitted to the sonar control unit.

DTC Logic

INFOID:0000000005212989

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2707	SENSOR HARNESS OPEN [CR-RR] [B2707]	Corner sensor (RR) harness circuit is open.	Check corner sensor (RR) circuit.

Diagnosis Procedure

INFOID:0000000005212990

1.CHECK HARNESS CORNER SENSOR (RR) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and corner sensor (RR) connector.
3. Check continuity between sonar control unit harness connector and corner sensor (RR) harness connector.

Sonar control unit		Corner sensor (RR)		Continuity
Connector	Terminal	Connector	Terminal	
M47	6	B256	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	6		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CORNER SENSOR (RR) GROUND CIRCUIT

Check continuity between sonar control unit harness connector and corner sensor (RR) harness connector.

Sonar control unit		Corner sensor (RR)		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	B256	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

POWER SUPPLY AND GROUND CIRCUIT

AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000005191926

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34*1
	74*2
Ignition switch ACC or ON	19

- *1: Gasoline engine models
- *2: Diesel engine models

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M208	19	OFF	Battery voltage
ACC power supply	M208	7	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between AV control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connectors.
3. Check continuity between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M208	20	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

FRONT DISPLAY UNIT

FRONT DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000005191927

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34*1
	74*2
Ignition switch ACC or ON	19

- *1: Gasoline engine models
- *2: Diesel engine models

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between front display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M195	11	OFF	Battery voltage
ACC power supply	M195	23	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between front display unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector.
3. Check continuity between front display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M195	12	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

MULTIFUNCTION SWITCH

MULTIFUNCTION SWITCH : Diagnosis Procedure

INFOID:0000000005191928

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between multifunction switch harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
ACC power supply	M72	3	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between multifunction switch and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect multifunction switch connector.
3. Check continuity between multifunction switch harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M72	1	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

BOSE AMP.

BOSE AMP. : Diagnosis Procedure

INFOID:0000000005191929

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	8

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B42	11	OFF	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between BOSE amp. and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector.
3. Check continuity between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B42	12	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:0000000005212913

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34*1
	74*2
Ignition switch ACC	19

- *1: Gasoline engine models
- *2: Diesel engine models

Is inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUITS

Check voltage between around view monitor control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B46	2	OFF	Battery voltage
ACC power supply	B46	4	ACC	Battery voltage

Is inspection result normal?

YES >> GO TO 3.
NO >> Check harness between around view monitor control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector.
3. Check continuity between around view monitor control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B46	1	OFF	Existed

Is inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : Diagnosis Procedure

INFOID:0000000005212914

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between sonar control unit harness connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M47	13		Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace sonar control unit power supply harness.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector.
3. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	24		Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace sonar control unit ground harness.

RGB DIGITAL IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000005216609

Transmit the image displayed with AV control unit with RGB digital image signal to the front display unit.

Diagnosis Procedure

INFOID:0000000005191930

1.CHECK CONTINUITY RGB DIGITAL IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector and AV control unit harness connector.

Front display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M397	27	M396	157	Existed
	28		158	

4. Check continuity between front display unit harness connector and ground.

Front display unit		Ground	Continuity
Connector	Terminals		
M397	27		Not existed
	28		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB DIGITAL IMAGE SIGNAL

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Front display unit				
Connector	Terminal			
M397	27	Ground	—	3.0 V
	28			

Is the inspection result normal?

YES >> Replace front display unit. Refer to AV-747, "Exploded View".
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

COMPOSITE IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000005191931

AV control unit transmits the playback DVD image signal and AUX image signal to the front display unit.

Diagnosis Procedure

INFOID:0000000005191932

1.CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and front display unit connector.
3. Check continuity between AV control unit harness connector and front display unit harness connector.

AV control unit		Front display unit		Continuity
Connector	Terminal	Connector	Terminal	
M210	68	M195	18	Existed

4. Check continuity between AV control unit harness connector and ground.

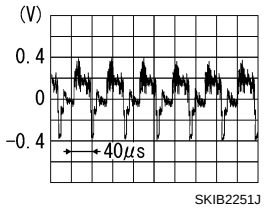
AV control unit		Ground	Continuity
Connector	Terminal		
M210	68		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMPOSITE IMAGE SIGNAL

1. Connect AV control unit connector and front display unit connector.
2. Turn ignition switch ON.
3. Check signal between auxiliary input jacks harness connector and ground.

(+) AV control unit		(–)	Condition	Reference value
Connector	Terminal			
M210	68	Ground	At DVD image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace front display unit. Refer to AV-747, "Exploded View".
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

AUX IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000005191933

- Transmits the image signal of AUX device from auxiliary input jacks to AV control unit.
- AV control unit transmits the image signal that is input to the front display unit.

Diagnosis Procedure

INFOID:0000000005191934

1.CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect auxiliary input jacks connector and AV control unit connector.
3. Check continuity between auxiliary input jacks harness connector and AV control unit harness connector.

Auxiliary input jacks		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M196*1	7	M209	26	Existed
M325*2				

- *1: A/T models
- *2 M/T models

4. Check continuity between auxiliary input jacks harness connector and ground.

Auxiliary input jacks		Ground	Continuity
Connector	Terminal		
M196*1	7		Not existed
M325*2			

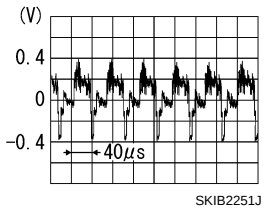
- *1: A/T models
- *2 M/T models

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AUX IMAGE SIGNAL

1. Connect auxiliary input jacks connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between auxiliary input jacks harness connector and ground.

(+)		(–)	Condition	Reference value
Auxiliary input jacks				
Connector	Terminal			
M196*1	7	Ground	At AUX image is displayed.	
M325*2				

SKIB2251J

- *1: A/T models
- *2 M/T models

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-745, "Exploded View".
NO >> Check that there is no malfunction in the external device.

DISK EJECT SIGNAL CIRCUIT

Description

INFOID:0000000005191935

The eject signal is output to AV control unit when the eject switch of multifunction switch is pressed.

Diagnosis Procedure

INFOID:0000000005191936

1.CHECK CONTINUITY DISK EJECT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect multifunction switch connector and AV control unit connector.
3. Check continuity between multifunction switch harness connector and AV control unit harness connector.

Multifunction switch		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M72	14	M209	29	Existed

4. Check continuity between multifunction switch harness connector and ground.

Multifunction switch		Ground	Continuity
Connector	Terminal		
M72	14		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Connect multifunction switch connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M209	29	Ground	Pressing the eject switch	0 V
			Except for above	5.0 V

Is the inspection result normal?

YES >> Replace preset switch. Refer to AV-757, "Exploded View".
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

MODE CHANGE SIGNAL CIRCUIT

Description

INFOID:0000000005214369

- AV control unit transmits the mode change signal to BOSE amp.
- Driver's Audio Stage controls the speaker's output characteristic by BOSE amp. so that the driver's seat is to be the center of sounds.

Diagnosis Procedure

INFOID:0000000005214370

1.CHECK CONTINUITY MODE CHANGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector and AV control unit connector.
3. Check continuity between BOSE amp. harness connector and AV control unit harness connector.

BOSE amp.		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
B41	17	M209	30	Existed

4. Check continuity between BOSE amp. harness connector and ground.

BOSE amp.		Ground	Continuity
Connector	Terminal		
B41	17		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK MODE CHANGE SIGNAL

1. Connect BOSE amp. connector.
2. Turn ignition switch ON.
3. Check signal between BOSE amp. harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
BOSE amp.				
Connector	Terminal			
B41	17	Ground	Driver's Audio Stage ON	0 V
			Driver's Audio Stage OFF	8.5 V

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-745, "Exploded View".
NO >> Replace BOSE amp. Refer to AV-754, "Exploded View".

MICROPHONE SIGNAL CIRCUIT

Description

INFOID:0000000005191937

Supply power from AV control unit to microphone. The microphone transmits the sound/voice to the AV control unit.

Diagnosis Procedure

INFOID:0000000005191938

1.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and microphone connector.
3. Check continuity between AV control unit harness connector and microphone harness connector.

AV control unit		Microphone		Continuity
Connector	Terminals	Connector	Terminals	
M210	71	R17	2	Existed
	72		4	
	87		1	

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminals		
M210	72		Not existed
	87		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE MICROPHONE VCC

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

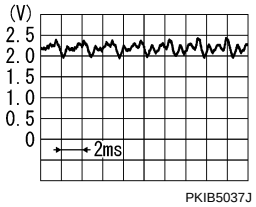
(+)		(–)	Voltage (Approx.)
AV control unit		Ground	
Connector	Terminal		
M210	72		5.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.
2. Check signal between AV control unit harness connector.

(+)		(–)		Condition	Reference value
AV control unit		AV control unit			
Connector	Terminal	Connector	Terminal		
M210	87	M210	71	Give a voice.	

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Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-745, "Exploded View".
NO >> Replace microphone. Refer to AV-761, "Exploded View".

CAMERA IMAGE SIGNAL CIRCUIT (WITH REAR VIEW MONITOR)

Description

INFOID:0000000005191939

- The AV control unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the front display unit when power is supplied from the AV control unit.

Diagnosis Procedure

INFOID:0000000005191940

1.CHECK CONTINUITY CAMERA POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and rear view camera connector.
3. Check continuity between AV control unit harness connector and rear view camera harness connector.

AV control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M209	22	D121	1	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M209	22		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE CAMERA POWER SUPPLY

1. Connect AV control unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to “R”.
4. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M209	22	Ground	Shift position is “R”.	6.0 V
			Except for above.	0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

3.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and rear view camera connector.
3. Check continuity between front display unit harness connector and rear view camera harness connector.

Front display unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M195	8	D121	3	Existed

4. Check continuity between front display unit harness connector and ground.

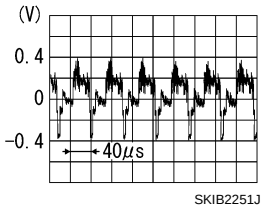
Front display unit		Ground	Continuity
Connector	Terminal		
M195	8		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK CAMERA IMAGE SIGNAL

1. Connect front display unit connector and rear view camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to “R”.
4. Check signal between front display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Front display unit				
Connector	Terminal			
M195	8	Ground	At camera image is displayed.	

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Is inspection result normal?

YES >> Replace front display unit. Refer to AV-747, "Exploded View".
NO >> Replace rear view camera. Refer to AV-776, "Exploded View".

CAMERA IMAGE SIGNAL CIRCUIT (WITH AROUND VIEW MONITOR)

Description

INFOID:0000000005216039

Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.

Diagnosis Procedure

INFOID:0000000005216040

1.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and around view monitor control unit connector.
3. Check continuity between front display unit harness connector and around view monitor control unit harness connector.

Front display unit		Around view monitor control unit		Continuity
Connector	Terminal	Connector	Terminal	
M195	8	B46	27	Existed

4. Check continuity between front display unit harness connector and ground.

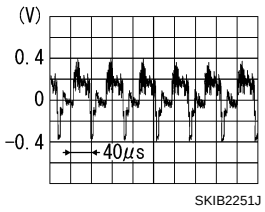
Front display unit		Ground	Continuity
Connector	Terminal		
M195	8		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK CAMERA IMAGE SIGNAL

1. Connect front display unit connector and around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector and ground.

(+) Front display unit		(–)	Condition	Reference value
Connector	Terminal			
M195	8	Ground	At camera image is displayed.	

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Is inspection result normal?

YES >> Replace front display unit. Refer to AV-747, "Exploded View".
NO >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".

FRONT CAMERA COMMUNICATION SIGNAL CIRCUIT

Description

INFOID:0000000005213003

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

Diagnosis Procedure

INFOID:0000000005213004

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and front camera connector.
3. Check continuity between around view monitor control unit harness connector and front camera harness connector.

Around view monitor control unit		Front camera		Continuity
Connector	Terminal	Connector	Terminal	
B45	45	E155	6	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

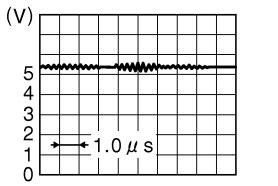
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	45		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and front camera connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+) Around view monitor control unit		(–)	Condition	Reference value
Connector	Terminal			
B45	45	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".
NO >> Replace front camera. Refer to AV-765, "Exploded View".

FRONT CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000005213005

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

Diagnosis Procedure

INFOID:0000000005213006

1.CHECK CONTINUITY FRONT CAMERA POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and front camera connector.
3. Check continuity between around view monitor control unit harness connector and front camera harness connector.

Around view monitor control unit		Front camera		Continuity
Connector	Terminals	Connector	Terminals	
B45	44	E155	2	Existed
	46		1	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	46		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE FRONT CAMERA POWER SUPPLY

1. Connect around view monitor control unit connector and front camera connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B45	46	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".

3.CHECK CONTINUITY FRONT CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and front camera connector.
3. Check continuity between around view monitor control unit harness connector and front camera harness connector.

Around view monitor control unit		Front camera		Continuity
Connector	Terminals	Connector	Terminals	
B45	41	E155	3	Existed
	42		4	

4. Check continuity between around view monitor control unit harness connector and ground.

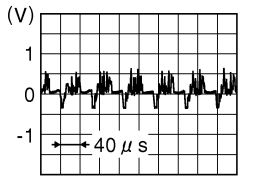
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B45	41, 42		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK FRONT CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit connector and front camera connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B45	41	B45	42	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0834GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".
NO >> Replace front camera. Refer to AV-765, "Exploded View".

REAR CAMERA COMMUNICATION SIGNAL CIRCUIT

Description

INFOID:0000000005213007

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

Diagnosis Procedure

INFOID:0000000005213008

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and rear camera connector.
3. Check continuity between around view monitor control unit harness connector and rear camera harness connector.

Around view monitor control unit		Rear camera		Continuity
Connector	Terminal	Connector	Terminal	
B46	35	D111	4	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

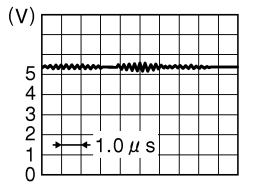
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	35		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and rear camera connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+) Around view monitor control unit		(–)	Condition	Reference value
Connector	Terminal			
B46	35	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".
NO >> Replace rear camera. Refer to AV-766, "Exploded View".

REAR CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000005213009

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

Diagnosis Procedure

INFOID:0000000005213010

1.CHECK CONTINUITY REAR CAMERA POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and rear camera connector.
3. Check continuity between around view monitor control unit harness connector and rear camera harness connector.

Around view monitor control unit		Rear camera		Continuity
Connector	Terminals	Connector	Terminals	
B46	36	D111	8	Existed
	38		7	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	36		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE REAR CAMERA POWER SUPPLY

1. Connect around view monitor control unit connector and rear camera connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B46	36	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".

3.CHECK CONTINUITY REAR CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and rear camera connector.
3. Check continuity between around view monitor control unit harness connector and rear camera harness connector.

Around view monitor control unit		Rear camera		Continuity
Connector	Terminals	Connector	Terminals	
B46	39	D111	5	Existed
	40		1	

4. Check continuity between around view monitor control unit harness connector and ground.

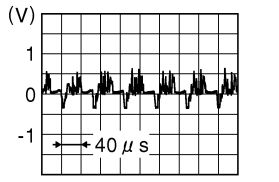
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B46	39, 40		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK REAR CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit connector and rear camera connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B46	39	B46	40	“CAMERA” switch is ON or shift position is “R”.	

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Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".
NO >> Replace rear camera. Refer to AV-766, "Exploded View".

SIDE CAMERA LH COMMUNICATION SIGNAL CIRCUIT

LHD MODELS

LHD MODELS : Description

INFOID:0000000005213011

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

LHD MODELS : Diagnosis Procedure

INFOID:0000000005213012

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
B45	47	D3	3	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

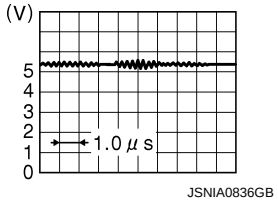
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	47		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Reference value
Around view monitor control unit				
Connector	Terminal			
B45	47	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".
NO >> Replace side camera LH. Refer to AV-767, "LHD MODELS : Exploded View".

RHD MODELS

RHD MODELS : Description

INFOID:0000000005213013

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

RHD MODELS : Diagnosis Procedure

INFOID:0000000005213014

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
B46	33	D2	3	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

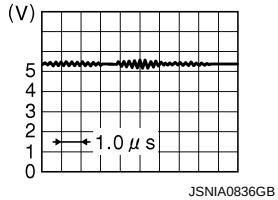
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	33		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+) Around view monitor control unit		(–)	Condition	Reference value
Connector	Terminal			
B46	33	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".
NO >> Replace side camera LH. Refer to AV-768, "RHD MODELS : Exploded View".

SIDE CAMERA LH IMAGE SIGNAL CIRCUIT
LHD MODELS
LHD MODELS : Description

INFOID:0000000005213015

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

LHD MODELS : Diagnosis Procedure

INFOID:0000000005213016

1.CHECK CONTINUITY SIDE CAMERA LH POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminals	Connector	Terminals	
B45	48	D3	6	Existed
	50		18	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	48		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE SIDE CAMERA LH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B45	48	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".

3.CHECK CONTINUITY SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.

3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminals	Connector	Terminals	
B45	51	D3	5	Existed
	52		17	

4. Check continuity between around view monitor control unit harness connector and ground.

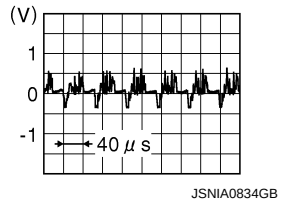
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B45	51, 52		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK SIDE CAMERA LH IMAGE SIGNAL

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B45	51	B45	52	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0834GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".
NO >> Replace side camera LH. Refer to AV-767, "LHD MODELS : Exploded View".

RHD MODELS

RHD MODELS : Description

INFOID:0000000005213017

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

RHD MODELS : Diagnosis Procedure

INFOID:0000000005213018

1. CHECK CONTINUITY SIDE CAMERA LH POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect control unit connector and door mirror (passenger side) connector.

3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminals	Connector	Terminals	
B46	32	D2	18	Existed
	34		6	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	34		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE SIDE CAMERA LH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B46	34	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".

3.CHECK CONTINUITY SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminals	Connector	Terminals	
B46	29	D2	5	Existed
	30		17	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B46	29, 30		Not existed

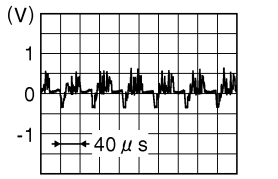
Is inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

4. CHECK SIDE CAMERA LH IMAGE SIGNAL

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B46	29	B46	30	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0834GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".
NO >> Replace side camera LH. Refer to AV-768, "RHD MODELS : Exploded View".

SIDE CAMERA RH COMMUNICATION SIGNAL CIRCUIT

LHD MODELS

LHD MODELS : Description

INFOID:0000000005213019

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

LHD MODELS : Diagnosis Procedure

INFOID:0000000005213020

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
B46	33	D33	3	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

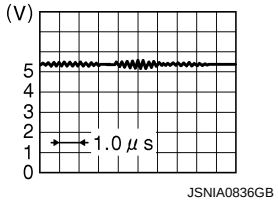
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	33		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Reference value
Around view monitor control unit				
Connector	Terminal			
B46	33	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".
NO >> Replace side camera RH. Refer to AV-770, "LHD MODELS : Exploded View".

RHD MODELS

RHD MODELS : Description

INFOID:0000000005213021

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

RHD MODELS : Diagnosis Procedure

INFOID:0000000005213022

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
B45	47	D48	3	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

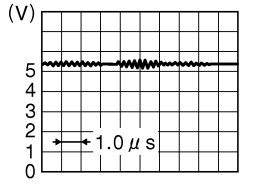
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	47		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Reference value
Around view monitor control unit				
Connector	Terminal			
B45	47	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".
NO >> Replace side camera RH. Refer to AV-771, "RHD MODELS : Exploded View".

SIDE CAMERA RH IMAGE SIGNAL CIRCUIT
LHD MODELS
LHD MODELS : Description

INFOID:0000000005213023

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

LHD MODELS : Diagnosis Procedure

INFOID:0000000005213024

1.CHECK CONTINUITY SIDE CAMERA RH POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect control unit connector and door mirror (passenger side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminals	Connector	Terminals	
B46	32	D33	18	Existed
	34		6	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	34		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE SIDE CAMERA RH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B46	34	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".

3.CHECK CONTINUITY SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.

3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminals	Connector	Terminals	
B46	29	D33	5	Existed
	30		17	

4. Check continuity between around view monitor control unit harness connector and ground.

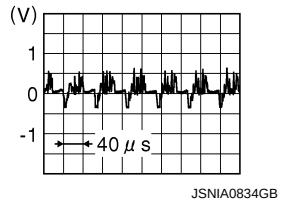
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B46	29, 30		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4.CHECK SIDE CAMERA RH IMAGE SIGNAL

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B46	29	B46	30	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0834GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".
NO >> Replace side camera RH. Refer to AV-770, "LHD MODELS : Exploded View".

RHD MODELS

RHD MODELS : Description

INFOID:0000000005213025

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

RHD MODELS : Diagnosis Procedure

INFOID:0000000005213026

1.CHECK CONTINUITY SIDE CAMERA RH POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.

3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminals	Connector	Terminals	
B45	48	D48	6	Existed
	50		18	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	48		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE SIDE CAMERA RH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B45	48	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".

3.CHECK CONTINUITY SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminals	Connector	Terminals	
B45	51	D48	5	Existed
	52		17	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B45	51, 52		Not existed

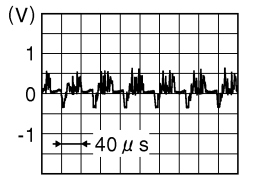
Is inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

4. CHECK SIDE CAMERA RH IMAGE SIGNAL

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B45	51	B45	52	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0834GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-764, "Exploded View".
NO >> Replace side camera RH. Refer to AV-771, "RHD MODELS : Exploded View".

STEERING SWITCH SIGNAL A CIRCUIT
EXCEPT FOR RUSSIA

EXCEPT FOR RUSSIA : Description

INFOID:0000000005191941

Transmits the steering switch signal to AV control unit.

EXCEPT FOR RUSSIA : Diagnosis Procedure

INFOID:0000000005191942

1.CHECK STEERING SWITCH SIGNAL A CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	6	M36	24	Existed

3. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M208	6		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit		AV control unit		
Connector	Terminal	Connector	Terminal	
M208	6	M208	15	5.0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-652, "EXCEPT FOR RUSSIA : Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to SR-16, "Exploded View".

EXCEPT FOR RUSSIA : Component Inspection

INFOID:0000000005191943

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

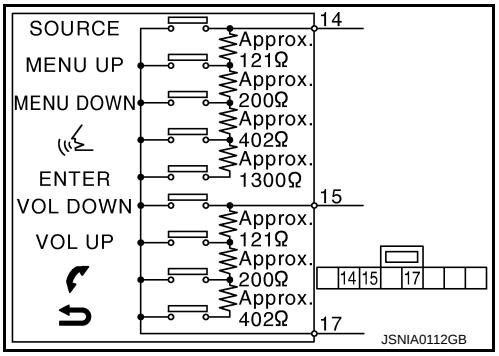
Standard

Between terminals 14 and 17

ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω

Between terminals 15 and 17

switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω



FOR RUSSIA

FOR RUSSIA : Description

INFOID:0000000006084313

Transmits the steering switch signal to AV control unit.

FOR RUSSIA : Diagnosis Procedure

INFOID:0000000006084314

1.CHECK STEERING SWITCH SIGNAL A CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	6	M36	24	Existed

3. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M208	6		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit		AV control unit		
Connector	Terminal	Connector	Terminal	
M208	6	M208	15	5.0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-654, "FOR RUSSIA : Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to SR-16, "Exploded View".

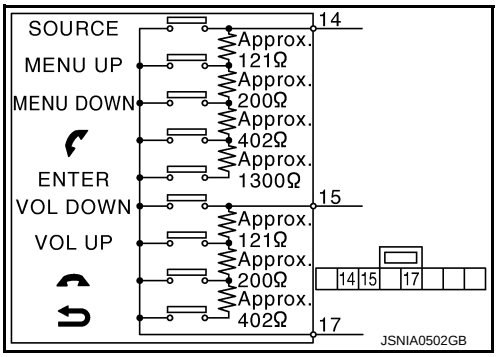
FOR RUSSIA : Component Inspection

INFOID:0000000006084315

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

Standard

Between terminals 14 and 17	
ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω
Between terminals 15 and 17	
switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω



STEERING SWITCH SIGNAL B CIRCUIT
EXCEPT FOR RUSSIA

EXCEPT FOR RUSSIA : Description

INFOID:0000000006084316

Transmits the steering switch signal to AV control unit.

EXCEPT FOR RUSSIA : Diagnosis Procedure

INFOID:0000000005191945

1.CHECK STEERING SWITCH SIGNAL B CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	16	M36	31	Existed

3. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M208	16		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit		AV control unit		
Connector	Terminal	Connector	Terminal	
M208	16	M208	15	5.0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-655, "EXCEPT FOR RUSSIA : Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to SR-16, "Exploded View".

EXCEPT FOR RUSSIA : Component Inspection

INFOID:0000000006084317

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

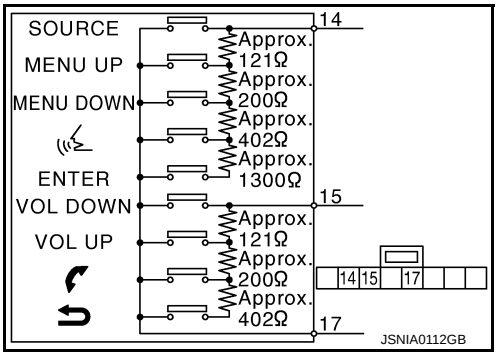
Standard

Between terminals 14 and 17

ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω

Between terminals 15 and 17

switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω



FOR RUSSIA

FOR RUSSIA : Description

INFOID:0000000006084318

Transmits the steering switch signal to AV control unit.

FOR RUSSIA : Diagnosis Procedure

INFOID:0000000006084320

1.CHECK STEERING SWITCH SIGNAL B CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	16	M36	31	Existed

3. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M208	16		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit		AV control unit		
Connector	Terminal	Connector	Terminal	
M208	16	M208	15	5.0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-657, "FOR RUSSIA : Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to SR-16, "Exploded View".

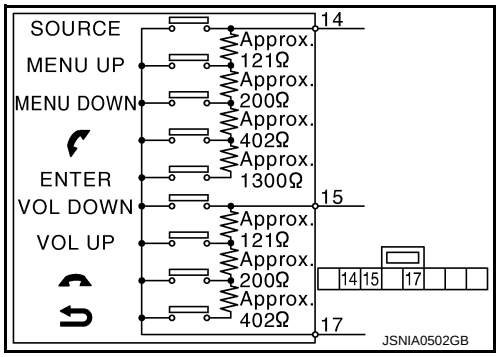
FOR RUSSIA : Component Inspection

INFOID:0000000006084319

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

Standard

Between terminals 14 and 17	
ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω
Between terminals 15 and 17	
switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω



STEERING SWITCH GROUND CIRCUIT
EXCEPT FOR RUSSIA

EXCEPT FOR RUSSIA : Description

INFOID:0000000006084321

Transmits the steering switch signal to AV control unit.

EXCEPT FOR RUSSIA : Diagnosis Procedure

INFOID:0000000005191948

1.CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	15	M36	33	Existed

3. Connect AV control unit connector.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK GROUND CIRCUIT

1. Connect AV control unit connector.
2. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M208	15		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-658, "EXCEPT FOR RUSSIA : Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to SR-16, "Exploded View".

EXCEPT FOR RUSSIA : Component Inspection

INFOID:0000000006084322

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

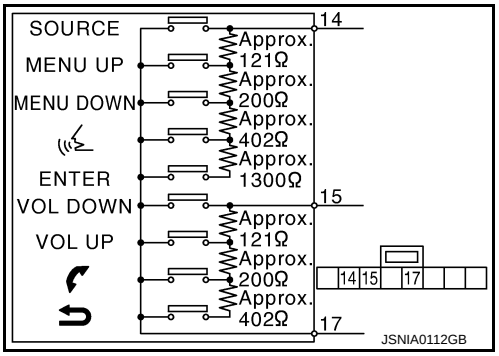
Standard

Between terminals 14 and 17

ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω

Between terminals 15 and 17

switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω



FOR RUSSIA

FOR RUSSIA : Description

INFOID:0000000006084324

Transmits the steering switch signal to AV control unit.

FOR RUSSIA : Diagnosis Procedure

INFOID:0000000006084323

1.CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	15	M36	33	Existed

3. Connect AV control unit connector.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK GROUND CIRCUIT

1. Connect AV control unit connector.
2. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M208	15		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-745, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-660, "FOR RUSSIA : Component Inspection".

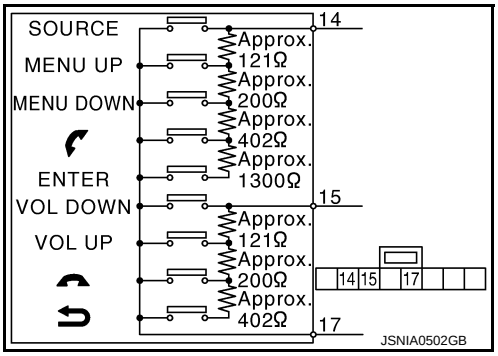
Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to SR-16, "Exploded View".

FOR RUSSIA : Component Inspection

INFOID:0000000006084325

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.



Standard

Between terminals 14 and 17	
ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω
Between terminals 15 and 17	
switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω

ECU DIAGNOSIS INFORMATION

AV CONTROL UNIT

Reference Value

INFOID:0000000005191950

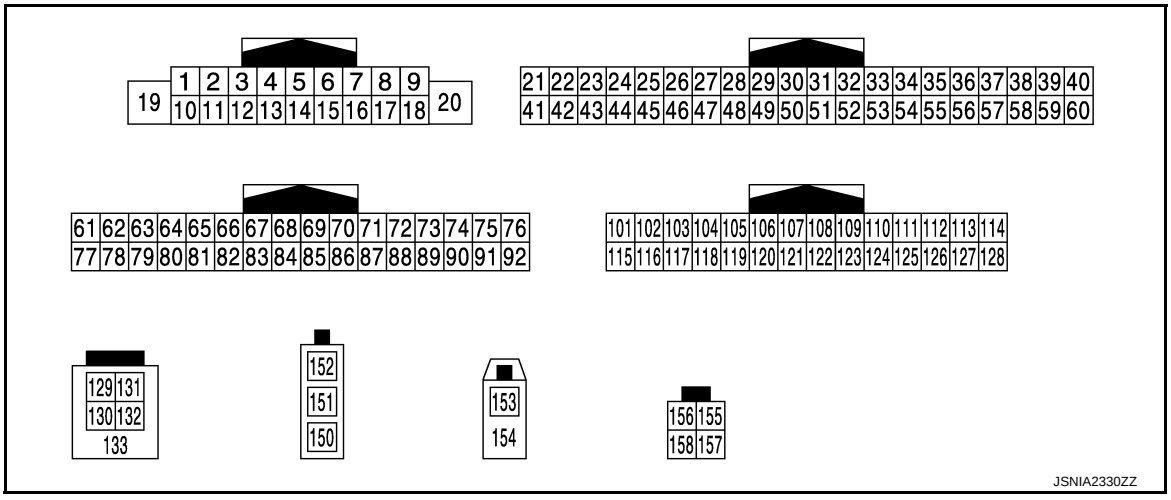
VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

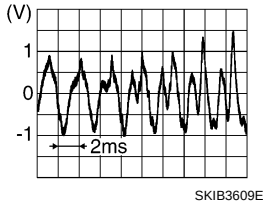
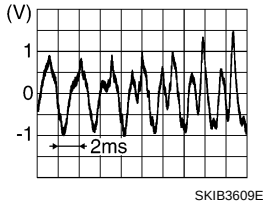
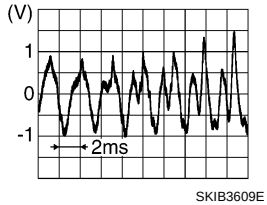
Monitor Item	Condition		Value/Status
VHCL SPD SIG	Ignition switch ON	Vehicle speed > 0 km/h (0 MPH)	On
		Vehicle speed = 0 km/h (0 MPH)	Off
PKB SIG	Ignition switch ON	Parking brake is applied.	On
		Parking brake is released.	Off
ILLUM SIG	Ignition switch ON	Light switch ON	On
		Light switch OFF	Off
IGN SIG	Ignition switch ON	—	On
	Ignition switch ACC	—	Off
REV SIG	Ignition switch ON	Selector lever in R position	On
		Selector lever in any position other than R	Off
SIDE VIEW SW	Ignition switch ON	This item is displayed, but cannot be monitored.	Off
ROOM LAMP*1	Ignition switch ON	Five seconds after opening any door.*2	On
		Except for above.	Off

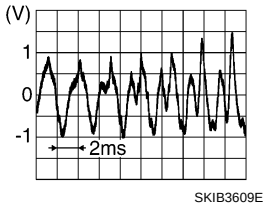
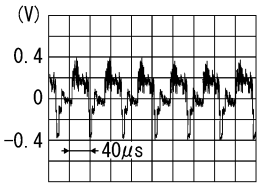
*1:For vehicles without driver door switch signal circuit, the ON/OFF indication is fixed to off.
*2:Check 10 seconds after closing all doors.

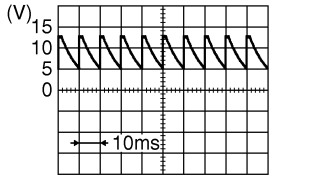
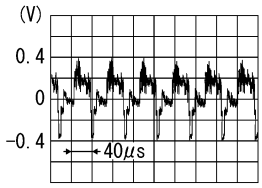
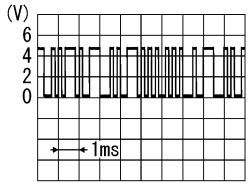
TERMINAL LAYOUT

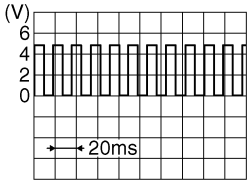
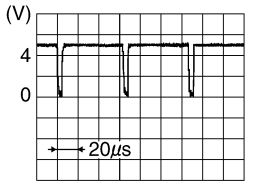
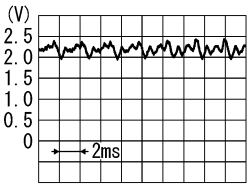
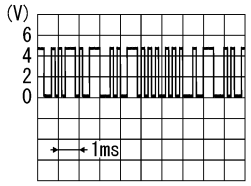


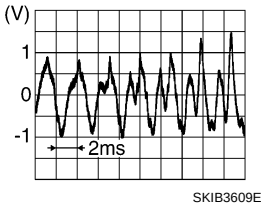
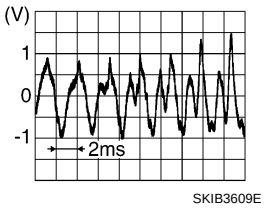
PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (V)	Ground	AMP. ON signal	Input	Ignition switch ON	—	12.0 V
2 (P)*1 (R)*2	3 (L)*1 (G)*2	Sound signal front LH	Output	Ignition switch ON	Sound output	 SKIB3609E
4 (V)*1 (BR)*2	5 (LG)*1 (Y)*2	Sound signal rear LH	Output	Ignition switch ON	Sound output	 SKIB3609E
6 (P)	15 (B)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing MENU UP switch.	1.0 V
					Keep pressing MENU DOWN switch.	2.0 V
					Keep pressing switch. (Except for Russia)	3.0 V
					Keep pressing switch. (For Russia)	3.0 V
					Keep pressing ENTER switch.	4.0 V
					Except for above.	5.0 V
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
10 (B)	—	Shield	—	—	—	—
11 (R)*1 (P)*2	12 (G)*1 (L)*2	Sound signal front RH	Output	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
13 (BR)*1 (LG)*3 (V)*4	14 (Y)*1 (LG)*2	Sound signal rear RH	Output	Ignition switch ON	Sound output	 SKIB3609E
16 (L)	15 (B)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	1.0 V
					Keep pressing switch. (Except for Russia)	2.0 V
					Keep pressing switch. (For Russia)	2.0 V
					Keep pressing switch.	3.0 V
					Except for above.	5.0 V
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
20 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
22 (R)	Ground	Camera power supply	Output	Ignition switch ON	At camera image is displayed.	6.0 V
					Except for above.	0 V
26 (Y)*1 (BR)*2	Ground	AUX image signal	Input	Ignition switch ON	At AUX image is displayed.	 SKIB2251J
29 (SB)*5 (Y)*6	Ground	Disk eject signal	Input	Ignition switch ON	Pressing the eject switch.	0 V
					Except for above.	5.0 V
30 (SB)	Ground	Mode change signal	Output	Ignition switch ON	Driver's Audio Stage ON	0 V
					Driver's Audio Stage OFF	8.5 V
42 (B)*1 (W)*2	Ground	Camera ground	—	Ignition switch ON	—	0 V
46 (BR)*1 (Y)*2	Ground	AUX image signal ground	—	Ignition switch ON	—	0 V
47	—	Shield	—	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
49 (BR)*5 (B)*6	Ground	Switch ground	—	Ignition switch ON	—	0 V
64*7 (GR)	Ground	Driver door switch signal	Input	Ignition switch ON	Door open (driver side)	0 V
					Door close (driver side)	 JPMIA0594GB
65 (V)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake is ON.	4.5 V
					Parking brake is OFF.	0 V
67 (B)*5 (L)*6	Ground	Composite image ground	—	Ignition switch ON	—	0 V
68 (R)*5 (P)*6	Ground	Composite image signal	Output	Ignition switch ON	At DVD image is displayed.	 SKIB2251J
71	—	Microphone shield	—	—	—	—
72 (G)*5 (R)*6	Ground	Microphone VCC	Output	Ignition switch ON	—	5.0 V
73 (R)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
74 (P)	—	CAN–L	Input/ Output	—	—	—
75 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
76 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
79 (R)	Ground	Illumination signal	Input	Ignition switch OFF	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12.0 V
80 (G)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
81 (O)	Ground	Reverse signal	Input	Ignition switch ON	R position	12.0 V
					Other than R position	0 V
82 (R)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** Maximum voltage may be 12.0 V due to specifications (connected units).  SKIA6649J
83	—	Shield	—	—	—	—
84 (W)	Ground	Composite image synchronizing signal	Output	Ignition switch ON	—	 SKIB0825E
87 (R)*5 (G)*6	71	Microphone signal	Input	Ignition switch ON	Give a voice	 PKIB5037J
88 (B)*2	—	Shield	—	—	—	—
89 (G)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
90 (L)	—	CAN–H	Input/ Output	—	—	—
91 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
92 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
104 (W)	119 (B)	AUX sound signal LH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E
117	—	Shield	—	—	—	—
118 (R)	119 (B)	AUX sound signal RH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E
129 (G)	—	USB ground	—	—	—	—
130 (R)	—	USB D– signal	Input/ Output	—	—	—
131 (W)	—	V BUS signal	Output	—	—	—
132 (L)	—	USB D+ signal	Input/ Output	—	—	—
133	—	Shield	—	—	—	—
150	—	AM-FM main	Input	—	—	—
151	—	FM sub	Input	—	—	—
152	Ground	Antenna amp. ON signal	Input	Ignition switch ON	—	12.0 V
153	Ground	GPS antenna signal	Input	Ignition switch ON	Not connected GPS antenna connector.	5.0 V
154	—	Shield	—	—	—	—
157	Ground	RGB digital image signal (–)	Output	Ignition switch ON	Not connected connector.	3.0 V
158	Ground	RGB digital image signal (+)	Output	Ignition switch ON	Not connected connector.	3.0 V

- *1: With gasoline engine
- *2: With diesel engine
- *3: LHD models with diesel engine
- *4: RHD models with diesel engine
- *5: LHD models with gasoline engine
- *6: Except LHD models with gasoline engine
- *7:Some vehicles do not include driver door switch signal circuit, depending on the vehicle specification.

Fail-Safe

INFOID:0000000005191952

When the ambiance temperature becomes extremely low or extremely high, AV control unit displays the message and limits the AV control unit function.

FAIL-SAFE CONDITIONS

When the ambiance temperature is –20°C (–4°F) or lower, or when it is 70°C (158°F) or higher

Display

The messages displayed on fail-safe conditions are as shown below:

Fail-safe mode	Display (display of the fail-safe condition)
When HDD temperature is low	HDD system is experiencing problems due to extreme low temperature. Normal operation will resume when temperature rises.
When HDD temperature is high	HDD system is experiencing problems due to extreme high temperature. Normal operation will resume when temperature drops.

DESCRIPTION OF CONTROLS

Function		When Fail-safe Function is activated
Air conditioner	Operation	Only multifunction switch (preset switch) can be operated.
	Display	• LED of multifunction switch (preset switch) illuminates. • Aimed temperature, blow angle, and flow rate are displayed in simplified mode.
Audio	Operation	Only ON/OFF and volume control operations by multifunction switch (preset switch) are possible.
	Display	No display (“Fail-safe mode” is displayed)
Camera	Operation	Image tone cannot be controlled.
	Display	Cannot be superimposed. (warning display, tone control display)
Hands-free phone	Operation	Cannot be operated.
Navigation	Operation	Cannot be operated.
Self diagnosis		The display in simplified mode of fail-safe condition
CONSULT-III diagnosis		Cannot be operated.

Ability Operation Mode

There is an ability operation mode for Fail-safes due to low or high ambiance temperature.
If HDD data can be read, fail-safe is shown, then normal displays are displayed only for functions which can be operated.

RELEASE CONDITIONS OF FAIL-SAFE

Fail-safe is released on following conditions and normal mode is restored.

When The Temperature of HDD Is Low or High

If the ambient temperature becomes out of fail-safe condition range, normal mode is restored.

DTC Index

INFOID:0000000005191953

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	AV-580, "Diagnosis Procedure"
U1010	CONTROL UNIT (CAN) [1010]	AV-581, "DTC Logic"
U1200	Cont Unit [U1200]	AV-582, "DTC Logic"
U1201	GYRO NO CONN [U1201]	AV-583, "DTC Logic"
U1202	G-SENSOR NO CONN [U1202]	AV-584, "DTC Logic"
U1204	GPS COMM [U1204]	AV-585, "Diagnosis Procedure"
U1205	GPS ROM [U1205]	AV-586, "Diagnosis Procedure"
U1206	GPS RAM [U1206]	AV-587, "Diagnosis Procedure"
U1207	GPS RTC [U1207]	AV-588, "Diagnosis Procedure"
U1216	CAN CONT [U1216]	AV-589, "DTC Logic"
U1217	BLUETOOTH MODULE [U1217]	AV-590, "DTC Logic"

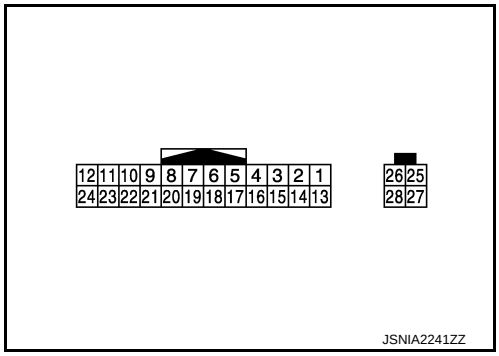
DTC	Display item	Refer to
U1218	HDD CONN [U1218]	AV-591, "Diagnosis Procedure"
U1219	HDD READ [U1219]	AV-592, "Diagnosis Procedure"
U121A	HDD WRITE [U121A]	AV-593, "Diagnosis Procedure"
U121B	HDD COMM [U121B]	AV-594, "Diagnosis Procedure"
U121C	HDD ACCESS [U121C]	AV-595, "Diagnosis Procedure"
U121D	DSP CONN [U121D]	AV-596, "Diagnosis Procedure"
U121E	DSP COMM [U121E]	AV-597, "Diagnosis Procedure"
U1225	USB CONTROLLER [U1225]	AV-598, "DTC Logic"
U1227	DVD COMM [U1227]	AV-599, "Diagnosis Procedure"
U1228	SUB CPU CONN [U1228]	AV-600, "DTC Logic"
U1229	iPod CERTIFICATION [U1229]	AV-601, "DTC Logic"
U122A	CONFIG UNFINISH [U122A]	AV-602, "Diagnosis Procedure"
U122E	Built-in AUDIO CONN [U122E]	AV-603, "DTC Logic"
U1232	ST ANGLE SEN CALIB [1232]	AV-604, "Diagnosis Procedure"
U1243	FRONT DISP CONN [U1243]	AV-605, "Diagnosis Procedure"
U1244	GPS ANTENNA CONN [U1244]	AV-607, "Diagnosis Procedure"
U1263	USB OVERCURRENT [U1263]	AV-608, "Diagnosis Procedure"
U1310	CONTROL UNIT (AV) [U1310]	AV-610, "DTC Logic"
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	AV-609, "Description"
U1300 U125B	• AV COMM CIRCUIT [U1300] • AROUND CAMERA CONN [U125B]	AV-609, "Description"
U1300 U125C	• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	AV-609, "Description"
U1300 U1240 U125B	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • AROUND CAMERA CONN [U125B]	AV-609, "Description"

FRONT DISPLAY UNIT

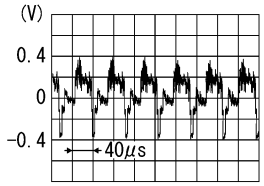
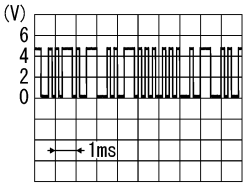
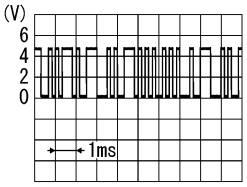
Reference Value

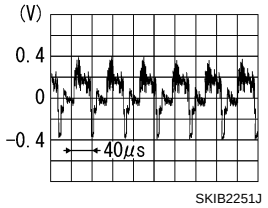
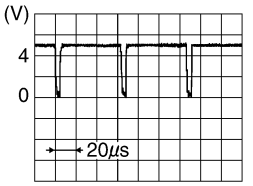
INFOID:0000000005191954

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
6	—	Shield	—	—	—	—
7 (B)*1	—	Shield	—	—	—	—
8 (W)	Ground	Camera image signal	Input	Ignition switch ON	At camera image is displayed.	 SKIB2251J
9 (G)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
10 (R)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
11 (P)*2 (Y)*3	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
18 (R)*2 (P)*3	Ground	Composite image signal	Input	Ignition switch ON	At DVD image is displayed.	 SKIB2251J
19 (B)*2 (L)*3	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
20 (W)	Ground	Composite image synchro-nizing signal	Input	Ignition switch ON	—	 SKIB0825E
22 (B)*1	—	Shield	—	—	—	—
23 (L)*2 (V)*3	Ground	ACC power supply	Input	—	—	—
27	—	RGB digital image signal (–)	Input	—	—	—
28	—	RGB digital image signal (+)	Input	—	—	—

- *1: With diesel engine
- *2: LHD models with gasoline engine
- *3: Except LHD models with gasoline engine

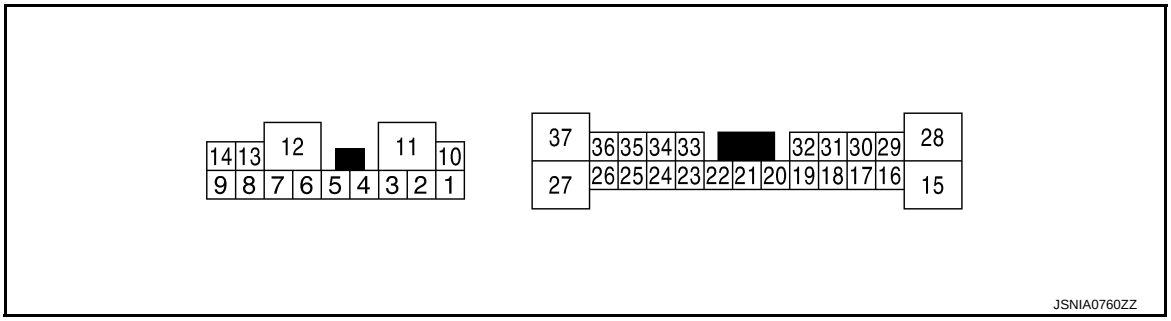
BOSE AMP.

LHD MODELS

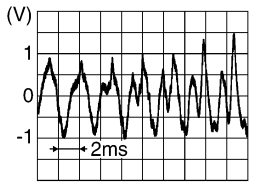
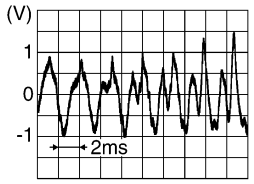
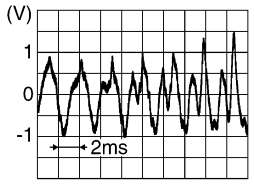
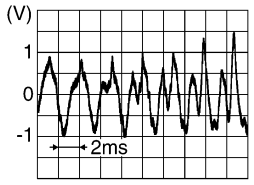
LHD MODELS : Reference Value

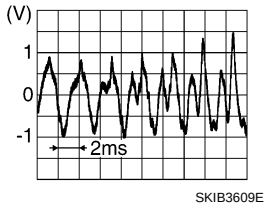
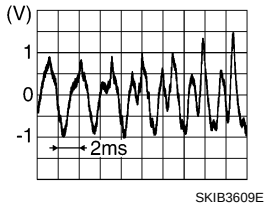
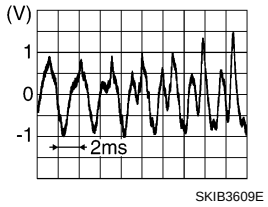
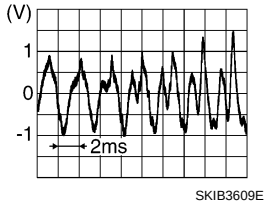
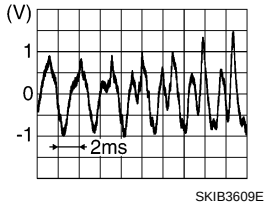
INFOID:0000000005191956

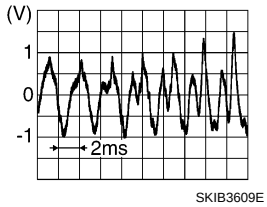
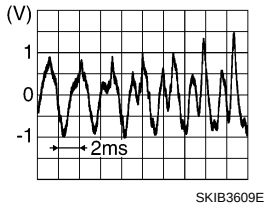
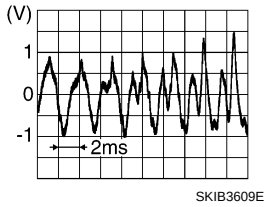
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (Y)	10 (G)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
2 (SB)	3 (V)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
4 (L)	5 (P)	Sound signal front door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
6 (O)	7 (W)	Sound signal front squawker LH	Output	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
8 (LG)	13 (Y)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
9 (G)	14 (R)	Sound signal woofer and rear squawker	Output	Ignition switch ON	Sound output	 SKIB3609E
11 (GR)	Ground	Battery power supply	Input	Ignition switch ON	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
15 (Y)	28 (G)	Sound signal center speaker	Output	Ignition switch ON	Sound output	 SKIB3609E
17 (O)*1 (SB)*2	Ground	Mode change signal	Input	Ignition switch ON	Driver's Audio Stage ON	0 V
					Driver's Audio Stage OFF	8.5 V
18 (P)*1 (R)*2	32 (L)*1 (G)*2	Sound signal front LH	Input	Ignition switch ON	Sound output	 SKIB3609E
19 (R)*1 (P)*2	20 (G)*1 (L)*2	Sound signal front RH	Input	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
21 (V)*1 (BR)*2	22 (SB)*1 (Y)*2	Sound signal rear LH	Input	Ignition switch ON	Sound output	 SKIB3609E
23 (BR)*1 (V)*2	33 (Y)*1 (SB)*2	Sound signal rear RH	Input	Ignition switch ON	Sound output	 SKIB3609E
25 (GR)	Ground	Woofer amp. ON signal	Output	Ignition switch ON	—	12.0 V
31 (GR)	Ground	AMP. ON signal	Input	Ignition switch ON	—	12.0 V
37 (V)	27 (LG)	Sound signal front squawker RH	Output	Ignition switch ON	Sound output	 SKIB3609E

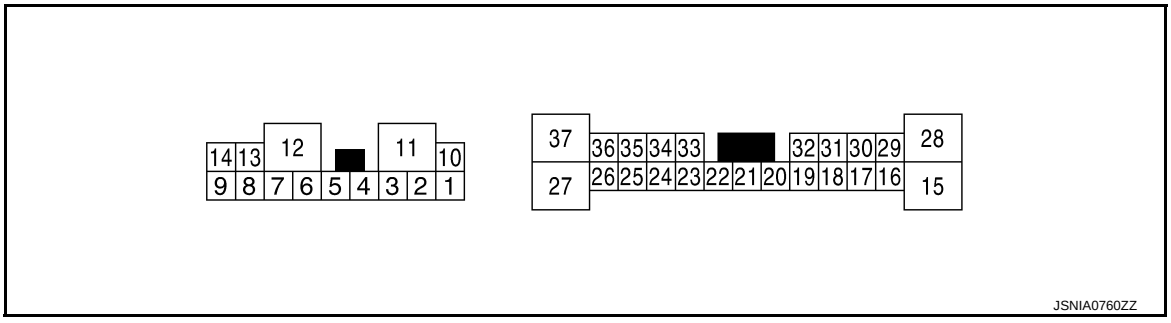
- *1: With gasoline engine
- *2: With diesel engine

RHD MODELS

RHD MODELS : Reference Value

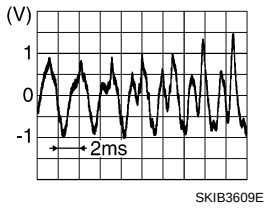
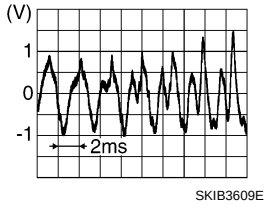
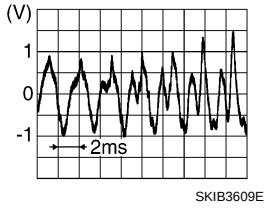
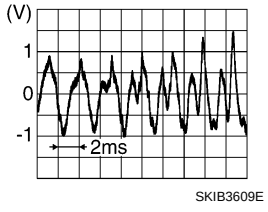
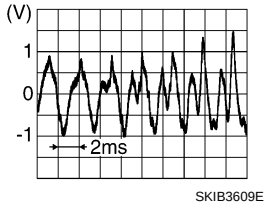
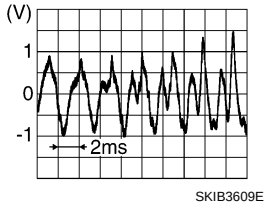
INFOID:0000000005363468

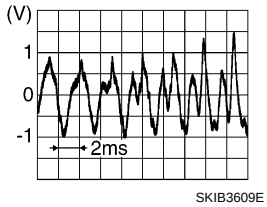
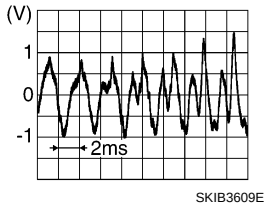
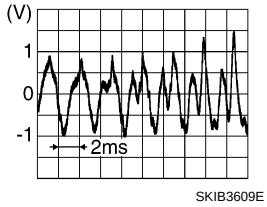
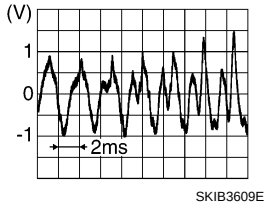
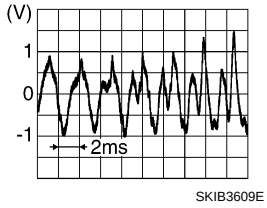
TERMINAL LAYOUT

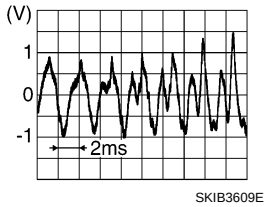


JSNIA0760ZZ

PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (SB)	10 (V)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
2 (Y)	3 (G)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
4 (O)	5 (GR)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
6 (V)	7 (LG)	Sound signal front squawker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
8 (L)	13 (P)	Sound signal front door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
9 (G)	14 (R)	Sound signal woofer and rear squawker	Output	Ignition switch ON	Sound output	 SKIB3609E
11 (GR)	Ground	Battery power supply	Input	Ignition switch ON	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
15 (Y)	28 (G)	Sound signal center speaker	Output	Ignition switch ON	Sound output	 SKIB3609E
17 (SB)	Ground	Mode change signal	Input	Ignition switch ON	Deiver's Audio Stage ON	0 V
					Deiver's Audio Stage OFF	8.5 V
18 (R)*1 (P)*2	32 (G)*1 (L)*2	Sound signal front RH	Input	Ignition switch ON	Sound output	 SKIB3609E
19 (P)*1 (R)*2	20 (L)*1 (G)*2	Sound signal front LH	Input	Ignition switch ON	Sound output	 SKIB3609E
21 (BR)*1 (V)*2	22 (Y)*1 (SB)*2	Sound signal rear RH	Input	Ignition switch ON	Sound output	 SKIB3609E
23 (V)*1 (BR)*2	33 (SB)*1 (Y)*2	Sound signal rear LH	Input	Ignition switch ON	Sound output	 SKIB3609E
25 (GR)	Ground	Woofer amp. ON signal	Input	Ignition switch ON	—	12.0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
31 (GR)	Ground	AMP. ON signal	Input	Ignition switch ON	—	12.0 V
37 (O)	27 (W)	Sound signal front squawker LH	Output	Ignition switch ON	Sound output	

SKIB3609E

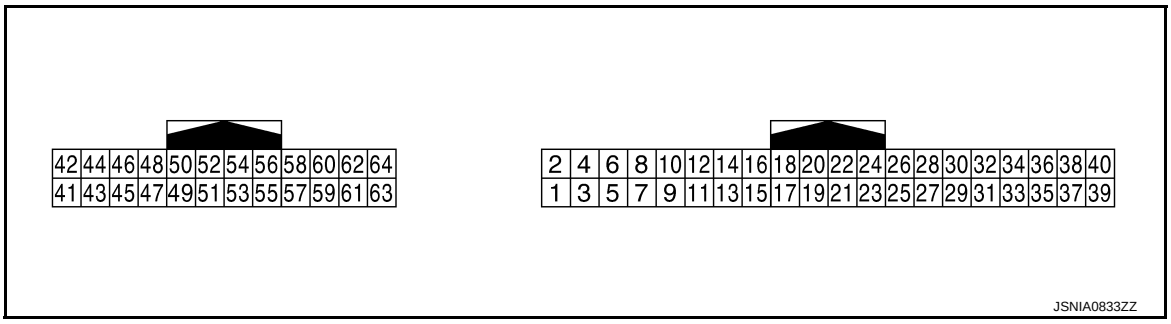
- *1: With gasoline engine
- *2: With diesel engine

AROUND VIEW MONITOR CONTROL UNIT

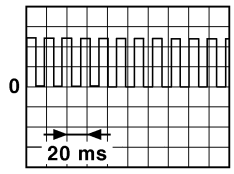
Reference Value

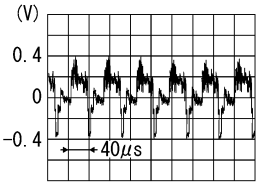
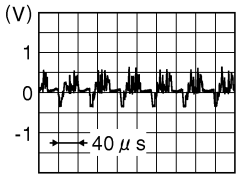
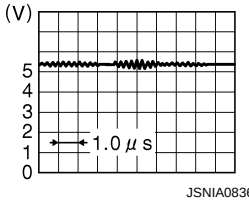
INFOID:0000000005216046

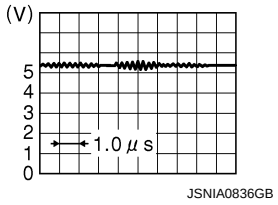
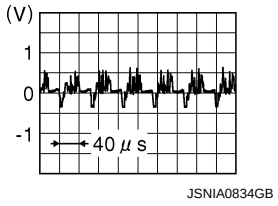
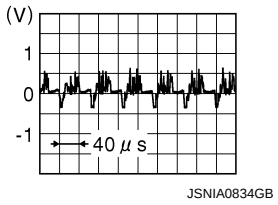
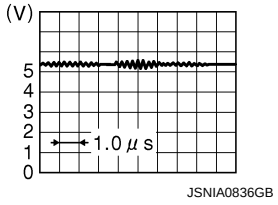
TERMINAL LAYOUT

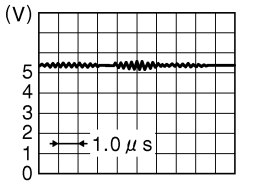
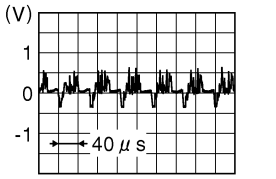


PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
3 (G)*1 (P)*2	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
4 (GR)*1 (LG)*2	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
5 (O)*1 (R)*2	Ground	Illumination signal	Input	Ignition switch OFF	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12.0 V
6 (SB)*1 (V)*2	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB
7 (V)*1 (P)*3 (O)*4	Ground	Reverse signal	Input	Ignition switch ON	R position	12.0 V
					Other than R position	0 V
9 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
13 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
17 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
18 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
21 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
22 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
23 (LG)	24 (G)	Auxiliary infrared LED power supply	Output	Ignition switch ON	"CAMERA" switch is ON or shift position is "R".	5.5 V
27 (W)	Ground	Camera image signal	Output	Ignition switch ON	At camera image display	 SKIB2251J
28 (B)*5	—	Shield	—	—	—	—
29 (Y)*1 (R)*2	30 (G)*1 (Y)*2	Side camera passenger side image signal	Input	Ignition switch ON	"CAMERA" switch is ON or shift position is "R".	 JSNIA0834GB
31	—	Shield	—	—	—	—
32 (B)*1 (W)*2	Ground	Side camera passenger side ground	—	Ignition switch ON	—	0 V
33 (W)*1 (BR)*2	Ground	Side camera passenger side communication signal	Input/ Output	Ignition switch ON	"CAMERA" switch is ON or shift position is "R".	 JSNIA0836GB
34 (R)*1 (L)*2	Ground	Side camera passenger side power supply	Output	Ignition switch ON	"CAMERA" switch is ON or shift position is "R".	6.0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
35 (L)*1 (W)*2	Ground	Rear camera communication signal	Input/ Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0836GB
36 (BR)*1 (G)*2	Ground	Rear camera power supply	Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	6.0 V
37	—	Shield	—	—	—	—
38 (R)*1 (L)*2	Ground	Rear camera ground	—	Ignition switch ON	—	0 V
39 (Y)	40 (W)*1 (BR)*2	Rear camera image signal	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0834GB
41 (Y)*1 (L)*2	42 (G)*1 (BR)*2	Front camera image signal	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0834GB
43	—	Shield	—	—	—	—
44 (B)*1 (Y)*2	Ground	Front camera ground	—	Ignition switch ON	—	0 V
45 (W)	Ground	Front camera communication signal	Input/ Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0836GB
46 (R)*1 (G)*2	Ground	Front camera power supply	Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
47 (L)*1 (BR)*2	Ground	Side camera driver side communication signal	Input/ Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0836GB
48 (BR)*1 (L)*2	Ground	Side camera driver side power supply	Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	6.0 V
49	—	Shield	—	—	—	—
50 (R)*1 (W)*2	Ground	Side camera driver side ground	—	Ignition switch ON	—	0 V
51 (Y)*1 (R)*2	52 (W)*1 (Y)*2	Side camera driver side image signal	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0834GB

- *1: LHD models with diesel engine
- *2: Except LHD models with diesel engine
- *3: RHD models with diesel engine
- *4: With gasoline engine
- *5: With diesel engine

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

Reference Value

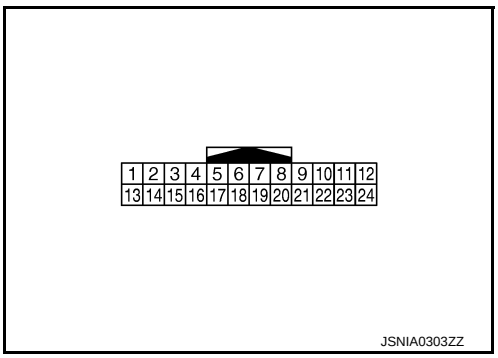
INFOID:0000000005216049

VALUES ON THE DIAGNOSIS TOOL

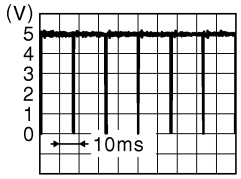
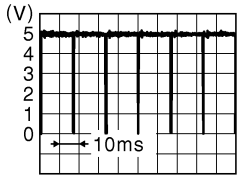
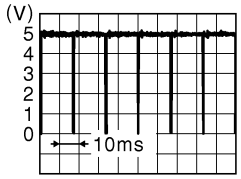
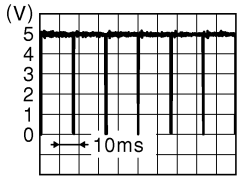
CONSULT-III MONITOR ITEM

Monitor Item	Condition		Value/Status
SONAR OPE	Ignition switch ON	Around view monitor operating (sonar operating).	On
		Around view monitor non-operating (sonar non-operating).	Off
BUZZER OUTPUT	Ignition switch ON	Buzzer is output condition.	On
		Buzzer is not output condition.	Off
CR SEN [FL]	Ignition switch ON	When a sensor is abnormal.	ERROR
		When a sensor is not detection.	LV.0
		The distance between the corner sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).	LV.2
		The distance between the corner sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).	LV.3
		The distance between corner sensor and an obstacle less than 40 cm (15.7 in).	LV.4
CR SEN [FR]	Ignition switch ON	When a sensor is abnormal.	ERROR
		When a sensor is not detection.	LV.0
		The distance between the corner sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).	LV.2
		The distance between the corner sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).	LV.3
		The distance between corner sensor and an obstacle less than 40 cm (15.7 in).	LV.4
CR SEN [RL]	Ignition switch ON	When a sensor is abnormal.	ERROR
		When a sensor is not detection.	LV.0
		The distance between the corner sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).	LV.2
		The distance between the corner sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).	LV.3
		The distance between corner sensor and an obstacle less than 40 cm (15.7 in).	LV.4
CR SEN [RR]	Ignition switch ON	When a sensor is abnormal.	ERROR
		When a sensor is not detection.	LV.0
		The distance between the corner sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).	LV.2
		The distance between the corner sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).	LV.3
		The distance between corner sensor and an obstacle less than 40 cm (15.7 in).	LV.4

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
3 (W)	12 (B)	Corner sensor signal front LH	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0837GB
4 (R)	12 (B)	Corner sensor signal front RH	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0837GB
5 (W)*1 (G)*2	12 (B)	Corner sensor signal rear LH	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0837GB
6 (R)*1 (Y)*2	12 (B)	Corner sensor signal rear RH	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0837GB
12 (B)	Ground	Sensor ground	—	Ignition switch ON	—	0 V
13 (V)*3 (L)*4	Ground	ACC power supply	Input	Ignition switch ACC	—	12.0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
18 (P)*5 (O)*6	—	K-line (CONSULT-III)	—	—	—	—
19 (G)	—	AV communication (H)	Input/ Output	—	—	—
20 (R)	—	AV communication (L)	Input/ Output	—	—	—
24 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

- *1: With gasoline engine
- *2: With diesel engine
- *3: LHD models
- *4: RHD models
- *5: LHD models with gasoline engine
- *6: Except LHD models with gasoline engine

Fail-Safe

INFOID:0000000005216052

- Sonar control unit has diagnosis function which can detect corner sensor malfunction and sensor harness disconnection.
- It transmits the malfunction status to around view monitor control unit and informs the malfunction to the user by displaying continuously red sonar indicator.

DTC Index

INFOID:0000000005216053

DTC	Display item	Malfunction is detected when...	Reference
B2700	CORNER SENSOR [FL] [B2700]	Corner sensor (FL) is malfunctioning.	AV-611, "DTC Logic"
B2701	SENSOR HARNESS OPEN [CR-FL] [B2701]	Corner sensor (FL) harness circuit is open.	AV-612, "Diagnosis Procedure"
B2702	CORNER SENSOR [FR] [B2702]	Corner sensor (FR) is malfunctioning.	AV-613, "DTC Logic"
B2703	SENSOR HARNESS OPEN [CR-FR] [B2703]	Corner sensor (FR) harness circuit is open.	AV-614, "Diagnosis Procedure"
B2704	CORNER SENSOR [RL] [B2704]	Corner sensor (RL) is malfunctioning.	AV-615, "DTC Logic"
B2705	SENSOR HARNESS OPEN [CR-RL] [B2705]	Corner sensor (RL) harness circuit is open.	AV-616, "Diagnosis Procedure"
B2706	CORNER SENSOR [RR] [B2706]	Corner sensor (RR) is malfunctioning.	AV-617, "DTC Logic"
B2707	SENSOR HARNESS OPEN [CR-RR] [B2707]	Corner sensor (RR) harness circuit is open.	AV-618, "Diagnosis Procedure"

NOTE:
"TIME" means the following.
- 0: Means detected malfunction at present. (From malfunction detection to turning ignition switch OFF)
- 1–39: Means detected malfunction in past.

WIRING DIAGRAM

BOSE AUDIO WITH NAVIGATION AND AROUND VIEW MONITOR LHD MODELS

LHD MODELS : Wiring Diagram

INFOID:0000000006106604

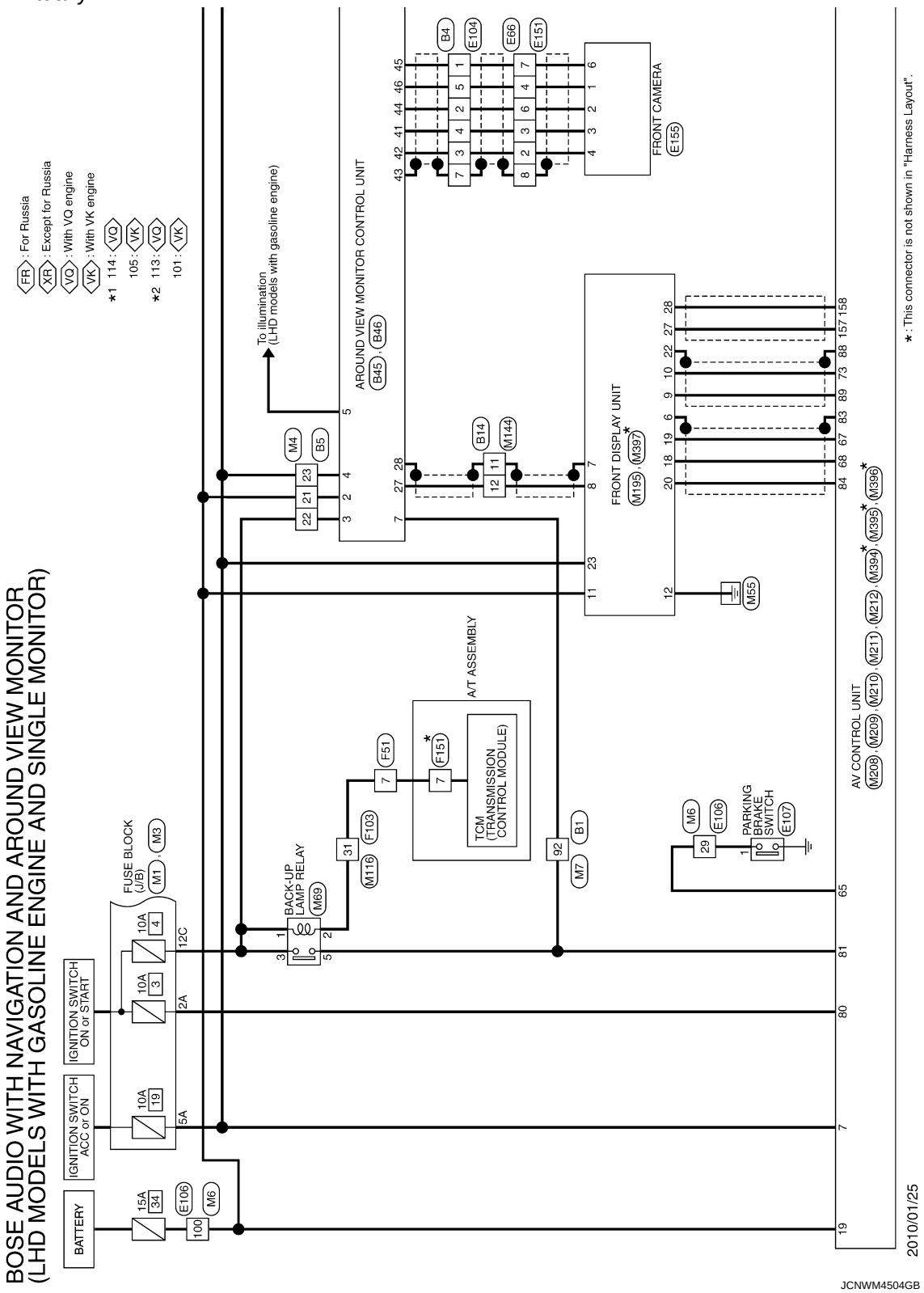
GASOLINE ENGINEMODELS

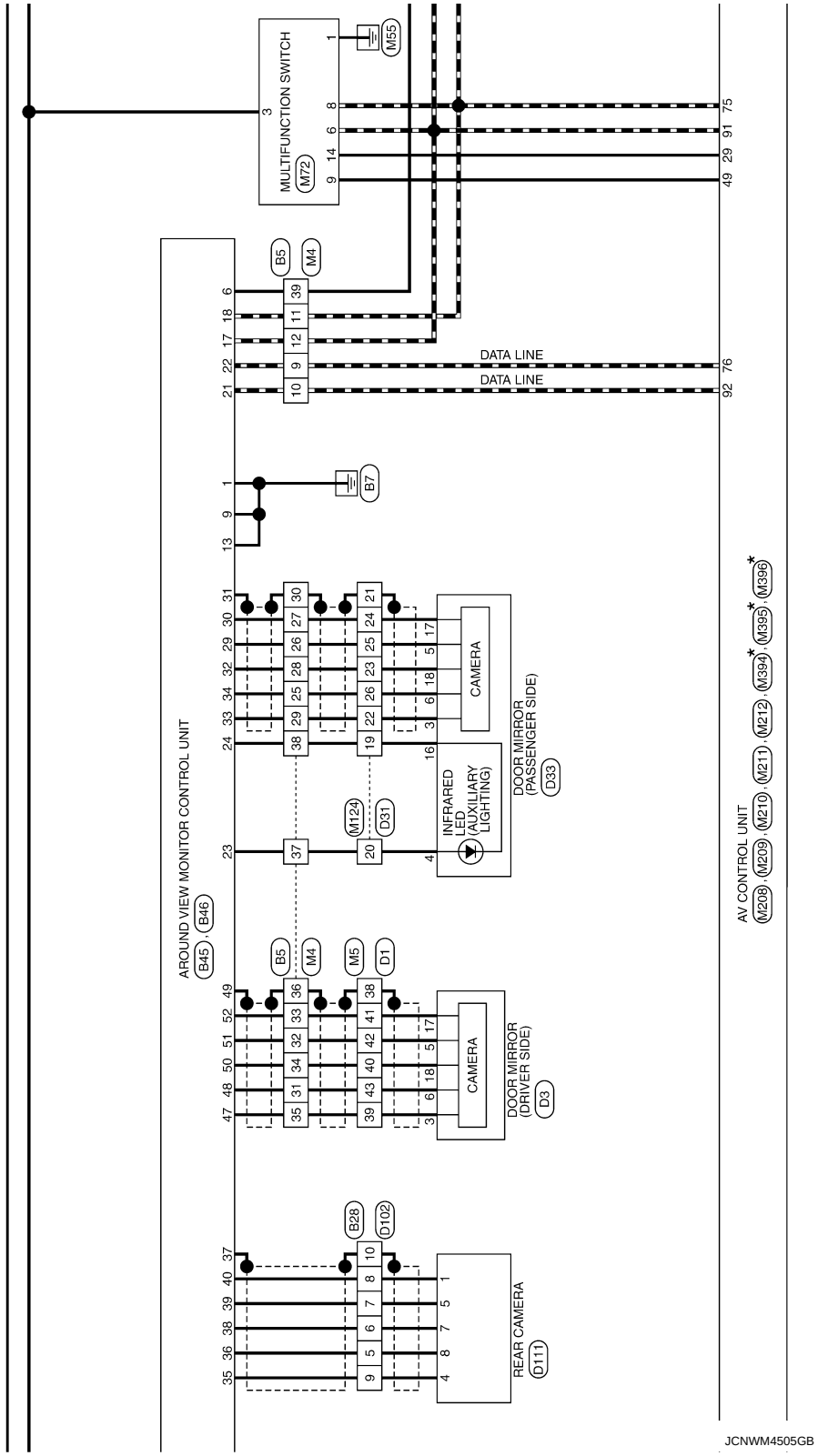
For connector terminal arrangements, harness layouts, and alphabets in a ⬭ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

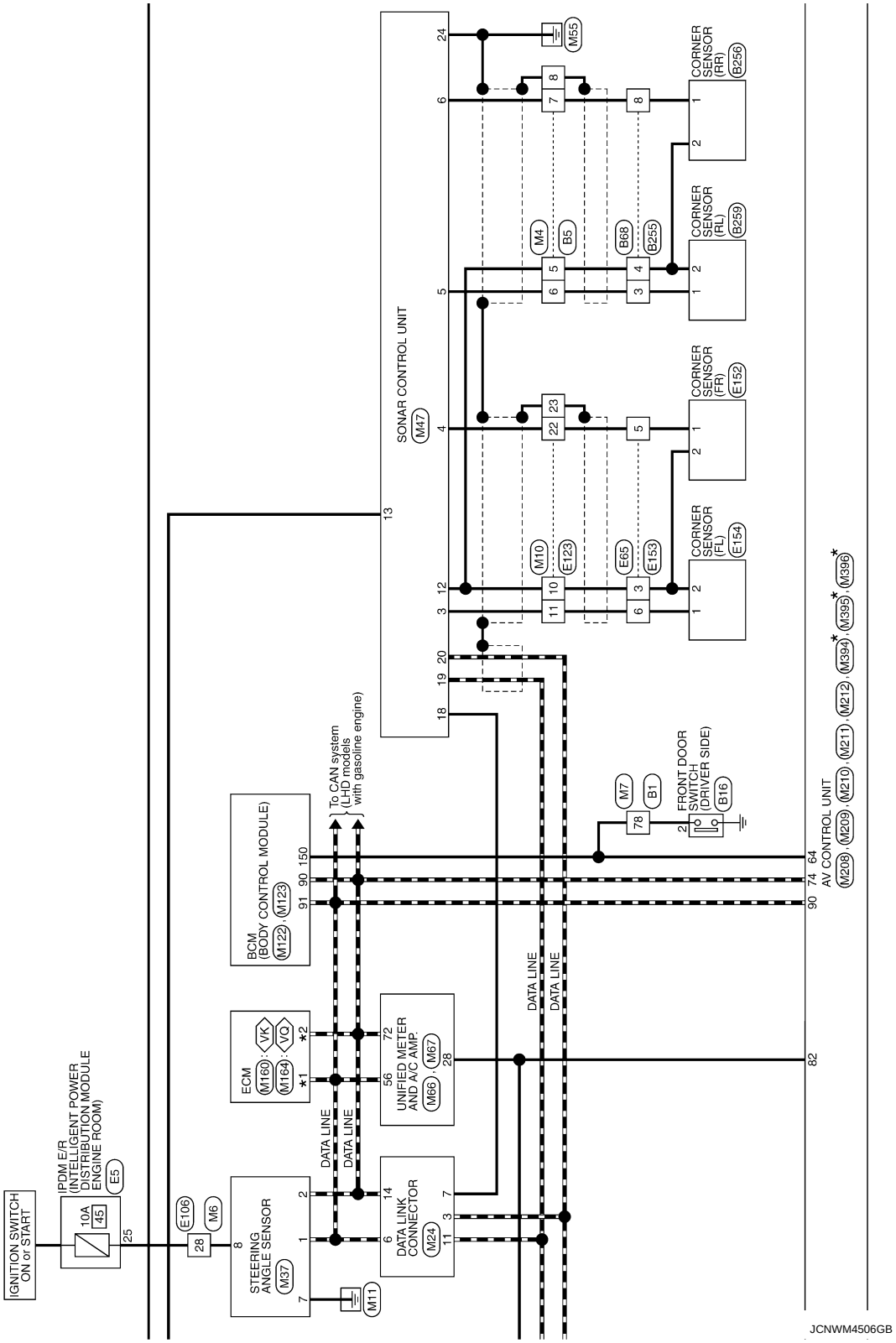
NOTE:

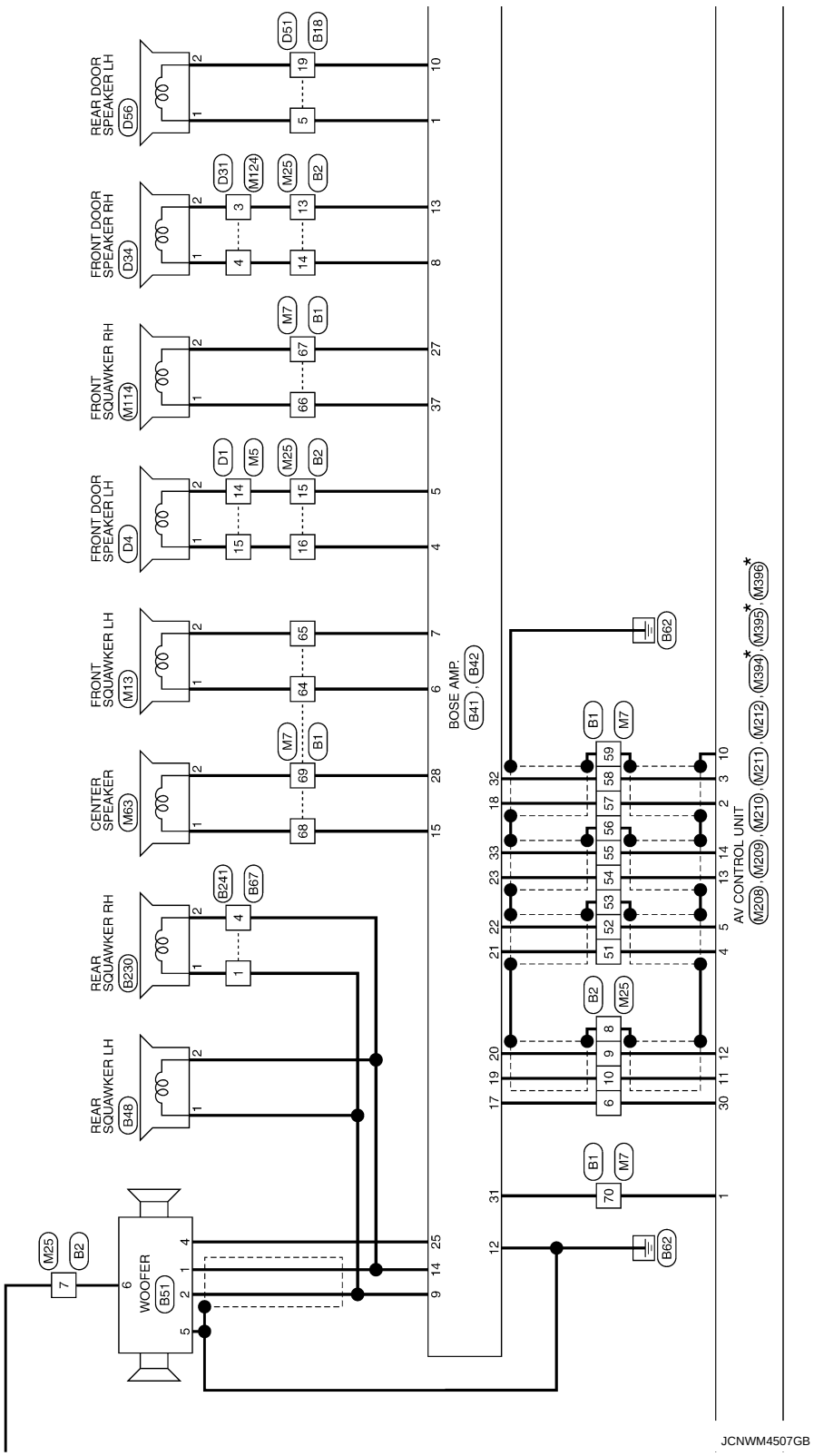
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

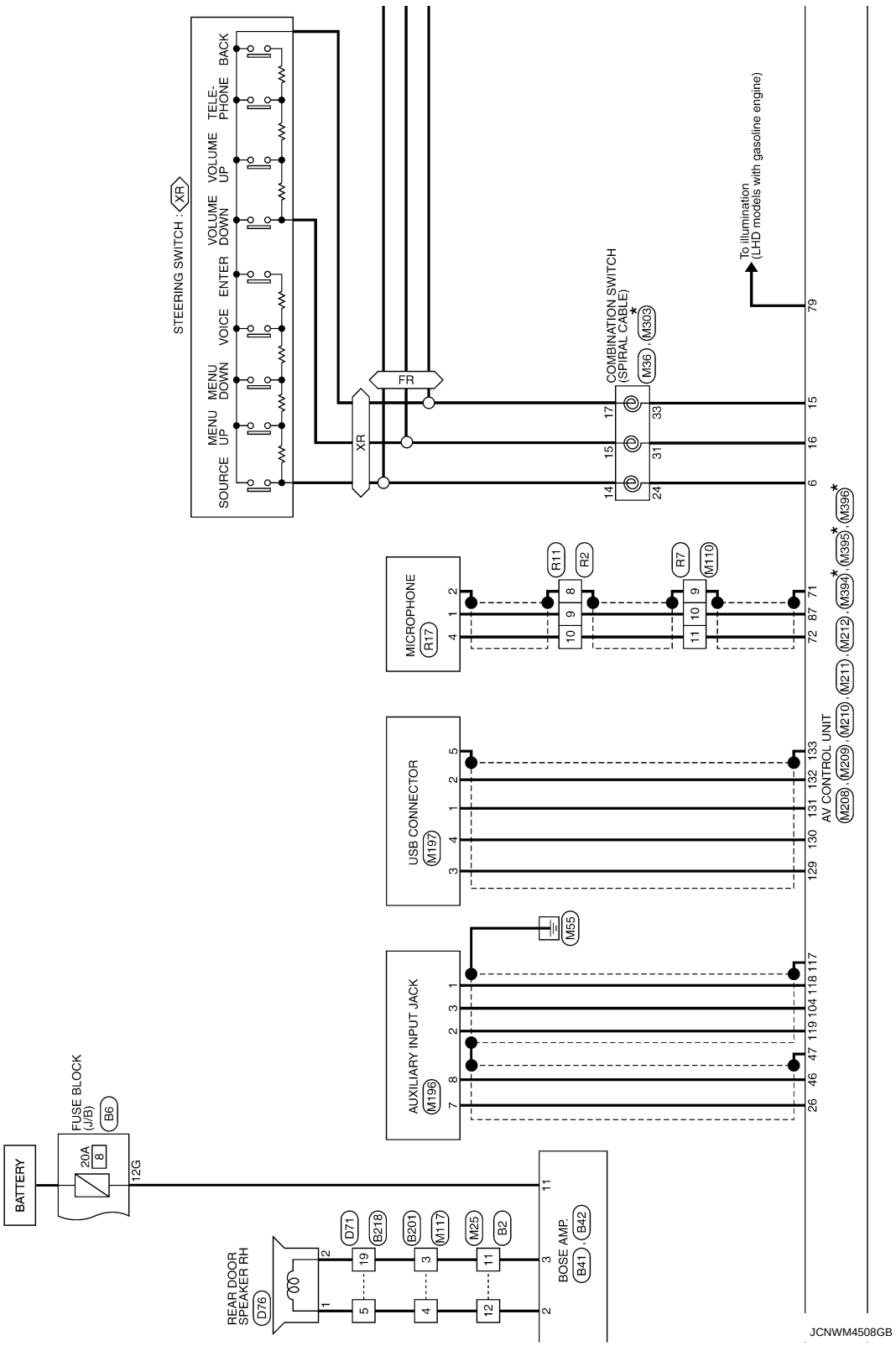
BOSE AUDIO WITH NAVIGATION AND AROUND VIEW MONITOR
(LHD MODELS WITH GASOLINE ENGINE AND SINGLE MONITOR)

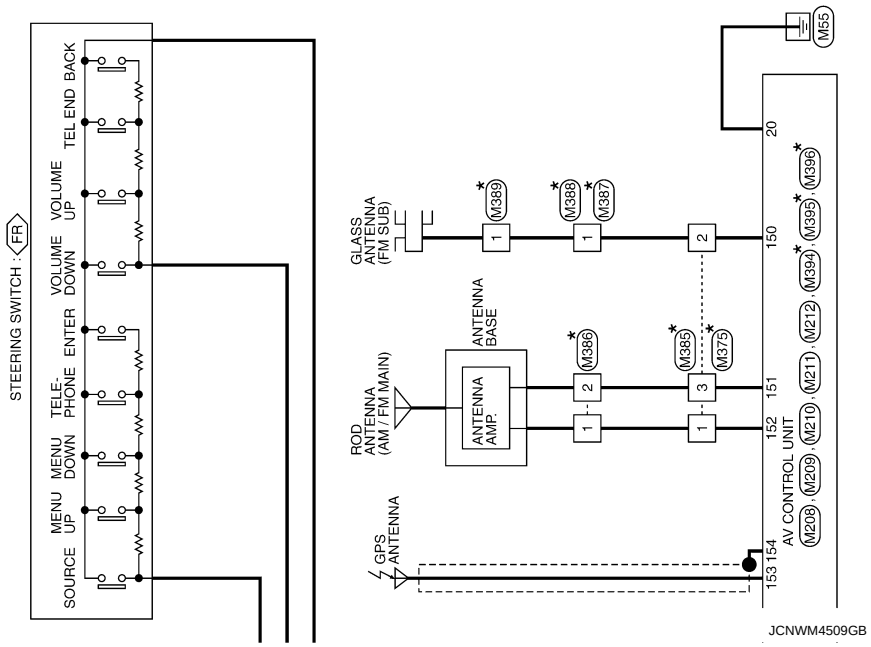



MULTIFUNCTION SWITCH
M72
M55
B5
M4
DATA LINE
DATA LINE
B7
AROUND VIEW MONITOR CONTROL UNIT
B45
B46
CAMERA
INFRARED LED (AUXILIARY LIGHTING)
DOOR MIRROR (PASSENGER SIDE)
D33
M124
D31
M5
D1
DOOR MIRROR (DRIVER SIDE)
D3
B28
D102
REAR CAMERA
D111
AV CONTROL UNIT
M208
M209
M210
M211
M212
M394
M395
M396
JCNWM4505GB


IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
10A 45
E5
25
E106
28
M6
8
STEERING ANGLE SENSOR
M37
7
M11
2
1
6
14
DATA LINK CONNECTOR
M24
7
3
11
DATA LINE
DATA LINE
ECM
M160 : VK
M164 : VQ
*2
*1
56
72
UNIFIED METER AND A/C AMP.
M66
M67
28
BCM (BODY CONTROL MODULE)
M122
M123
91
90
150
To CAN system (LHD models with gasoline engine)
SONAR CONTROL UNIT
M47
13
18
19
20
3
12
4
5
6
24
M55
8
7
CORNER SENSOR (FR)
B256
M4
B5
5
6
B68
B255
4
3
CORNER SENSOR (RL)
B259
M10
E123
11
10
E65
E153
6
3
CORNER SENSOR (FL)
E154
22
23
5
CORNER SENSOR (FR)
E152
M7
B1
78
FRONT DOOR SWITCH (DRIVER SIDE)
B16
2
AV CONTROL UNIT
M208
M209
M210
M211
M212
M394*
M395*
M396*
90
74
64
82
DATA LINE
DATA LINE
JCNWM4506GB


REAR DOOR SPEAKER LH D56
FRONT DOOR SPEAKER RH D34
FRONT SQUAWKER RH M114
FRONT DOOR SPEAKER LH D4
FRONT SQUAWKER LH M13
CENTER SPEAKER M63
REAR SQUAWKER RH B230
REAR SQUAWKER LH B48
WOOFER B51
BOSE AMP. B41, B42
AV CONTROL UNIT M208, M209, M210, M211, M212, M394*, M395*, M396*
JCNWM4507GB


STEERING SWITCH : XR
SOURCE
MENU UP
MENU DOWN
VOICE
ENTER
VOLUME DOWN
VOLUME UP
TELE-PHONE
BACK
XR
FR
COMBINATION SWITCH (SPIRAL CABLE) M36 M303
To illumination (LHD models with gasoline engine)
MICROPHONE R17
R11
R2
R7
M110
USB CONNECTOR M197
AUXILIARY INPUT JACK M196
M55
AV CONTROL UNIT M208, M209, M210, M211, M212, M394, M395, M396
BATTERY
FUSE BLOCK (J/B) B6
20A 8
12G
REAR DOOR SPEAKER RH D76
D71
B218
B201
M117
M25
B2
BOSE AMP. B41, B42
JCNWM4508GB

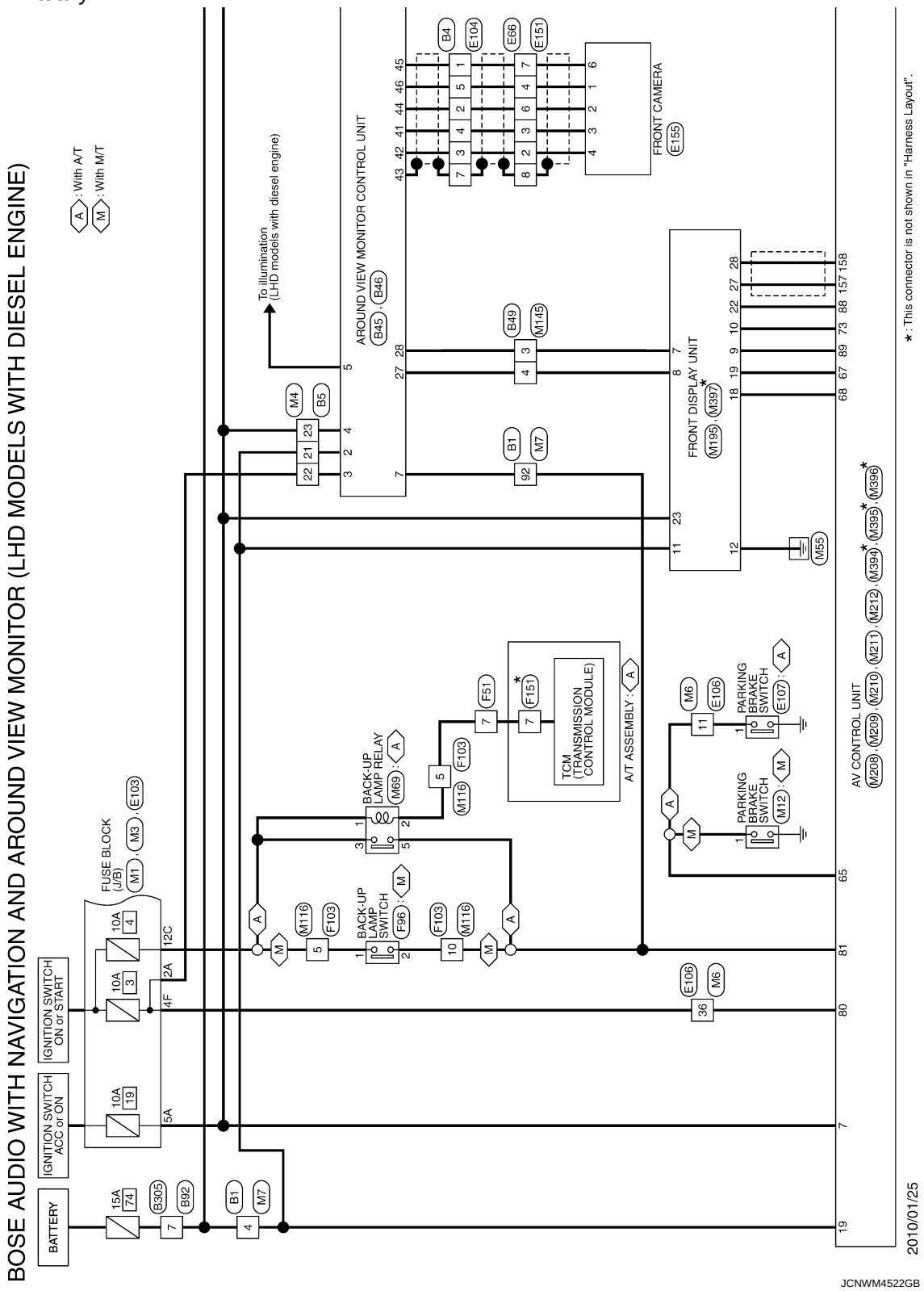


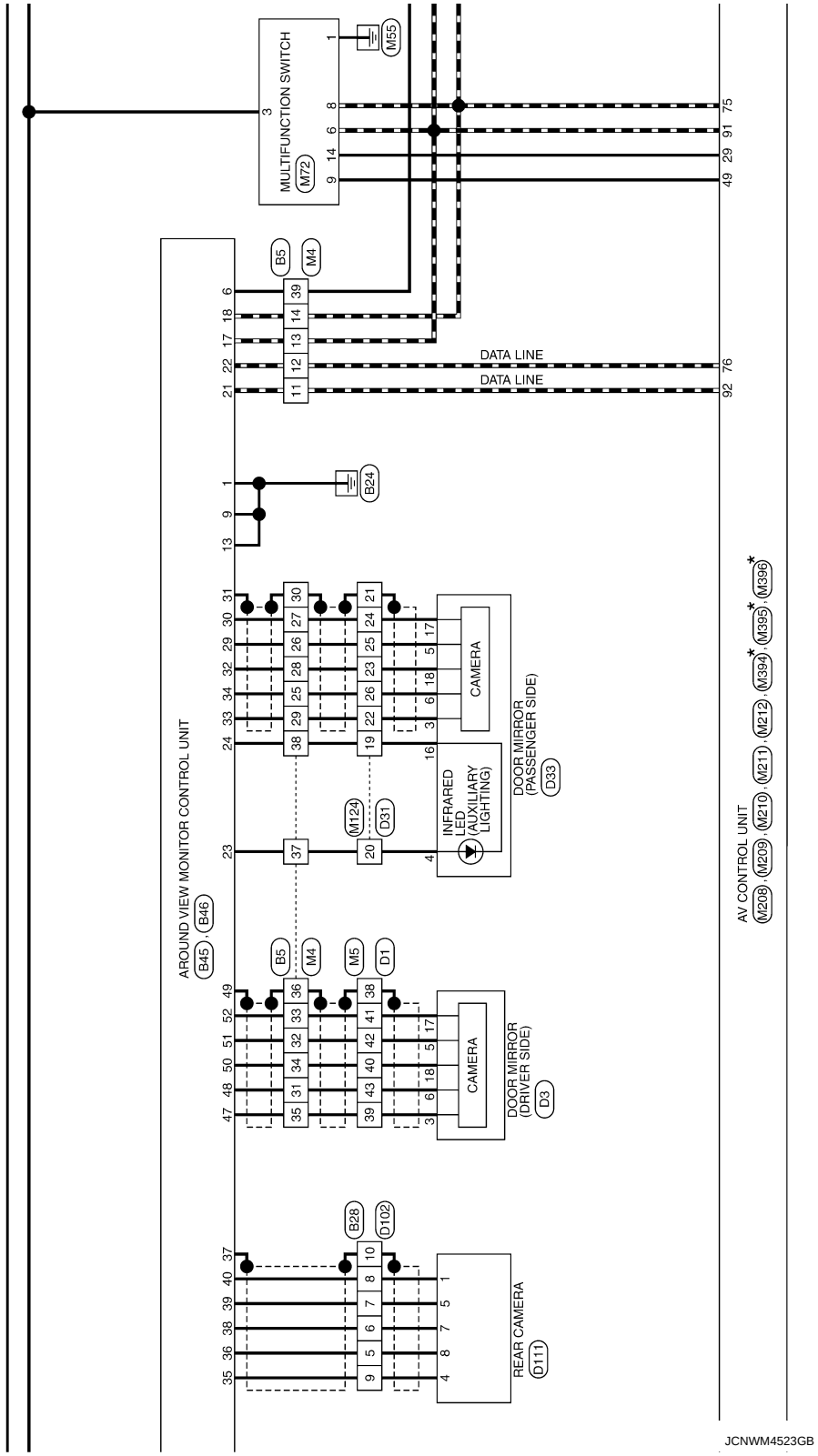
DIESEL ENGINEMODELS

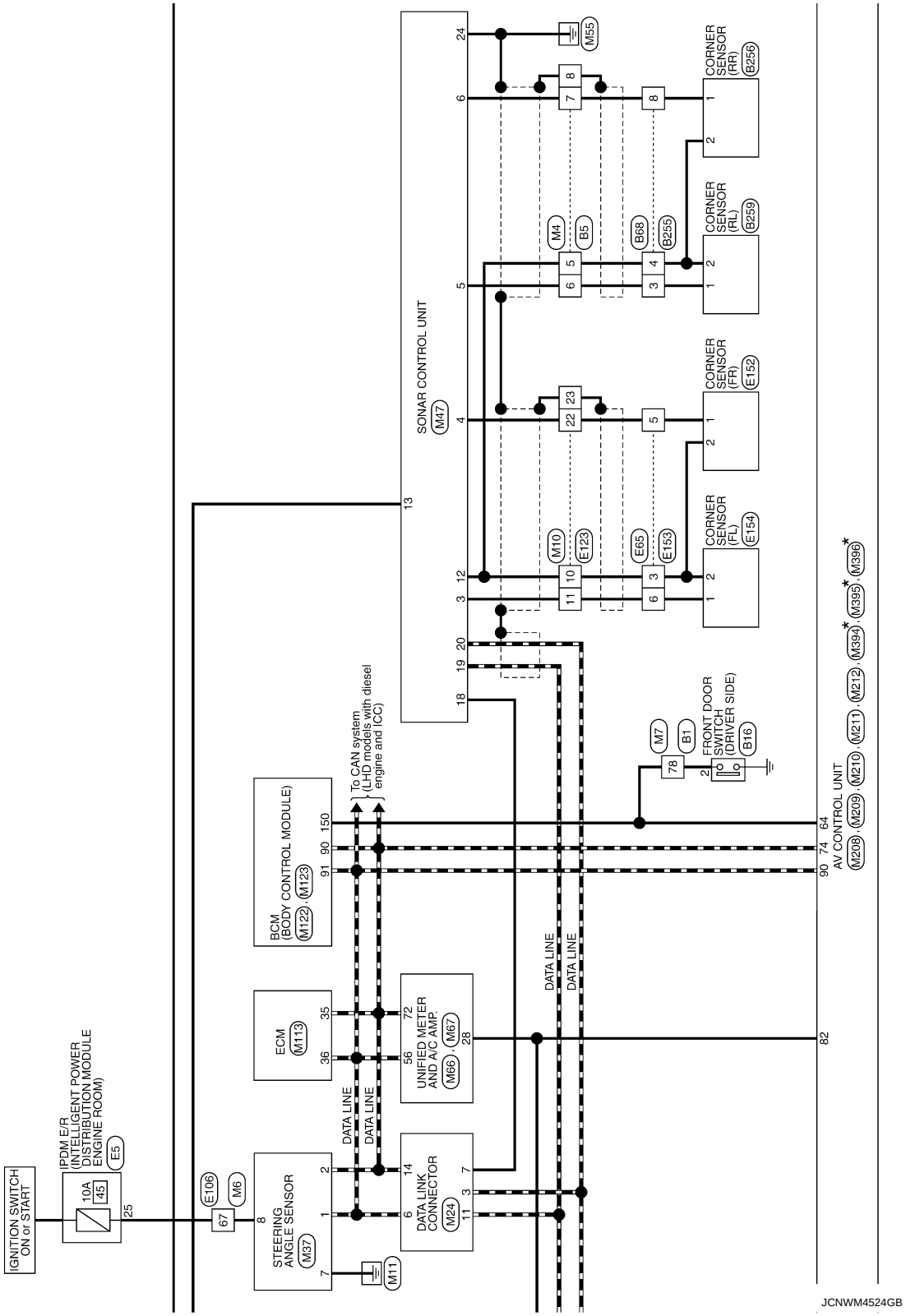
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

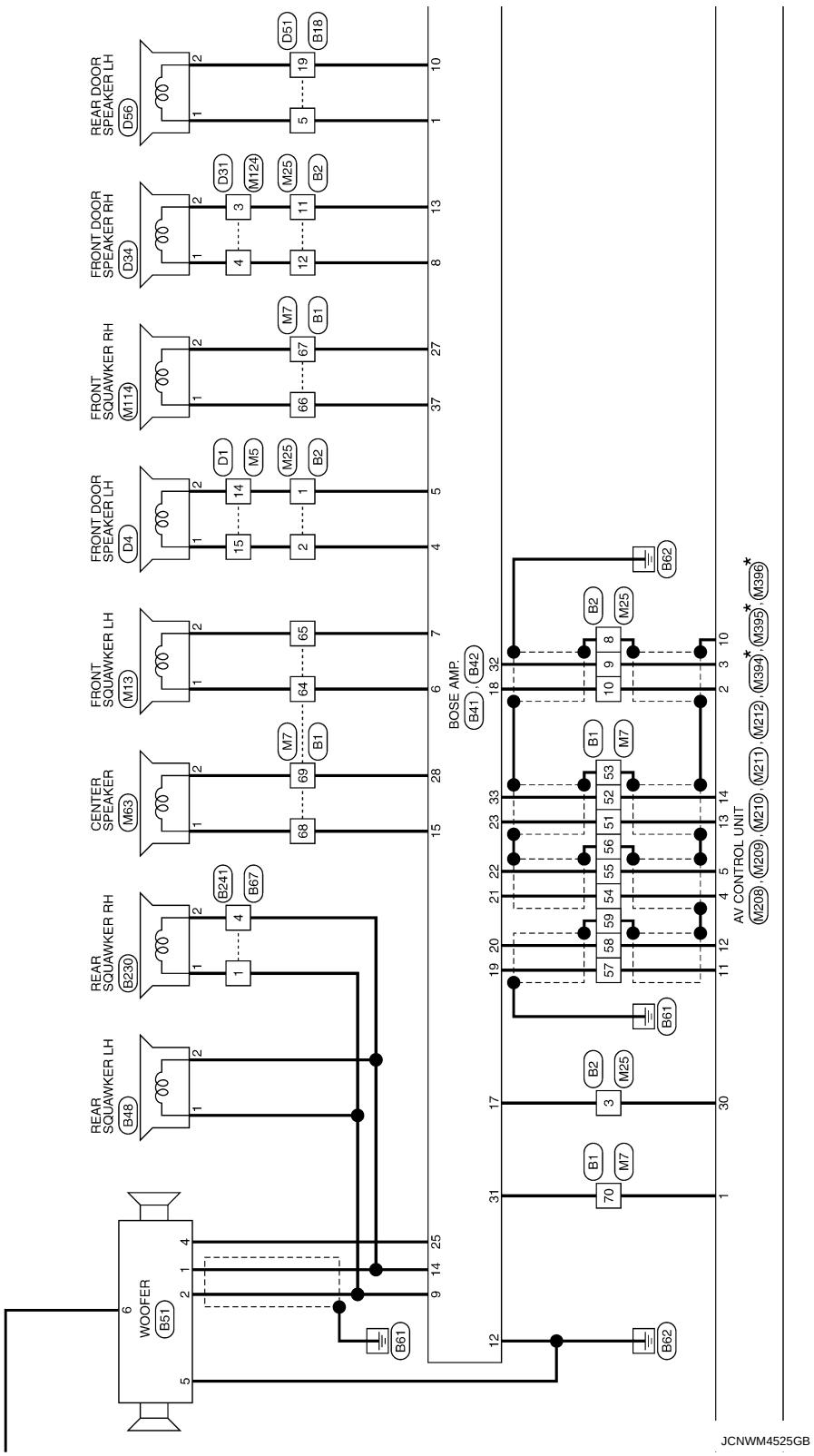
NOTE:

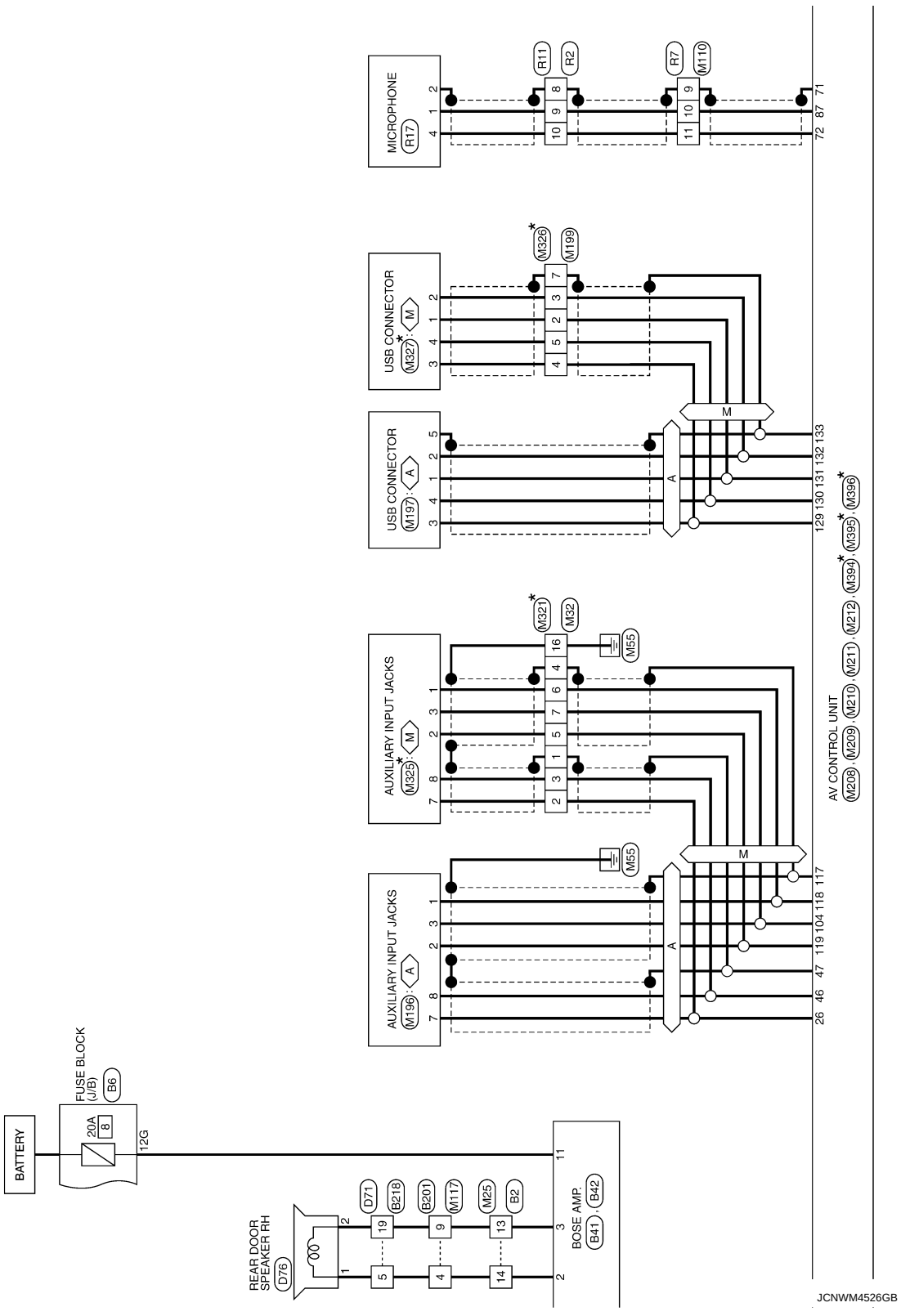
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

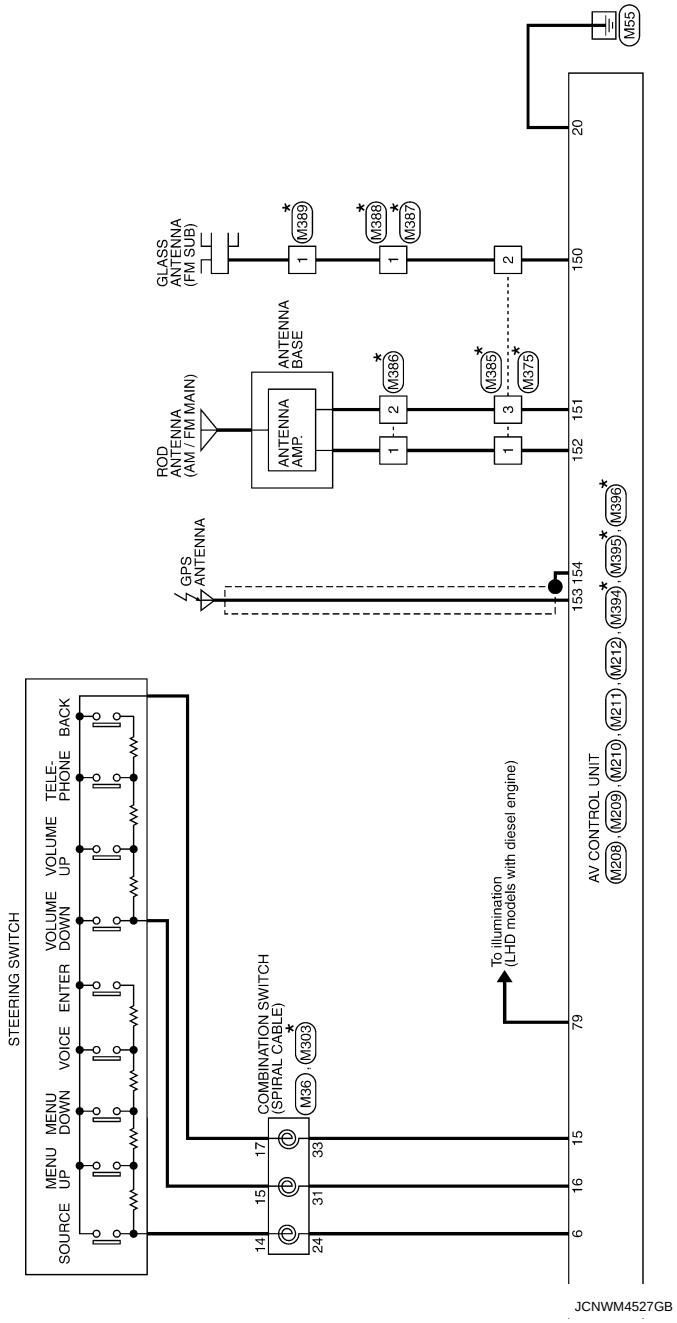



MULTIFUNCTION SWITCH
M72
M55
B5
M4
DATA LINE
DATA LINE
B24
AROUND VIEW MONITOR CONTROL UNIT
B45
B46
CAMERA
INFRARED LED (AUXILIARY LIGHTING)
DOOR MIRROR (PASSENGER SIDE)
D33
M124
D31
M5
D1
DOOR MIRROR (DRIVER SIDE)
D3
B28
D102
REAR CAMERA
D111
AV CONTROL UNIT
M208
M209
M210
M211
M212
M394
M395
M396
JCNWM4523GB


IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
10A 45
25
E106
67
M6
8
STEERING ANGLE SENSOR
M37
7
M11
DATA LINE
DATA LINE
DATA LINE
DATA LINE
ECM
M113
35
36
BCM (BODY CONTROL MODULE)
M122, M123
150
90
91
To CAN system (LHD models with diesel engine and ICC)
UNIFIED METER AND A/C AMP.
M66, M67
72
56
28
DATA LINK CONNECTOR
M24
14
6
11
3
7
SONAR CONTROL UNIT
M47
13
18
19
20
3
12
4
5
6
24
M55
M4
M5
M10
E123
E65
E153
M7
B1
78
2
FRONT DOOR SWITCH (DRIVER SIDE)
B16
B68
B255
22
23
CORNER SENSOR (FR)
E152
CORNER SENSOR (RL)
B259
CORNER SENSOR (FL)
E154
CORNER SENSOR (RR)
B256
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394*, M395*, M396*
90
74
64
82
JCNWM4524GB


REAR DOOR SPEAKER LH D56
FRONT DOOR SPEAKER RH D34
FRONT SQUAWKER RH M114
FRONT DOOR SPEAKER LH D4
FRONT SQUAWKER LH M13
CENTER SPEAKER M63
REAR SQUAWKER RH B230
REAR SQUAWKER LH B48
WOOFER B51
BOSE AMP. B41, B42
AV CONTROL UNIT M208, M209, M210, M211, M212, M394*, M395*, M396*
B61
B62
JCNWM4525GB


MICROPHONE
R17
R11
R2
R7
M110
USB CONNECTOR
M327
M326
M199
USB CONNECTOR
M197
AUXILIARY INPUT JACKS
M325
M321
M32
M55
AUXILIARY INPUT JACKS
M196
M55
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394, M395, M396
BATTERY
FUSE BLOCK (J/B)
B6
20A
12G
REAR DOOR SPEAKER RH
D76
D71
B218
B201
M117
M25
B2
BOSE AMP.
B41, B42
JCNWM4526GB



RHD MODELS

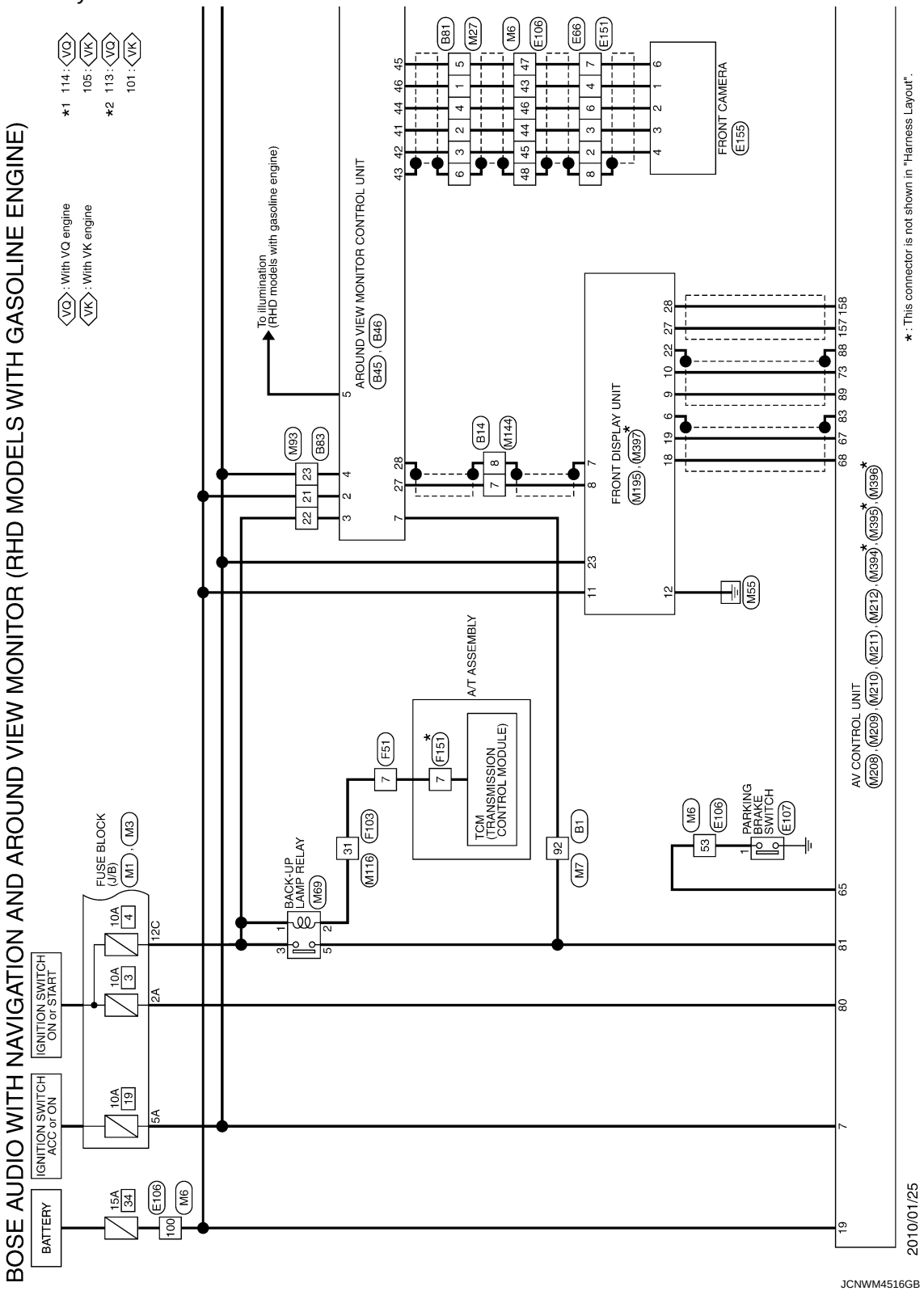
RHD MODELS : Wiring Diagram

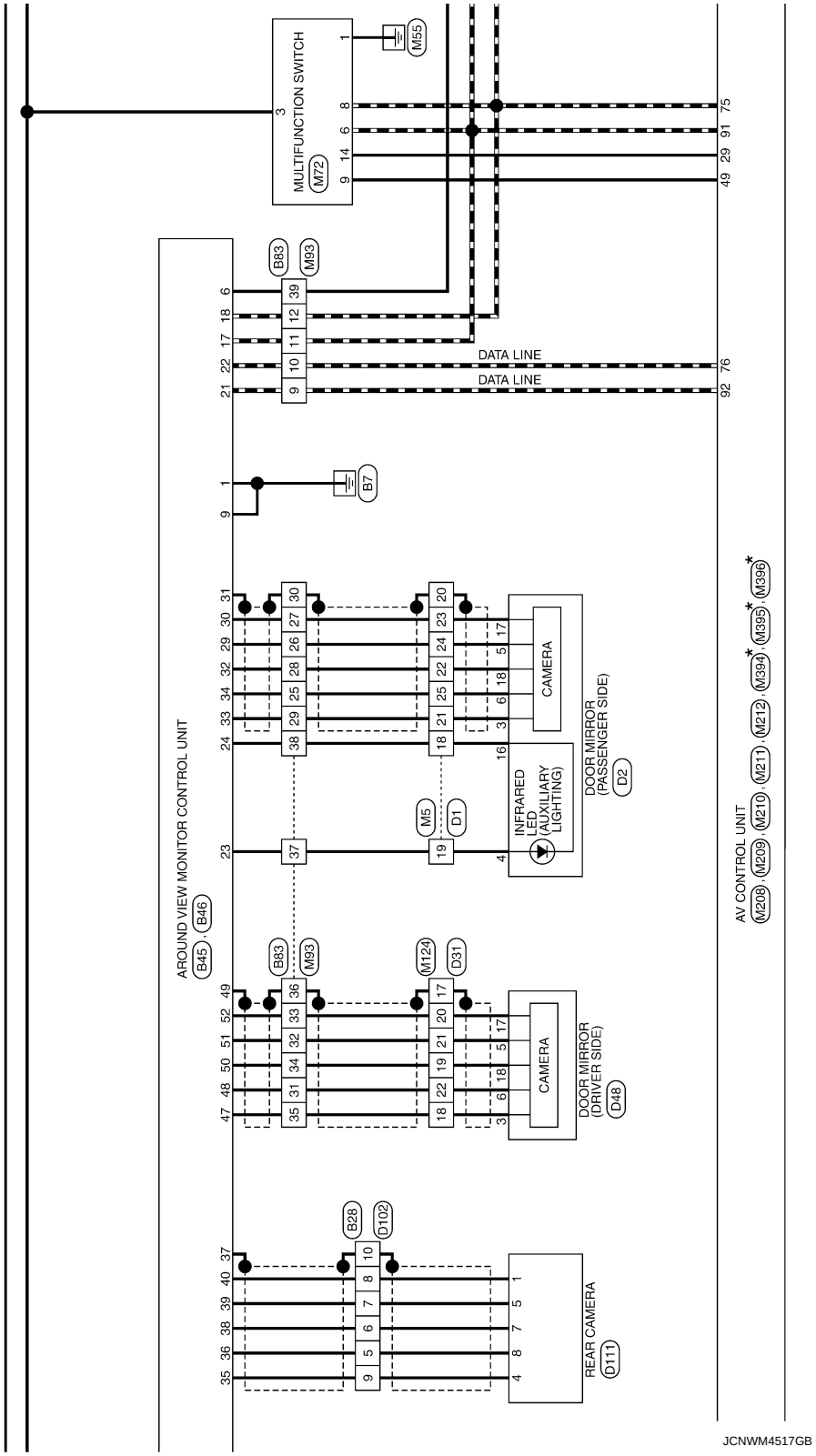
INFOID:0000000006106607

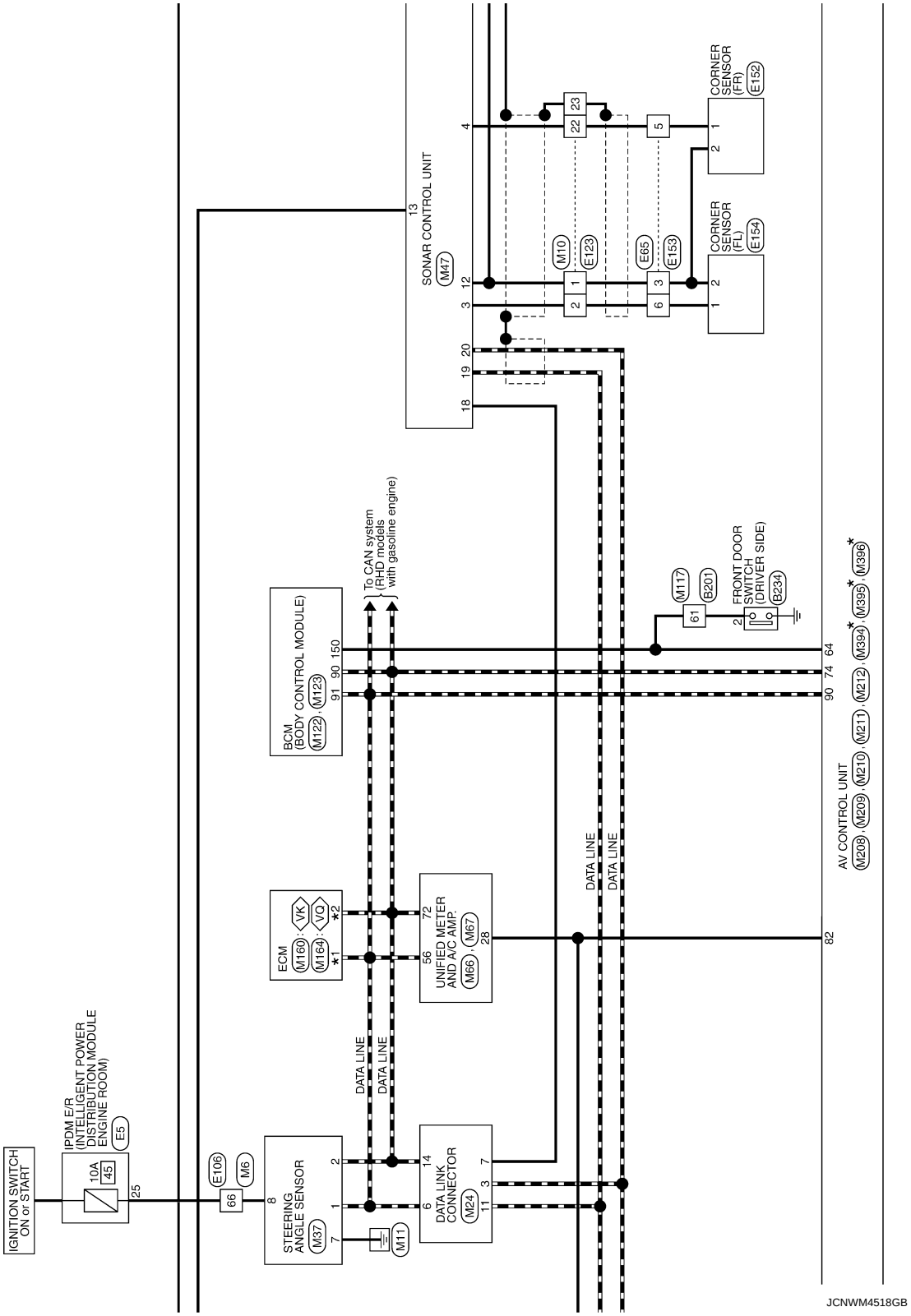
GASOLINE ENGINE MODELS

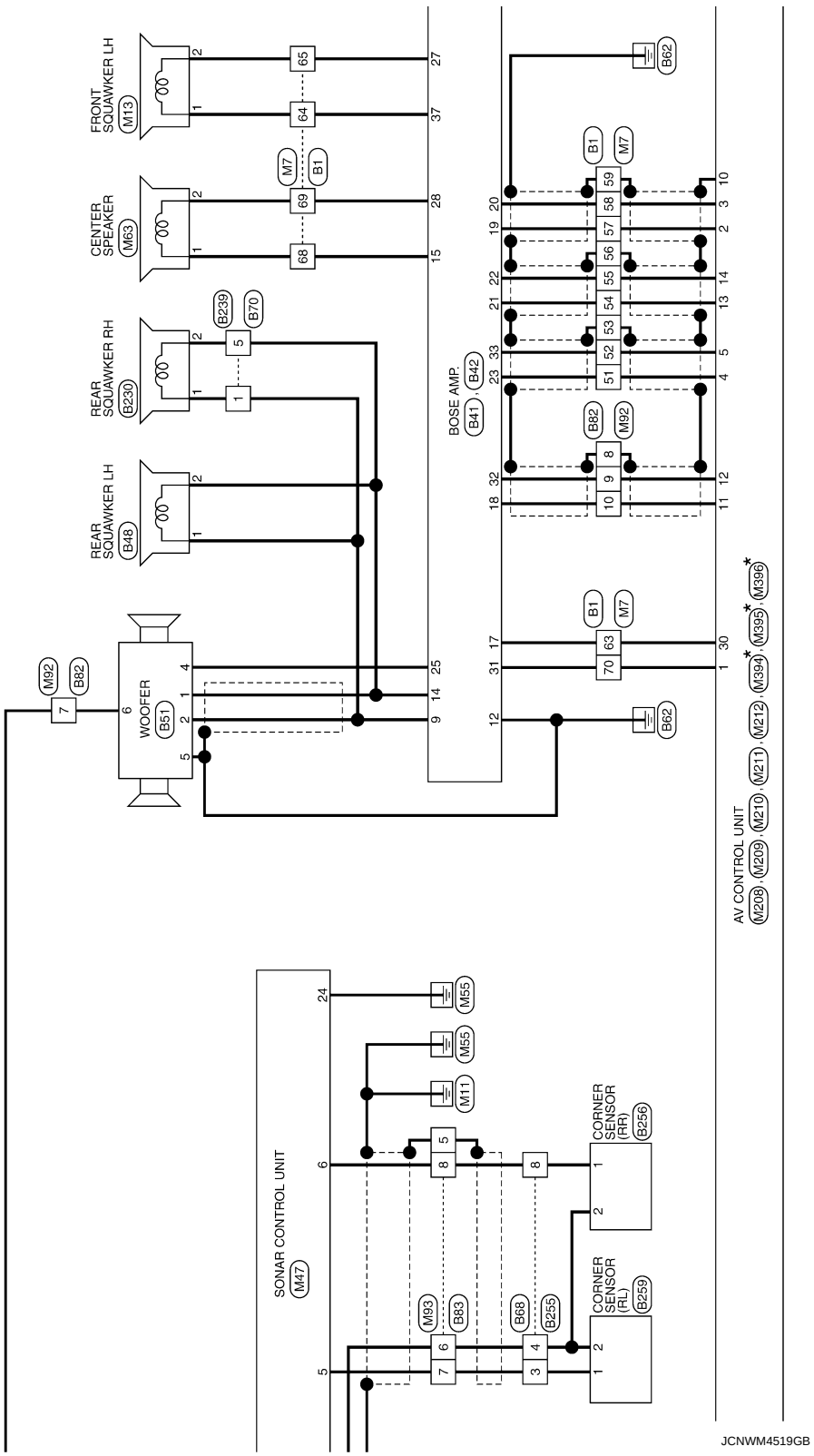
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

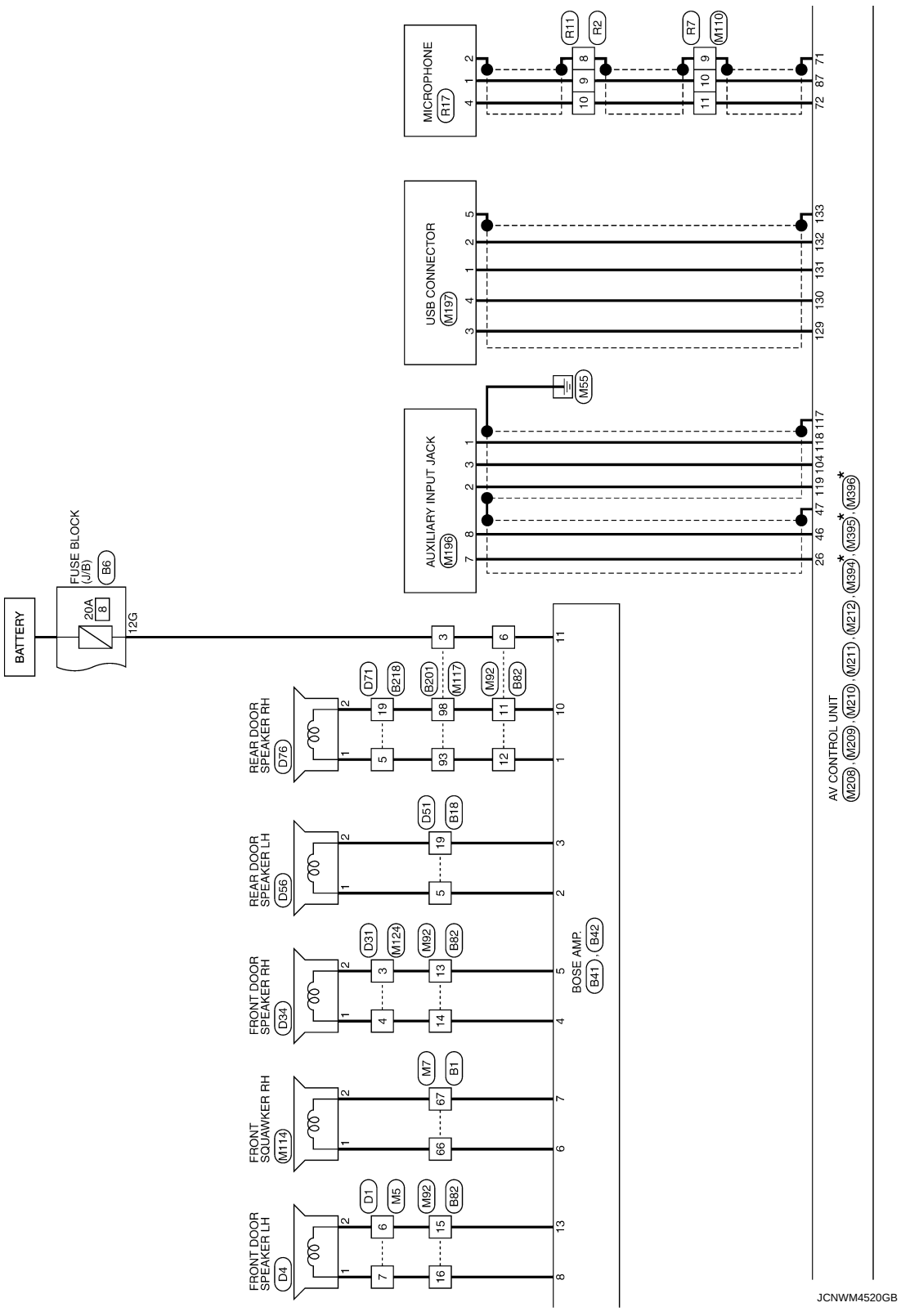
NOTE:
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

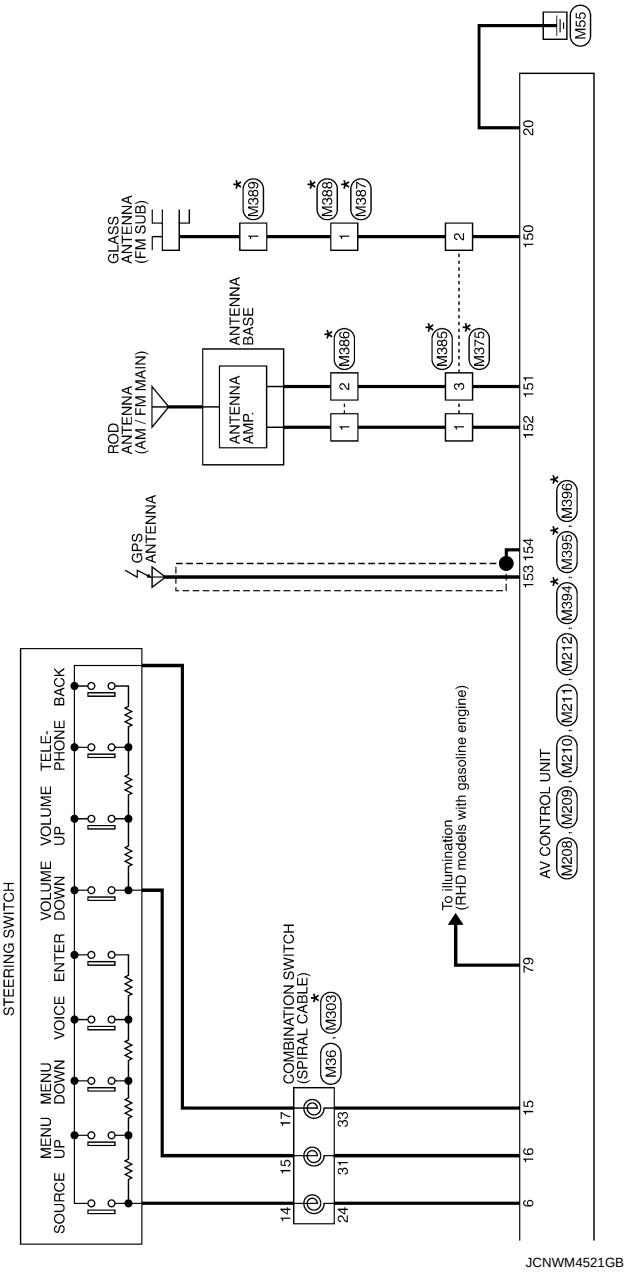



MULTIFUNCTION SWITCH
M72
M55
B83
M93
DATA LINE
DATA LINE
B7
AROUND VIEW MONITOR CONTROL UNIT
B45
B46
CAMERA
INFRARED LED (AUXILIARY LIGHTING)
DOOR MIRROR (PASSENGER SIDE)
D2
M5
D1
M124
D31
DOOR MIRROR (DRIVER SIDE)
D48
B28
D102
REAR CAMERA
D111
AV CONTROL UNIT
M208
M209
M210
M211
M212
M394*
M395*
M396*
JCNWM4517GB


IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
10A 45
25
E106
66
M6
STEERING ANGLE SENSOR
M37
8
7
2
1
M11
DATA LINE
DATA LINE
ECM
M160
M164
VK
VO
*2
*1
UNIFIED METER AND A/C AMP.
M66
M67
72
56
28
DATA LINE
DATA LINE
DATA LINK CONNECTOR
M24
14
6
11
3
7
BCM (BODY CONTROL MODULE)
M122
M123
150
90
91
To CAN system (RHD models with gasoline engine)
SONAR CONTROL UNIT
M47
13
4
3
12
20
19
18
M10
E123
2
1
22
23
E65
E153
6
3
5
CORNER SENSOR (FR)
E152
CORNER SENSOR (FL)
E154
1
2
M117
B201
61
FRONT DOOR SWITCH (DRIVER SIDE)
B234
2
AV CONTROL UNIT
M208
M209
M210
M211
M212
M394
M395
M396
82
90
74
64
JCNWM4518GB


FRONT SQUAWKER LH
M13
CENTER SPEAKER
M63
REAR SQUAWKER RH
B230
REAR SQUAWKER LH
B48
WOOFER
B51
BOSE AMP.
B41
B42
AV CONTROL UNIT
M208
M209
M210
M211
M212
M394
M395
M396
SONAR CONTROL UNIT
M47
CORNER SENSOR (RR)
B256
CORNER SENSOR (RL)
B259
JCNWM4519GB


BATTERY
FUSE BLOCK (J/B) B6
20A 8
12G
MICROPHONE R17
USB CONNECTOR M197
AUXILIARY INPUT JACK M196
M55
R11 R2 R7 M110
AV CONTROL UNIT M208, M209, M210, M211, M212, M394, M395, M396
REAR DOOR SPEAKER RH D76
REAR DOOR SPEAKER LH D56
FRONT DOOR SPEAKER RH D34
FRONT SQUAWKER RH M114
FRONT DOOR SPEAKER LH D4
BOSE AMP B41, B42
JCNWM4520GB

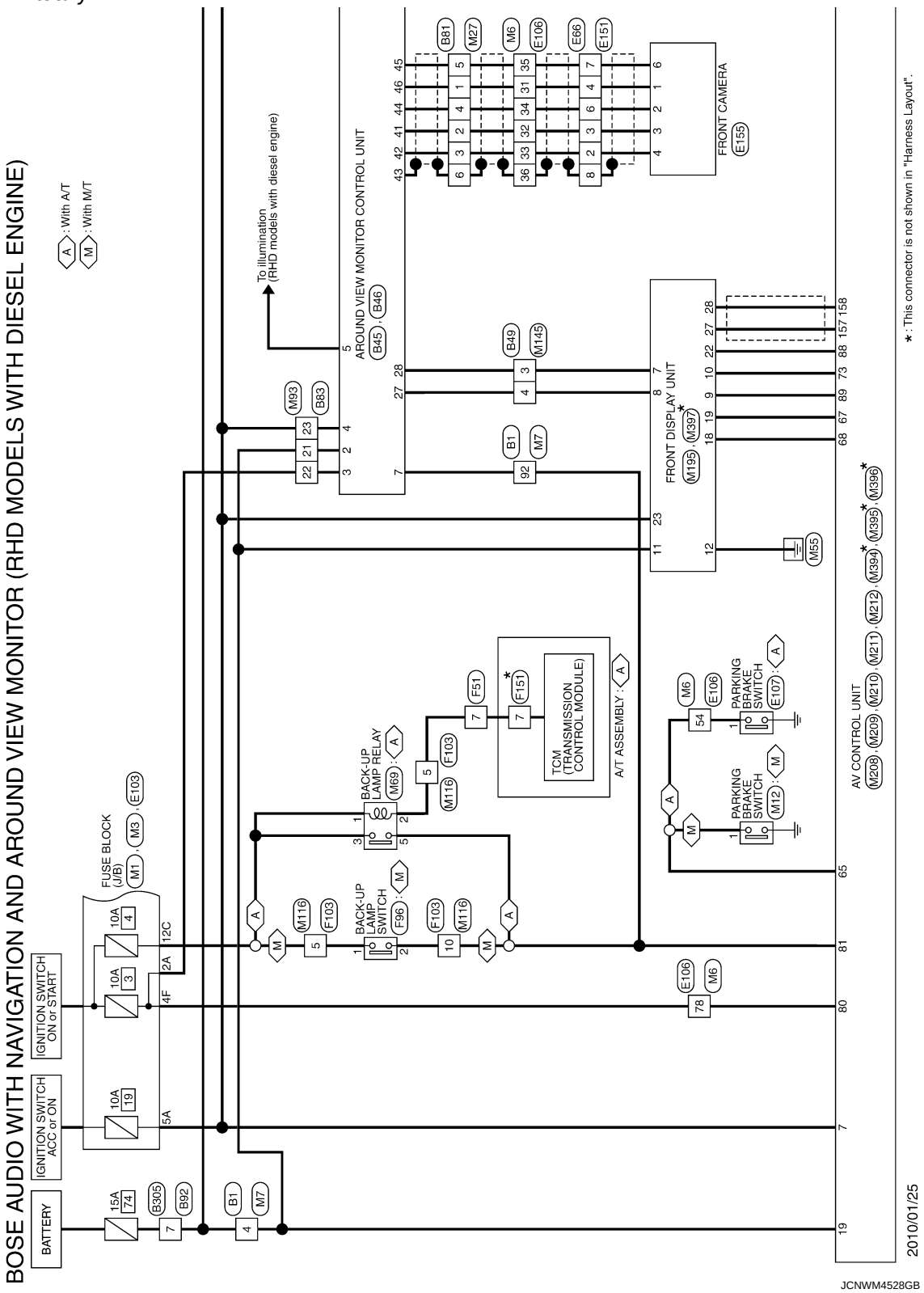


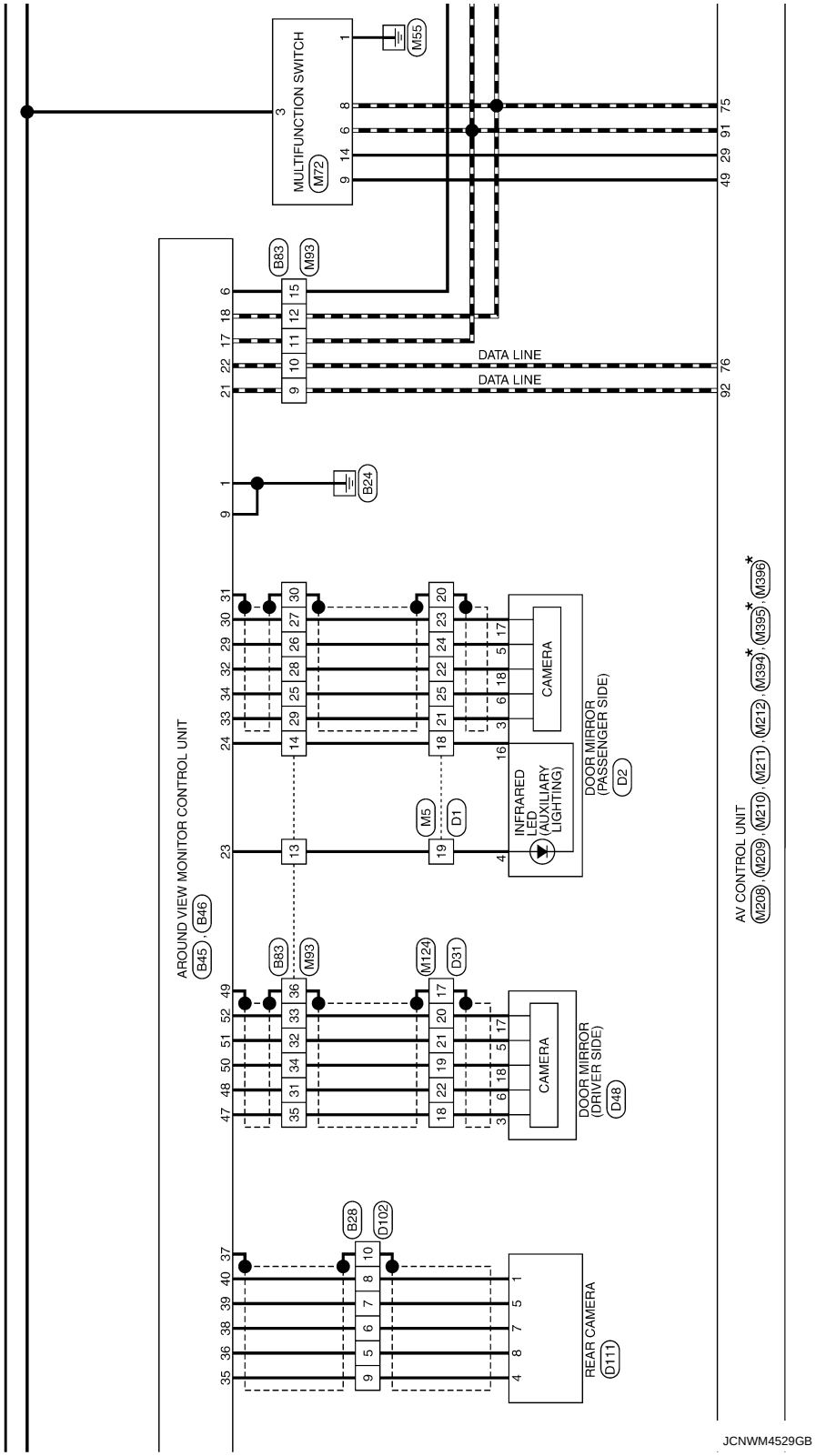
DIESEL ENGINE MODELS

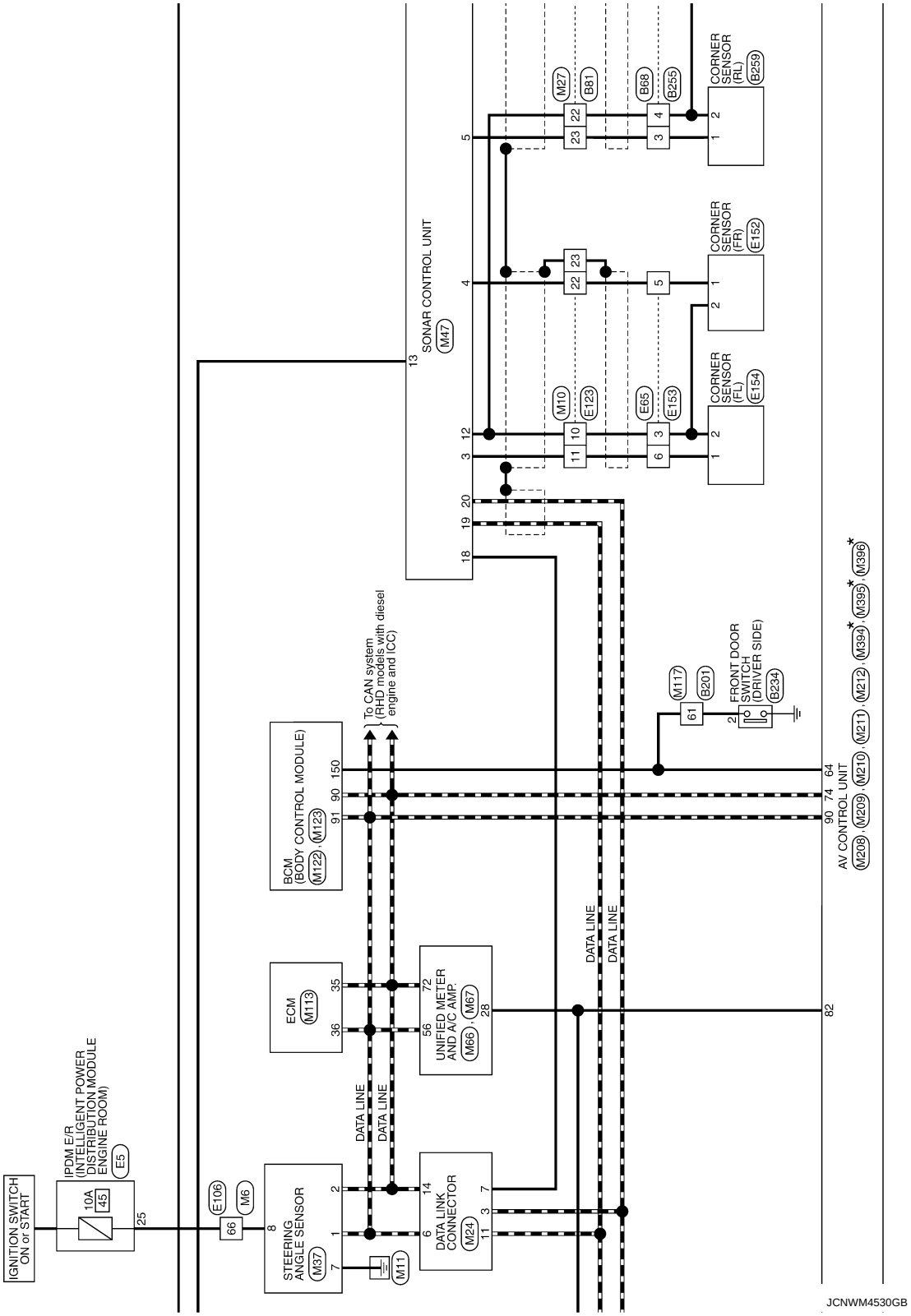
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

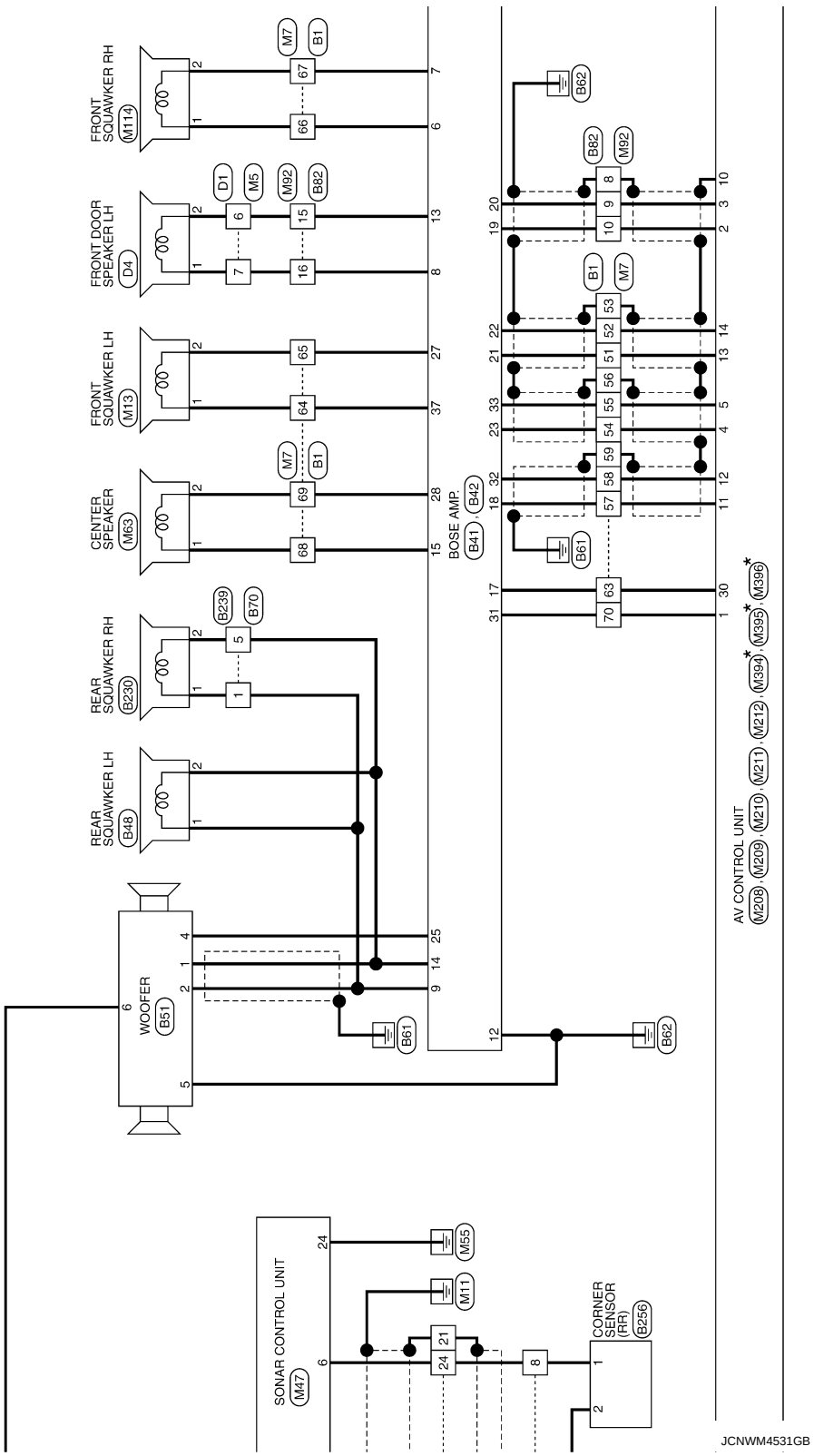
NOTE:

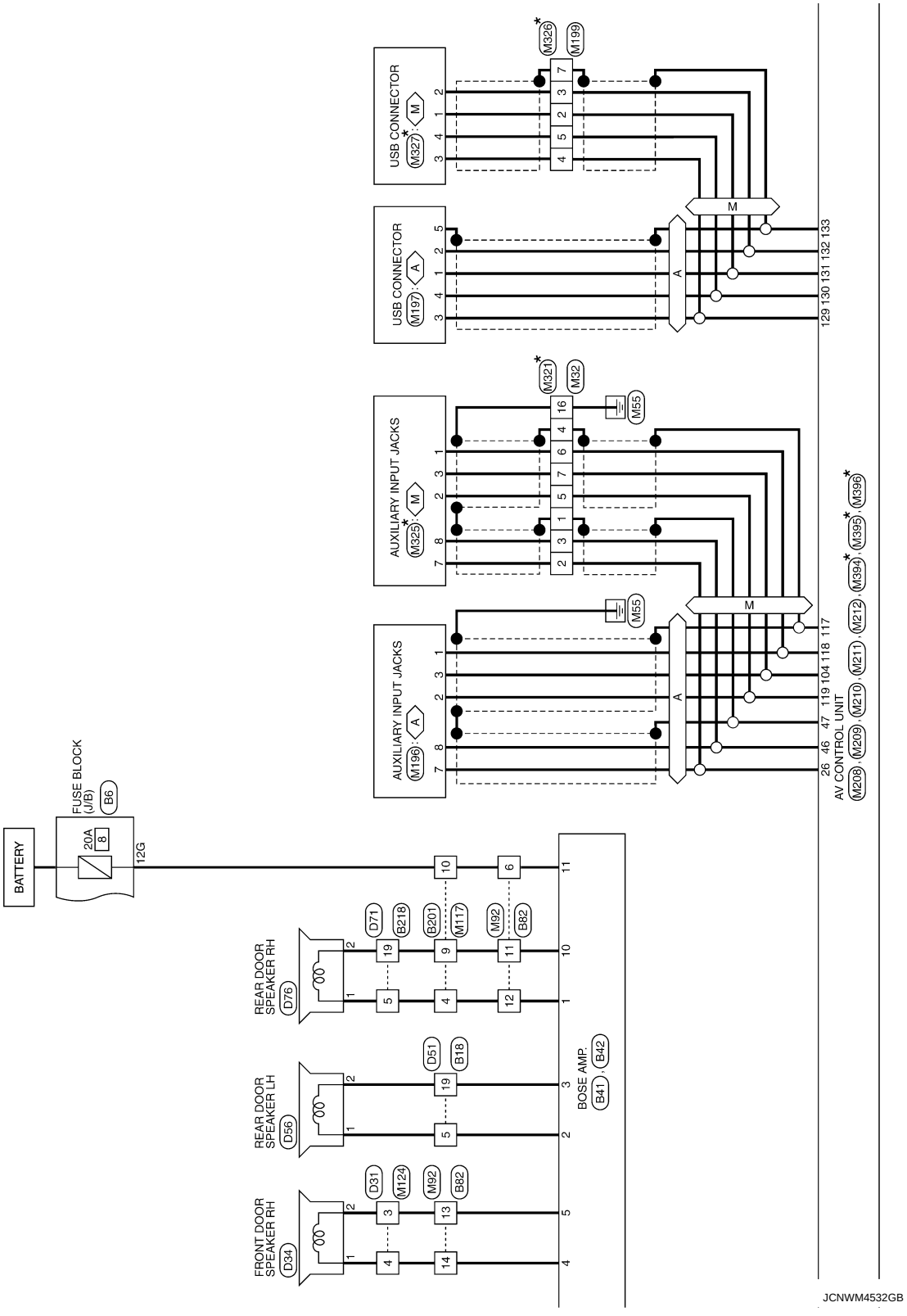
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

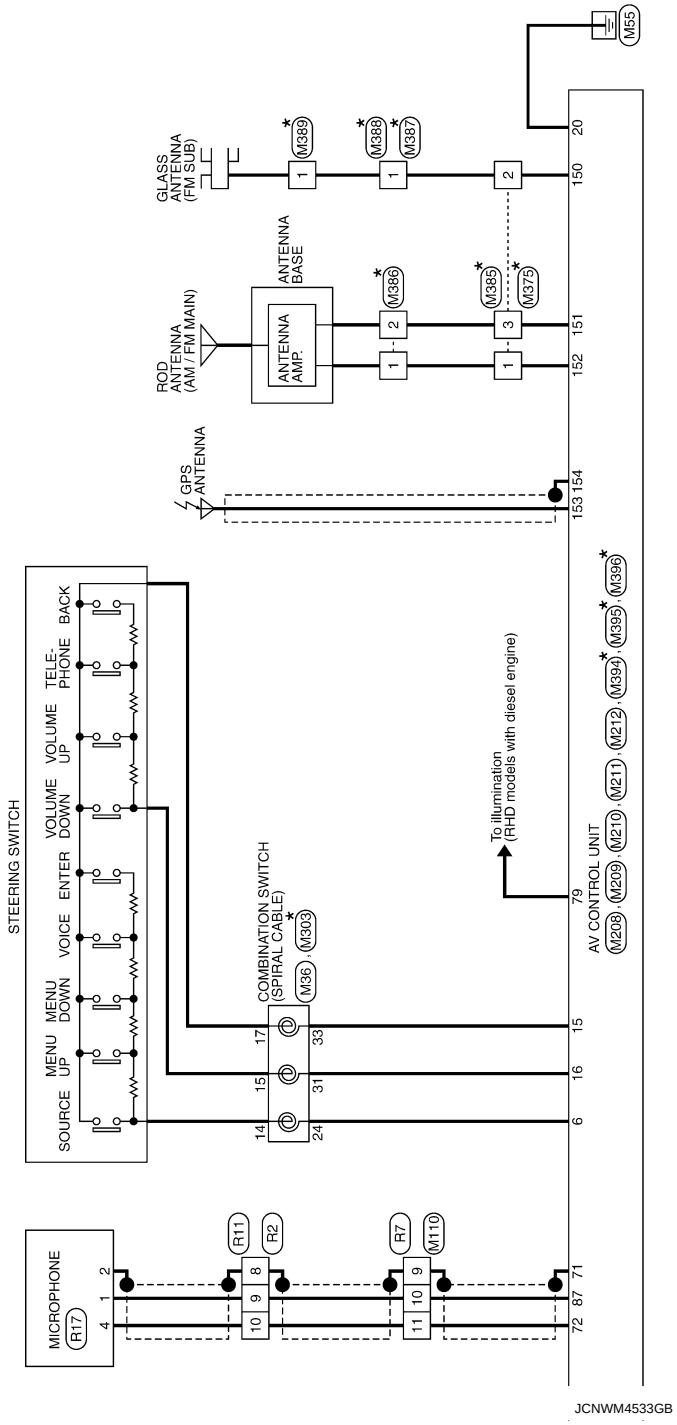



MULTIFUNCTION SWITCH
M72
M55
B83
M93
DATA LINE
DATA LINE
B24
AROUND VIEW MONITOR CONTROL UNIT
B45
B46
CAMERA
INFRARED LED (AUXILIARY LIGHTING)
DOOR MIRROR (PASSENGER SIDE)
D2
M5
D1
M124
D31
DOOR MIRROR (DRIVER SIDE)
D48
B28
D102
REAR CAMERA
D111
AV CONTROL UNIT
M208
M209
M210
M211
M212
M394
M395
M396
JCNWM4529GB


IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
10A 45
25
E106
66
M6
STEERING ANGLE SENSOR
M37
8
2
1
7
M11
DATA LINE
DATA LINE
DATA LINK CONNECTOR
M24
14
6
7
3
11
ECM
M113
35
36
UNIFIED METER AND A/C AMP.
M66
M67
56
72
28
BCM (BODY CONTROL MODULE)
M122
M123
150
90
91
To CAN system (RHD models with diesel engine and ICC)
DATA LINE
DATA LINE
82
AV CONTROL UNIT
M208
M209
M210
M211
M212
M394*
M395*
M396*
90
74
64
M117
61
B201
FRONT DOOR SWITCH (DRIVER SIDE)
B234
2
0
SONAR CONTROL UNIT
M47
13
18
19
20
3
12
4
5
M10
E123
11
10
E65
E153
6
3
CORNER SENSOR (FL)
E154
M27
B81
23
22
B68
B255
4
3
CORNER SENSOR (RL)
B259
22
23
5
CORNER SENSOR (FR)
E152
JCNWM4530GB


FRONT SQUAWKER RH (M114)
FRONT DOOR SPEAKER LH (D4)
FRONT SQUAWKER LH (M13)
CENTER SPEAKER (M63)
REAR SQUAWKER RH (B230)
REAR SQUAWKER LH (B48)
WOOFER (B51)
BOSE AMP. (B41), (B42)
AV CONTROL UNIT (M208), (M209), (M210), (M211), (M212), (M394)*, (M395)*, (M396)*
SONAR CONTROL UNIT (M47)
CORNER SENSOR (RR) (B256)
JCNWM4531GB


USB CONNECTOR
M327
M
M326
M199
USB CONNECTOR
M197
A
AUXILIARY INPUT JACKS
M325
M
M321
M32
M55
AUXILIARY INPUT JACKS
M196
A
M55
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394, M395, M396
129 130 131 132 133
26 46 47 119 104 118 117
FUSE BLOCK (J/B)
B6
20A
8
12G
BATTERY
REAR DOOR SPEAKER RH
D76
REAR DOOR SPEAKER LH
D56
FRONT DOOR SPEAKER RH
D34
D71
B218
B201
M117
M92
B82
D51
B18
D31
M124
BOSE AMP.
B41, B42
JCNWM4532GB


M55
GLASS ANTENNA (FM SUB)
M389
M388
M387
ANTENNA BASE
ROD ANTENNA (AM / FM MAIN)
ANTENNA AMP.
M386
M385
M375
GPS ANTENNA
STEERING SWITCH
SOURCE
MENU UP
MENU DOWN
VOICE
ENTER
VOLUME DOWN
VOLUME UP
TELE-PHONE
BACK
COMBINATION SWITCH (SPIRAL CABLE)
M36
M303
To illumination (RHD models with diesel engine)
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394, M395, M396
MICROPHONE
R17
R11
R2
R7
M110
JCNWM4533GB

BOSE AUDIO WITH NAVIGATION AND REAR VIEW MONITOR
LHD MODELS

LHD MODELS : Wiring Diagram

INFOID:0000000006109274

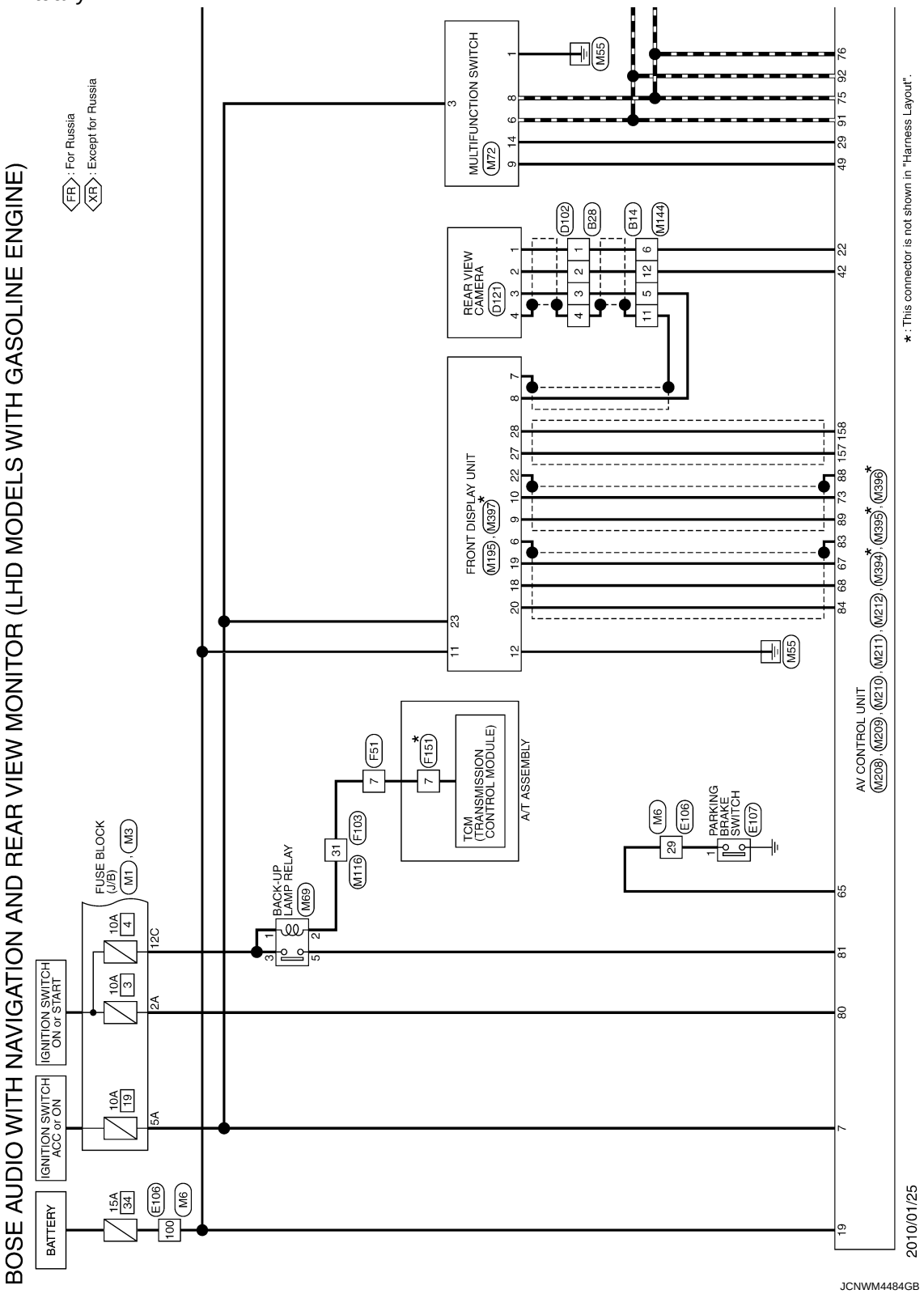
GASOLINE ENGINE MODELS

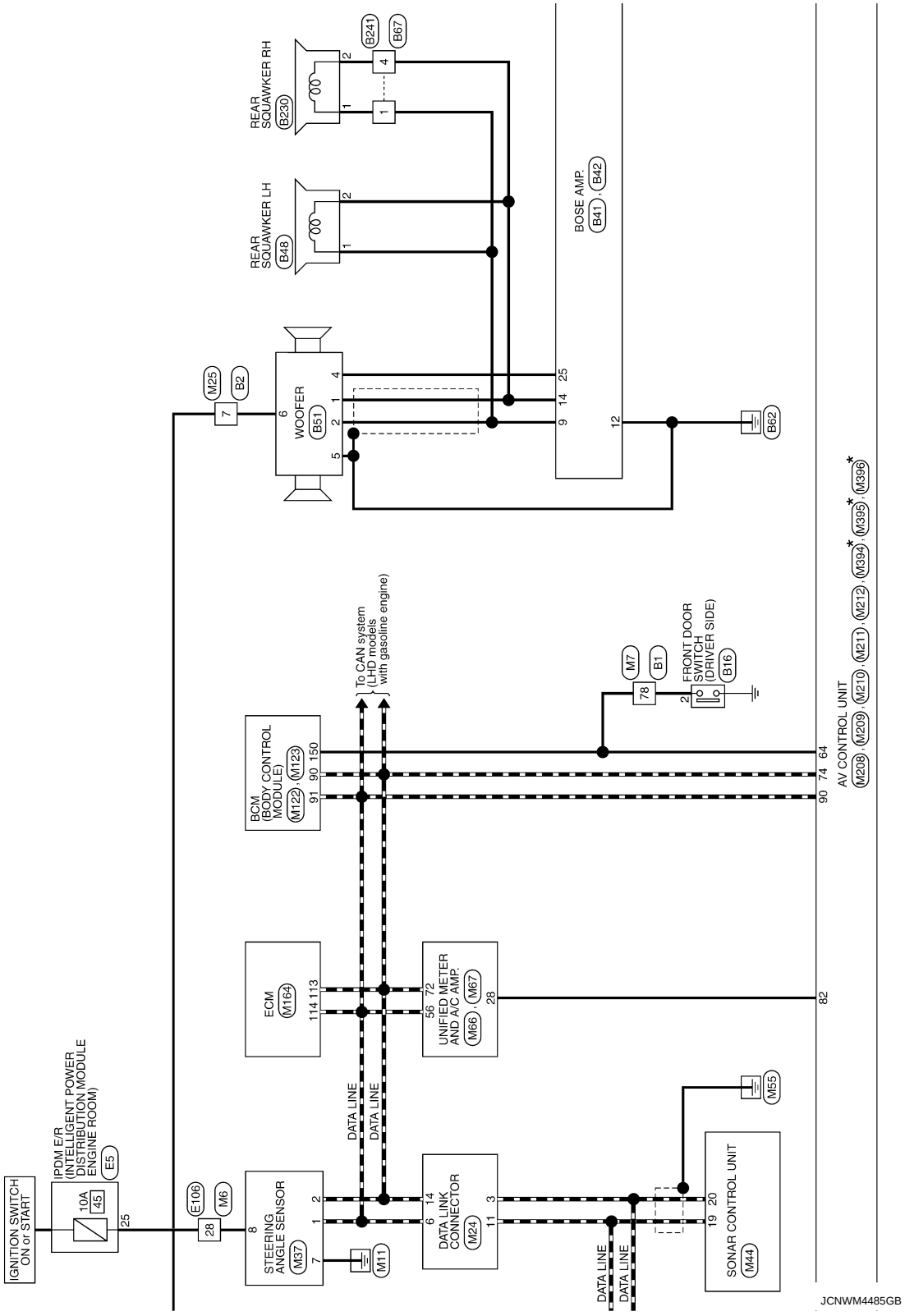
For connector terminal arrangements, harness layouts, and alphabets in a ⬭ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

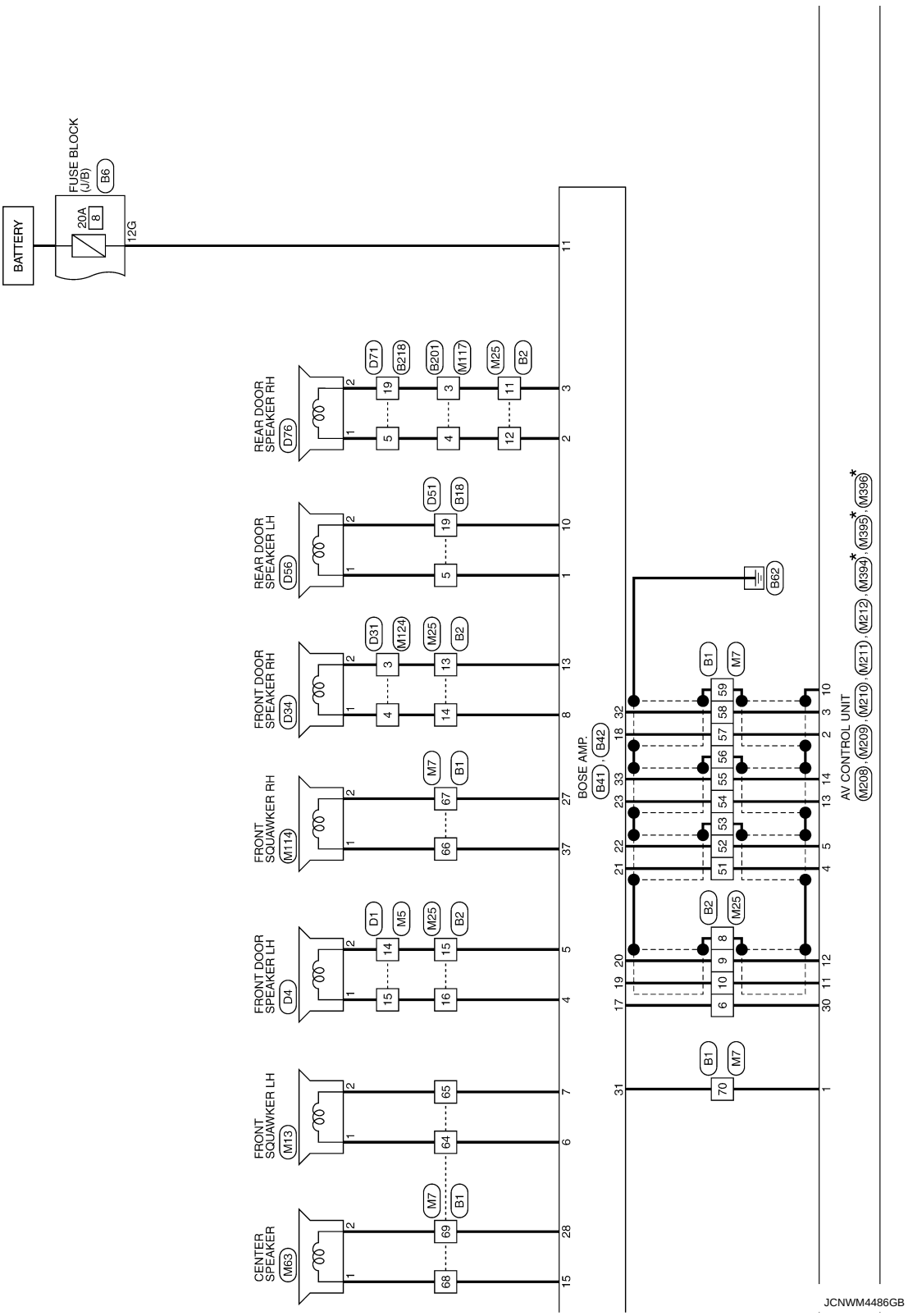
NOTE:

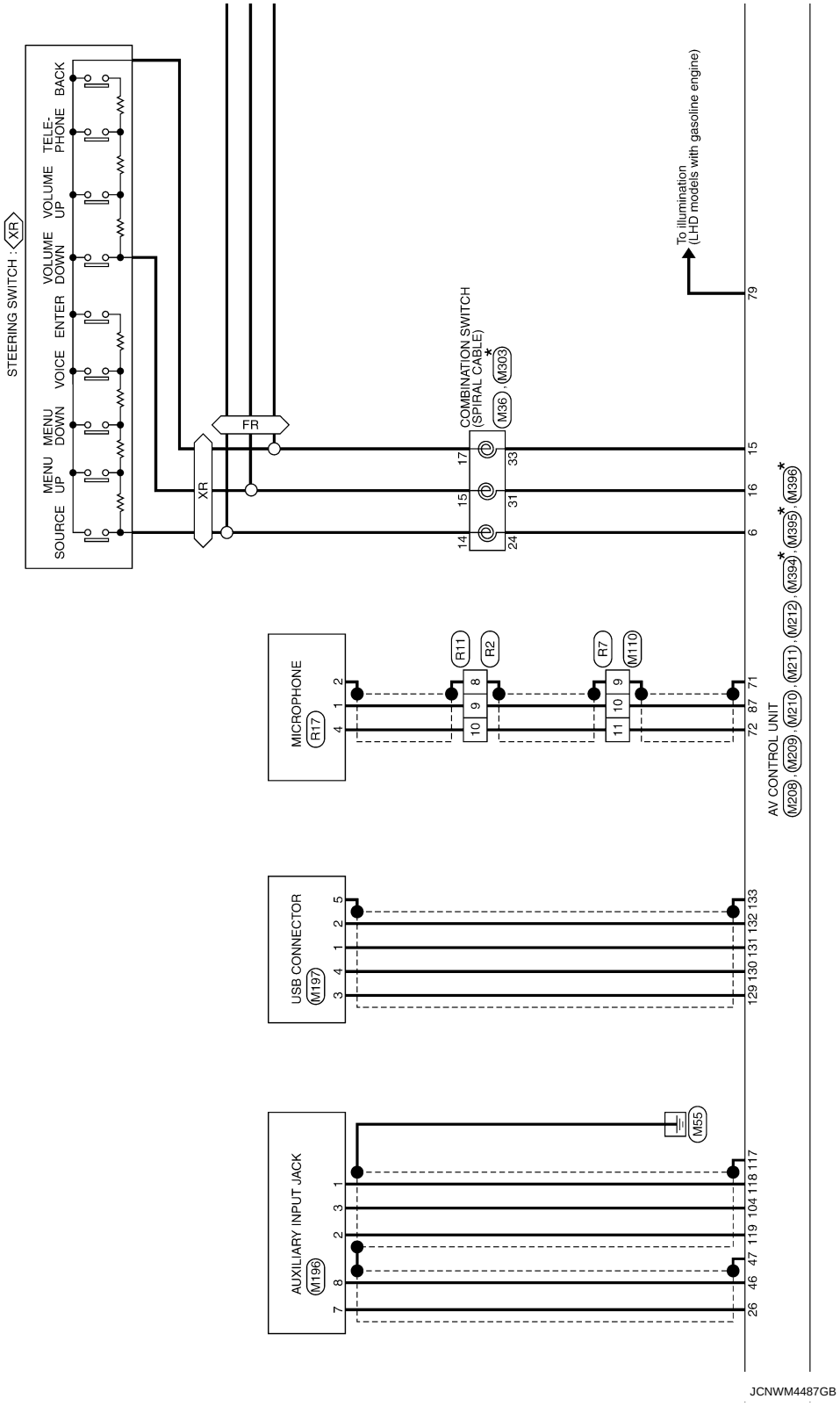
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

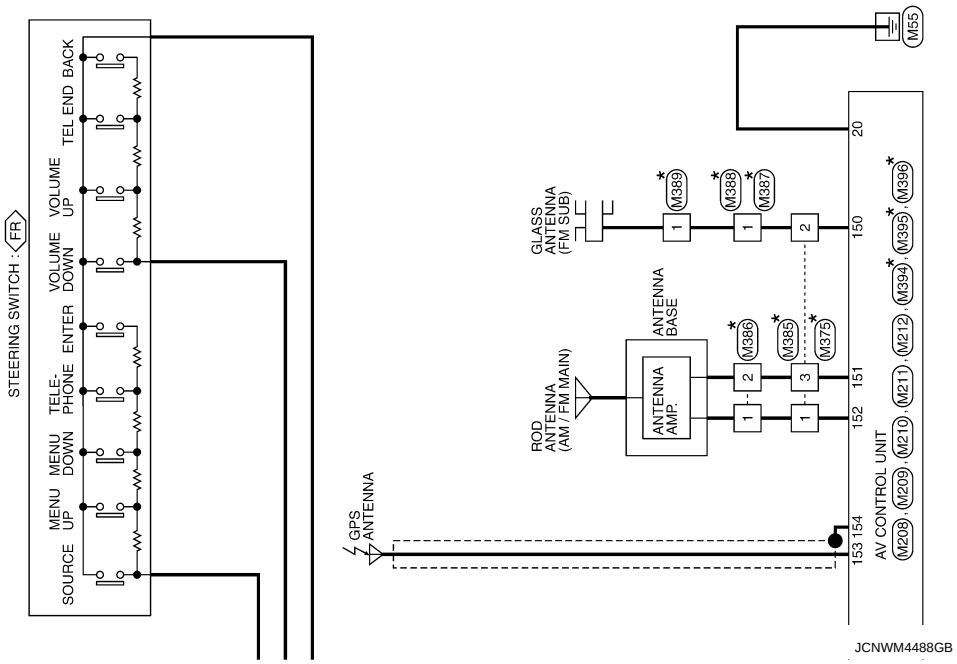
BOSE AUDIO WITH NAVIGATION AND REAR VIEW MONITOR (LHD MODELS WITH GASOLINE ENGINE)




REAR SQUAWKER RH (B230)
REAR SQUAWKER LH (B48)
BOSE AMP. (B41), (B42)
WOOFER (B51)
(M25) (B2)
(B241) (B67)
(B62)
To CAN system (LHD models with gasoline engine)
FRONT DOOR SWITCH (DRIVER SIDE) (B16)
(M7) (B1)
BCM (BODY CONTROL MODULE) (M122), (M123)
AV CONTROL UNIT (M208), (M209), (M210), (M211), (M212), (M394)*, (M395)*, (M396)*
ECM (M164)
UNIFIED METER AND A/C AMP. (M66), (M67)
DATA LINE
DATA LINE
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E5)
10A 45
IGNITION SWITCH ON or START
(E106) (M6)
STEERING ANGLE SENSOR (M37)
(M11)
DATA LINK CONNECTOR (M24)
(M55)
SONAR CONTROL UNIT (M44)
DATA LINE
DATA LINE
JCNWM4485GB


BATTERY
FUSE BLOCK (J/B) B6
20A 8
12G
REAR DOOR SPEAKER RH D76
REAR DOOR SPEAKER LH D56
FRONT DOOR SPEAKER RH D34
FRONT SQUAWKER RH M114
FRONT DOOR SPEAKER LH D4
FRONT SQUAWKER LH M13
CENTER SPEAKER M63
BOSE AMP. B41, B42
AV CONTROL UNIT M208, M209, M210, M211, M212, M394*, M395*, M396*
B62
JCNWM4486GB


STEERING SWITCH : XR
SOURCE
MENU UP
MENU DOWN
VOICE
ENTER
VOLUME DOWN
VOLUME UP
TELE-PHONE
BACK
XR
FR
COMBINATION SWITCH (SPIRAL CABLE)
M36 , M303
To illumination (LHD models with gasoline engine)
MICROPHONE
R17
R11
R2
R7
M110
USB CONNECTOR
M197
AUXILIARY INPUT JACK
M196
M55
AV CONTROL UNIT
M208 , M209 , M210 , M211 , M212 , M394 , M395 , M396
JCNWM4487GB



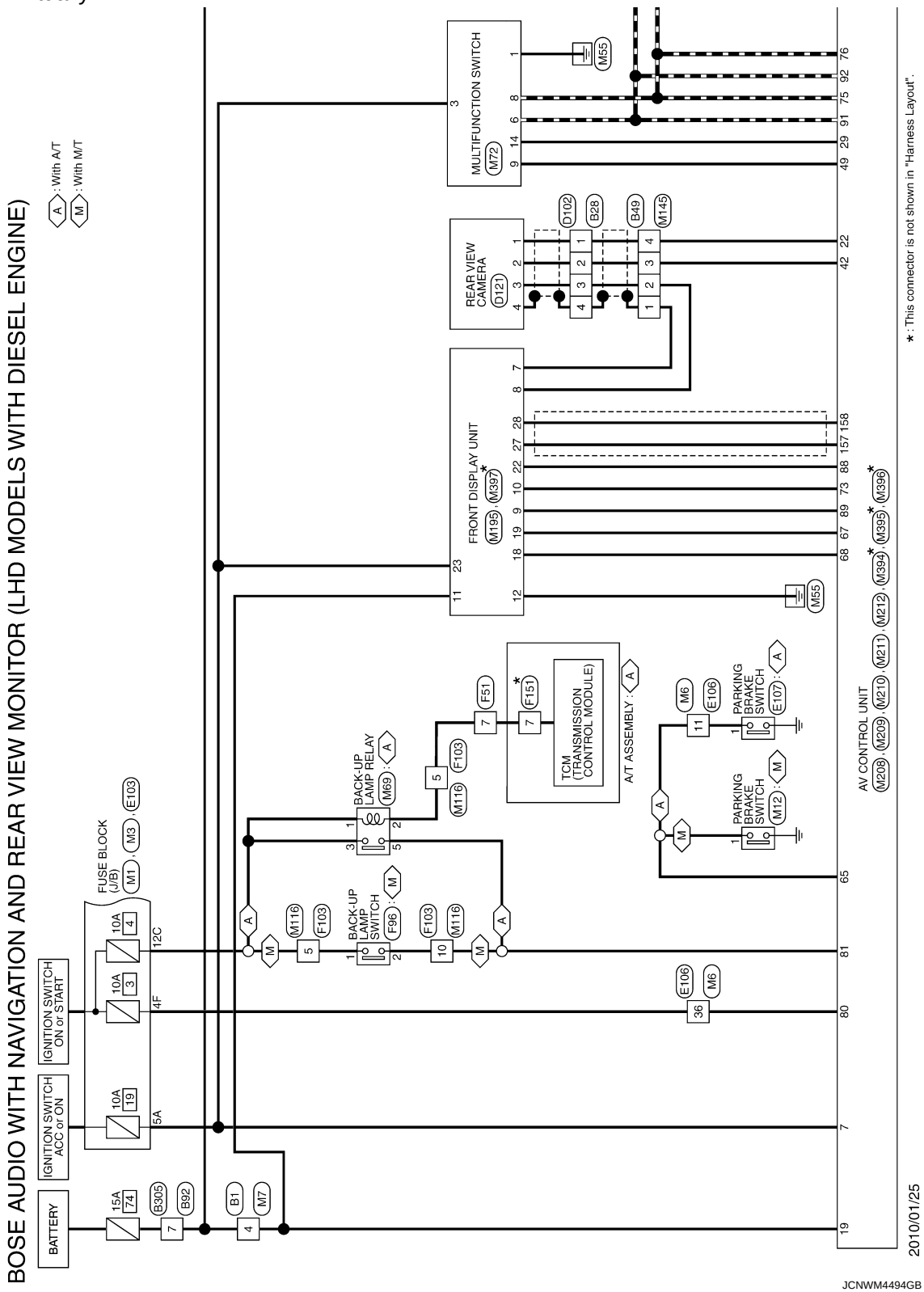
DIESEL ENGINE MODELS

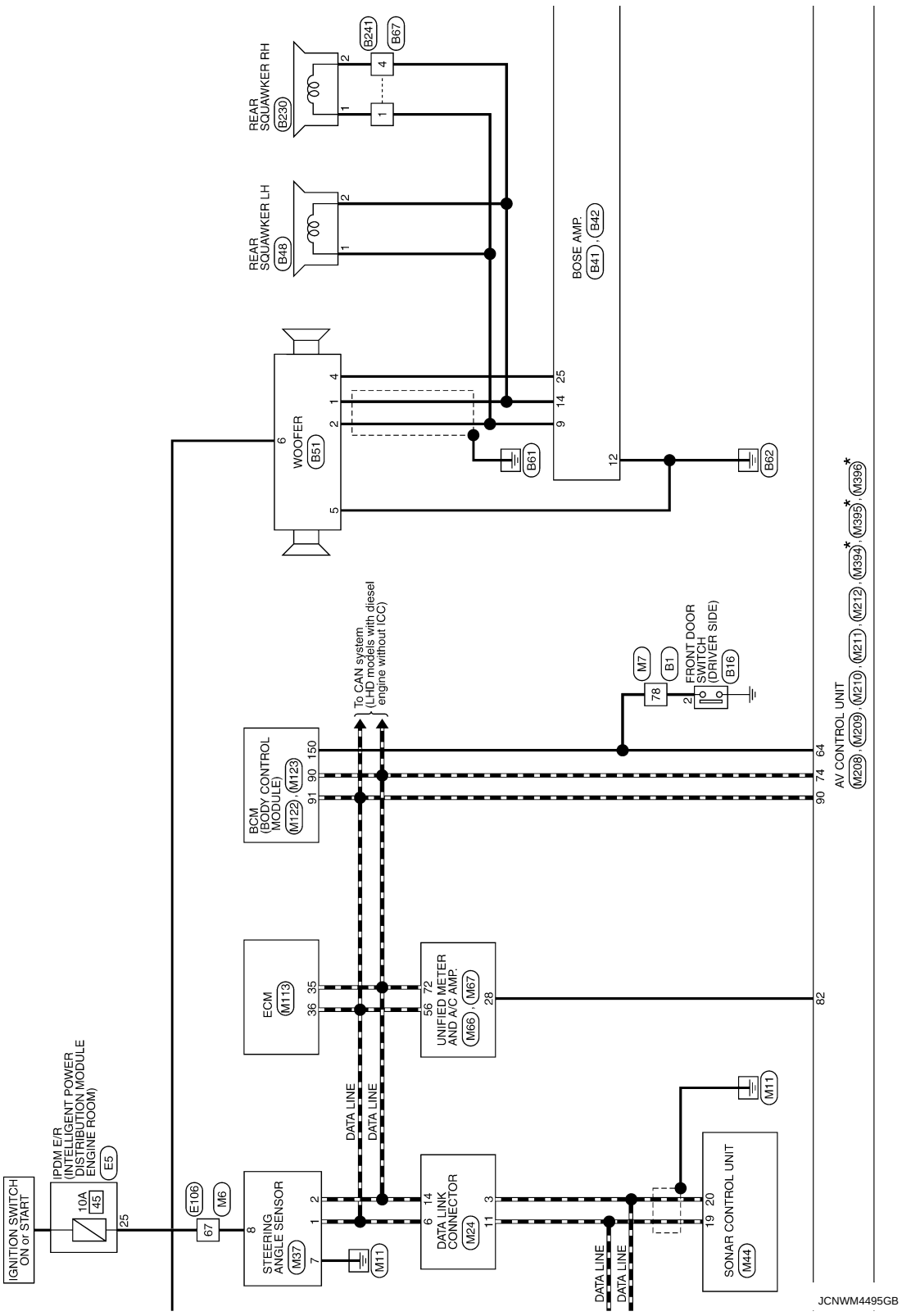
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

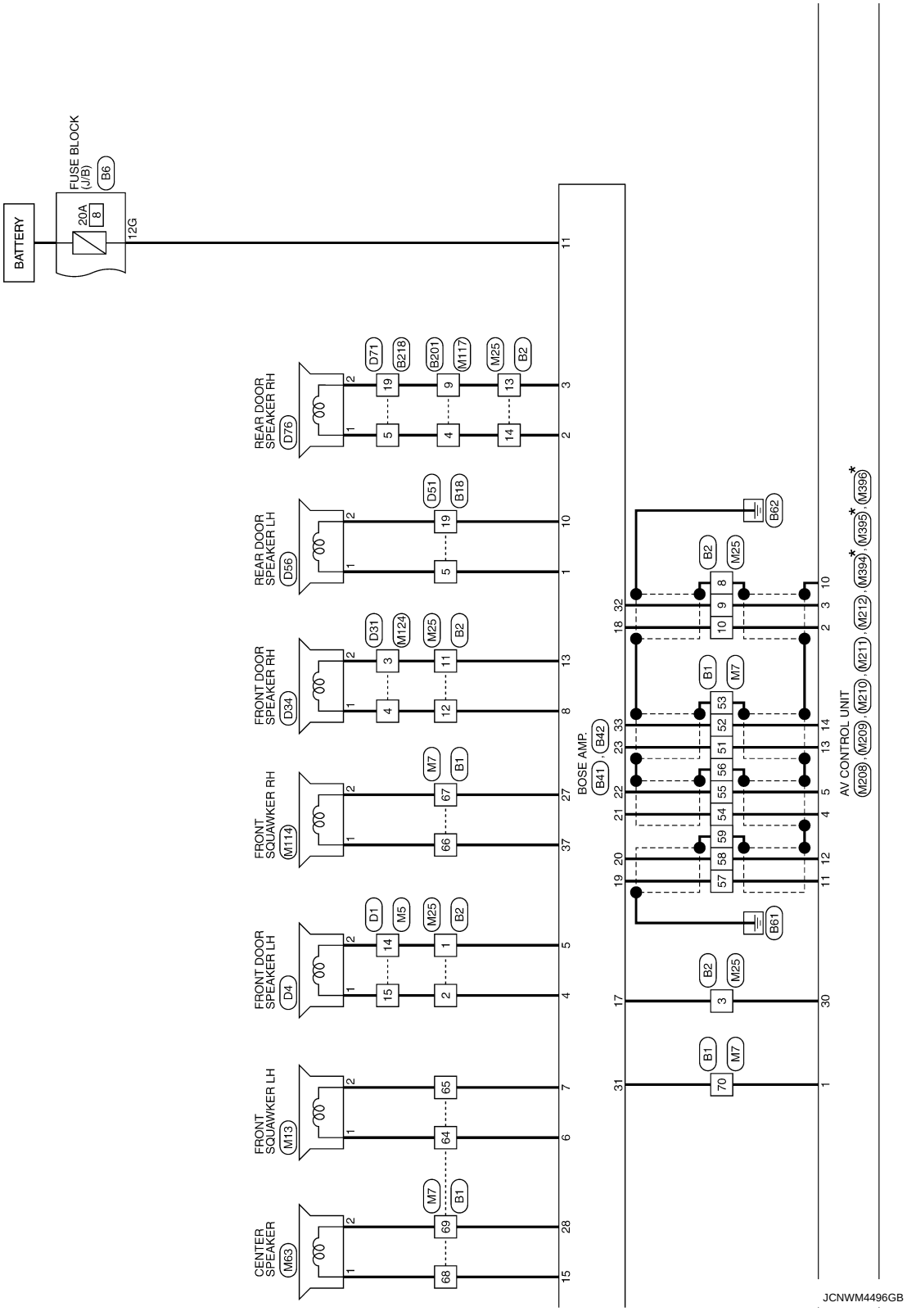
NOTE:

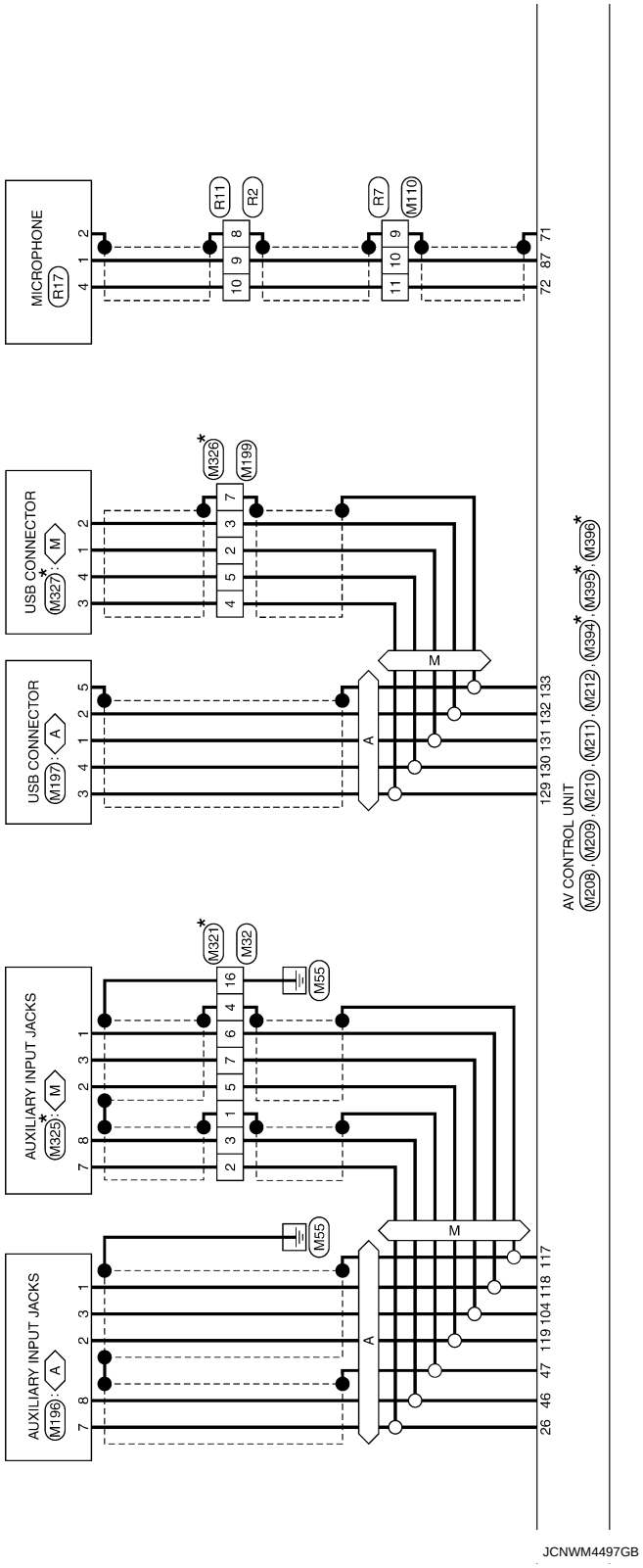
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

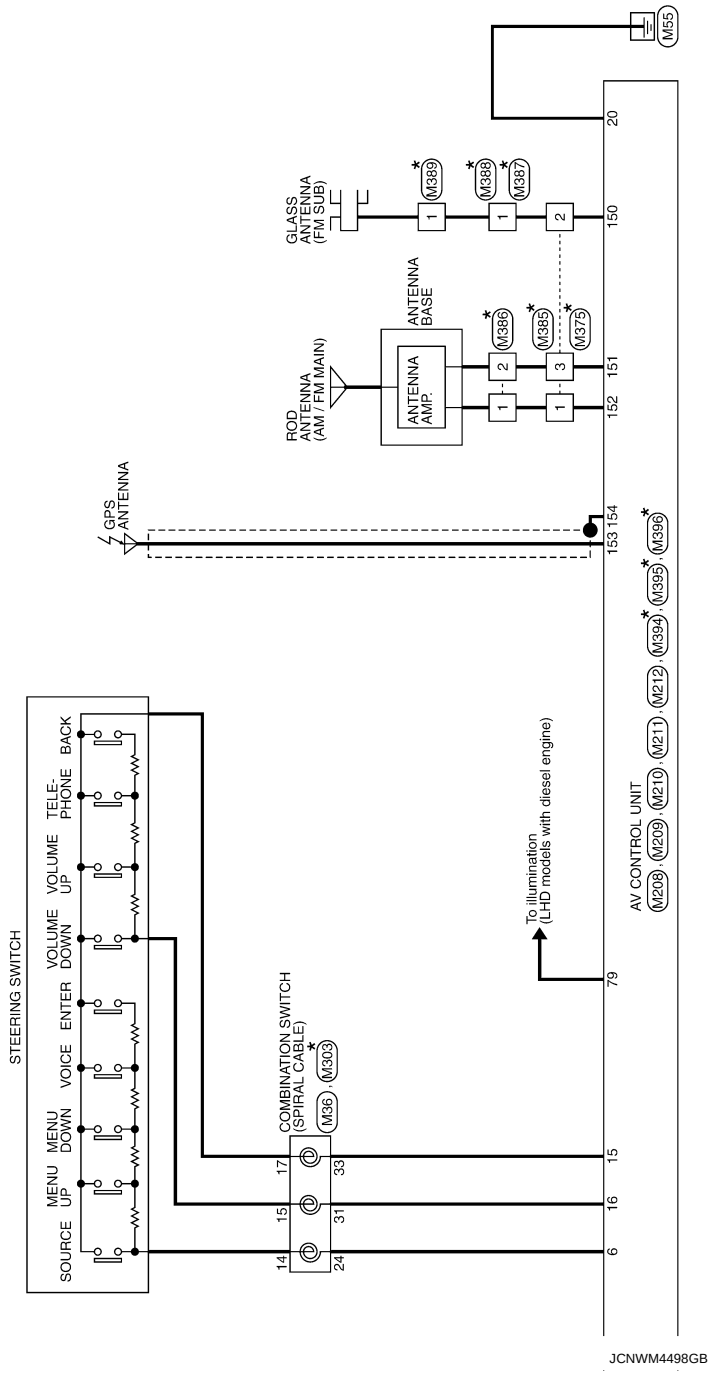
BOSE AUDIO WITH NAVIGATION AND REAR VIEW MONITOR (LHD MODELS WITH DIESEL ENGINE)




REAR SQUAWKER RH
B230
B241
B67
REAR SQUAWKER LH
B48
BOSE AMP.
B41, B42
WOOFER
B51
B61
B62
To CAN system
(LHD models with diesel engine without ICC)
FRONT DOOR SWITCH (DRIVER SIDE)
M7
B1
B16
78
BCM (BODY CONTROL MODULE)
M122, M123
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394*, M395*, M396*
ECM
M113
UNIFIED METER AND A/C AMP.
M66, M67
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
10A
45
IGNITION SWITCH ON or START
E106
M6
67
STEERING ANGLE SENSOR
M37
DATA LINE
DATA LINE
DATA LINK CONNECTOR
M24
M11
SONAR CONTROL UNIT
M44
DATA LINE
DATA LINE
JCNWM4495GB


BATTERY
FUSE BLOCK (J/B) B6
20A 8
12G
REAR DOOR SPEAKER RH D76
REAR DOOR SPEAKER LH D56
FRONT DOOR SPEAKER RH D34
FRONT SQUAWKER RH M114
FRONT DOOR SPEAKER LH D4
FRONT SQUAWKER LH M13
CENTER SPEAKER M63
BOSE AMP. B41, B42
AV CONTROL UNIT M208, M209, M210, M211, M212, M394*, M395*, M396*
B62
B61
JCNWM4496GB


MICROPHONE
R17
R11
R2
R7
M110
72 87 71
USB CONNECTOR
M327 : M
M326
M199
USB CONNECTOR
M197 : A
M
A
129 130 131 132 133
AV CONTROL UNIT
M208 , M209 , M210 , M211 , M212 , M394 , M395 , M396
AUXILIARY INPUT JACKS
M329 : M
M321
M32
M55
AUXILIARY INPUT JACKS
M196 : A
M55
M
A
26 46 47 119 104 118 117
JCNWM4497GB



JCNWM4498GB

RHD MODELS

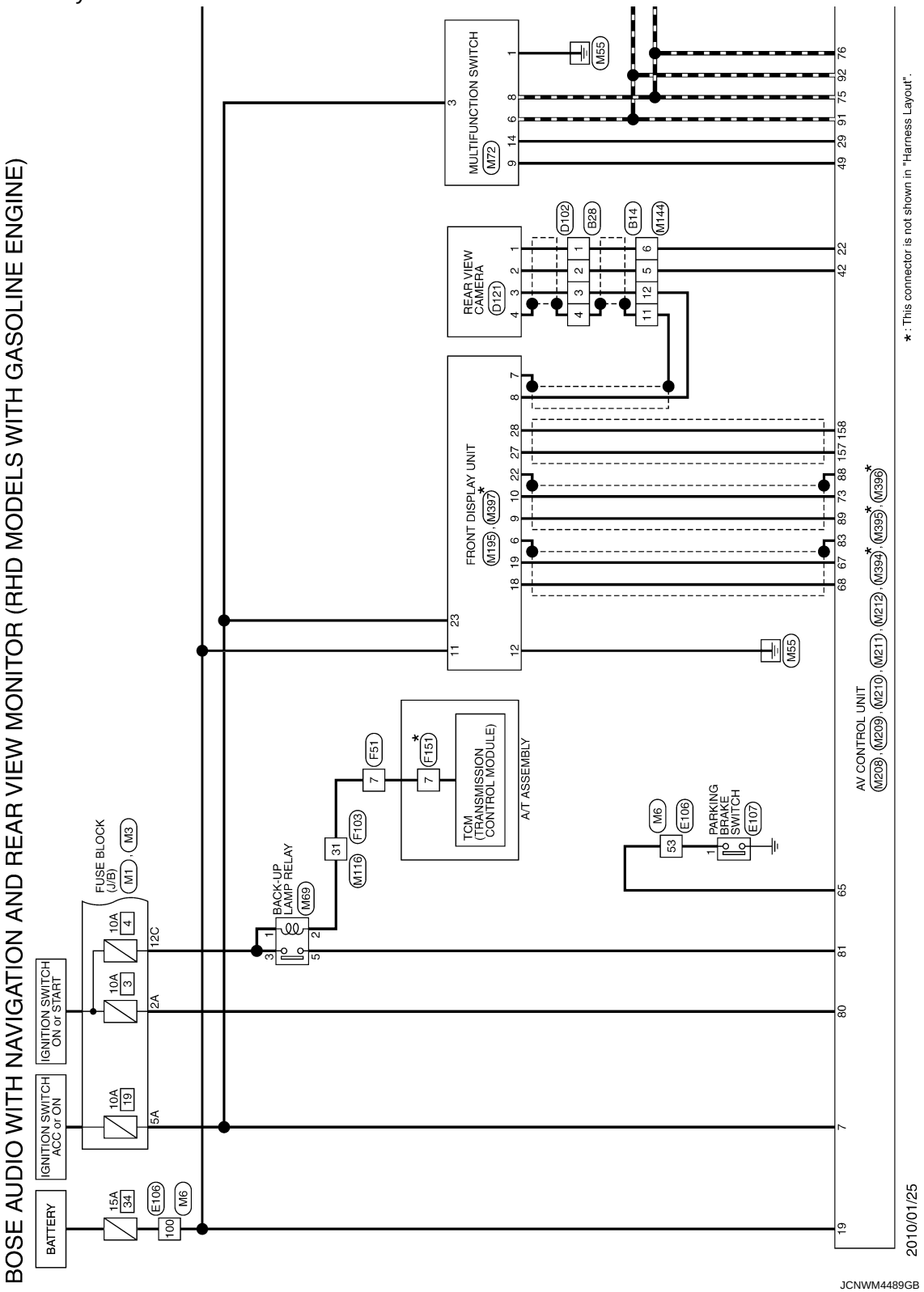
RHD MODELS : Wiring Diagram

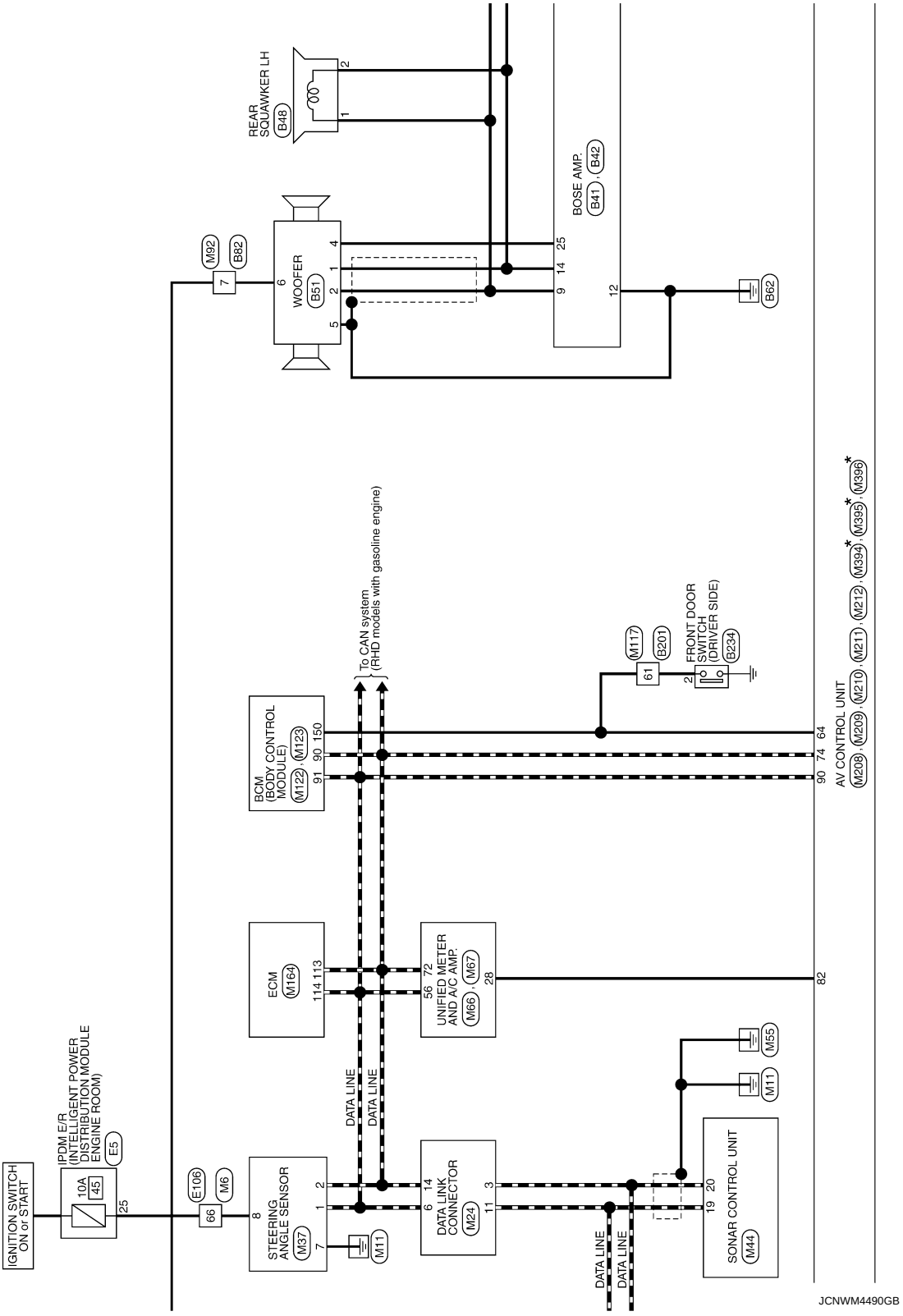
INFOID:0000000006109275

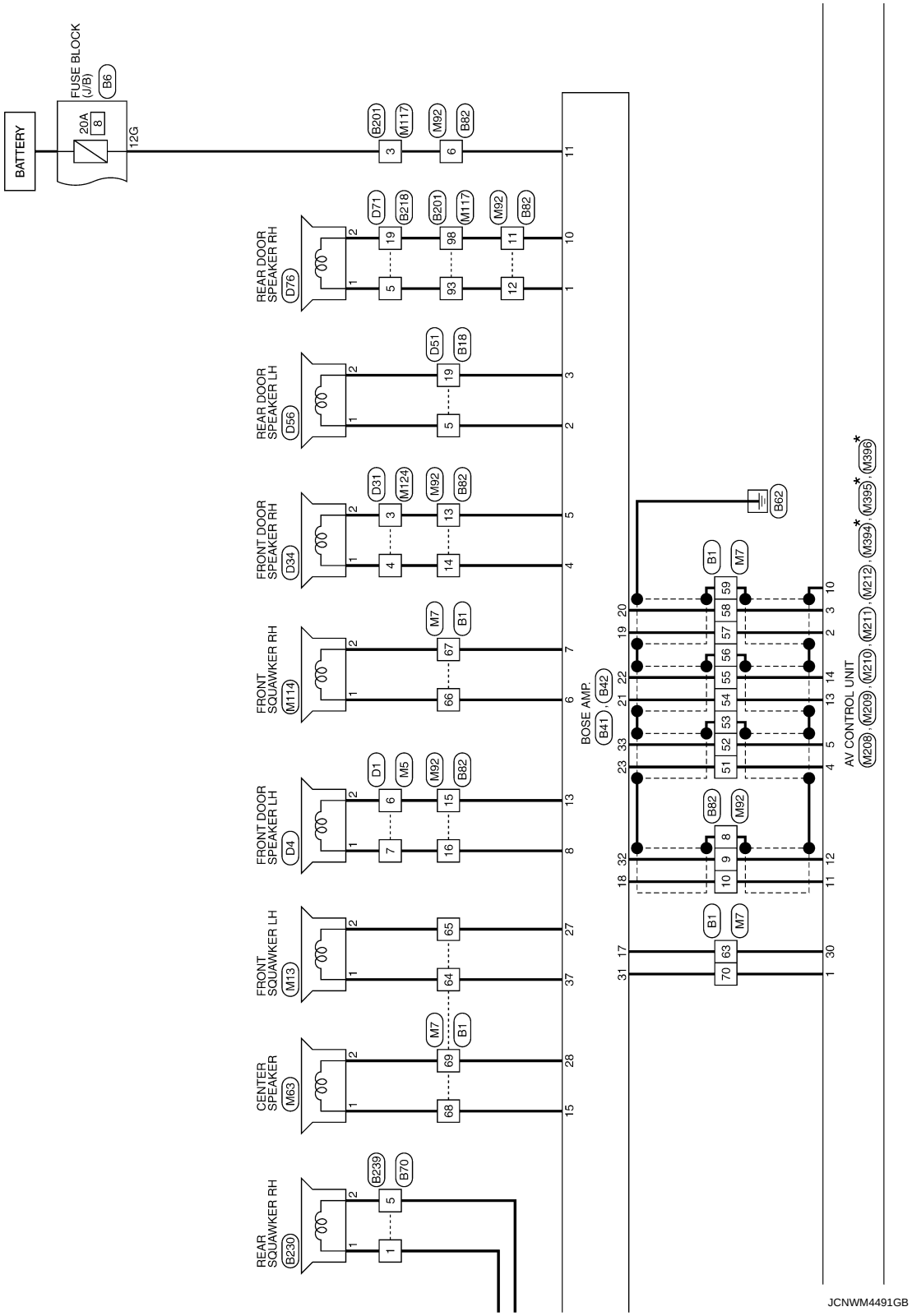
GASOLINE ENGINE MODELS

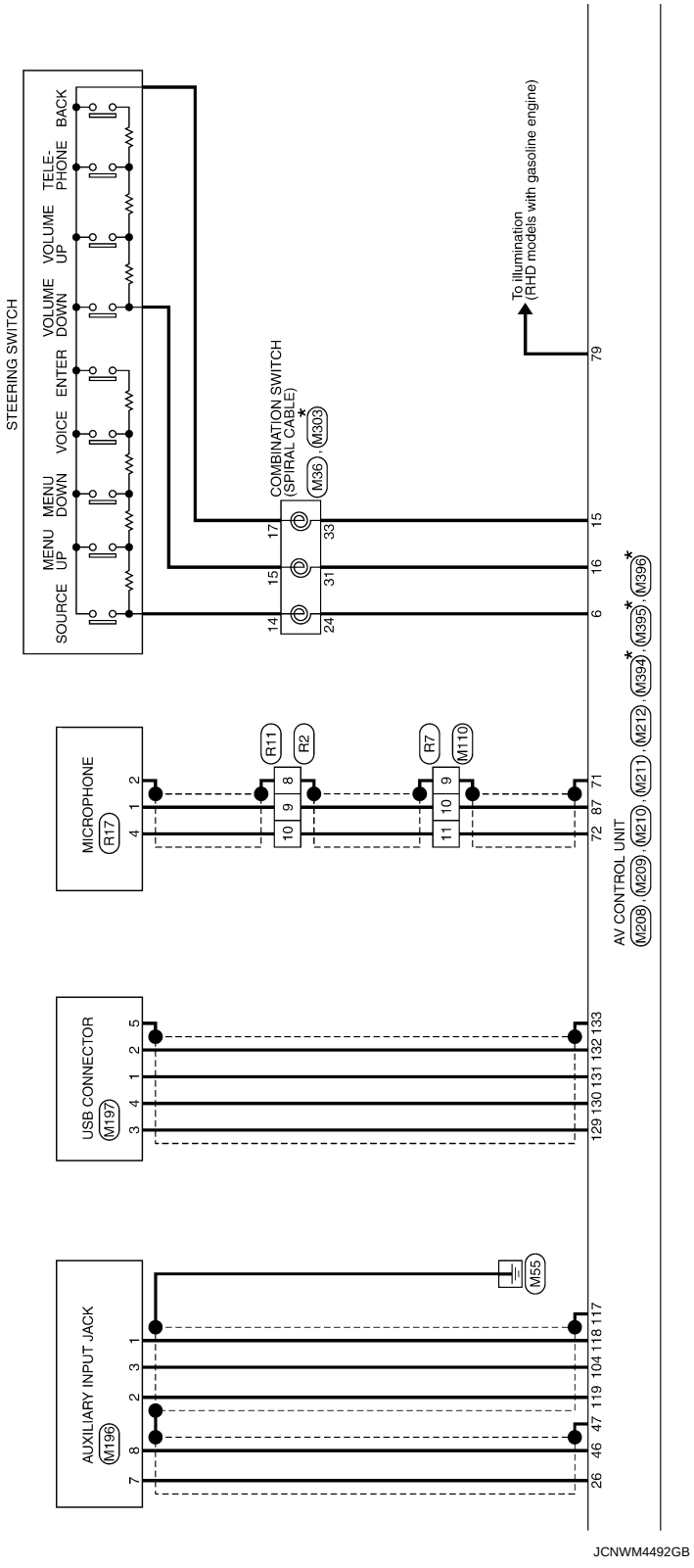
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

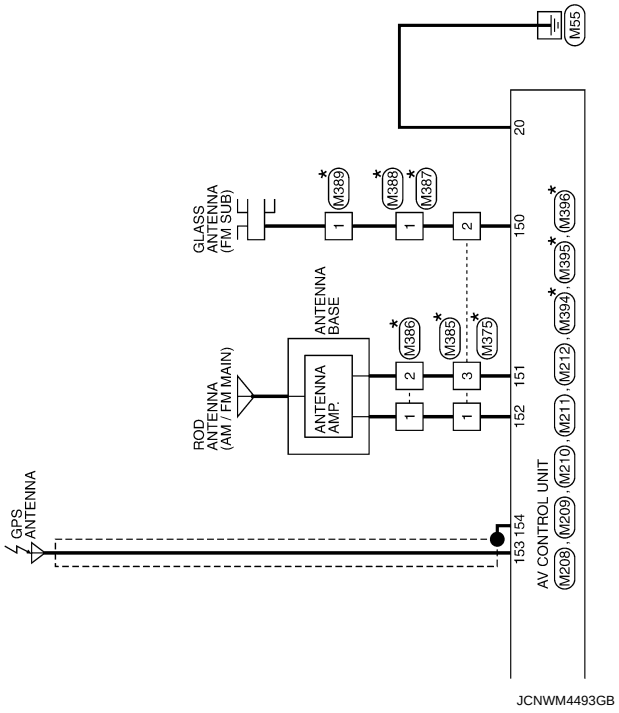
NOTE:
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.




REAR SQUAWKER LH
B48
BOSE AMP.
B41, B42
WOOFER
B51
M92
B82
B62
To CAN system
(RHD models with gasoline engine)
FRONT DOOR SWITCH (DRIVER SIDE)
M117
B201
B234
BCM (BODY CONTROL MODULE)
M122, M123
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394*, M395*, M396*
ECM
M16A
UNIFIED METER AND A/C AMP.
M66, M67
DATA LINE
DATA LINE
DATA LINK CONNECTOR
M24
STEERING ANGLE SENSOR
M37
M11
M55
SONAR CONTROL UNIT
M44
IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
10A 45
E106
M6
JCNWM4490GB


BATTERY
FUSE BLOCK (J/B) B6
20A 8
12G
REAR DOOR SPEAKER RH D76
REAR DOOR SPEAKER LH D56
FRONT DOOR SPEAKER RH D34
FRONT SQUAWKER RH M114
FRONT DOOR SPEAKER LH D4
FRONT SQUAWKER LH M13
CENTER SPEAKER M63
REAR SQUAWKER RH B230
BOSE AMP B41, B42
AV CONTROL UNIT M209, M209, M210, M211, M212, M394*, M395*, M396*
B62
JCNWM4491GB


STEERING SWITCH
SOURCE
MENU UP
MENU DOWN
VOICE
ENTER
VOLUME DOWN
VOLUME UP
TELE-PHONE
BACK
COMBINATION SWITCH (SPIRAL CABLE)
M36
M303
To illumination (RHD models with gasoline engine)
MICROPHONE
R17
R11
R2
R7
M110
USB CONNECTOR
M197
AUXILIARY INPUT JACK
M196
M55
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394, M395, M396
JCNWM4492GB



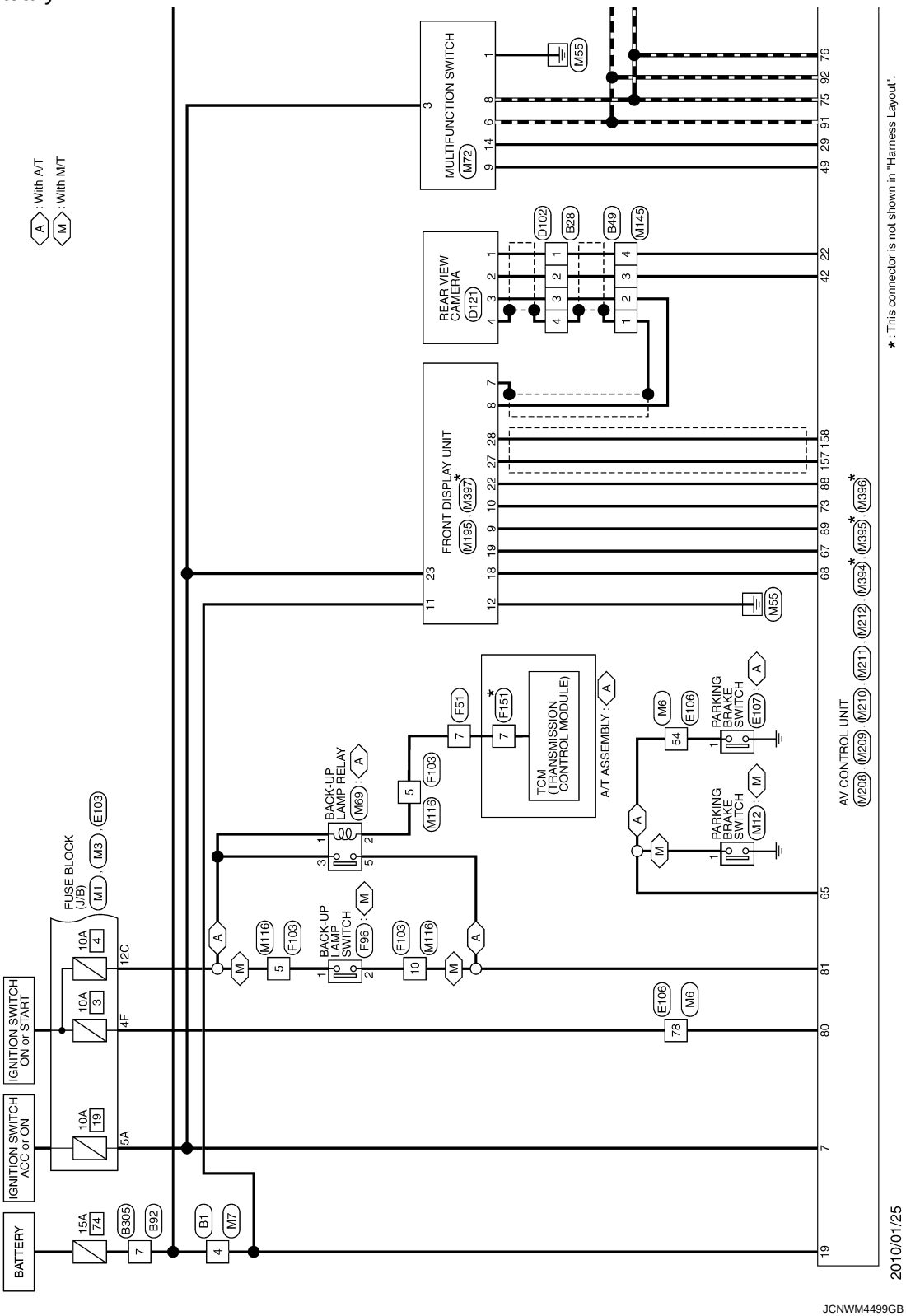
DIESEL ENGINE MODELS

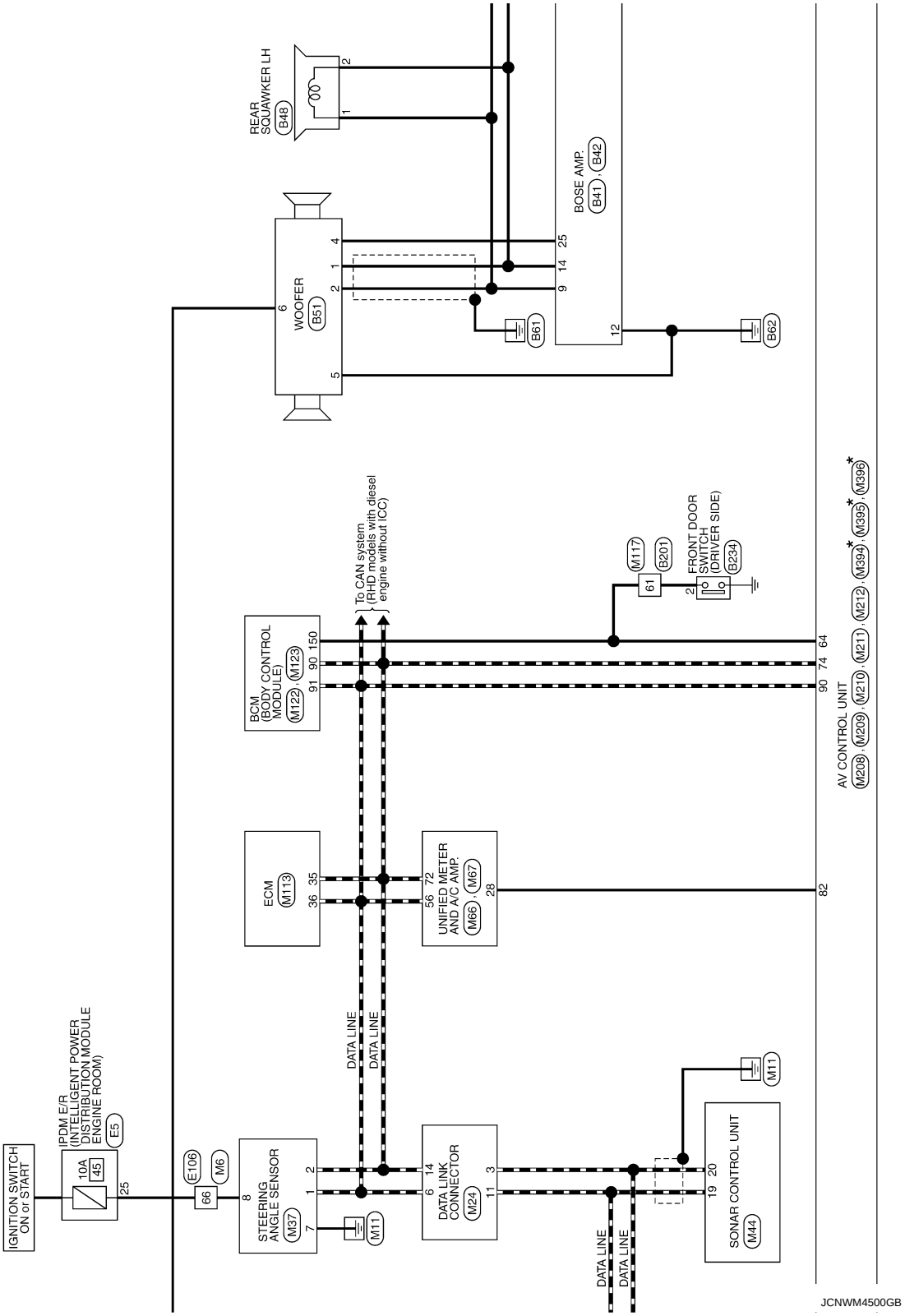
For connector terminal arrangements, harness layouts, and alphabets in a ⬡ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

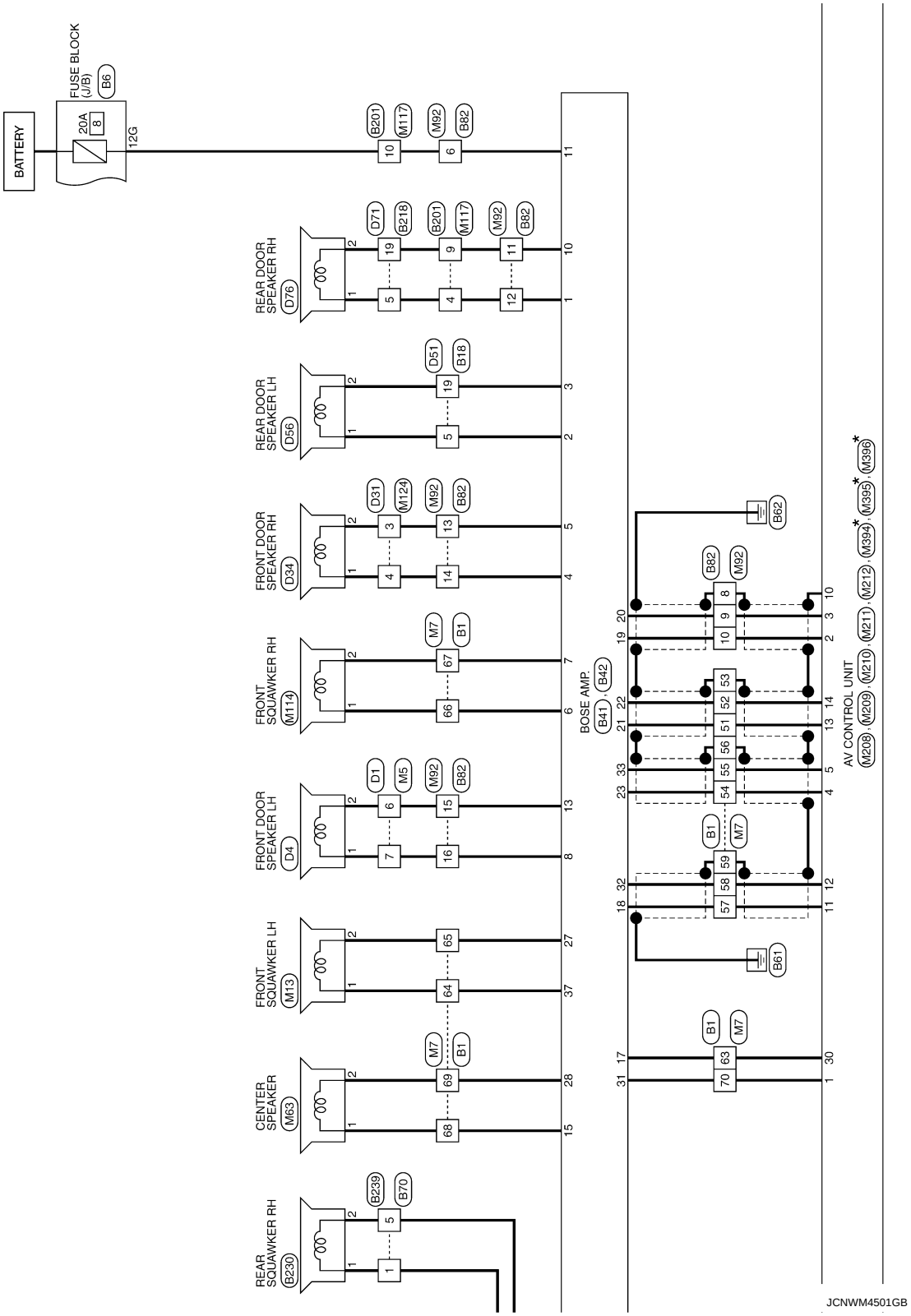
NOTE:

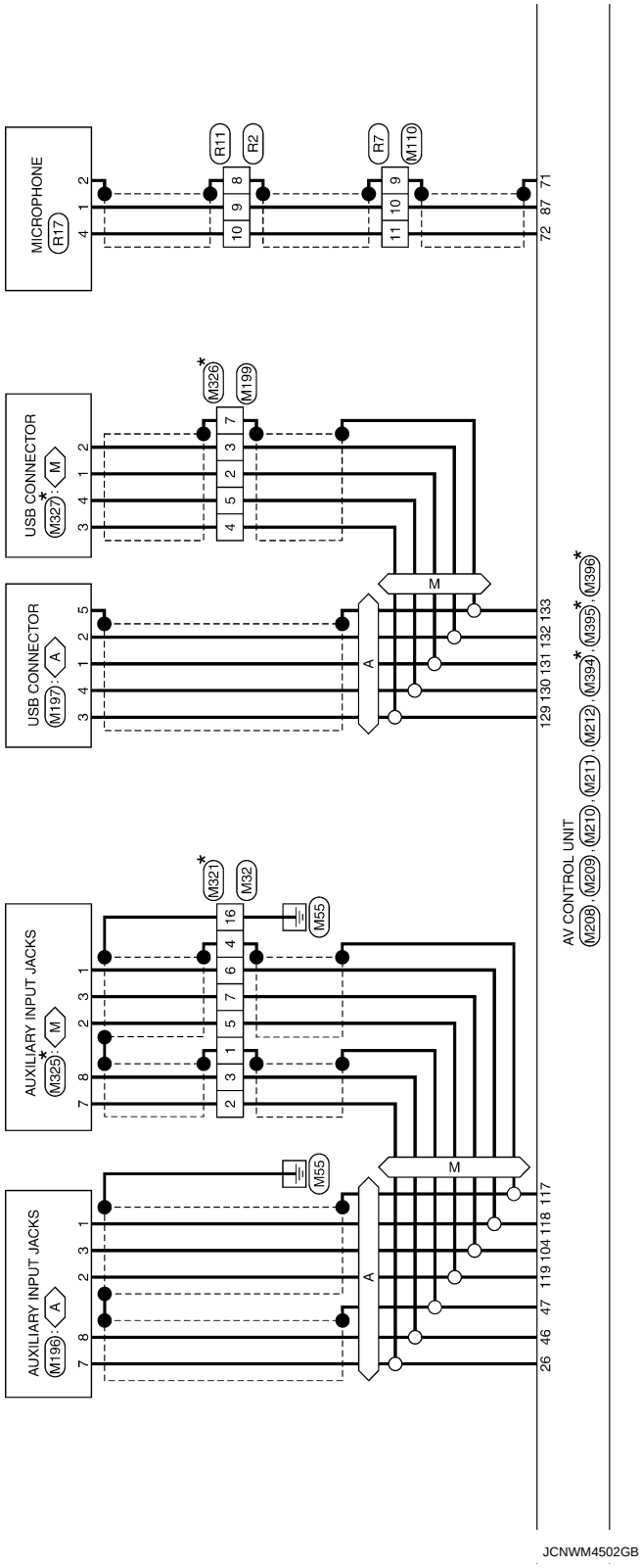
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

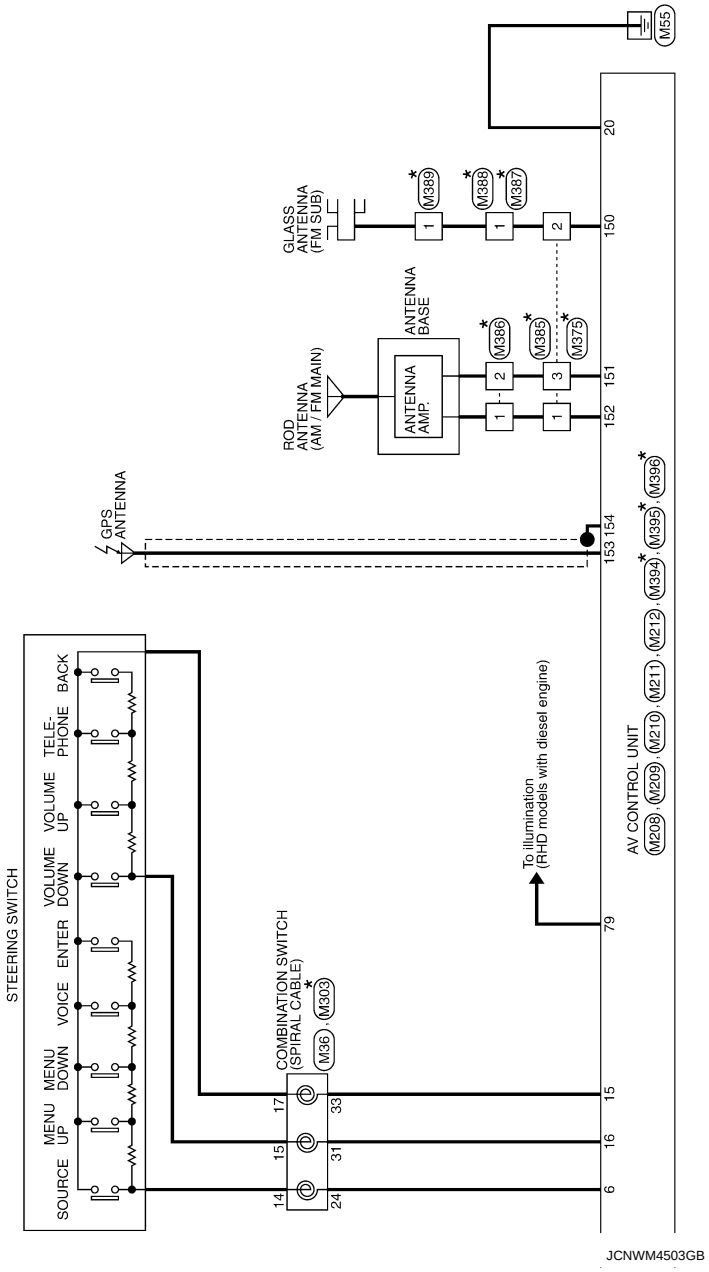
BOSE AUDIO WITH NAVIGATION AND REAR VIEW MONITOR (RHD MODELS WITH DIESEL ENGINE)




REAR SQUAWKER LH
B48
WOOFER
B51
BOSE AMP
B41
B42
B61
B62
To CAN system
(RHD models with diesel engine without ICC)
FRONT DOOR SWITCH (DRIVER SIDE)
M117
B201
B234
BCM (BODY CONTROL MODULE)
M122
M123
ECM
M113
UNIFIED METER AND A/C AMP.
M66
M67
AV CONTROL UNIT
M208
M209
M210
M211
M212
M394
M395
M396
DATA LINE
DATA LINE
DATA LINK CONNECTOR
M24
STEERING ANGLE SENSOR
M37
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E5
10A
45
IGNITION SWITCH ON or START
E106
66
M6
M11
SONAR CONTROL UNIT
M44
DATA LINE
DATA LINE
JCNWM4500GB


BATTERY
FUSE BLOCK (J/B) B6
20A 8
12G
REAR DOOR SPEAKER RH D76
REAR DOOR SPEAKER LH D56
FRONT DOOR SPEAKER RH D34
FRONT SQUAWKER RH M114
FRONT DOOR SPEAKER LH D4
FRONT SQUAWKER LH M13
CENTER SPEAKER M63
REAR SQUAWKER RH B230
BOSE AMP. B41, B42
AV CONTROL UNIT M209, M210, M211, M212, *M394, *M395, *M396
B201 M117 M92 B82
D71 B218
D51 B18
D31 M124
M7 B1
D1 M5
B239 B70
B62
B61
JCNWM4501GB


MICROPHONE
R17
R11
R2
R7
M110
USB CONNECTOR
M327
M326
M199
USB CONNECTOR
M197
M
A
AUXILIARY INPUT JACKS
M325
M321
M32
M55
AUXILIARY INPUT JACKS
M196
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394, M395, M396
JCNWM4502GB


M55
20
GLASS ANTENNA (FM SUB)
M389
M388
M387
150
ANTENNA BASE
ROD ANTENNA (AM / FM MAIN)
ANTENNA AMP.
M386
M385
M375
151
152
GPS ANTENNA
153 154
M396
M395
M394
M212
M211
M210
M209
M208
AV CONTROL UNIT
To illumination (RHD models with diesel engine)
79
STEERING SWITCH
SOURCE
MENU UP
MENU DOWN
VOICE
ENTER
VOLUME DOWN
VOLUME UP
TELE-PHONE
BACK
COMBINATION SWITCH (SPIRAL CABLE)
M36
M303
14
15
17
24
31
33
6
16
15
JCNWM4503GB

SYMPTOM DIAGNOSIS

MULTI AV SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000005191958

RELATED TO NAVIGATION

Symptoms	Check items	Probable malfunction location
Multifunction switch and preset switch operation does not work.	• All switches cannot be operated. • “MULTI AV” is displayed on system selection screen when the CONSULT-III is started.	• Multifunction switch power supply and ground circuit malfunction. Refer to AV-620, "MULTIFUNCTION SWITCH : Diagnosis Procedure". • AV communication circuit between AV control unit and multifunction switch. Perform CONSULT-III self-diagnosis. Refer to AV-571, "CONSULT - III Function (MULTI AV)".
	• All switches cannot be operated. • “MULTI AV” is not displayed on system selection screen when the CONSULT-III is initialized.	AV control unit power supply and ground circuit malfunction. Refer to AV-619, "AV CONTROL UNIT : Diagnosis Procedure".
	Only specified switch cannot be operated.	Multifunction switch or preset switch malfunction. Perform multifunction switch and preset switch self-diagnosis function. Refer to AV-559, "Diagnosis Description".
Fuel economy display is abnormal.	There is malfunction in the CONSULT-III “self-diagnosis result” of “MULTI AV”.	Perform detected DTC diagnosis. Refer to AV-667, "DTC Index".
	There is no malfunction in the CONSULT-III “self-diagnosis results” of “MULTI AV”.	Ignition signal circuit malfunction.
Start of the AV control unit takes time.*	—	Front door switch signal circuit malfunction.
Guide sound is not heard or too low.	On the setting display select “system sound (guide sound volume, etc.),” and confirm that guide sound is ON.	AV control unit malfunction. Replace AV control unit. Refer to AV-745, "Exploded View".

*:Models with driver door switch signal circuit.

RELATED TO HANDS-FREE PHONE

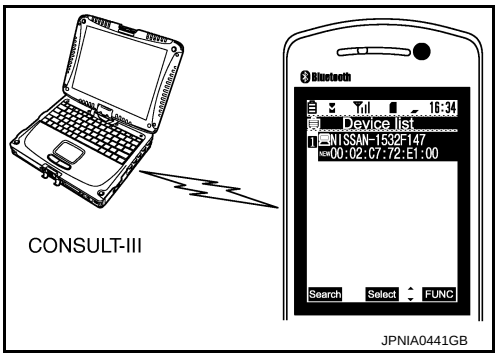
- Check that the cellular phone is the corresponding type (Bluetooth™ enabled) and Bluetooth™ turns ON.
- Malfunction may occur due to the version change of the phone type, etc. even though it is the corresponding type. The cell phone must support at least hands-free profile V1.0 and object push V1.0. Refer to cell phone instruction manual.
- When customers contact concerning Bluetooth™ compatible cell phone malfunction for the first time, always suggest customers to update cellular phone software if possible.
- Check that customer cellular phone is compatible on the published list. The dealer should contact its RBU/NSC for the list.
- Take note of any exceptions that the list may detail, i.e. no ringing tone or no phonebook transfer etc. If the customer phone is not listed then its full function cannot be guaranteed. NISSAN should not replace the AV control unit if the cell phone does not appear on the list or the cell phone is operating as described on the list e.g. no ringing tone, no phonebook transfer etc.
- Take note of any exceptions to other phones made by the same manufacturer as the customers. Any exceptions on one model by a specific manufacturer may be common to all models made by that manufacturer.

Simple Check for Bluetooth™ Communication

If cellular phone and AV control unit cannot be connected with Bluetooth™ communication, following procedure allows the technician to judge which device has malfunction.

1. Turn ON cellular phone, not connecting Bluetooth™ communication.
2. Start CONSULT-III, then start Windows®.

3. Set CONSULT-III near a cellular phone.
4. When operated Bluetooth™ registration by cellular phone, check if CONSULT-III* would be displayed on the device name.
   (If other Bluetooth™ device is located near cellular phone, a name of the device would be displayed also.)
   NOTE:
   *:Displayed device name is “NISSAN-********”.



- If no device name is displayed, cellular phone is malfunctioning. Repair the cellular phone first, then perform diagnosis.
- If CONSULT-III is displayed on device name, cellular phone is normal*. Perform diagnosis as per the following table.

*: There is no 100% guarantee that cellular phone operates all functions on AV control unit. Different phone manufacturers implement Bluetooth™ in different ways. Phones on Supported Phone List are tested and any minor exceptions are listed.

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection. (no connection is displayed on the display at the guide.)	Repeat the registration of cellular phone.	AV control unit malfunction. Replace AV control unit. Refer to AV-745, "Exploded View".
Hands-free phone cannot be established.	• Hands-free phone operation can be made, but the communication cannot be established. • Hands-free phone operation can be performed, however, voice between each other cannot be heard during the conversation.	AV control unit malfunction. Replace AV control unit. Refer to AV-745, "Exploded View".
The other party's voice cannot be heard by hands-free phone.	Check the “microphone speaker” in Inspection & Adjustment Mode if sound is heard.	AV control unit malfunction. Replace AV control unit. Refer to AV-745, "Exploded View".
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	AV control unit malfunction. Replace AV control unit. Refer to AV-745, "Exploded View".
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-629, "Diagnosis Procedure".
The system cannot be operated. (Except for Russia)	Steering switch's ”VOL UP”, “VOL DOWN”, “↩” switch works, but “📞” it does not work.	Steering switch malfunction. Replace steering switch. Refer to SR-16, "Exploded View".
	Steering switch's “📞”, ”VOL UP”, “VOL DOWN”, “↩” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-655, "EXCEPT FOR RUSSIA : Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-658, "EXCEPT FOR RUSSIA : Diagnosis Procedure".
The system cannot be operated. (For Russia)	Steering switch's “SOURCE”, ”MENU UP”, “MENU DOWN”, “ENTER” switch works, but “📞” it does not work.	Steering switch malfunction. Replace steering switch. Refer to SR-16, "Exploded View".
	Steering switch's “📞”, “SOURCE”, ”MENU UP”, “MENU DOWN” and “ENTER” switches do not work.	Steering switch signal A circuit malfunction. Refer to AV-653, "FOR RUSSIA : Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-659, "FOR RUSSIA : Diagnosis Procedure".

RELATED TO CAMERA

Rear View Monitor

Symptoms	Check items	Probable malfunction location
Camera image is not shown.	—	Camera image signal circuit between rear view camera and front display unit malfunction. Refer to AV-631, "Diagnosis Procedure".
Camera image does not switch.	Select “Camera Cont.” of Confirmation/ Adjustment mode, Reverse Sensor is not turned ON at “Connection Confirmation”.	Reverse signal circuit malfunction.
	Select “Camera Cont.” of Confirmation/ Adjustment mode, Reverse Sensor is turned ON at “Connection Confirmation”.	AV control unit malfunction. Replace AV control unit. Refer to AV-745, "Exploded View".

Around View Monitor

Symptoms	Check items		Probable malfunction location / Action to take
It does not switch to camera image even when the “CAMERA” switch is pressed or the selector lever is in the reverse position.	“Camera Cont.” of “Confirmation/Adjustment” can be selected.		Ignition signal circuit malfunction (around view monitor control unit).
	“Camera Cont.” of “Confirmation/Adjustment” cannot be selected.		• Around view monitor control unit power supply and ground circuits malfunction. Refer to AV-621, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure". • AV communication circuits malfunction. Refer to AV-571, "CONSULT - III Function (MULTI AV)".
The screen switches when pressing the “CAMERA” switch or shifting the selector lever to the reverse position, however, all views are not displayed.	Only superimposing is displayed. (Only the image displayed by AV control unit is displayed)		Camera image signal circuit between around view monitor control unit and front display unit malfunction. Refer to AV-633, "Diagnosis Procedure".
	Superimposing is not displayed.		Communication circuit between AV control unit and front display unit malfunction. Refer to AV-571, "CONSULT - III Function (MULTI AV)".
Camera image is rolling.	—		Communication circuit between AV control unit and front display unit malfunction. Refer to AV-571, "CONSULT - III Function (MULTI AV)".
It cannot be switched to rear view monitor even when the selector lever is in the reverse position.	The front view is displayed normally.		Reverse signal circuit malfunction. (AV control unit)
The predicted course line display in front view and rear view is malfunctioning.	The “Steer. Angle Sensor” is not turned ON at “Connection Confirmation” of “Camera Cont.”		Steering angle sensor signal circuits.
• The front view screen is not displayed. • The front of Birds-Eye view screen is not displayed.	Check the item Front Camera in “Connection Confirmation” mode of “Camera Cont.”	• Image Output Signal: NG • COMM Status: NG • COMM Line: NG	• Front camera image signal circuit malfunction. • Front camera power supply and ground circuits malfunction. Refer to AV-635, "Diagnosis Procedure".
		• Image Output Signal: OK • COMM Status: NG • COMM Line: NG	Front camera communication signal circuit malfunction. Refer to AV-634, "Diagnosis Procedure".

Symptoms	Check items		Probable malfunction location / Action to take
• The rear view screen is not displayed. • The rear of Birds-Eye view screen is not displayed.	Check the item Rear Camera in “Connection Confirmation” mode of “Camera Cont.”	• Image Output Signal: NG • COMM Status: NG • COMM Line: NG	• Rear camera image signal circuit malfunction. • Rear camera power supply and ground circuits malfunction. Refer to AV-638, "Diagnosis Procedure".
		• Image Output Signal: OK • COMM Status: NG • COMM Line: NG	Rear camera communication signal circuits malfunction. Refer to AV-637, "Diagnosis Procedure".
• The front-side screen is not displayed. • The passenger side of Birds-Eye view screen is not displayed.	Check the item Pass-Side Camera in “Connection Confirmation” mode of “Camera Cont.”	• Image Output Signal: NG • COMM Status: NG • COMM Line: NG	LHD models • Side camera RH image signal circuit malfunction. • Side camera RH power supply and ground circuits malfunction. Refer to AV-648, "LHD MODELS : Diagnosis Procedure". RHD models • Side camera LH image signal circuit malfunction. • Side camera LH power supply and ground circuits malfunction. Refer to AV-649, "RHD MODELS : Diagnosis Procedure".
		• Image Output Signal: OK • COMM Status: NG • COMM Line: NG	LHD models • Side camera RH communication circuit malfunction. Refer to AV-646, "LHD MODELS : Diagnosis Procedure". RHD models • Side camera LH communication circuit malfunction. Refer to AV-647, "RHD MODELS : Diagnosis Procedure".

Symptoms	Check items		Probable malfunction location / Action to take
The driver side of Birds-eye view screen is not displayed.	Check the item Dr-Side Camera at “Connection Confirmation” mode of “Camera Cont.”	• Image Output Signal: NG • COMM Status: NG • COMM Line: NG	LHD models • Side camera LH image signal circuit malfunction. • Side camera LH power supply and ground circuits malfunction. Refer to AV-642, "LHD MODELS : Diagnosis Procedure". RHD models • Side camera RH image signal circuit malfunction. • Side camera RH power supply and ground circuits malfunction. Refer to AV-643, "RHD MODELS : Diagnosis Procedure".
		• Image Output Signal: OK • COMM Status: NG • COMM Line: NG	LHD models • Side camera LH communication circuit malfunction. Refer to AV-640, "LHD MODELS : Diagnosis Procedure". RHD models • Side camera RH communication circuit malfunction. Refer to AV-641, "RHD MODELS : Diagnosis Procedure".
When shift position is other than “R” the front-side and front screen or the Birds-Eye view and front screen remain displaying even if the vehicle speed increases.	—		Vehicle speed signal circuit malfunction (around view monitor control unit).

RELATED TO CAMERA ASSISTANCE SONAR

Symptoms	Check items	Probable malfunction location / Action to take
The malfunction is detected in the sonar indicator (Always displayed in red)	The malfunction is detected in only 1 indicator (Always displayed in red).	• Corner sensor malfunction in corresponding area. • Corner sensor harness circuit in corresponding area. Perform CONSULT-III “self-diagnosis” of “SONAR”. Refer to AV-578, "CONSULT-III Function (SONAR)".
	The malfunction is detected in all 4 indicators (Always displayed in red).	• Corner sensor ground circuit malfunction. Perform CONSULT-III “self-diagnosis” of “SONAR”. Refer to AV-578, "CONSULT-III Function (SONAR)". • Sonar control unit power supply and ground circuits malfunction. • AV communication circuits malfunction. Perform CONSULT-III “self-diagnosis” of “MULTI AV”. Refer to AV-571, "CONSULT - III Function (MULTI AV)".
The sonar indicator is normal, but the buzzer does not sound	—	Replace sonar control unit. Refer to AV-773, "Exploded View".

RELATED TO RGB IMAGE

Symptoms	Check items	Probable malfunction location
RGB image is not shown.	—	RGB digital image signal circuit malfunction. Refer to AV-624, "Diagnosis Procedure".

RELATED TO VOICE CONTROL

Symptoms	Check items	Probable malfunction location
The voice cannot be controlled even if the voice control screen is displayed.	Voice sounds at “Voice Microphone Test” of Confirmation/Adjustment mode.	AV control unit malfunction. Replace AV control unit. Refer to AV-745, "Exploded View".
	Voice does not sound at “Voice Microphone Test” of Confirmation/Adjustment mode.	Microphone circuit malfunction. Refer to AV-629, "Diagnosis Procedure".
The voice cannot be controlled (Voice control screen is not displayed).	Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN”, “ENTER” switch works, but “ ” it does not work.	Steering switch malfunction. Replace steering switch. Refer to SR-16, "Exploded View".
	Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN”, “ ”, “ENTER” switches do not work.	Steering switch signal A circuit malfunction. Refer to AV-652, "EXCEPT FOR RUSSIA : Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-658, "EXCEPT FOR RUSSIA : Diagnosis Procedure".

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to AV-627, "Diagnosis Procedure".
Audio sound is not heard.	No sound from all speakers.	• Amp. ON signal circuit malfunction. • BOSE amp. power supply and ground circuits malfunction. Refer to AV-621, "BOSE AMP. : Diagnosis Procedure".
	Sound is not heard from woofer.	• Woofer power supply and ground circuit malfunction. • Sound signal (woofer) circuit malfunction. • Woofer amp. ON signal circuit malfunction.
	Sound is heard only from specific places.	Sound signals circuit of suspect system.
It does not change to “Driver's Audio Stage” mode.	—	Mode change signal circuit malfunction. Refer to AV-628, "Diagnosis Procedure".
AM/FM radio is not received.	Other audio sounds are normal.	• Antenna amp. ON signal circuit malfunction. • Antenna feeder malfunction.

RELATED TO STEERING SWITCH (EXCEPT FOR RUSSIA)

Symptoms	Probable malfunction location
None of the steering switch operations work.	Steering switch ground circuit malfunction. Refer to AV-658, "EXCEPT FOR RUSSIA : Diagnosis Procedure".
Only specified switch cannot be operated.	Steering switch malfunction. Replace steering switch. Refer to SR-16, "Exploded View".
Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN”,“ ”, “ENTER”switches do not work.	Steering switch signal A circuit malfunction. Refer to AV-652, "EXCEPT FOR RUSSIA : Diagnosis Procedure".
Steering switch's “ ”, “VOL UP”, “VOL DOWN”, “ ” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-655, "EXCEPT FOR RUSSIA : Diagnosis Procedure".

RELATED TO STEERING SWITCH (FOR RUSSIA)

Symptoms	Probable malfunction location
None of the steering switch operations work.	Steering switch ground circuit malfunction. Refer to AV-659, "FOR RUSSIA : Diagnosis Procedure".
Only specified switch cannot be operated.	Steering switch malfunction. Replace steering switch. Refer to SR-16, "Exploded View".

Symptoms	Probable malfunction location
Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN”, “ ” and “ENTER”switches do not work.	Steering switch signal A circuit malfunction. Refer to AV-653, "FOR RUSSIA : Diagnosis Procedure".
Steering switch's “ ”, “VOL UP”, “VOL DOWN”, “ ” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-656, "FOR RUSSIA : Diagnosis Procedure".

RELATED TO USB

NOTE:

Check that there is no malfunction of USB equipment main body before performing a diagnosis.

Symptoms	Check items	Possible malfunction location / Action to take
iPod® or USB memory can not be recognized.	—	• USB harness malfunction. • USB connector malfunction.

iPod® is a trademark of Apple inc., registered in the U.S. and other countries.

RELATED TO DVD MODE

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to AV-627, "Diagnosis Procedure".
DVD image is not displayed.	—	Perform CONSULT-III self-diagnosis. Refer to AV-571, "CONSULT - III Function (MULTI AV)". When detecting no malfunction in those components, the following items are a possible cause. • Composite image signal circuits malfunction. Refer to AV-625, "Diagnosis Procedure".
DVD sound is not heard.	No sound from all speakers.	• Amp. ON signal circuit malfunction. • BOSE amp. power supply and ground circuits malfunction. Refer to AV-621, "BOSE AMP. : Diagnosis Procedure".
	Sound is not heard from woofer.	• Woofer power supply and ground circuit malfunction. • Sound signal (woofer) circuit malfunction. • Woofer amp. ON signal circuit malfunction.
	Sound is heard only from specific places.	Sound signals circuit of suspect system.

RELATED TO AUXILIARY INPUT

NOTE:

Check that there is no malfunction of AUX equipment main body before performing a diagnosis.

Symptoms	Check items	Probable malfunction location
No voice sound is heard when AUX mode is selected.	Voice sound is heard when other modes are selected.	AUX sound signal circuit.
Image is not displayed when AUX mode is selected.	DVD image is displayed.	AUX image signal circuit malfunction. Refer to AV-626, "Diagnosis Procedure".
	DVD image is not displayed.	Composite image signal circuits malfunction. Refer to AV-625, "Diagnosis Procedure".

NORMAL OPERATING CONDITION

Description

INFOID:0000000005191959

NOTE:
For Navigation system operation information, refer to Navigation system Owner's Manual.

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The systems in the video mode.	Press “DISC-AUX” to change the mode.
	The display is turned off.	Press “☀/☽” to turn on the display.
	The interior of the vehicle becomes the a little less than 80°C (176°F) or high temperature, and the protection of the display acts, and a display is turned off.	Wait until the interior of the vehicle has cooled down.
Screen not clear.	Contrast setting is not appropriate.	Adjust the contrast of the display.
No voice guidance is available. Or The volume is too high or too low.	The volume is not set correctly, or it is turned off.	Adjust the volume of voice guidance.
	Voice guidance is not provided for certain streets (roads displayed in gray).	This is not a malfunction.
No map is displayed on the screen.	A screen other than map screen is displayed.	Press “MAP”.
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the navigation system.

NOTE:
Locations stored in the Address Book and other memory functions may be lost if the vehicle's battery is disconnected or becomes discharged. If this occurs, service the vehicle's battery as necessary and re-enter the information in the Address Book.

RELATED TO VOICE RECOGNITION

Related to Basic Operation

Symptom	Possible cause	Possible solution
The system does not recognize your command. or The system recognizes your command incorrectly	The interior of the vehicle is too noisy.	Close the windows or have other occupants quiet.
	The volume of your voice is too low.	Speak louder.
	The volume if your voice is too loud.	Speak softer.
	Your pronunciation is unclear.	Speak clearly.
	You are speaking before the voice recognition is ready	Press and release “” switch on the steering switch, and speak a command after the tone sounds.
	8 seconds or more have passed after you pressed and released “” switch on the steering switch.	Make sure to speak a command within 8 seconds after you press and release “” switch on the steering switch.
	Only a limited range of voice commands is usable for each screen.	Use a correct voice command appropriate for the current screen.
	The fan of the air conditioner is too loud.	Lower the fan speed as necessary as voice command can be recognized more easily.
The system cannot be operated.	The retractable hard top is open.	• Close the retractable hard top. • Open and close the retractable hard top before operating the system.

Related to Item Choice

The system should respond correctly to all voice commands without difficulty. If problems are encountered, follow the solutions given in this guide for the appropriate error.

Where the solutions are listed by number, try each solution in turn, starting with number one, until the problem is resolved.

Symptom/ error message	Solution
Displays “COMMAND NOT RECOGNIZED” or the system fails to interpret the command correctly.	1. Ensure that the command format is valid.
	2. Speak clearly without pausing between words and at a level appropriate to the ambient noise level.
	3. Ensure that the ambient noise level is not excessive, for example, windows open or defrost on. **NOTE:** If it is too noisy to use the phone, it is likely that voice commands will not be recognized.
	4. If optional words of the command have been omitted, then command should be tried with these in place.
The system consistently selects the wrong voicetag	1. Ensure that the voicetag requested matches what was originally stored. This can be confirmed by giving the “Addressbook” Directory or Phone Directory command.
	2. Replace one of the voicetags being confused with a different voicetag.

Related to Telephone

The system should respond correctly to all voice commands without difficulty. If problems are encountered, try the following solutions.

Where the solutions are listed by number, try each solution in turn, starting with number 1, until the problem is resolved.

Symptom	Solution
System fails to interpret the command correctly.	1. Ensure that the command is valid.
	2. Ensure that the command is spoken after the tone.
	3. Speak clearly without pausing between words and at level appropriate to the ambient noise level in the vehicle.
	4. Ensure that the ambient noise level is not excessive (for example, windows open or defroster on). **NOTE:** If it is too noisy to use the phone, it is likely that the voice commands will not be recognized.
	5. If more than one command was said at a time, try saying the commands separately.
	6. If the system consistently fails to recognize commands, the voice training procedure should be carried out to improve the recognition response for the speaker. See “Speaker adaptation (SA) mode” earlier in this section. Refer to “OWNER’S MANUAL”.
The system consistently selects the wrong voicetag	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the “List Names” command.
	2. Replace one of the names being confused with a new name.

RELATED TO AUDIO

- The majority of the audio malfunctions are the result of outside causes (bad CD, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and then determine the cause.

NOTE:

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA, AAC) or could be incorrectly mastered by the customer on a computer.
- Check if the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the “red book” Compact Disc Standard and may not play.

Symptom	Cause and Counter measure
Cannot play	Check if the CD was inserted correctly.
	Check if the CD is scratched or dirty.
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.
	If there is a mixture of music CD files (CD-DA data) and MP3/WMA/AAC files on a CD, only the music CD files (CD-DA data) will be played.
	Files with extensions other than ".MP3", ".WMA", "AAC" ".mp3", ".wma" or ".aac"cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format, This may occur depending on the variation or the setting of MP3/WMA/AAC writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the disc.
	Check if the CD is protected by copyright.
	Disks recorded in live file system format are not supported. (For Microsoft Windows Vista, check the settings.)
Poor sound quality	Check if the CD is scratched or dirty.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA/AAC CD, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.
Move immediately to the next song when playing	When a non-MP3/WMA/AAC file has been given an extension of ".MP3", ".WMA", "AAC", ".mp3", ".wma" or ".aac", or when play is prohibited by copyright protection, the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.

Noise resulting from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources, is not a malfunction.

NOTE:

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

RELATED TO DVD

Symptom	Possible cause	Possible solution
Not working as operated	Some operations may be rejected or may not function as intended because of the manufacturer's intent, depending on DVD.	This is not a malfunction.
Operation not accepted	If a requested operation is prohibited, then a message is displayed on the screen. (Message display depends on DVD.)	This is not a malfunction.

Symptom	Possible cause	Possible solution
DVD can not be played	Check that the DVD is inserted in the right place.	Upturn the DVD (facing the title upward).
	Check that there is no condensation inside the player.	Wait until the condensation evaporates (approximately one hour).
	DVD menu is displayed.	Select item to touch “ENTER”.
	Insertion of a DVD with a different region code.	DVDs with a different region code can not be played. Check DVD.
	Some DVD softwares may not be played because not all DVD softwares fully comply in the standard.	This is not a malfunction.
Interruption during playback or flicker in the display	Check that the DVD has no scratches and dirt.	Errors may not be corrected depending on the size of scratches.
		Wipe and clean the dirt on the disc.
Subtitles not shown	Subtitle setting is OFF.	Set subtitle.
	Subtitle is not included in the software.	Check DVD.
Not played in set language	If a language is not included in the DVD, then the DVD is played in a recommended language.	Check DVD.
Not played with set subtitle	If a set subtitle is not included in the DVD, then the DVD is played with a recommended subtitle.	Check DVD.
Angle unchangeable	Plural angles are not recorded in the software.	Check if the DVD is multi–angle capable.
Unusual screen display	Display mode to the output aspect ratio for the DVD software is inappropriate.	Switch to the appropriate display mode.
Distortion in picture	In the process of fast–forward or fast–reverse.	This is not a malfunction.
Low sound quality	Check that the DVD has no scratches and dirt.	Wipe and clean the dirt on the disc.
Subtitle and language not selectable (not played with set subtilte or in set language)	The DVD is not multilanguage–capable.	The inclusion of the number of languages depends on DVD. Languages may be selectable on the Menu screen. Check DVD.
	The DVD has a priority language or setting.	If the DVD has a priority language or settings, then settings changed with this device are not reflected.
Playback time is indicated, but no sound comes out.	Playback of Mix mode Truck 1. (Mix mode: Format including Truck 1 with data other than music and Trucks from Truck 2 with music data.)	Play music data included in trucks from Truck 2.

RELATED TO VEHICLE ICON

Symptom	Possible cause	Possible solution
Names of roads differ between Plan View and Birdview™.	This is because the quantity of the displayed information is reduced so that the screen does not become too crowded. There is also a chance that names of the roads may be displayed multiple times, and the names appearing on the screen may be different because of a processing procedure.	This is not a malfunction.
The vehicle icon is not displayed in the correct position.	The vehicle was transported after the ignition switch was pressed off, for example, by a ferry or car transporter.	Drive the vehicle for a while on a road where GPS signals can be received.
	The position and direction of the vehicle icon may be incorrect depending on the driving environments and the levels of positioning accuracy of the navigation system.	This is not a malfunction. Drive the vehicle for a while to automatically correct the position and direction of the vehicle icon.
When the vehicle is traveling on a new road, the vehicle icon is located on another road nearby.	Because the new road is not stored in the map data, the system automatically places the vehicle icon on the nearest road available.	Updated road information will be included in the next version of the map data.

Symptom	Possible cause	Possible solution
The screen does not switch to the night screen even after turning on the headlights.	The daytime screen was set the last time the headlights were turned on.	Set the screen to the night screen mode using <Day/Night> when you turn on the headlights.
The map does not scroll even when the vehicle is moving.	The current location map screen is not displayed.	Press “MAP”.
The vehicle icon is not displayed.	The current location map screen is not displayed.	Press “MAP”.
The location of the vehicle icon is misaligned from the actual position.	When using tire chains or replacing the tires, speed calculations based on the speed sensor may be incorrect.	Drive the vehicle for a while [at approximately 30 km/h (19 MPH) for about 30 minutes] to automatically correct the vehicle icon position. If this does not correct the vehicle icon position, contact an INFINITI dealer.
	The map data has a mistake or is incomplete (the vehicle icon position is always misaligned in the same area).	Updated road information will be included in the next version of the map data.

RELATED TO ROUTE CALCULATION AND VISUAL GUIDANCE

Symptom	Possible cause	Possible solution
Waypoints are not included in the auto reroute calculation.	Waypoints that you have already passed are not included in the auto reroute calculation.	If you want to go to that waypoint again, you need to edit the route.
Route information is not displayed.	Route calculation has not yet been performed.	Set the destination and perform route calculation.
	You are not driving on the suggested route.	Drive on the suggested route.
	Route guidance is set to off.	Turn on route guidance.
	Route information is not provided for certain types of roads (roads displayed in gray).	This is not a malfunction.
The auto reroute calculation (or detour calculation) suggests the same route as the one previously suggested.	Route calculations took priority conditions into consideration, but the same route was calculated.	This is not a malfunction.
A waypoint cannot be added.	Five waypoints are already set on the route, including ones that you have already passed.	A maximum of 5 waypoints can be set on the route. If you want to go to 6 or more waypoints, perform route calculations multiple times as necessary.
The suggested route is not displayed.	Roads near the destination cannot be calculated.	Reset the destination to a main or ordinary road, and recalculate the route.
	The starting point and destination are too close.	Set a more distant destination.
	The starting point and destination are too far away.	Divide your trip by selecting one or two intermediate destinations, and perform route calculations multiple times.
	There are time restricted roads (by the day of the week, by time) near the current vehicle location or destination.	Set [Use Time Restricted Roads] to off.
The part of the route that you have already passed is deleted.	A route is managed by sections between waypoints. If you passed the first waypoint, the section between the starting point and the waypoint is deleted. (It may not be deleted depending on the area.)	This is not a malfunction.
An indirect route is suggested.	If there are restrictions (such as one-way streets) on roads close to the starting point or destination, the system may suggest an indirect route.	Adjust the location of the starting of the starting point or destination.
	The system may suggest an indirect route because route calculation does not take into consideration some areas such as narrow streets (gray roads.)	Reset the destination to a main or ordinary road, and recalculate the route.

Symptom	Possible cause	Possible solution
The landmark information does not correspond to the actual information.	This may be caused by insufficient or incorrect map data.	Updated information will be included in the next version of the data.
The suggested route does not exactly connect to the starting point, waypoints, or destination.	There is no data for route calculation closes to these locations.	Set the starting point, waypoints and destination on a main road, and perform route calculation.

RELATED TO VOICE GUIDANCE

Symptom	Possible cause	Possible solution
Voice guidance is not available	Voice guidance is only available at certain intersections marked with? In some case, voice guidance is not available even when the vehicle should make a turn.	This is not a malfunction.
	The vehicle has deviated from the suggested route.	Go back to the suggested route or request route calculation again
	Voice guide is set to off.	Turn on voice guidance.
	Route guidance is set to off.	Turn on voice guidance.
The guidance contact does not correspond to the actual condition.	The contact of voice guidance may vary, depending on the types of intersections at which turn are made.	Follow all traffic rules and regulations.

PRECAUTION

PRECAUTIONS FOR RUSSIA

FOR RUSSIA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000006018375

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the “SRS AIR BAG”.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

EXCEPT FOR RUSSIA

EXCEPT FOR RUSSIA : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000006018376

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the “SRS AIR BAG”.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

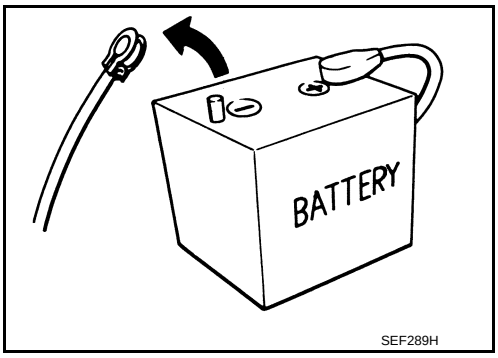
- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s)**

with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

EXCEPT FOR RUSSIA : Precaution for Battery Service (for V9X Models)

INFOID:0000000006081195

When disconnect the battery cable, pay attention to the following.
- Always use a 12 volt battery as power source.
- Do not attempt to disconnect battery cables while engine is running.
- **Before disconnecting battery cables, turn ignition switch OFF and wait at least 4 minutes.**
- **After high-load driving, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery cable.**
  NOTE:
  Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.



Precaution for Trouble Diagnosis

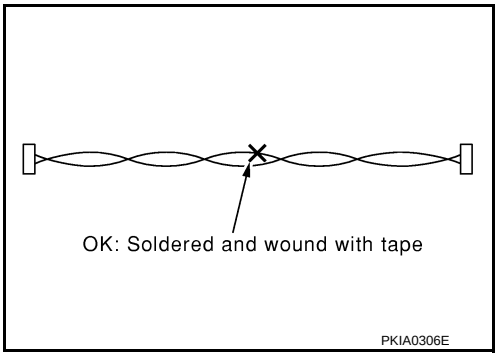
INFOID:0000000005191961

AV COMMUNICATION SYSTEM
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

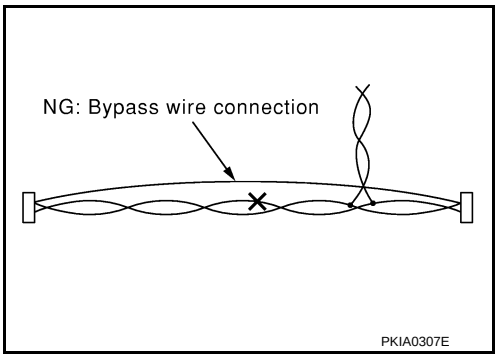
Precaution for Harness Repair

INFOID:0000000005191962

AV COMMUNICATION SYSTEM
- Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]



- Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)



REMOVAL AND INSTALLATION

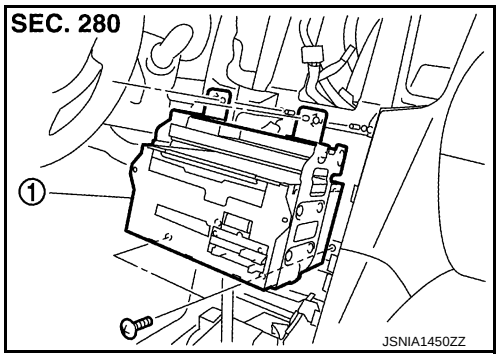
AV CONTROL UNIT

Exploded View

INFOID:0000000005192082

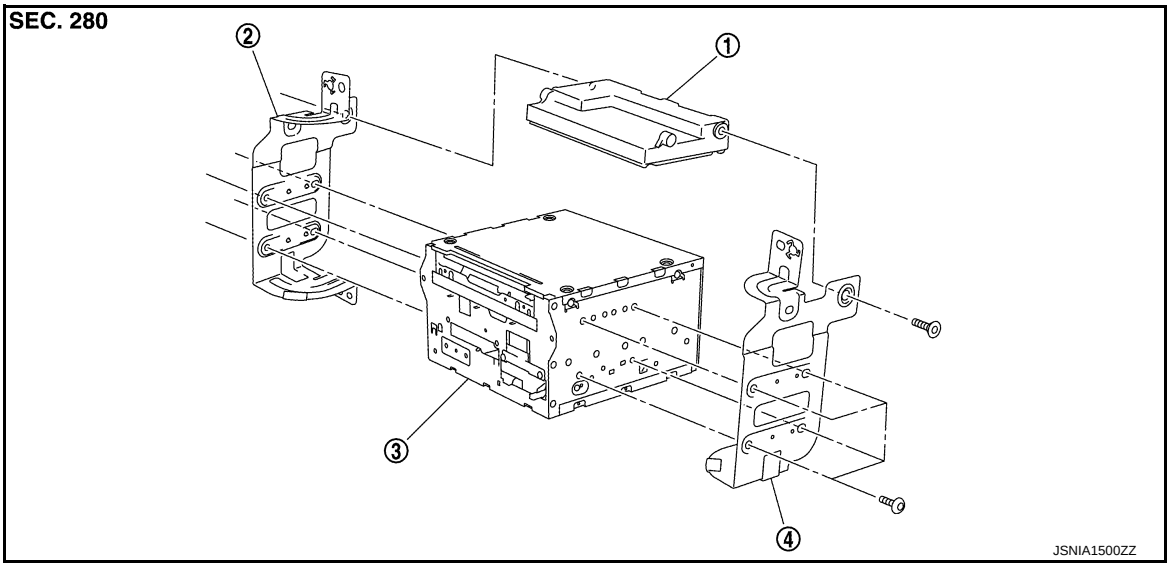
CAUTION:
Before replacing AV control unit, perform "READ CONFIGURATION" to save or print current vehicle specification. For details, refer to AV-534, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description".

REMOVAL



1: AV control unit

DISASSEMBLY



1. Unified meter and A/C amp.
2. Bracket LH
3. AV control unit
4. Bracket RH

Removal and Installation

INFOID:0000000005192083

REMOVAL

CAUTION:
Before replacing AV control unit, perform "READ CONFIGURATION" to save or print current vehicle specification. For details, refer to AV-534, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description".

1. Remove front display unit. Refer to AV-747, "Exploded View".
2. Remove AV control unit with a unified meter and A/C amp. as a single unit from the body.
3. Remove bracket screws, and then remove AV control unit.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

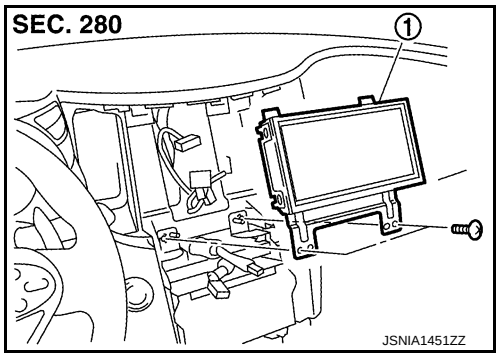
Be sure to perform “WRITE CONFIGURATION” when replacing AV control unit.

FRONT DISPLAY UNIT

Exploded View

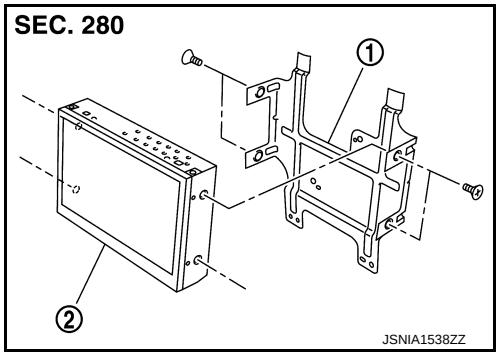
INFOID:0000000005192086

REMOVAL



1. Front display unit

DISASSEMBLY



1. Bracket
2. Front display unit

Removal and Installation

INFOID:0000000005192087

REMOVAL

1. Remove cluster lid D. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove front display unit mounting screws.
3. Disconnect connector, and remove front display unit.

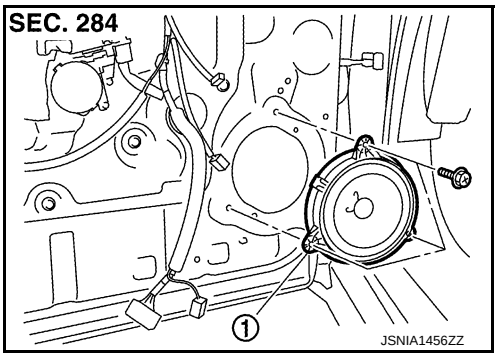
INSTALLATION

Installation is the reverse order of removal.

FRONT DOOR SPEAKER

Exploded View

INFOID:0000000005192088



1. Front door speaker

Removal and Installation

INFOID:0000000005192089

REMOVAL

1. Remove front door finisher. Refer to INT-13, "Exploded View".
2. Remove front door speaker mounting bolts.
3. Disconnect connector and remove front door speaker.

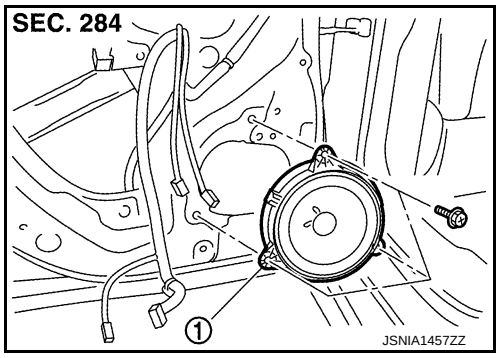
INSTALLATION

Installation is the reverse order of removal.

REAR DOOR SPEAKER

Exploded View

INFOID:0000000005192090



1. Rear door speaker

Removal and Installation

INFOID:0000000005192091

REMOVAL

1. Remove rear door finisher. Refer to INT-16, "Exploded View".
2. Remove rear door speaker mounting bolts.
3. Disconnect connector and remove rear door speaker.

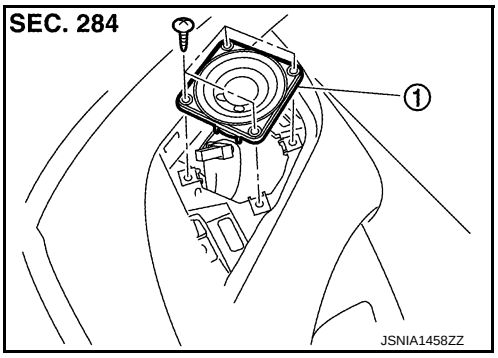
INSTALLATION

Installation is the reverse order of removal.

FRONT SQUAWKER

Exploded View

INFOID:0000000005192092



1. Front squawker

Removal and Installation

INFOID:0000000005192093

REMOVAL

1. Remove speaker grille. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove front squawker mounting screws.
3. Disconnect connector and remove front squawker.

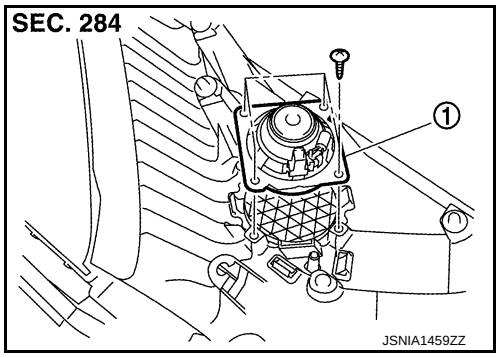
INSTALLATION

Installation is the reverse order of removal.

REAR SQUAWKER

Exploded View

INFOID:0000000005192094



1. Rear squawker

Removal and Installation

INFOID:0000000005192095

REMOVAL

1. Remove luggage side finisher upper. Refer to INT-30, "FOR EUROPE : Exploded View" (except for Russia), INT-34, "FOR RUSSIA : Exploded View" (for Russia) or INT-38, "V9X : Exploded View" (for V9X models).
2. Remove rear squawker mounting screws.
3. Remove rear squawker.

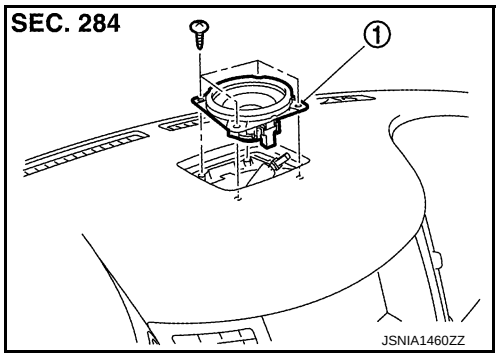
INSTALLATION

Installation is the reverse order of removal.

CENTER SPEAKER

Exploded View

INFOID:0000000005192096



1. Center speaker

Removal and Installation

INFOID:0000000005192097

REMOVAL

1. Remove center speaker grille. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove center speaker mounting screws, lift up the center speaker and disconnect connector.
3. Remove center speaker.

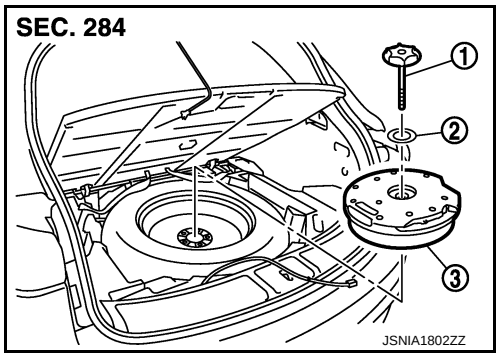
INSTALLATION

Installation is the reverse order of removal.

WOOFER

Exploded View

INFOID:0000000005192098



1. Woofer clamp
2. Spacer
3. Woofer

Removal and Installation

INFOID:0000000005192099

REMOVAL

1. Pull up luggage finisher center and hang the strap to upper body.
2. Remove woofer clamp.
3. Remove harness clip and connector.
4. Remove woofer.

INSTALLATION

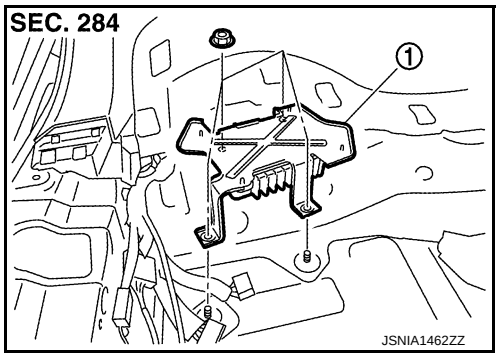
Installation is the reverse order of removal.

BOSE AMP.

Exploded View

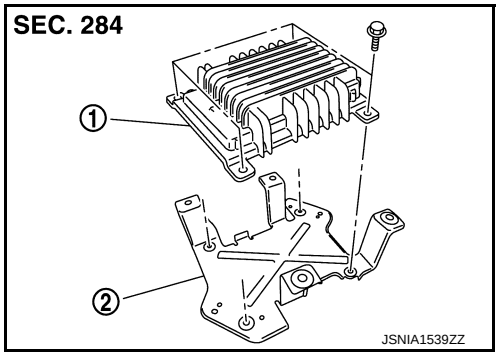
INFOID:0000000005192100

REMOVAL



1. BOSE amp.

DISASSEMBLY



1. BOSE amp.
2. Bracket

Removal and Installation

INFOID:0000000005192101

REMOVAL

1. Remove luggage floor spacer (LH). Refer to INT-30, "FOR EUROPE : Exploded View" (except for Russia), INT-34, "FOR RUSSIA : Exploded View" (for Russia) or INT-38, "V9X : Exploded View" (for V9X models).
2. Remove BOSE amp. mounting nuts.
3. Disconnect connector and remove BOSE amp.

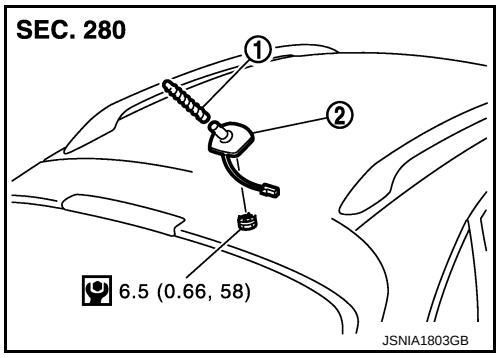
INSTALLATION

Installation is the reverse order of removal.

ANTENNA BASE

Exploded View

INFOID:0000000005192102



1. Antenna rod
2. Antenna base

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000005192103

REMOVAL

1. Remove headlining (rear). Keep a service area. Refer to INT-25, "Exploded View".
2. Remove antenna base mounting nut.
3. Disconnect connector and remove antenna base.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

Be careful about tightening torque. Antenna sensitivity becomes poor, and when it is excessive, roof panel may be deformed, when antenna base mounting nut tightening torque is loose.

MULTIFUNCTION SWITCH

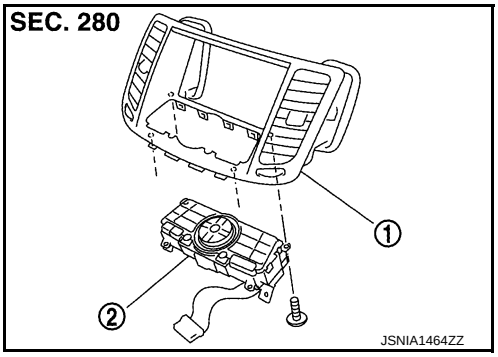
Exploded View

INFOID:0000000005192104

REMOVAL

Refer to IP-14, "A/T MODELS : Exploded View".

DISASSEMBLY



1. Cluster lid D
2. Multifunction switch

Removal and Installation

INFOID:0000000005192105

REMOVAL

1. Remove cluster lid D. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove multifunction switch mounting screws.
3. Disconnect connector and remove multifunction switch.

INSTALLATION

Installation is the reverse order of removal.

PRESET SWITCH

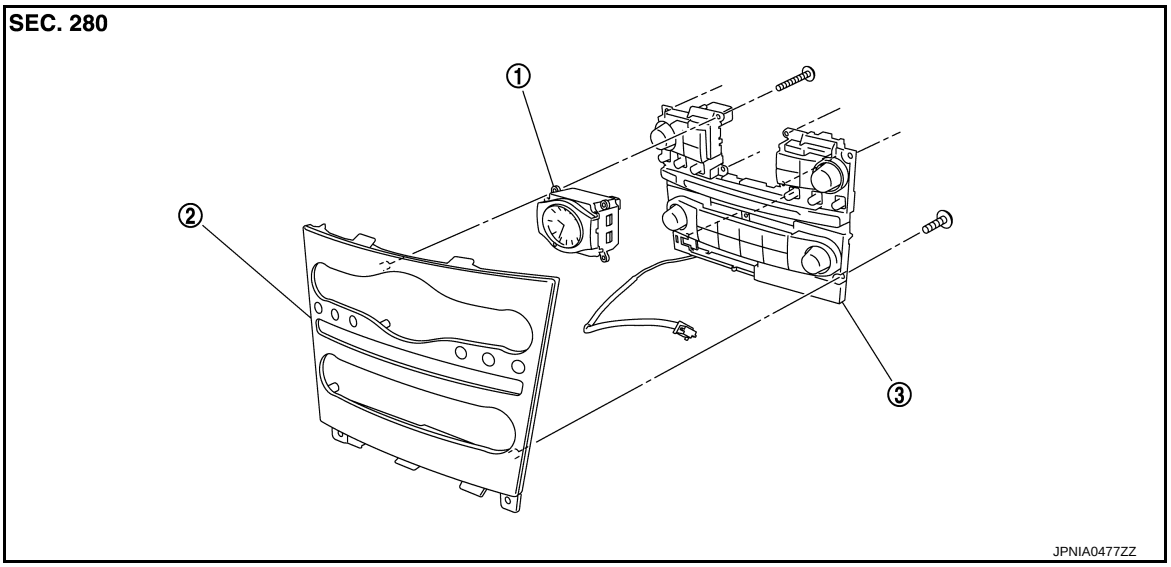
Exploded View

INFOID:0000000005192106

REMOVAL

Refer to IP-14, "A/T MODELS : Exploded View".

DISASSEMBLY



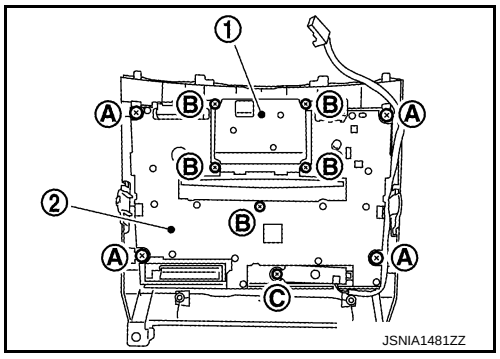
1. Clock
2. Cluster lid C
3. Preset switch

Removal and Installation

INFOID:0000000005192107

REMOVAL

1. Remove cluster lid C. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove preset switch mounting screws (A), (B) and (C).
3. Disconnect connector and remove preset switch.



1. Clock
2. Preset switch

INSTALLATION

Installation is the reverse order of removal.

NOTE:

When installing preset switch, do not allow the print wire that connects preset switch and multifunction switch to get caught in between audio unit and preset switch.

STEERING SWITCH

Exploded View

INFOID:0000000005369394

Refer to SR-16, "Exploded View".

Removal and Installation

INFOID:0000000005369395

REMOVAL

Refer to SR-16, "Removal and Installation".

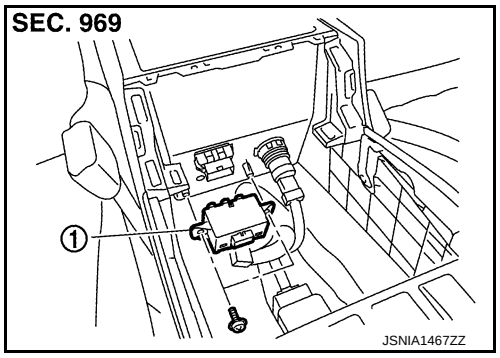
INSTALLATION

Install in the reverse order of removal.

AUXILIARY INPUT JACKS

Exploded View

INFOID:0000000005192108



1. Auxiliary input jacks

Removal and Installation

INFOID:0000000005192109

REMOVAL

1. Remove console box assembly. Refer to IP-37, "A/T MODELS : Exploded View".
2. Remove auxiliary mounting screws.
3. Disconnect connector and remove auxiliary input jacks.

INSTALLATION

Installation is the reverse order of removal.

USB CONNECTOR

Removal and Installation

INFOID:0000000005198413

REMOVAL

1. Remove console box assembly. Refer to IP-37, "A/T MODELS : Exploded View".
2. Press the pawl from the back of console box assembly to remove USB connector.

INSTALLATION

Install in the reverse order of removal.

MICROPHONE

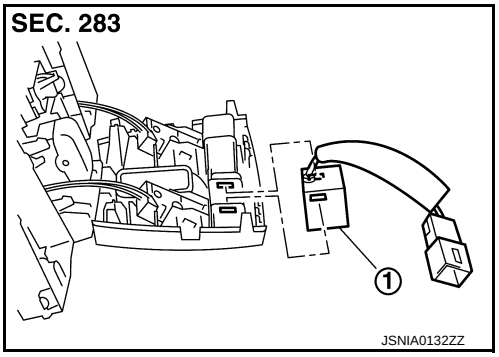
Exploded View

INFOID:0000000005192110

REMOVAL

Refer to INT-25, "Exploded View".

DISASSEMBLY



1. Microphone

Removal and Installation

INFOID:0000000005192111

REMOVAL

1. Remove map lamp assembly. Refer to INT-25, "Exploded View".
2. Remove microphone, stretching pawls of map lamp assembly.

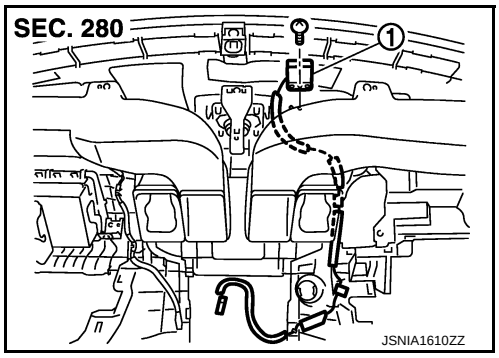
INSTALLATION

Installation is the reverse order of removal.

GPS ANTENNA

Exploded View

INFOID:0000000005192113



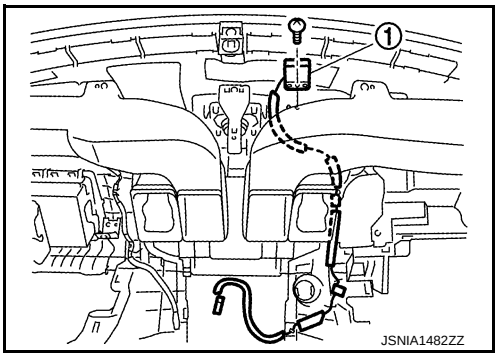
1. GPS antenna

Removal and Installation

INFOID:0000000005192114

REMOVAL

1. Remove instrument panel. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove GPS antenna mounting screw.
3. Remove GPS antenna (1).



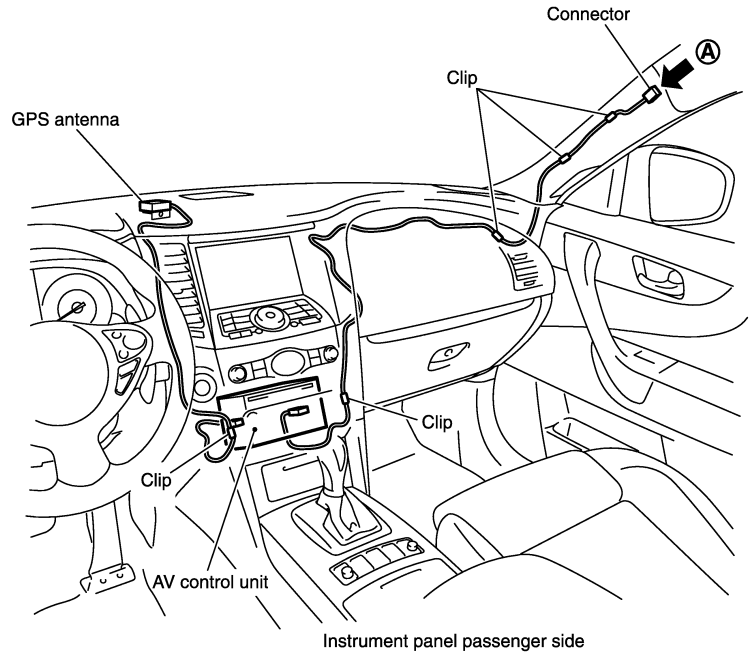
INSTALLATION

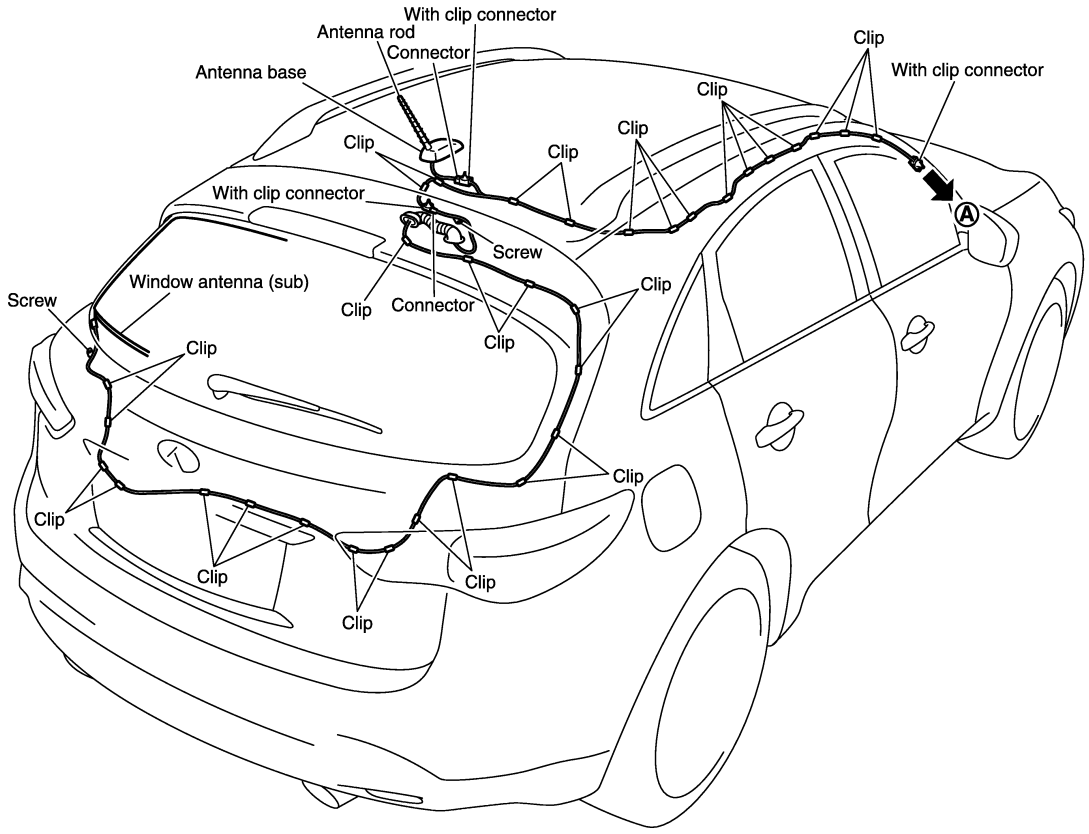
Installation is the reverse order of removal.

Feeder Layout

INFOID:0000000005192112

SEC. 280



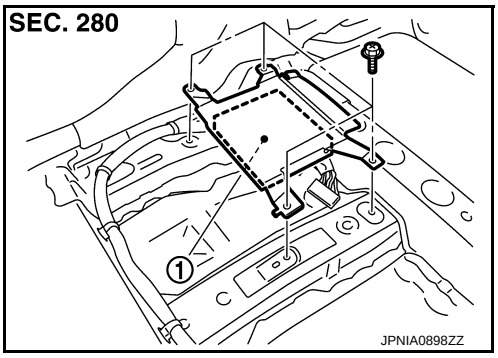


JSNIA2260GB

AROUND VIEW MONITOR CONTROL UNIT

Exploded View

INFOID:0000000005192118



1. Around view monitor control unit

Removal and Installation

INFOID:0000000005192119

REMOVAL

1. Remove front seat (LH side). Refer to SE-90, "Exploded View".
2. Remove floor carpet. Keep a service area.
3. Remove around view monitor control unit mounting screws.
4. Disconnect connector and remove around view monitor control unit.

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-536, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".
3. Perform predictive course line center position adjustment. Refer to AV-536, "PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Special Repair Requirement".

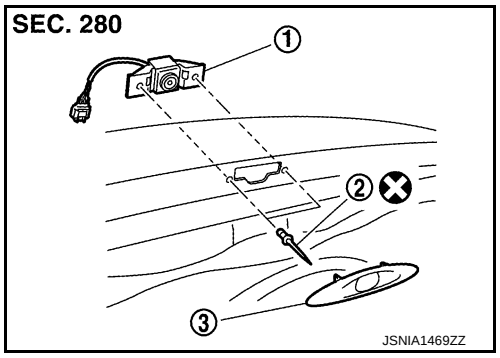
CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

FRONT CAMERA

Exploded View

INFOID:0000000005192120



1. Front camera
2. Rivet
3. Front camera finisher

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000005192121

REMOVAL

1. Remove front camera finisher.
2. Remove front camera mounting rivet.
3. Remove front camera.

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-536, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

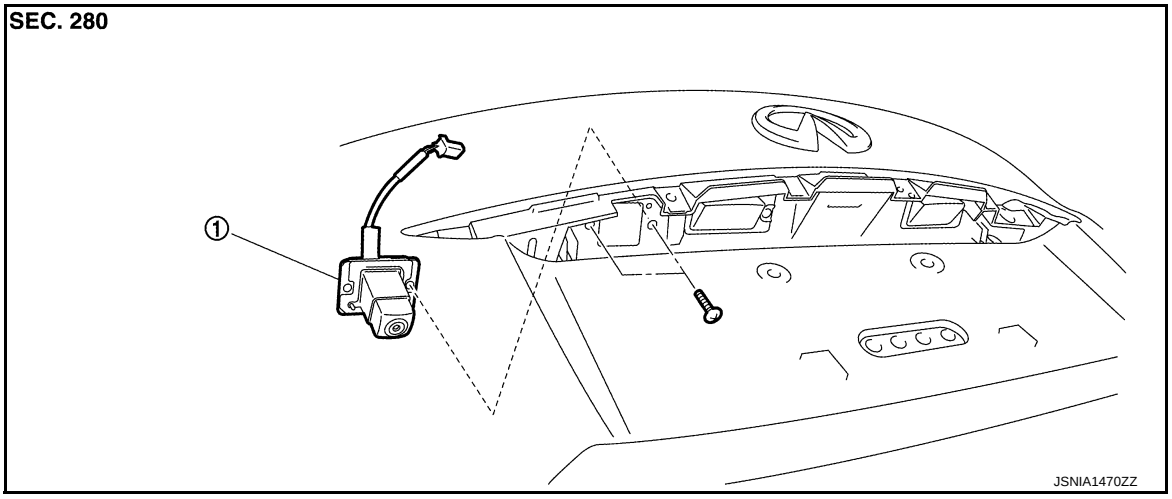
CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

REAR CAMERA

Exploded View

INFOID:0000000005192122



1. Rear camera

Removal and Installation

INFOID:0000000005192123

REMOVAL

1. Remove door handle cover upper. Refer to EXT-52, "Exploded View".
2. Remove rear camera mounting screws and rear camera harness connector.
3. Remove rear camera.

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-536, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

CAUTION:

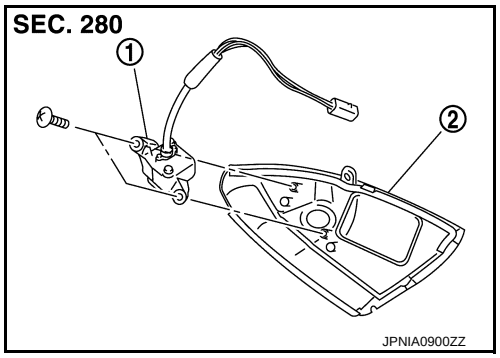
Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

SIDE CAMERA LH

LHD MODELS

LHD MODELS : Exploded View

INFOID:0000000005192124



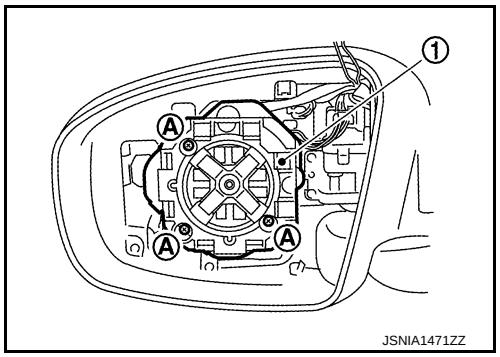
1. Side camera (LH)
2. Side camera finisher assembly

LHD MODELS : Removal and Installation

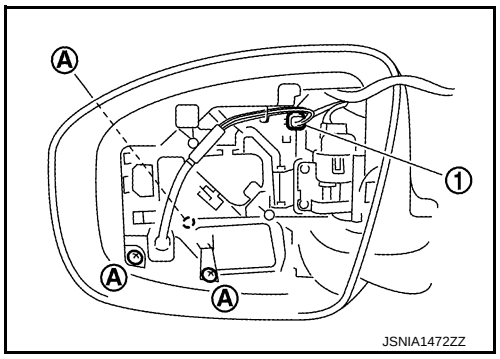
INFOID:0000000005192125

REMOVAL

1. Remove glass mirror (driver side). Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
2. Remove screws (A), and actuator connector, and then actuator (1).



3. Remove door mirror cover. Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
4. Remove screws (A) and connector (1), and then remove side camera finisher assembly (LH).



5. Remove side camera (LH) mounting screws
6. Remove side camera (LH).

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-536, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

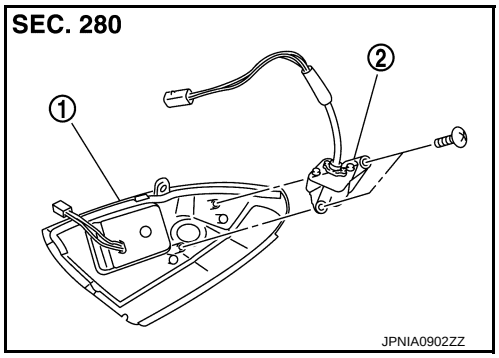
CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

RHD MODELS

RHD MODELS : Exploded View

INFOID:0000000005346894



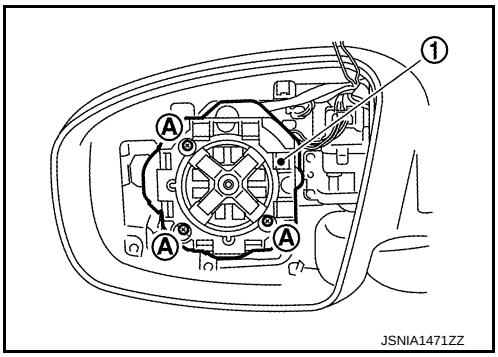
1. Side camera finisher assembly
2. Side camera (RH)

RHD MODELS : Removal and Installation

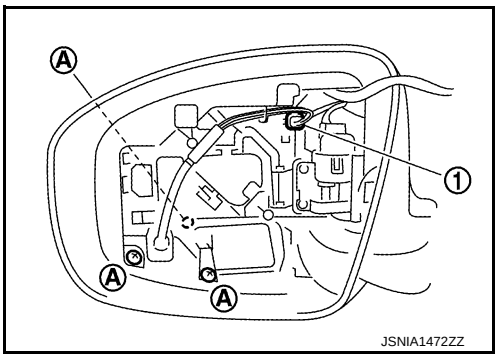
INFOID:0000000005346895

REMOVAL

1. Remove glass mirror (driver side). Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
2. Remove screws (A) and actuator connector, and then actuator (1).



3. Remove door mirror cover. Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
4. Remove screws (A) and connector (1), and then remove side camera finisher assembly (LH).



5. Remove side camera (LH) screws.
6. Remove side camera (LH).

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-536, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

CAUTION:

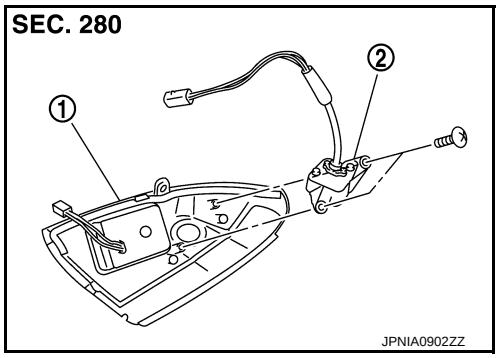
Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

SIDE CAMERA RH

LHD MODELS

LHD MODELS : Exploded View

INFOID:0000000005192126



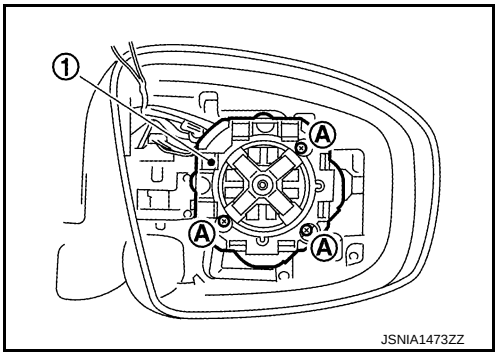
1. Side camera finisher assembly
2. Side camera (RH)

LHD MODELS : Removal and Installation

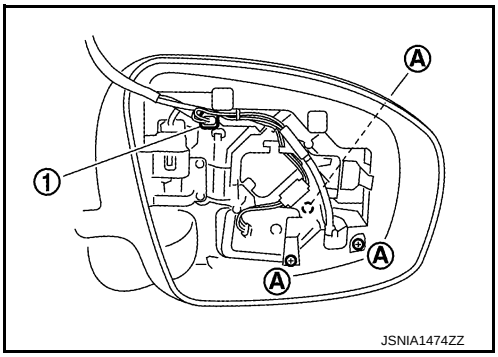
INFOID:0000000005192127

REMOVAL

1. Remove glass mirror (passenger side). Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
2. Remove screws (A) and actuator connector, and then actuator (1).



3. Remove door mirror cover. Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
4. Remove screws (A) and connector (1), and then remove side camera finisher assembly (RH).



5. Remove side camera (RH) screws.
6. Remove side camera (RH).

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-536, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

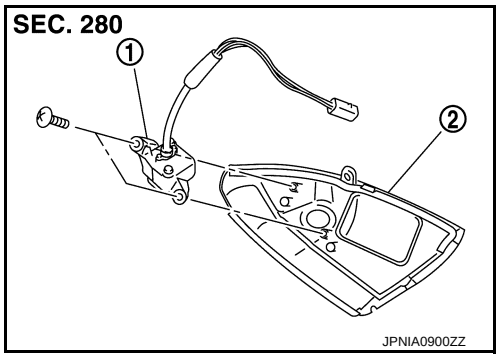
CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

RHD MODELS

RHD MODELS : Exploded View

INFOID:0000000005346896



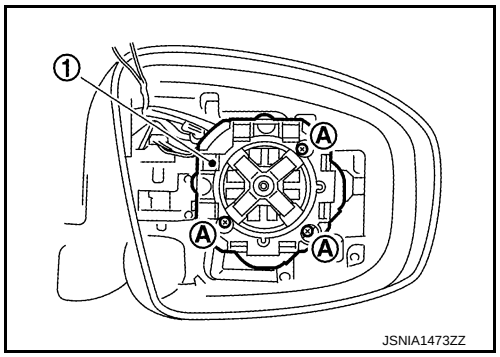
1. Side camera (RH)
2. Side camera finisher assembly

RHD MODELS : Removal and Installation

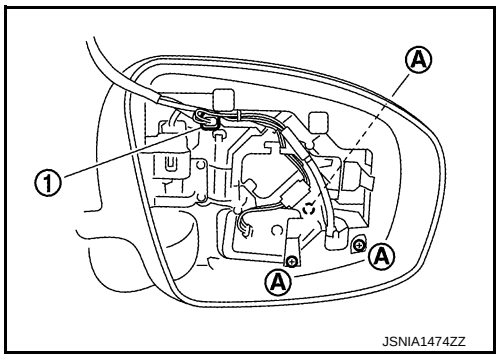
INFOID:0000000005346897

REMOVAL

1. Remove glass mirror (passenger side). Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
2. Remove screws (A), and actuator connector, and then actuator (1).



3. Remove door mirror cover. Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
4. Remove screws (A) and connector (1), and then remove side camera finisher assembly (RH).



5. Remove side camera (RH) mounting screws
6. Remove side camera (RH).

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-536, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

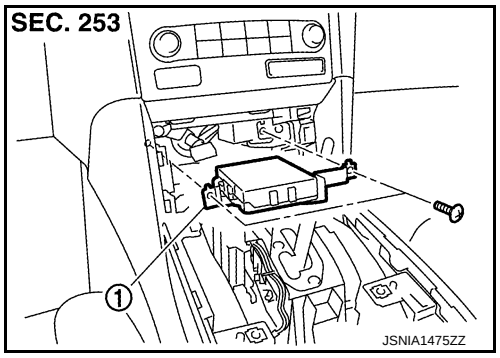
CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

Exploded View

INFOID:0000000005192128



1. Sonar control unit

Removal and Installation

INFOID:0000000005192129

REMOVAL

1. Remove AV control unit. Refer to AV-745, "Exploded View".
2. Remove screws and connector, and then sonar control unit.

INSTALLATION

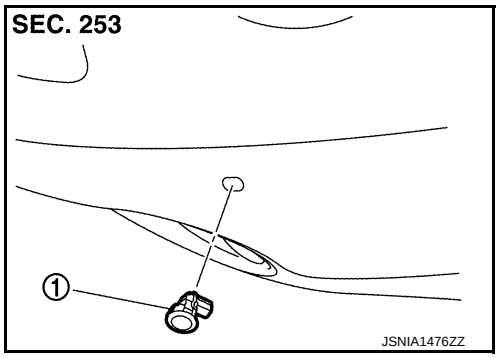
Install in the reverse order of removal.

SONAR SENSOR

FRONT

FRONT : Exploded View

INFOID:0000000005192130



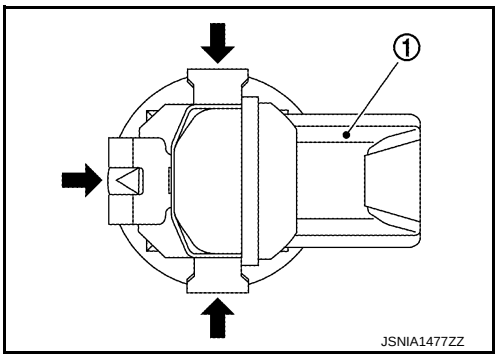
1. Sonar sensor (front)

FRONT : Removal and Installation

INFOID:0000000005192131

REMOVAL

1. Remove fender protector. Keep a service area. Refer to EXT-28, "FENDER PROTECTOR : Exploded View".
2. Remove sonar sensor connector.
3. Press the sonar sensor (1) outside the front bumper, pressing the metal clips on the back to the direction of black arrows.



INSTALLATION

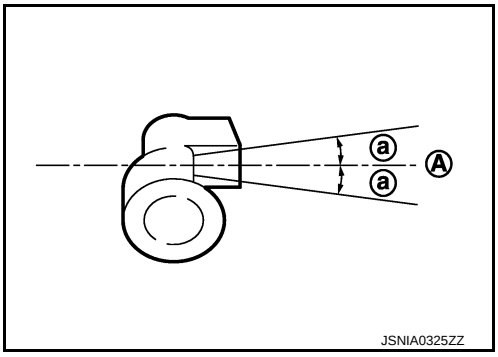
Install the bumper when the pawl engages.

CAUTION:

The connector direction is within ±10° from the horizontal position when assembling the bumper.

A : Horizontal position

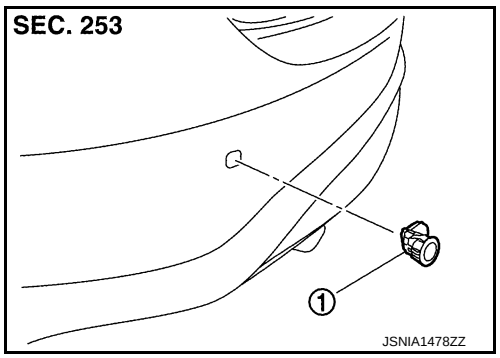
a : 10°



REAR

REAR : Exploded View

INFOID:0000000005192132



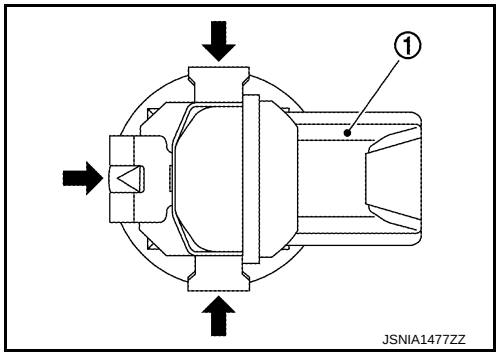
1. Sonar sensor (rear)

REAR : Removal and Installation

INFOID:0000000005192133

REMOVAL

1. Remove sonar sensor connector.
2. Press the sonar sensor (1) outside the front bumper, pressing the metal clips on the back to the direction of black arrows.



INSTALLATION

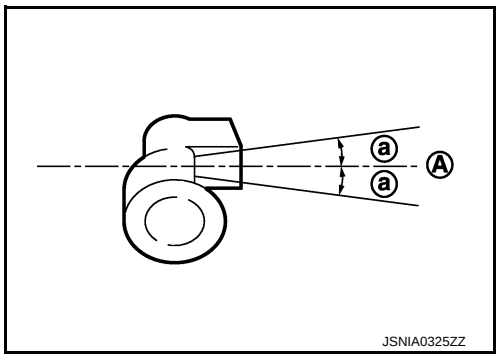
Install the bumper when the pawl engages.

CAUTION:

The connector direction is within ±10° from the horizontal position when assembling the bumper.

A : Horizontal position

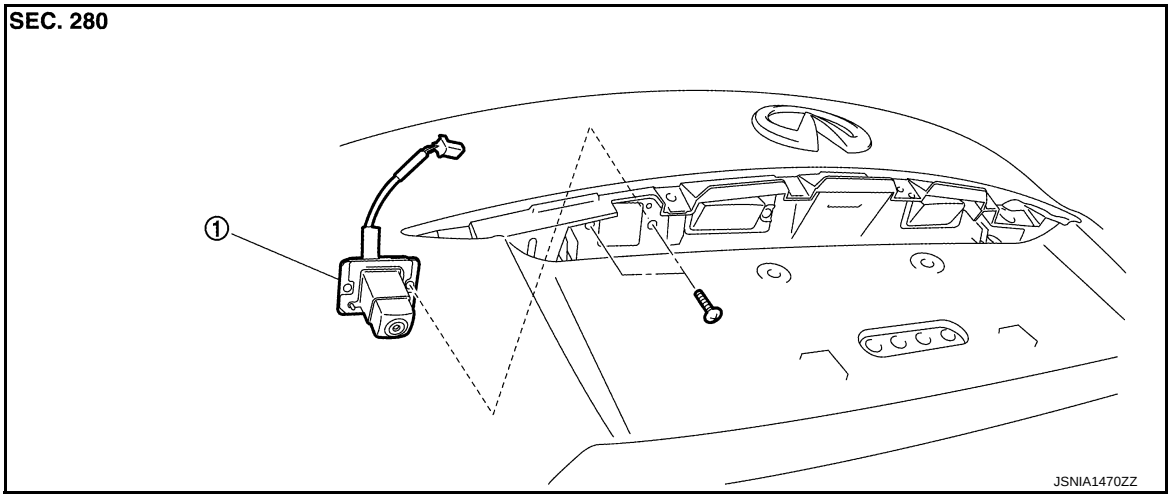
a : 10°



REAR VIEW CAMERA

Exploded View

INFOID:0000000005192138



1. Rear view camera

Removal and Installation

INFOID:0000000005192139

REMOVAL

1. Remove door handle cover. Refer to EXT-52, "Exploded View".
2. Remove rear view camera mounting screws and rear view camera harness connector.
3. Remove rear view camera.

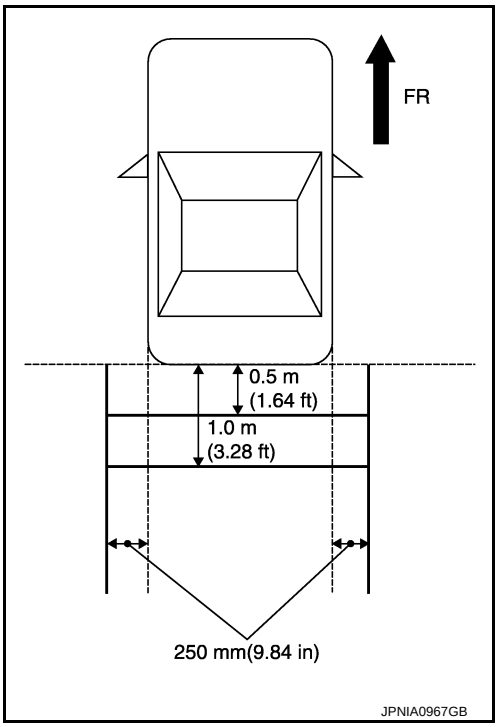
INSTALLATION

1. Installation is the reverse order of removal.
2. Adjust the guide line position if the guide line position is shifted after installing the rear view camera. Refer to AV-776, "Adjustment".

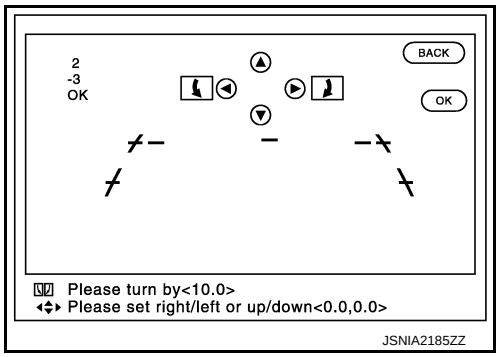
Adjustment

INFOID:0000000005192140

1. Draw lines on rearward area of the vehicle passing through the following points: 250 mm (9.84 in) from both sides of the vehicle, and 0.5 m (1.64 ft), 1.0 m (3.28 ft) from the rear end of the bumper.
2. Set into “Adjust offset of rear view camera” mode of Confirmation/Adjustment mode.



3. Rotate the center dial, and then select the guiding line pattern so that its angle is aligned with the correction line of the rear of the vehicle.



Selected pattern	: –10° to 10°

4. Make fine adjustment to the correction line of the rear of the vehicle with up/down/left/right switches so that its position is aligned with the guiding line. Press “OK” switch and record the adjusted guiding line position to the AV control unit.

Up/Down adjustment range	: –10° to 10°
Left/Right adjustment range	: –10° to 10°

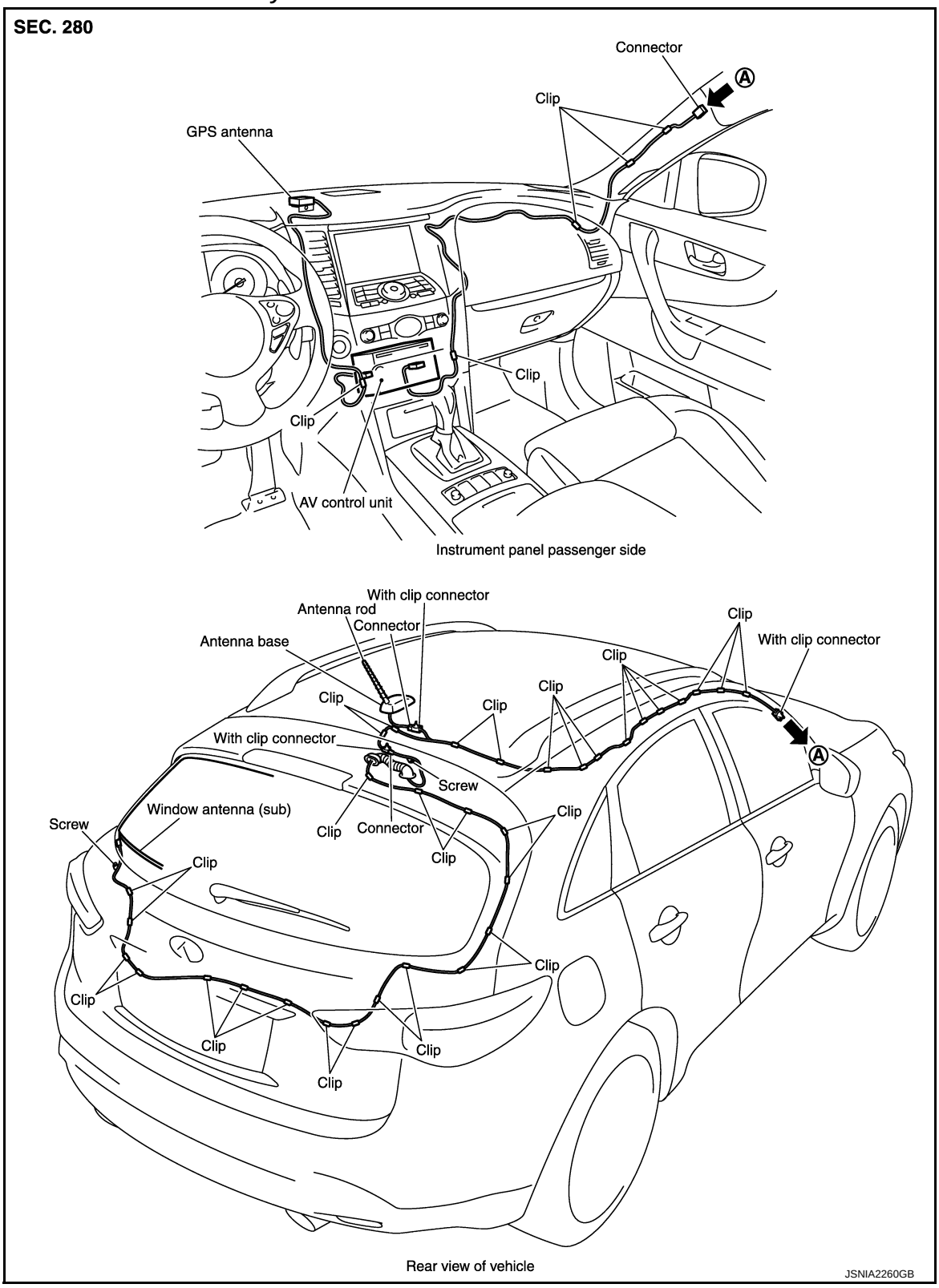
CAUTION:
Never operate other function such as pressing BACK while writing index data.

ANTENNA FEEDER

LHD MODELS

LHD MODELS : Feeder Layout

INFOID:0000000005192143

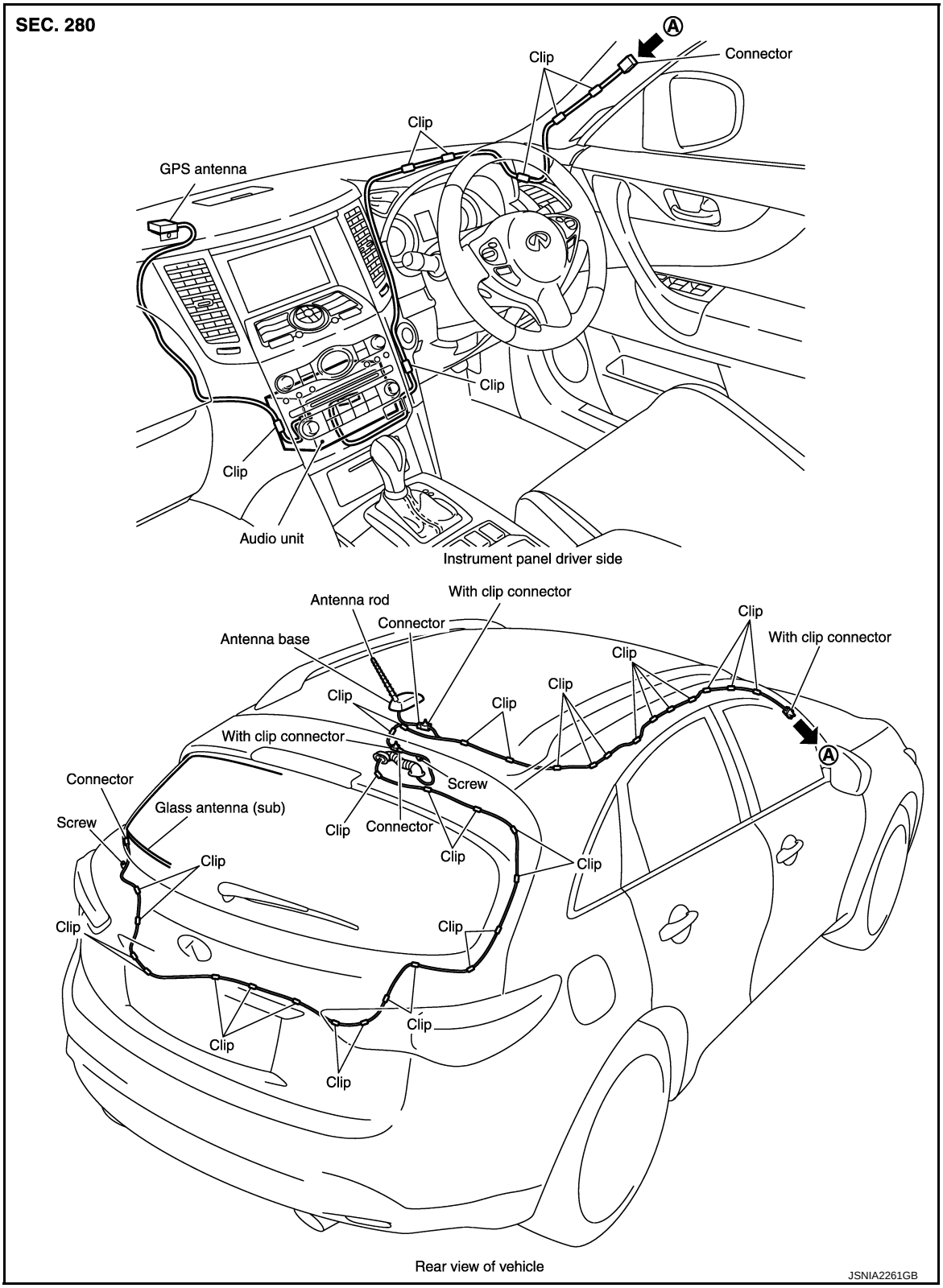


RHD MODELS

RHD MODELS : Feeder Layout

INFOID:0000000005197109

SEC. 280



HOW TO USE THIS MANUAL

APPLICATION NOTICE

Information

INFOID:0000000006080655

In this manual, “SONAR” means “PARKING SENSOR”.

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000006077707

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the “SRS AIR BAG”.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precaution for Trouble Diagnosis

INFOID:0000000006077709

AV COMMUNICATION SYSTEM

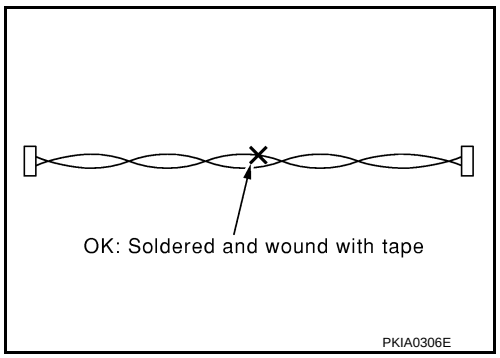
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

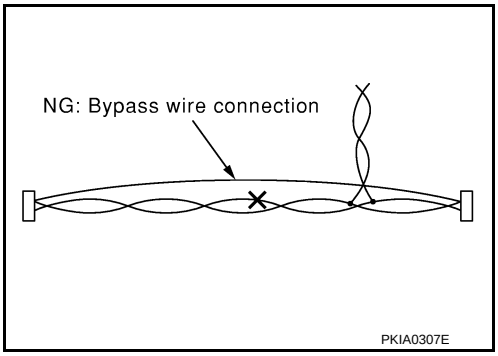
INFOID:0000000006077710

AV COMMUNICATION SYSTEM

- Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]



- Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)

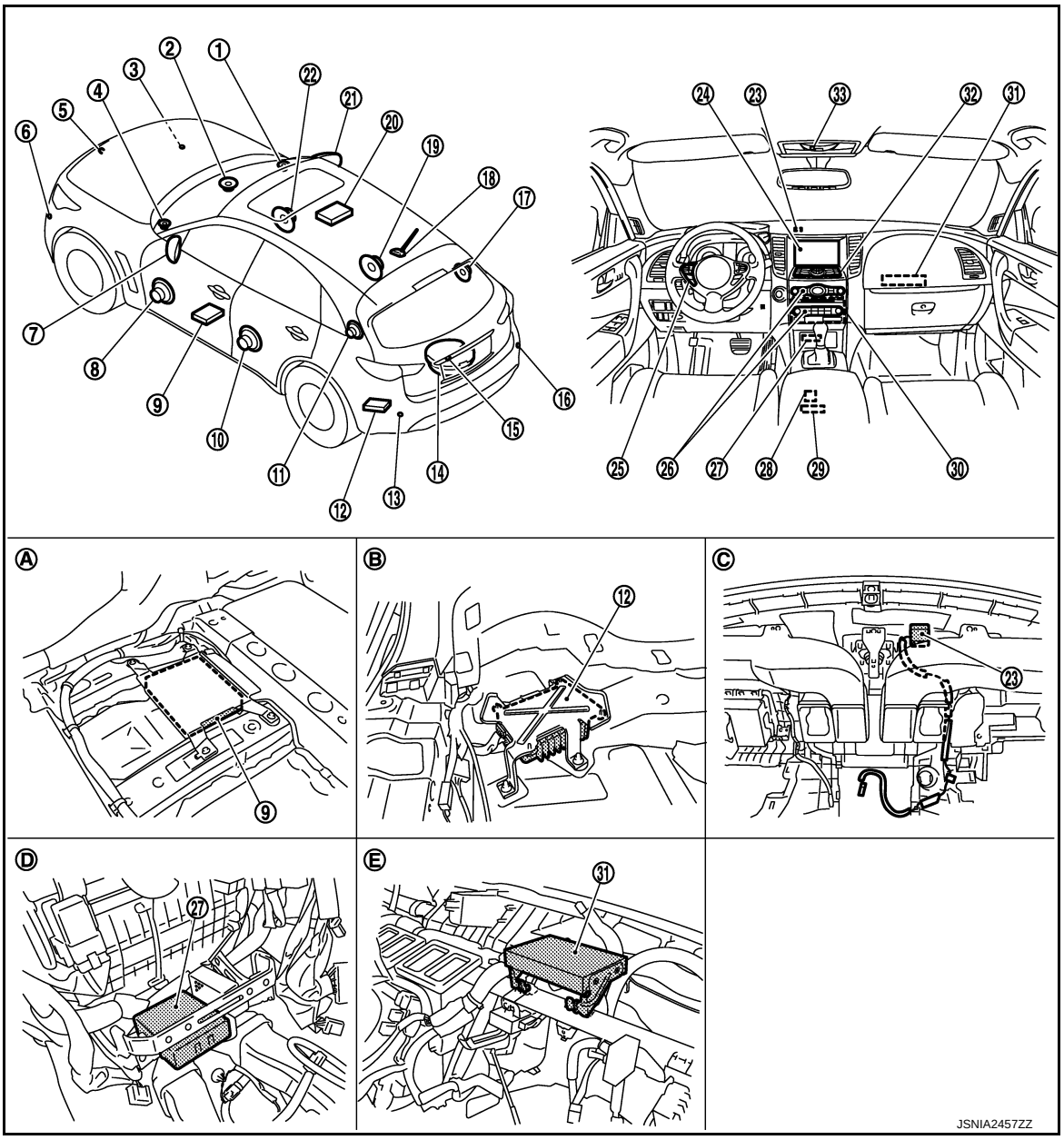


SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000006071830



1. Front squawker RH
2. Center speaker
3. Corner sensor front RH
4. Front squawker LH
5. Front camera
6. Corner sensor front LH
7. Side camera LH
8. Front door speaker LH
9. Around view monitor control unit
10. Rear door speaker LH
11. Rear squawker LH
12. BOSE amp.
13. Corner sensor rear LH
14. Woofer
15. Rear camera
16. Corner sensor rear RH
17. Rear squawker RH
18. Antenna base (antenna amp.)
19. Rear door speaker RH
20. Rear display unit
21. Side camera RH and infrared LED (auxiliary lighting)
22. Front door speaker RH
23. GPS antenna
24. Front display unit
25. Steering switch
26. Preset switch
27. Sonar control unit
28. USB connector
29. Auxiliary input jacks
30. AV control unit

31. Video distributor
32. Multifunction switch
33. Microphone
A. Under front seat (LH side)
B. Luggage floor (LH side)
C. Instrument panel rear side
D. Console pocket assembly removed condition
E. Instrument panel assembly removed condition

Component Description

INFOID:0000000006071831

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, navigation, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • The RGB digital image signal and composite image signal are output to front display unit. • Amp. ON signal, sound signal and mode change signal transmitted to BOSE amp. • Update of map data is performed with the DVD-ROM.
Front display unit	• Front display image is controlled by the serial communication from AV control unit. • RGB digital image signal is input from AV control unit. • Composite image signal is input from AV control unit. • Camera image signal is input from around view monitor control unit. • Touch panel function can be operated for each system by touching a display directly.
Rear display unit	• Rear display image is controlled by the serial communication from video distributor. • RGB image signal is input from video distributor (RGB image and RGB area). • Composite image signal [USB (video data), DVD and auxiliary images] is input from the video distributor. • Synchronize signal (HP, VP) is output to video distributor. • It receives the DVD/AUX/USB sound signal from the AV control unit, and then transmits it to the headphones. • It operates by receiving the headphone ON signal from the video distributor.
Video distributor	• It receives the image signal from the AV control unit and then transmits it to the rear display unit. • It transmits headphone ON signal to rear display unit.
BOSE amp.	• Inputs sound signal from AV control unit, and outputs sound signal to each speaker. • Input mode change signal from AV control unit.
Front door speaker	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
Rear door speaker	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
Front squawker	• Outputs sound signal from BOSE amp. • Outputs mid range sounds.
Rear squawker	• Outputs sound signal from BOSE amp. • Outputs mid range sounds.
Center speaker	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
Woofer	• Inputs power (woofer amp. ON) and sound signal from BOSE amp. • Outputs low range sounds.

Part name	Description
Multifunction switch	• Operation panel is equipped with the centralized switch where audio, auxiliary input and navigation, etc. operations are integrated. • Connected with preset switch via cable, and operation signal is transmitted to AV control unit via AV communication.
Preset switch	• Operation panel is equipped with the centralized switch where audio and air conditioner, etc. operations are integrated. • Connected with multifunction switch via cable, and operation signal is transmitted to AV control unit via AV communication. • The disk ejection operating signal is performed by hardwire.
Around view monitor control unit	• It supplies power to front camera, rear camera, and side camera. And then it superimposes the images from each camera and outputs them to front display unit. • Superimpose the guiding line, predicted course line and sonar indicator to the camera image that outputs to front display unit. • It performs the reception/transmission of communication signal with each camera. • It transmits the sonar operation signal from sonar control unit and receives the sonar information from sonar control unit via AV communication. • It transmits the information received/transmitted with sonar control unit via AV communication to AV control unit.
Front camera	• It inputs the power supply from around view monitor control unit and outputs the image of the vehicle front to around view monitor control unit. • It performs the reception/transmission of the communication signal with around view monitor control unit.
Rear camera	• It inputs the power supply from around view monitor control unit and outputs the image of the vehicle rear to around view monitor control unit. • It performs the reception/transmission of the communication signal with around view monitor control unit.
Side camera LH	• It inputs the power supply from around view monitor control unit and outputs the image of the vehicle LH to around view monitor control unit. • It performs the reception/transmission of the communication signal with around view monitor control unit.
Side camera RH	• It inputs the power supply from around view monitor control unit and outputs the image of the vehicle RH to around view monitor control unit. • It performs the reception/transmission of the communication signal with around view monitor control unit.
Infrared LED (Auxiliary lighting)	• It illuminates around the front RH wheel by the power supply from around view monitor control unit to improve nighttime visibility of front-side view. • The infrared LED is an invisible light ray.
Sonar control unit (Camera assistance sonar system)	• It is connected with around view monitor control unit via AV communication and receives the sonar operation signal from around view monitor control unit. • It transmits the sonar detection status to around view monitor control unit via AV communication. • It judges the warning level according to the signal from corner sensor.
Corner sensor	The obstacle distance is detected. The signal is transmitted to sonar control unit.
Steering switch	• Operations for audio, hands-free phone, navigation, etc. are possible. • Steering switch signal (operation signal) is output to AV control unit.
Microphone	• Used for hands-free phone operation. • Microphone signal is transmitted to AV control unit. • Power (Microphone VCC) is supplied from AV control unit.
Auxiliary input jacks	Image signal and sound signal of auxiliary input are transmitted to AV control unit.
GPS antenna	GPS signal is received and transmitted to AV control unit.
Antenna base	• An antenna base integrated with radio antenna amp. is adopted. • Radio signal received by rod antenna is amplified and transmitted to AV control unit. • Power (antenna amp. ON signal) is supplied from AV control unit.
USB connector	Image signal*1 and sound signal of USB input is transmitted to AV control unit.

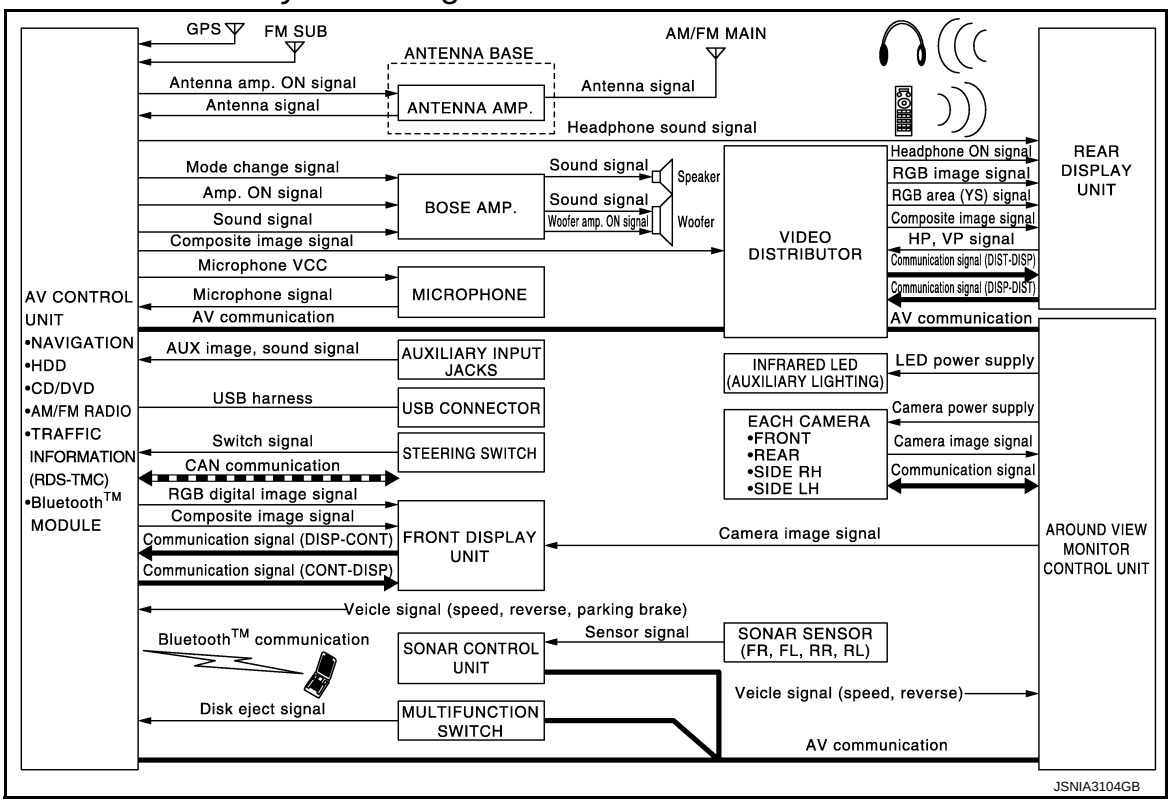
*1: Image signals cannot be received from iPod®.

SYSTEM

MULTI AV SYSTEM

MULTI AV SYSTEM : System Diagram

INFOID:0000000006071832



NOTE:
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

MULTI AV SYSTEM : System Description

INFOID:0000000006071833

Multi AV system means that the following systems are integrated.

FUNCTION NAME
Navigation system function
Audio function
DVD play function
Hands-free phone function
Mobile entertainment system
Auxiliary input function
USB connection function
Touch panel function
Around view monitor function
Camera assistance sonar system
Vehicle information function

COMMUNICATION SIGNAL

- AV control unit function by transmitting/receiving data one by one with each unit (slave unit) that configures them completely as a master unit by connecting between units that configure MULTI AV system with two AV communication lines (H, L).
- Two AV communication lines (H, L) adopt a twisted pair line that is resistant to noise.

- AV control unit is connected by CAN communication, and it receives data signal from ECM, unified meter and A/C amp. It computes and displays fuel economy information value with the obtained information.
- AV control unit is connected with display and serial communication, and it transmits the required signal of display and display control and receives the response signal from display.

NAVIGATION SYSTEM FUNCTION

Description

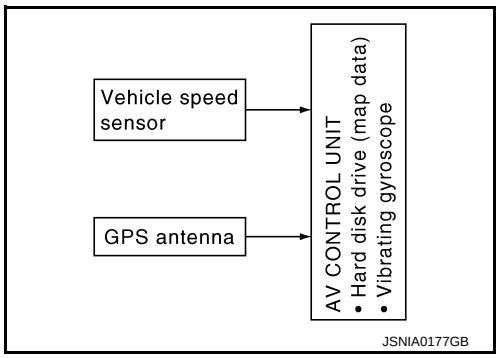
- The AV control unit controls navigation function while GPS tuner has built-in map data, GYRO (angle speed sensor), on the HDD (Hard Disk Drive).
- The AV control unit inputs operation signal with communication signal, through display (touch panel) and multifunction switch and steering switch.
- Guide sound is output to front speaker through BOSE amp. from AV control unit when operating navigation system.
- A vehicle position is calculated with the GYRO (angle speed sensor), vehicle sensor, signal from GPS satellite and map data stored on HDD (Hard Disk Drive), and transmits the map image signal (RGB image, RGB area, RGB image synchronizing) to the display.

Position Detection Principle

The navigation system periodically calculates the current vehicle position according to the following three types of signals.

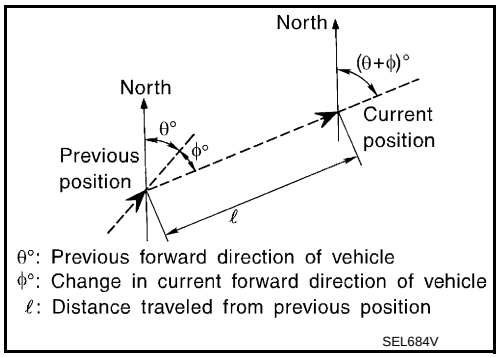
- Travel distance of the vehicle as determined by the vehicle speed sensor
- Vehicle turning angle determined by the gyroscope (angular speed sensor)
- The travel direction of the vehicle determined by the GPS antenna (GPS information)

The current position of the vehicle is then identified by comparing the calculated vehicle position with map data, which is stored in the HDD (Hard Disk Drive) (map-matching), and indicated on the screen with a current location mark. More accurate data is used by comparing position detection results from GPS to the map-matching.



The current position is calculated by detecting the travel distance from the previous calculation point, and its direction change.

- Travel distance
  The travel distance is generated from the vehicle speed sensor input signal. The automatic distance correction function is adopted for preventing a miss-detection of the travel distance because of tire wear etc.
- Travel direction
  The gyroscope (angular velocity sensor) and GPS antenna (GPS information) generate the change of the travel direction. Both have advantages and disadvantages as per the following descriptions.

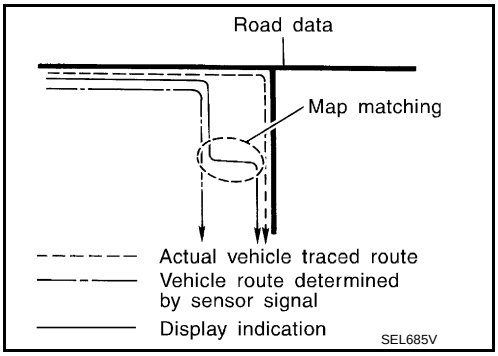


Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	The turning angle is precisely detected.	Errors are accumulated when driving a long distance without stopping.
GPS antenna (GPS information)	The travel direction (North/South/East/West) is detected.	The travel direction is not precisely detected when driving slowly.

Input signals are prioritized in each situation. However, this order of priority may change in accordance with more detailed travel conditions so that the travel direction is detected more accurately.

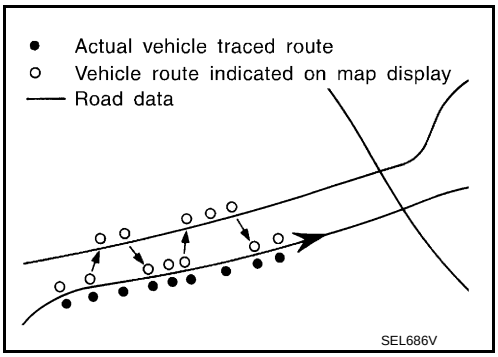
Map-matching

Map-matching repositions the vehicle on the road map when a new location is judged to be more accurate. This is done by comparing the current vehicle position (calculated by the normal position detection method) from the map data stored in the HDD (Hard Disk Drive).

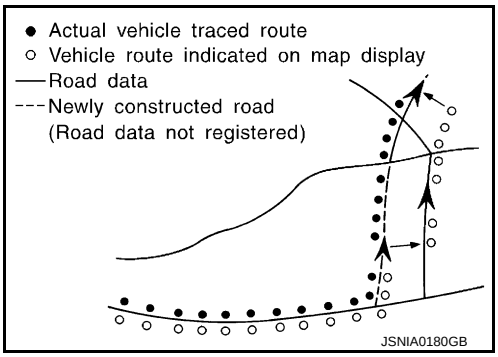


There is a possibility that the vehicle position may not be corrected in the following case, and when vehicle is driven over a certain distance or time in which GPS information is hard to receive. Correct manually the current location mark on the screen.

- In map-matching, several alternative routes are prepared and prioritized in addition to the road judged as currently driving on.
  Therefore, due to errors in the distance and/or direction, an incorrect road may be prioritized, and the current location mark may be repositioned to the incorrect road.
  If two roads are running in parallel, they are of the same priority. Therefore, the current location mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road, etc.



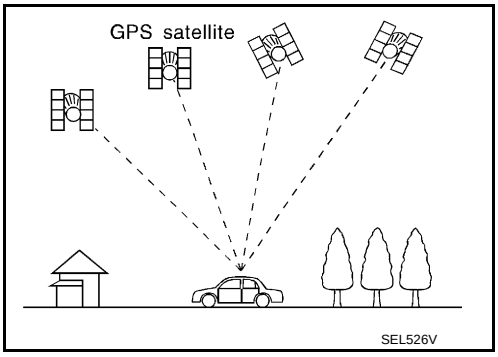
- Map-matching does not function correctly when road on which the vehicle is driving is new, etc. and not recorded in the map data. Also, map-matching does not function correctly when road pattern stored in the map data and the actual road pattern are different due to repair, etc.
  Therefore, the map-matching function judges other road as a currently driving road if the road is not in the map, and displays the current location mark on it. Later, the current location mark may be repositioned to the road if the correct road is detected.
- Effective range for comparing the vehicle position and travel direction calculated by the distance and direction with the road data is limited. Therefore, correction by map-matching is not possible when there is an excessive gap between current vehicle position and the position on the map.



GPS (Global Positioning System)

GPS (Global Positioning System) is developed for and is controlled by the US Department of Defense. The system utilizes GPS satellites (NAVSTAR), transmitting out radio waves while flying on an orbit around the earth at an altitude of approximately 21,000 km (13,049 mile).

The receiver calculates the travel position in three dimensions (latitude/longitude/altitude) according to the time lag of the radio waves that four or more GPS satellites transmit (three-dimensional positioning). The GPS receiver calculates the travel position in two dimensions (latitude/longitude) with the previous altitude data if the GPS receiver receives only three radio waves (two-dimensional positioning). GPS position correction is not performed while stopping the vehicle.



Accuracy of the GPS will deteriorate under the following conditions:

- In two-dimensional positioning, GPS accuracy will deteriorate when altitude of the vehicle position changes.
- The position of GPS satellite affects GPS detection precision. The position detection may not be precisely performed.

- The position detection is not performed if GPS receiver does not receive radio waves from GPS satellites. (Inside a tunnel, parking in a building, under an elevated highway etc.) GPS receiver may not receive radio waves from GPS satellites if any object is placed on the GPS antenna.

NOTE:

- The detection result has an error of approximately 10 m (32.81 ft) even with a high-precision three dimensional positioning.
- There may be cases when the accuracy is lowered and radio waves are stopped intentionally because the GPS satellite signal is controlled by the US trace control center.

AUDIO FUNCTION

The audio system is equipped with the following functions. Each function is operated with multifunction switch, preset switch, touch panel, steering switch or audio recognition. Operation status of audio is indicated at display.

FUNCTION
AM/FM radio
Traffic information (RDS-TMC)
CD
Bluetooth™ audio
Music Box (Hard Disk Drive)
Driver's Audio Stage

Operating Signal

Audio system operation can be performed with multifunction switch, preset switch, steering switch, touch panel function or voice recognition function.

- Operating signal is transmitted to AV control unit with AV communication when it is operated by multifunction switch or preset switch. The disk ejection operating signal is performed by hardwire.
- Operating signal is transmitted to AV control unit with steering switch signal when it is operated by steering switch.

Screen Display

Switching of display is performed with serial communication between front display unit and AV control unit.

AM/FM Radio Mode

- AM/FM radio tuner is built into AV control unit.
- Audio signal is received by rod antenna, next it is amplified by antenna amp., and finally it is input to AV control unit. Audio signal is input to BOSE amp., and BOSE amp. outputs to each speaker.

Traffic Information (RDS-TMC) Function

The traffic information broadcast can avoid delays due to traffic incidents.

Traffic jams, roadwork, closed roads around current location, etc. are represented graphically on the map by icons depicting the nature of the event. Incidents on the route are automatically noticed when they are approached.

The traffic information feature gives the driver the opportunity to forecast traffic incidents, determine how serious they are and, via the guidance mode, allows to detour around traffic problems.

The navigation system receives traffic information from best available sources and enables the RDS-TMC (Radio Data System-Traffic Message Channel) to inform and guide the driver.

- Traffic information function is built into AV control unit.
- Traffic information is received by rod antenna, next it is amplified by antenna amp., and finally it is input to AV control unit.

CD Mode

- CD function is built into AV control unit.
- AV control unit outputs audio signal to BOSE amp., and BOSE amp. outputs to each speaker when CD is inserted to AV control unit.

Bluetooth™ Audio Mode

- Bluetooth™ audio function is built into AV control unit.
- Bluetooth™ audio can play music data in the portable audio by means of Bluetooth™ communications between the portable audio and the AV control unit.

- AV control unit outputs audio signal to BOSE amp., and BOSE amp. outputs to each speaker.

Music Box Mode
- Music CD data is stored on HDD that is built into AV control unit, and it can be played.
- AV control unit outputs music (sound signal) that is stored on HDD to BOSE amp., and BOSE amp. outputs to each speaker.

Driver's Audio Stage
- Driver's Audio Stage controls the speaker's output characteristic by BOSE amp. so that the driver's seat is to be the center of sounds.
- ON/OFF signals of Driver's Audio Stage are transmitted from AV control unit to BOSE amp. using mode change signal.

DVD PLAY FUNCTION
- DVD is played by inserting DVD into the AV control unit.
- DVD image signals are transmitted to the front display unit and video distributor, and DVD sound signals are transmitted to BOSE amp. and rear display unit.
- DVD image signals are transmitted to rear display unit via video distributor.

MOBILE ENTERTAINMENT SYSTEM
The passengers can enjoy watching DVD in the rear seat with the rear display unit. They can also listen to a DVD and AUX in the rear seat independently by cordless headphones.

Operating Signal
The mobile entertainment system can be controlled by the rear seat remote controller.
It receives the operation signal of the rear seat remote controller by the remote control receiver and rear display unit, and then transmits it to the video distributor.

Headphone Sound
- Headphone sound signals are transmitted to rear display unit via AV control unit.
- Headphone sound signals are transmitted to wireless communication between rear display unit and headphone.

Screen Rear Display
- Switching of display is performed with serial communication between rear display unit and video distributor.
- The rear display unit receives the DVD/AUX/USB (video data) image signal and RGB image signal from the video distributor.

Screen Front Display
- Switching of display is performed with serial communication between front display unit and AV control unit.
- The front display unit receives the DVD/AUX/USB (video data) image signal from the AV control unit.
- The front display unit receives the RGB image signal from the AV control unit.

HANDS-FREE PHONE FUNCTION
- AV control unit includes hands-free phone function.
- Hands-free communication can be operated by connecting using Bluetooth™ communication with cellular phone.
- Operation is performed by steering switch, and operating condition is indicated on display.
- Guide sound that is heard during operation is input from AV control unit to BOSE amp., and is output from front speaker and center speaker.

When A Call Is Originated
Spoken voice sound output from the microphone (microphone signal) is input to AV control unit. AV control unit outputs to cellular phone with Bluetooth™ communication as a TEL voice signal. Voice sound is then heard at the other party.

When Receiving A Call
Voice sound is input to own cellular phone from the other party. TEL voice signal is output to door speaker, and the signal is input to BOSE amp. via AV control unit by establishing Bluetooth™ communication from cellular phone.

AUXILIARY INPUT FUNCTION
- Image and sound can be output from an external device by connecting a device with auxiliary input jacks.
- AUX image signals are transmitted to the front display unit and video distributor via the AV control unit, and AUX sound signals are transmitted to BOSE amp via AV control unit.

USB CONNECTION FUNCTION

- Connecting iPod® or USB memory allows the driver to play iPod® music files or USB memory-stored music files, video data, and image viewer data.
- Sound signals of music files stored in iPod® or USB memory are transmitted from the USB connector to the AV control unit. The AV control unit transmits the sound signals to the woofer and each speaker via BOSE amp.
- Video signals and image viewer file signals are transmitted from the USB connector to the AV control unit. The data and files are displayed on the front display unit screen.
- iPod® is recharged when connected to USB connector.
- Only files that meet the following conditions will be played.

	Music file	Video file	Image viewer file
File format	“MP3”, “WMA”, “AAC”, “M4A”	“DivX”, “MPEG4 (ASF)”	“JPEG”
File extension	“.mp3”, “.wma”, “.aac”, “.m4a”	“.divx”, “.afs”, “.avi”	“.jpg”, “.jpeg”
Maximum file size	2 GB	2 GB	2 MB

NOTE:

- iPod® is a trademark of Apple inc., registered in the U.S. and other countries.
- Image signals cannot be received from iPod®.
- Use the enclosed USB harness when connecting iPod® to USB connector.

TOUCH PANEL SYSTEM

Each operation of multi AV system can be performed by directly touching a front display.

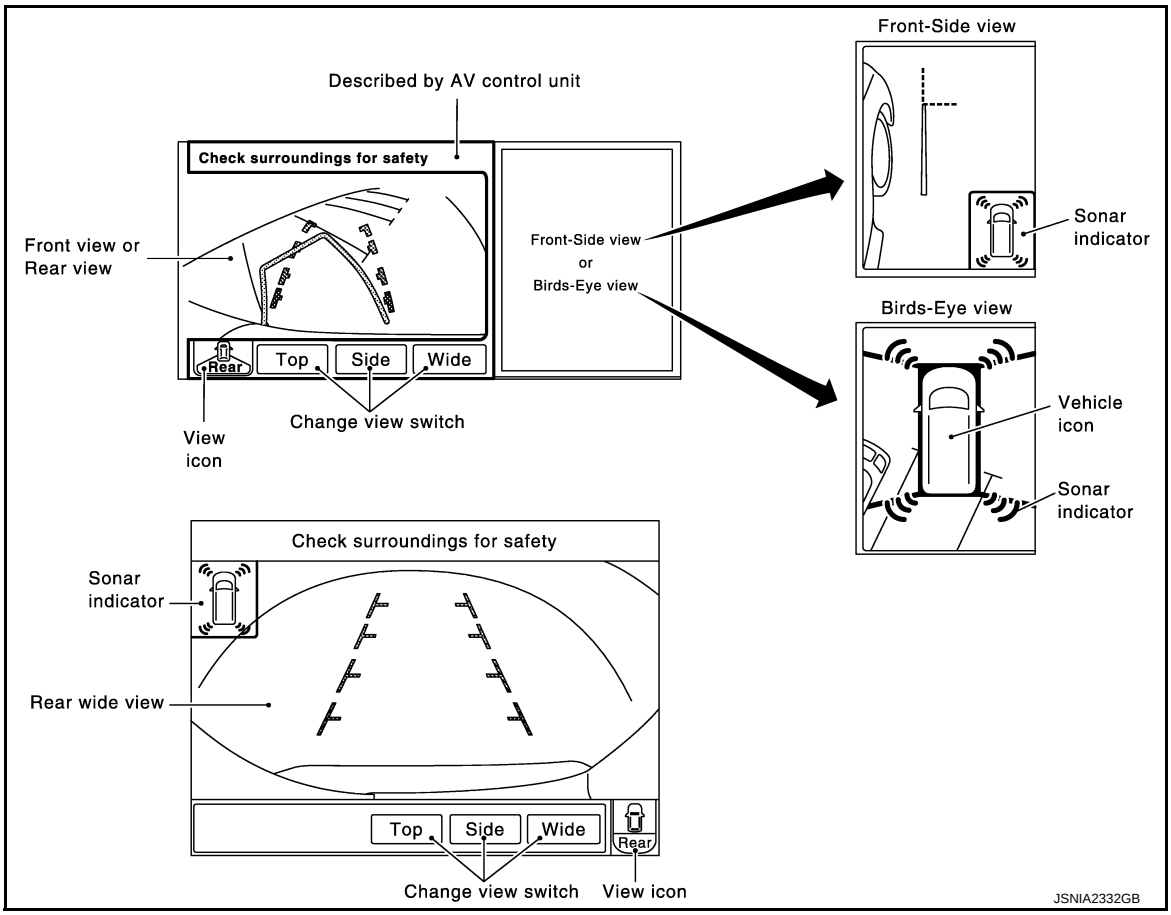
AROUND VIEW MONITOR FUNCTION

- This system is equipped with wide-angle high-resolution cameras on the front and rear of the vehicle and on both right and left door mirrors. The images from front view, rear view, front-side view (RH side), and birds-eye view that shows the view from the top of the vehicle are displayed to monitor the vehicle surroundings.
- Around view monitor control unit cuts out and expands the image received from each camera to create each view.
- The sonar indicator is displayed on display (superimposed on the camera image) in combination with the camera assistance sonar system to warm of the approach of an obstacle.
- In front view and rear view, the vehicle width, distance lines and predictive course lines are superimposed and displayed. In front-side view, the vehicle distance guiding line and vehicle width guiding line are displayed.
- The Birds-Eye view converts the images from 4 cameras into the overhead view and displays the status of the vehicle on display. The vehicle icon and sonar indicator that are displayed on the Birds-Eye view display are rendered by around view monitor control unit.

Around View Monitor Screen

- Around view monitor combines and displays the travel direction view and “Birds-Eye view”, “Front-Side view” and then it displays the sonar indicator on the “Birds-Eye view”, “Front-Side view”“Rear wide view” .
- AV control unit renders the “Change View” switch, view icon, warning message on display.

Screen constitution



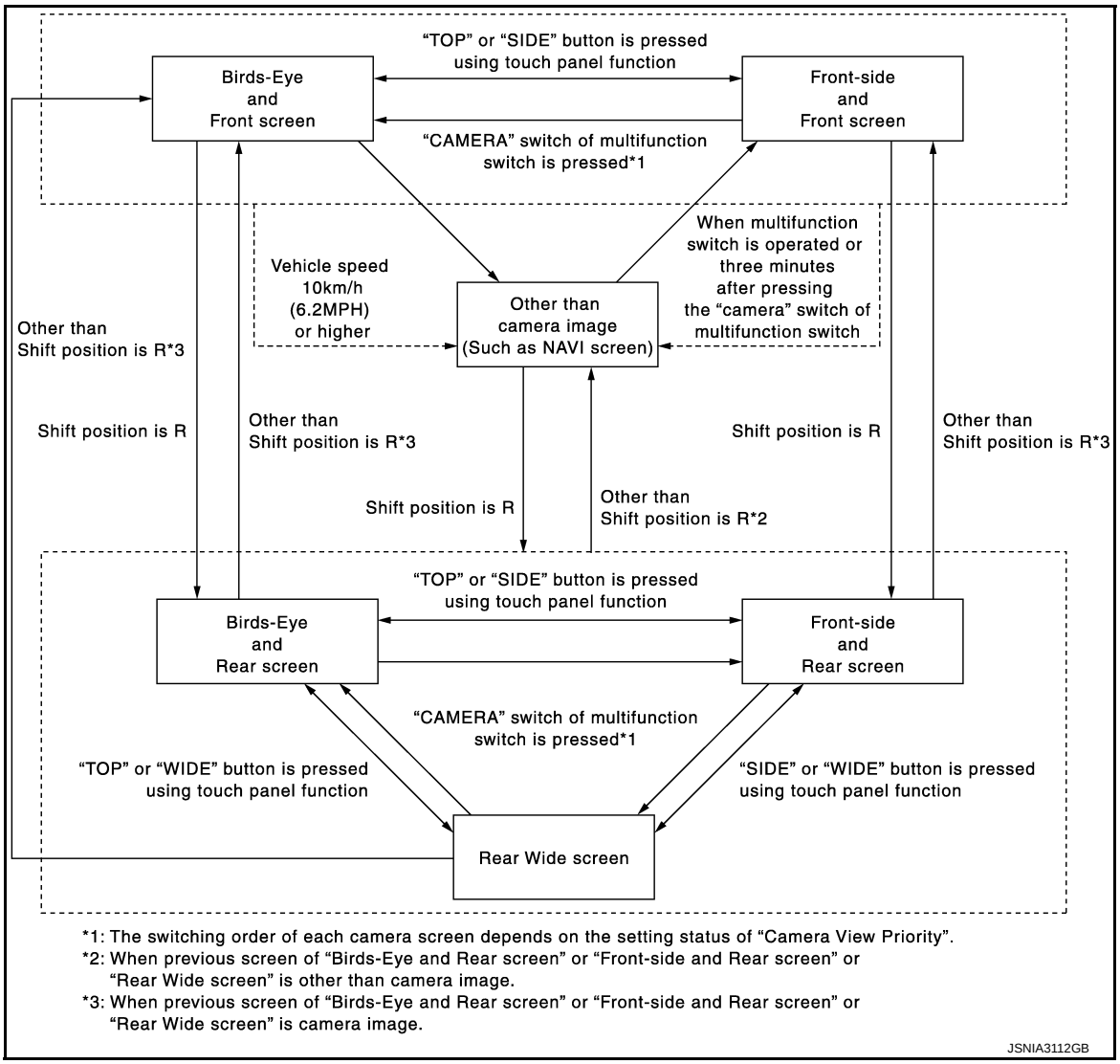
Operation Description

- Around view monitor operates by pressing the “CAMERA” switch of multifunction switch and shifting the selector switch to the reverse position.
- When the selector lever is in any position other than the reverse position, the screen is switched to the around view monitor by pressing the “CAMERA” switch.
- The screen is switched to the around view monitor by shifting the selector lever to the reverse position.
- In the around view monitor, Birds-Eye view, Front-side view and rear wide view (rear only) can be switched by pressing the “CAMERA” switch.
- The around view monitor is cancelled 3 minutes after pressing the “CAMERA” switch, and then the screen returns to the screen before displaying the around view monitor when selector lever is in a position other than the reverse position.
- ON/OFF setting of sonar indicator display on the Front-Side view screen can be performed.
- In the Birds-Eye view, the invisible area is displayed on the image to specify the boundary of the 4 cameras. The invisible area is displayed in yellow in the Birds-Eye view after turning the ignition switch ON.
- The sonar (both of buzzer and indicator) operates only when the camera screen is displayed.

  NOTE:

  The first, second, and third camera image displayed when switched to the camera image display depends on the settings of “Camera View Priority”.

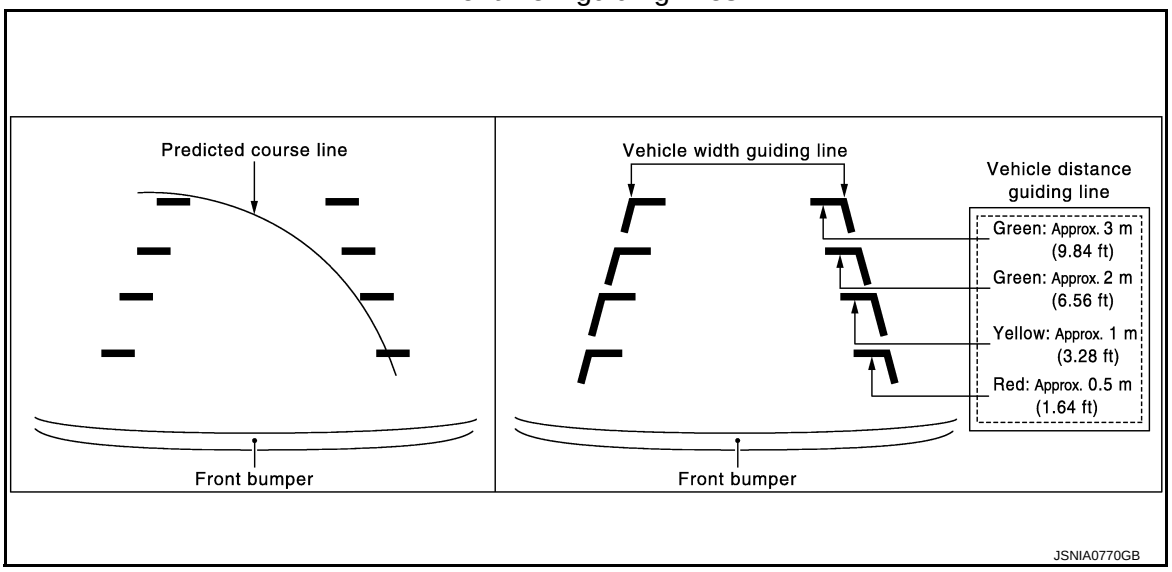
Around view monitor screen transition



FRONT VIEW

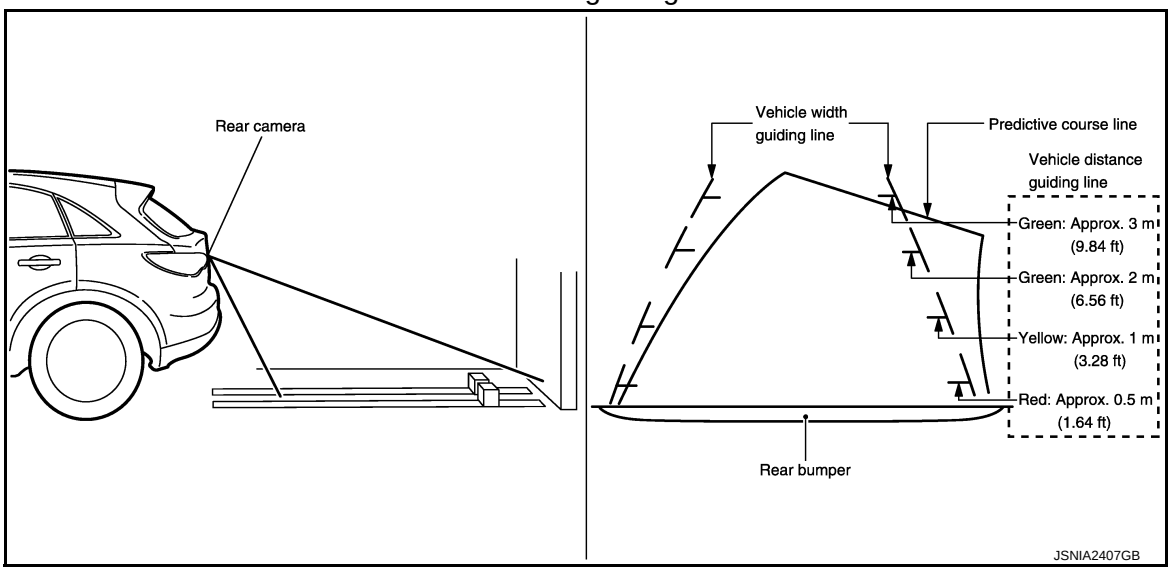
- The front view image is from the front camera.
- When the selector lever is in any position other than the reverse position, the front view is displayed by pressing the "CAMERA" switch. It improves the visibility of obstacles in front of the vehicle and helps driving by the images displayed from Birds-Eye view and Front-Side view.
- Display the vehicle width guiding line and vehicle distance guiding line in front view and display the predictive course line according to the steering angle.
- If the steering angle is within approximately 90 degrees, the predictive course lines on the left/right side are displayed. If the steering angle is exceeding approximately 90 degrees, only the predictive course line on the outside (in the opposite side of steering direction) is displayed.
- AV control unit is connected to the steering angle sensor and receives the steering angle signal via CAN communication. AV control unit is transmits steering angle signal to around view monitor control unit via AV communication.
- Around view monitor control unit controls the direction and distance of the predictive course line according to the sensor signal from steering angle sensor.

Front view guiding lines



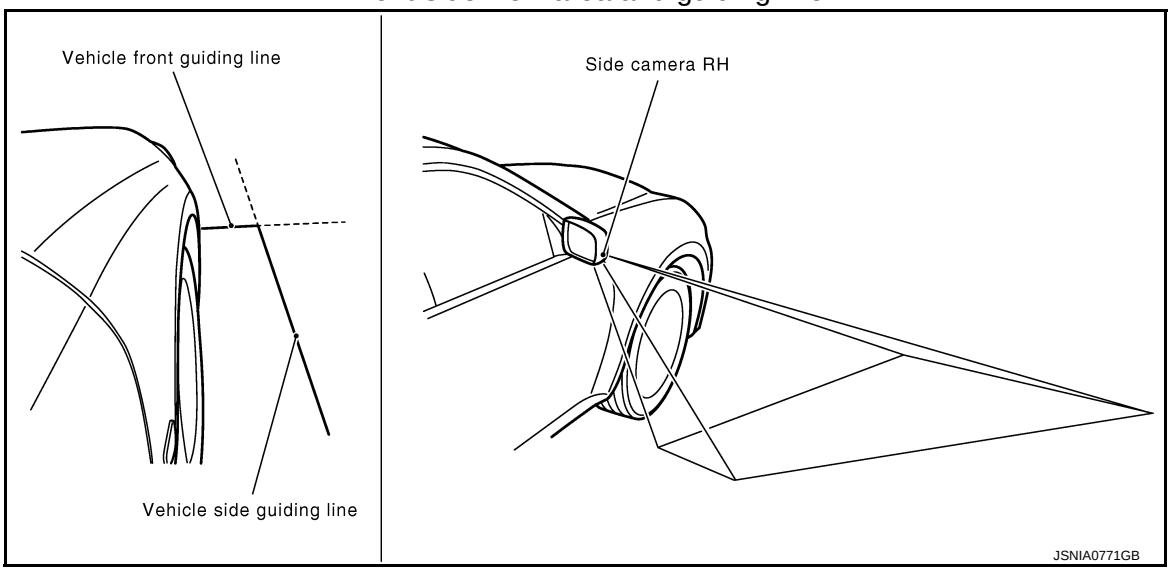
REAR VIEW
- The rear view image is from the rear camera.
- When the selector lever is in the reverse position, the rear view is displayed. Backing and parking are improved by the images from Birds-Eye view and Front-Side view. The rear wide view function allows the display of an image with a 180° horizontal angle.
- Display the vehicle width guiding line and vehicle distance guiding line in Rear view and display the predictive course line according to the steering angle (except when using the rear wide view function).
- The predictive course line is not displayed at the steering neutral position.
- AV control unit is connected to the steering angle sensor and receives the steering angle signal via CAN communication. AV control unit is transmits steering angle signal to around view monitor control unit via AV communication.
- Around view monitor control unit controls the direction and distance of predictive course line according to the sensor signal from steering angle sensor.

Rear view guiding lines



FRONT-SIDE VIEW
- The front-side view image is from the side camera RH.
- In Front-Side view, display the vehicle distance guiding line and vehicle width guiding line.
- The infrared LED illumination is installed on the door mirror RH to illuminate around the front wheels.

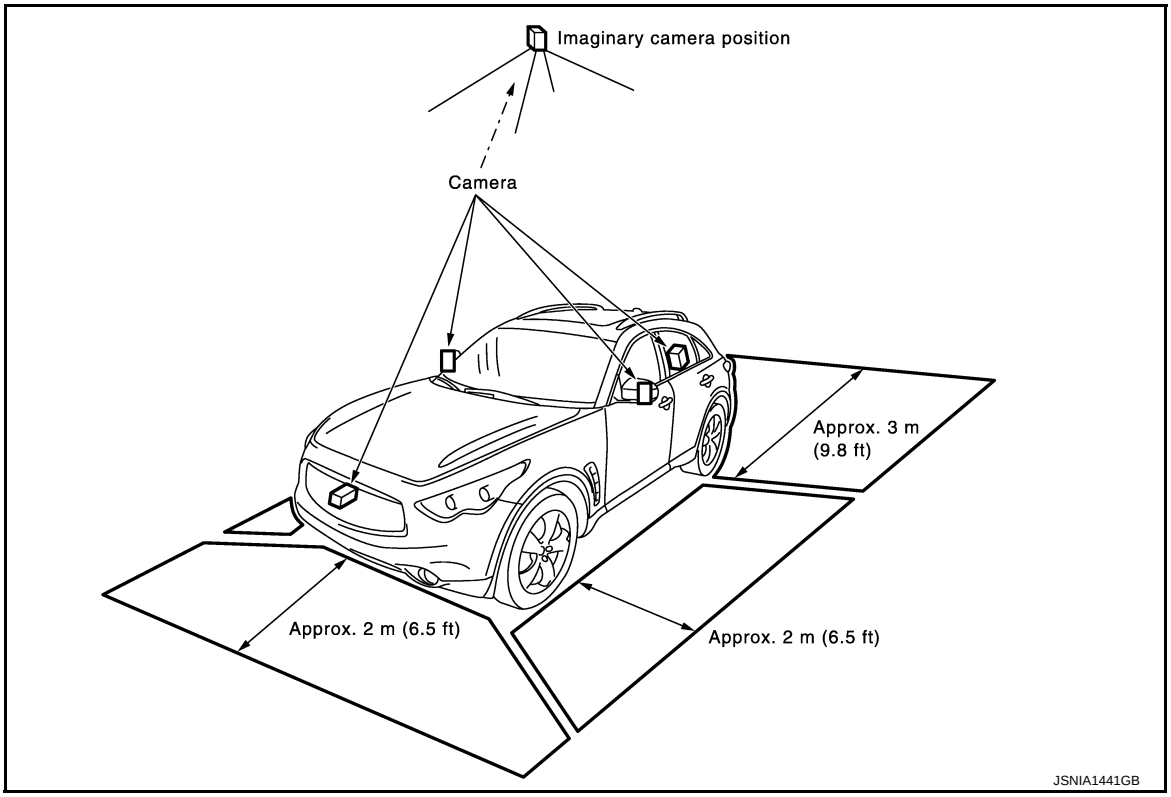
Front-side view area and guiding line



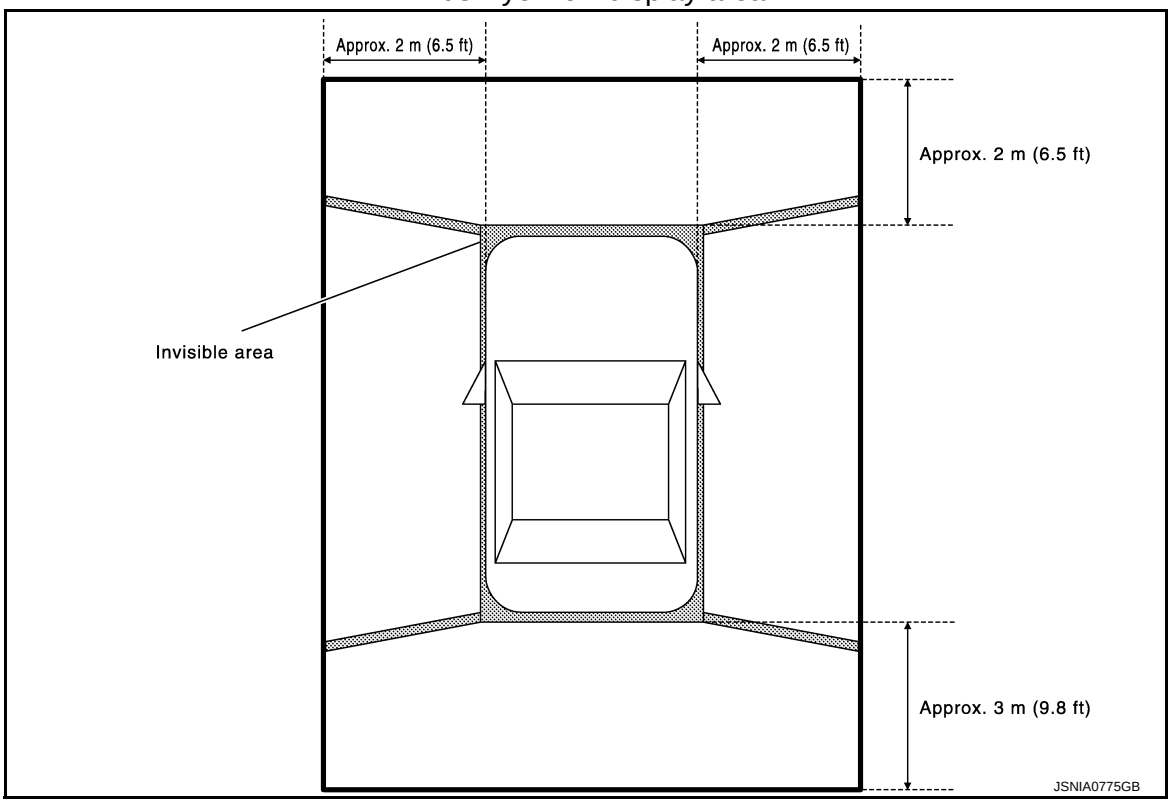
BIRDS-EYE VIEW

- The image from the 4 cameras is cut out and converted into the overhead view, and the surroundings of the vehicle is displayed in birds-eye view.
- In Birds-Eye view, the invisible area is displayed on the image to specify the boundary of the 4 cameras.
- The invisible area is displayed in yellow in the Birds-Eye view after turning the ignition switch ON as an information for the user. (OFF setting can be performed)

Birds-Eye view display image



Birds-Eye view display area



Camera Image Operation Principle

- If the information writing to around view monitor control unit and the information from the camera are not matched, the applicable camera position is indicated as an error on the Birds-Eye view display. (Calibration operation is necessary when replacing each camera or when replacing around view monitor control unit.)
- Around view monitor control unit receives the camera switch signal from AV control unit via AV communication by pressing the “CAMERA” switch of multifunction switch.
- Around view monitor control unit that receives the camera switch signal supplies the power to each camera and inputs the camera image from each camera.
- When the selector lever is in the reverse position, around view monitor control unit receives the reverse signal, supplies the power to each camera, and inputs the camera image from each camera.
- Around view monitor control unit that receives the camera image signal from each camera cuts out the required screen for each view, superimposes the camera image, vehicle icon, guiding lines, sonar indicator, and outputs them to the front display unit.

CAMERA ASSISTANCE SONAR FUNCTION

- Install the corner sensor on the front bumper and rear bumper. It detects the obstacles around the vehicle when the around view monitor is displayed. It warns of the approach to the obstacles with the buzzer and indicator in the display linked with the around view monitor system.
- It displays the distance between the bumper and obstacle with the color of sonar indicator in the display and the blinking cycle of indicator in 3 stages.
- The buzzer warns of the distance to the obstacles with the cycle in 3 stages.

System Operation Description

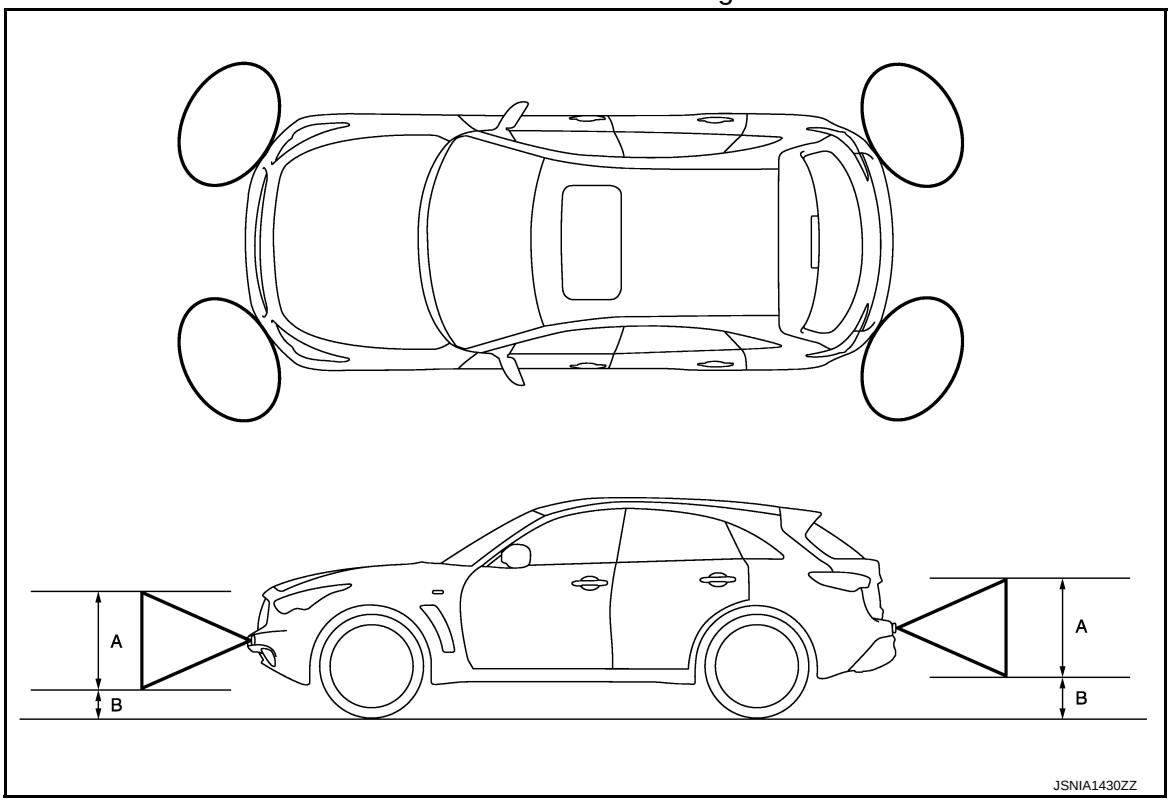
- Around view monitor control unit transmits the sonar operation signal via AV communication to sonar control unit to control the operation of sonar indicator and sonar buzzer.
- Sonar control unit that receives the sonar operation signal from around view monitor control unit transmits the detection signal and detection distance signal according to the signal from corner sensor via AV communication to around view monitor control unit. Around view monitor control unit operates the applicable sonar indicator.
- When receiving a sonar operation signal from the around view monitor control unit, the sonar control unit converts a signal transmitted from the corner sensor into a detection distance signal and transmits it to the AV control unit via AV communication. When receiving the detection signal, the AV control unit activates each speaker via BOSE amp.

- Sonar control unit has the diagnosis function. It can detect the corner sensor malfunction or sensor harness open circuit. It transmits the diagnosis results to around view monitor control unit and always displays the sonar indicator in red to inform the user.

Obstacle Detection Distance

- Sonar control unit changes the outputs of the sonar indicator and warning buzzer in 3 stages according to the obstacle detection distance from the corner sensor.
- The sonar control unit can change the setting of obstacle detection distance in 4 stages.

Obstacle detection image



A. Approx. 50 cm (19.6 in) B. Approx. 15 cm (5.9 in)

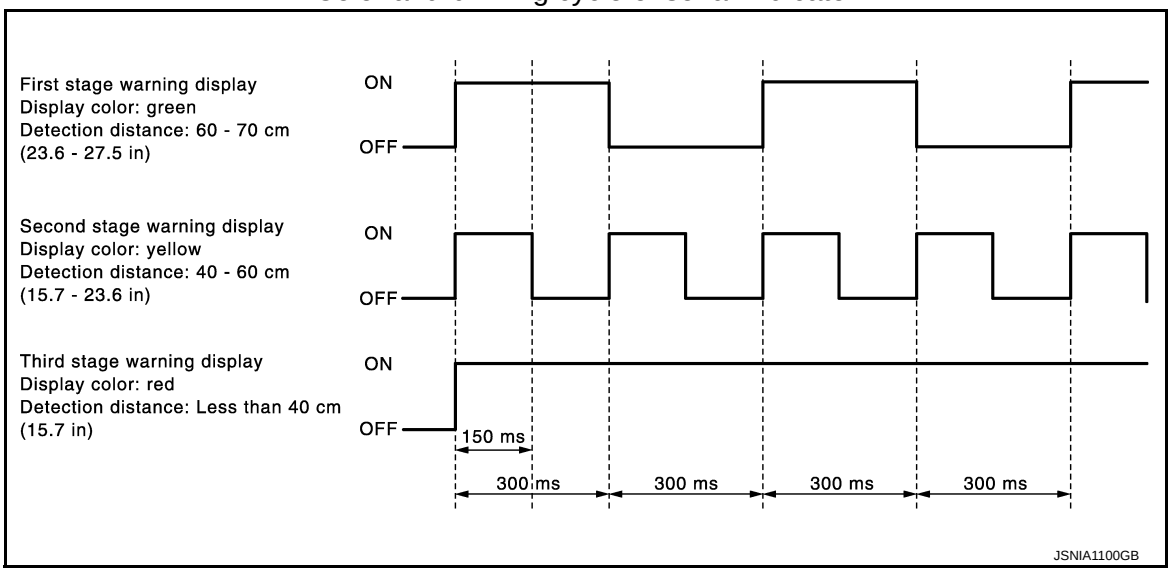
Detection distance

Warning item	Sensitivity level 1 (Faster warning)	Sensitivity level 2 (Default value)	Sensitivity level 3 (Slower warning)	Sensitivity level 4 (Slowest warning)
First stage warning	70 – 80 cm (27.5 – 31.4 in)	60 – 70 cm (23.6 – 27.5 in)	50 – 60 cm (19.6 – 23.6 in)	40 – 50 cm (15.7 – 19.6 in)
Second stage warning	50 – 70 cm (19.6 – 27.5 in)	40 – 60 cm (15.7 – 23.6 in)	30 – 50 cm (11.8 – 19.6 in)	30 – 40 cm (11.8 – 15.7 in)
Third stage warning	Less than 50 cm (19.6 in)	Less than 40 cm (15.7 in)	Less than 30 cm (11.8 in)	Less than 30 cm (11.8 in)

Sonar Indicator Display

- Around view monitor control unit that receives the detection signal and detection distance signal from sonar control unit displays the sonar indicator on display.
- Around view monitor control unit changes the color or blinking cycle of the indicator according to the detection distance.

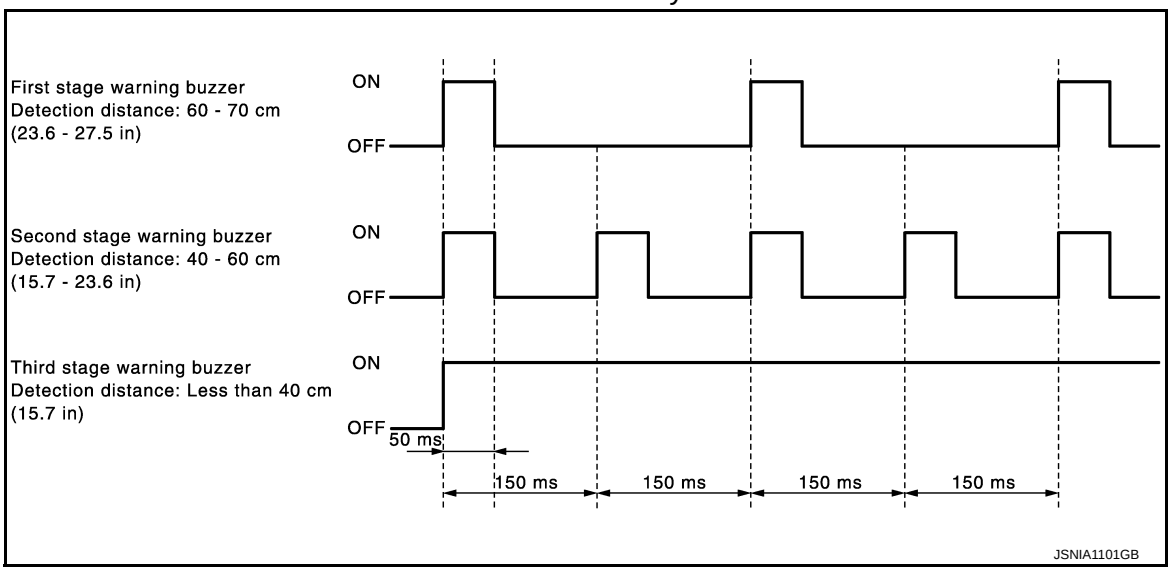
Color and blinking cycle of sonar indicator



Sonar Buzzer Operation

- Each sonar sensor transmits a sensor signal to the sonar control unit when detecting an obstacle.
- The sonar control unit converts a signal received from each sonar sensor into distance and transmits detection distance signal to the AV control unit via AV communication.
- The AV control unit transmits a buzzer signal to the BOSE amp. corresponding to each sonar sensor based on the received signal.
- When receiving a buzzer signal, the BOSE amp. transmits the buzzer signal to the each speaker. When each speaker receives a buzzer signal, a buzzer sounds.
- When the front corner sensor detects an obstacle, a buzzer is heard from the speakers on the front side.
- When the rear corner sensor detects an obstacle, a buzzer is heard from the speakers on the rear side.
- It changes the buzzer cycle in 3 stages according to the detection distance.

Sonar buzzer cycle



VEHICLE INFORMATION FUNCTION

- Status of audio, climate control system, fuel economy, maintenance and navigation are displayed.
- AV control unit displays the fuel consumption status while receiving data signal through CAN communication from ECM, unified meter and A/C amp.

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

On Board Diagnosis Function

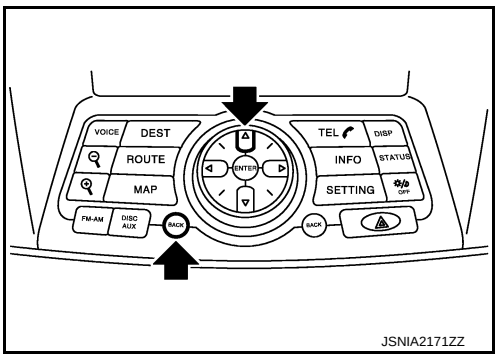
INFOID:0000000006071834

MULTIFUNCTION SWITCH AND PRESET SWITCH SELF-DIAGNOSIS FUNCTION

The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

Self-diagnosis Mode

- Press the “BACK” switch and the “UP” switch of the 8-direction switches within 10 seconds after turning the ignition switch from OFF to ACC and hold them for 3 seconds or more. Then the buzzer sounds, all indicators of the preset switch illuminate, and the self-diagnosis mode starts.
- The continuity of each switch at the ON position can be checked by pressing the switch. The buzzer sounds if the switch is normal.
  NOTE:
  The hazard switch and disk eject switch cannot be checked.



Finishing Self-diagnosis Mode

Self-diagnosis mode is canceled when turning the ignition switch OFF.

MULTI AV SYSTEM ON BOARD DIAGNOSIS FUNCTION

- The AV control unit diagnosis function starts up with multifunction switch operation and the AV control unit performs a diagnosis for each unit in the system during the on board diagnosis.
- Perform a CONSULT-III diagnosis if the on board diagnosis does not start, e.g., the screen does not display anything, the multifunction switch does not function, etc.

ON BOARD DIAGNOSIS

Description

- The trouble diagnosis function has a self-diagnosis mode for conducting trouble diagnosis automatically and a confirmation/adjustment mode for operating manually.
- The self-diagnosis mode performs diagnoses on the AV control unit, connections between system components as well as connections between AV control unit and GPS antenna. Then it displays the diagnosis results on the display.
- The confirmation/adjustment mode allows the technician to check, modify or adjust the vehicle signals and set values, as well as to monitor the system error records and system communication status. The checking, modifying or adjusting generally require human intervention and judgment (the system cannot make judgment automatically).

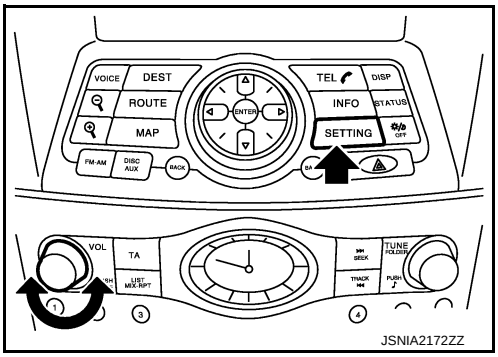
On Board Diagnosis Item

Mode	Description
Self Diagnosis	• AV control unit diagnosis. • Diagnoses the connections across system components, between AV control unit and GPS antenna.

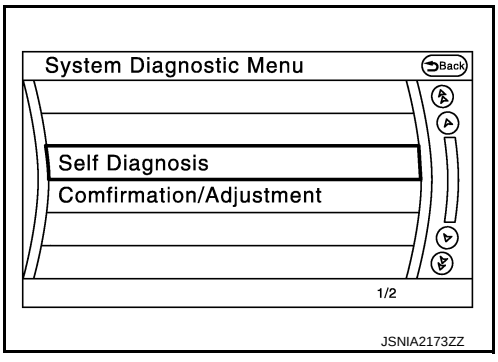
Mode			Description
Confirmation/ Adjustment	Display Diagnosis		The following check functions are available: color tone check by color bar display and white display, light and shade check by gray scale display and touch panel calibration response check.
	Vehicle Signals		Diagnosis of signals can be performed for vehicle speed, parking brake, lights, ignition, reverse, side view switch and room lamp.
	Climate Control		Start auto air conditioner system self-diagnosis.
	Navigation	Steering Angle Adjustment	When there is a difference between the actual turning angle and the vehicle mark turning angle, it can be adjusted.
		Speed Calibration	When there is a difference between the current location mark and the actual location, it can be adjusted.
	Error History		The system malfunction and the frequency when occurring in the past are displayed. When the malfunctioning item is selected, the time and place that the selected malfunction last occurred are displayed.
	Synchronizer FES Clock		–
	Speaker Test		The connection of a speaker can be confirmed by test tone.
	Vehicle CAN Diagnosis		The transmitting/receiving of CAN communication can be monitored.
	AV COMM Diagnosis		The communication condition of each unit of Multi AV system can be monitored.
	Hands-free Phone		The received volume adjustment of hands-free phone, microphone speaker check, and erase memory can be performed.
	Camera Cont.		It can perform the confirmation of a signal connection to around view monitor control unit, the calibration of each camera, Correct Draw Line of Camera Image, and Fine Tuning of Birds-Eye View.
	Delete Unit Connection Log		Erase the connection history of unit and error history.
	Initialize Settings		Initializes the AV control unit memory.
	Version Information		Version information of the AV control unit is displayed.

STARTING PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “SETTING” button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   • Shifting from current screen to previous screen is performed by pressing “BACK” button.



4. The trouble diagnosis initial screen is displayed, and then the items of “Self Diagnosis” and “Confirmation/Adjustment” can be selected.



SELF-DIAGNOSIS MODE

1. Start the self-diagnosis function and select “Self Diagnosis”.
- Self-diagnosis subdivision screen is displayed, and the self-diagnosis mode starts.
- The bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis.

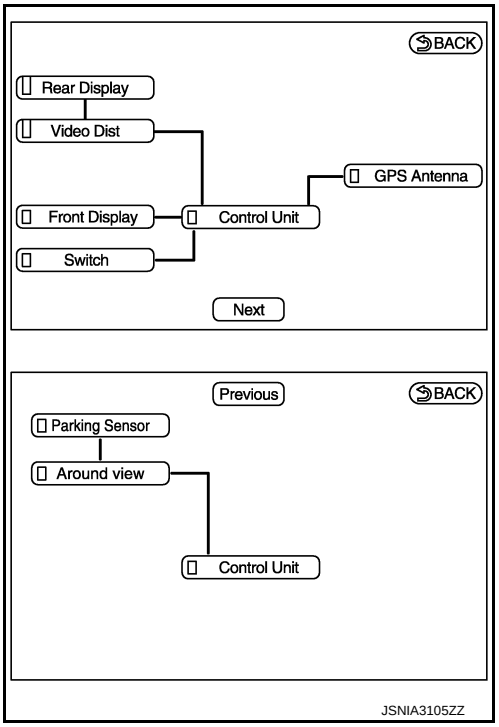
2. Diagnosis results are displayed after the self-diagnosis is completed. The unit names and the connection lines are color-coded according to the diagnostic results.

Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction Note	Red	Green

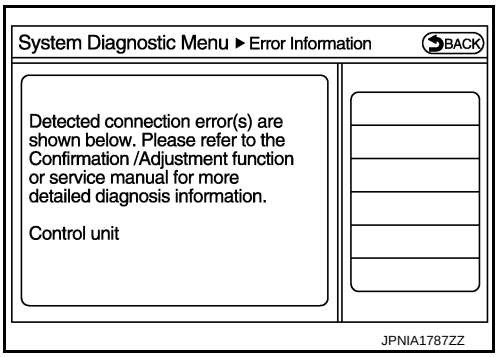
NOTE:

Control unit (AV control unit) is displayed in red.

- Replace AV control unit if “Self-Diagnosis did not run because of a control unit malfunction” is indicated. The symptom is AV control unit internal error. Refer to AV-965, "Exploded View".
- If multiple errors occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > gray.



- The comments of the self-diagnosis results can be viewed with a component in the diagnosis result screen.



Detection Range of Self-diagnosis Mode

- The self-diagnosis mode allows the technician to diagnose the connection in the communication line between AV control unit and each unit and the internal operation of the AV control unit.
- Because the start condition of diagnosis function is a switch operation, the on board diagnosis function cannot be started up if any malfunction is detected in the communication circuit between AV control unit and multifunction switch.

SELF-DIAGNOSIS RESULTS

Check the applicable display at the following table, and then repair the malfunctioning parts.

Only Unit Part Is Displayed In Red.

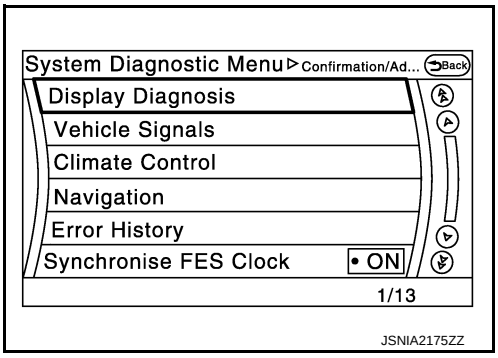
Screen switch	Description	Possible malfunction location / Action to take
Control Unit	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.
Rear Display	When either one of the following items are detected: • rear display unit power supply and ground circuits are malfunctioning. • serial communication circuits between rear display unit and video distributor are malfunctioning.	• Rear display unit power supply and ground circuits are malfunctioning. • serial communication circuits between rear display unit and video distributor are malfunctioning.

A Connecting Cable Between Units Is Displayed In Yellow.

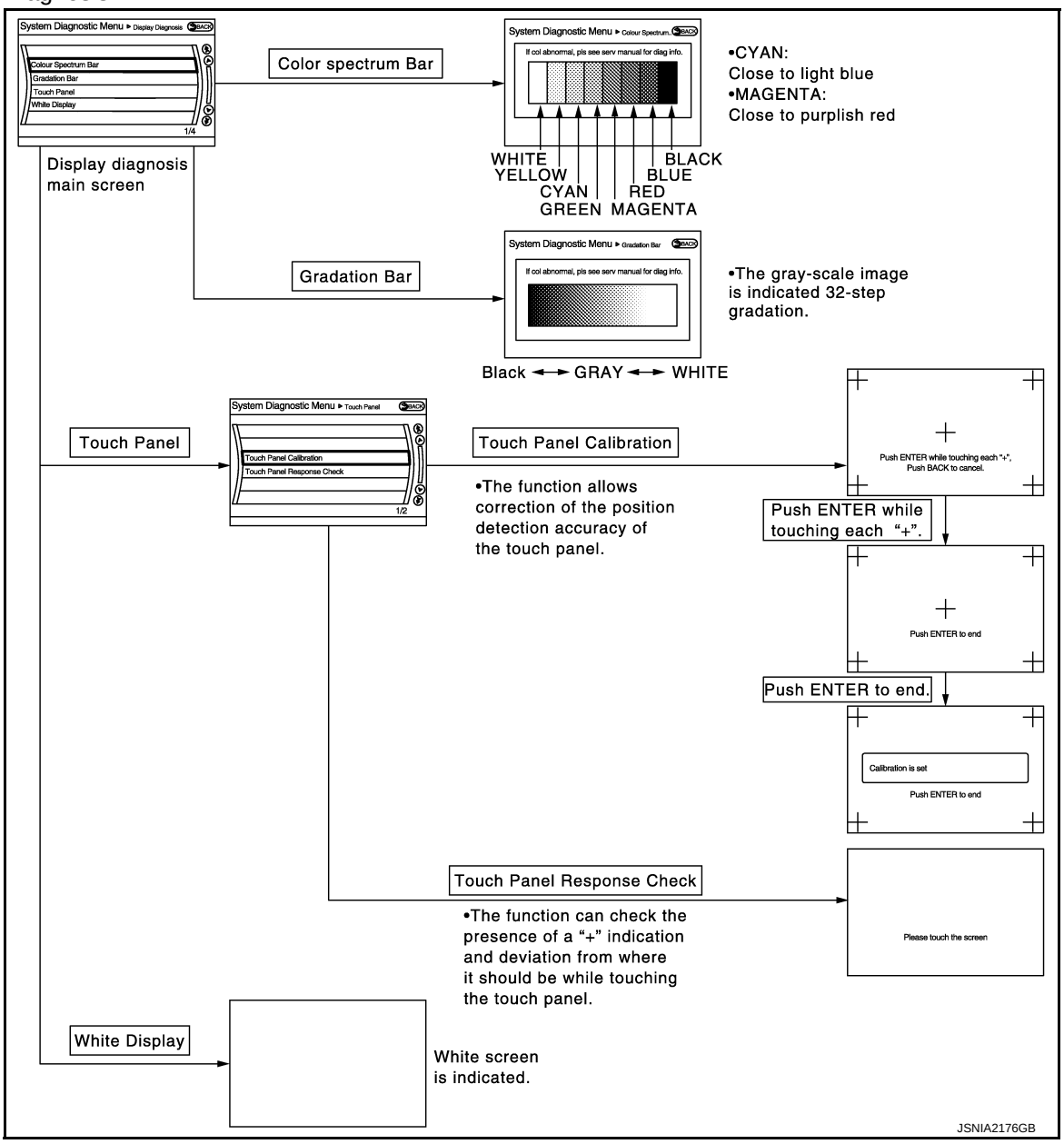
Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control unit ⇔ Front Display	Malfunction is detected in serial communication circuits between AV control unit and front display unit.	Serial communication circuits between AV control unit and front display unit.
Control unit ⇔ GPS Antenna	GPS antenna connection malfunctions detected.	GPS antenna
Control unit ⇔ Around view	around view monitor control unit power supply and ground circuits are malfunctioning.	Around view monitor control unit power supply and ground circuits.
Around view ⇔ Parking sensor	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between AV control unit and sonar control unit.
Control unit ⇔ Video Dist	When either one of the following items are detected: • video distributor power supply and ground circuits are malfunctioning. • AV communication circuits between around view monitor control unit and video distributor are malfunctioning.	• Video distributor power supply and ground circuits. • AV communication circuits between around view monitor and video distributor.
Control unit ⇔ Around view Control unit ⇔ Video Dist	AV communication circuits between around view monitor control unit and multifunction switch are malfunctioning.	AV communication circuits between around view monitor control unit and multifunction switch.

CONFIRMATION/ADJUSTMENT MODE

1. Start the diagnosis function and select “Confirmation/Adjustment”. The confirmation/adjustment mode indicates where each item can be checked or adjusted.
2. Select each switch on the “Confirmation/Adjustment Mode” screen to display the relevant trouble diagnosis screen. Press the “Back” switch to return to the initial Confirmation/Adjustment Mode screen.

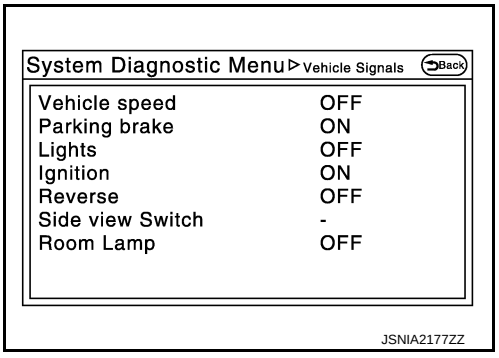


Display Diagnosis



Vehicle Signals

A comparison check can be made of each actual vehicle signal and the signals recognized by the system.

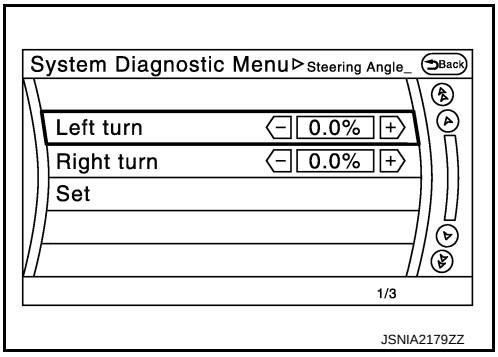


Diagnosis item	Display	Vehicle status	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
Parking brake	ON	Parking brake is applied.	
	OFF	Parking brake is released.	
Lights	ON	Light switch ON	—
	OFF	Light switch OFF	
Ignition	ON	Ignition switch ON	—
	OFF	Ignition switch in ACC position	
Reverse	ON	Shift the selector lever to “R” position	Changes in indication may be delayed. This is normal.
	OFF	Shift the selector lever other than “R” position	
SIDE VIEW SW	—	—	This item is displayed, but cannot be monitored.
ROOM LAMP*	ON	5 seconds after opening any door.	Check 10 seconds after closing all doors.
	OFF	Except for above.	

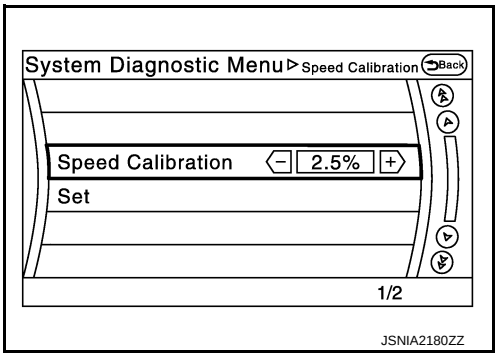
*:For vehicles without driver door switch signal circuit, the ON/OFF indication is fixed to off.

Climate Control
Refer to “HEATER & AIR CONDITIONING CONTROL SYSTEM” for details.

Navigation
STEERING ANGLE ADJUSTMENT
The steering angle output value detected with the gyroscope is adjusted.



SPEED CALIBRATION
During normal driving, distance error caused by tire wear and tire pressure change is automatically adjusted for by the automatic distance correction function. This function, on the other hand, is for immediate adjustment, in cases such as driving with tire chain fitted on tires.



Error History
The self-diagnosis results are judged depending on whether any error occurs from when “Self-diagnosis” is selected until the self-diagnosis results are displayed.
However, the diagnosis results are judged normal if an error has occurred before the ignition switch is turned ON and then no error has occurred until the self-diagnosis start. Check the “Error Record” to detect any error that may have occurred before the self-diagnosis start because of this situation.
The error record displays the time and place of the most recent occurrence of that error. However, take note of the following points.

- If there is a malfunction with the GPS antenna circuit board in the AV control unit, the correct date and time of occurrence may not be able to be displayed.
- Place of the error occurrence is represented by the position of the current location mark at the time an error occurred. If current location mark has deviated from the correct position, then the place of the error occurrence cannot be located correctly.
- The frequency of occurrence is displayed in a count up manner. The actual count up method differs depending on the error item.

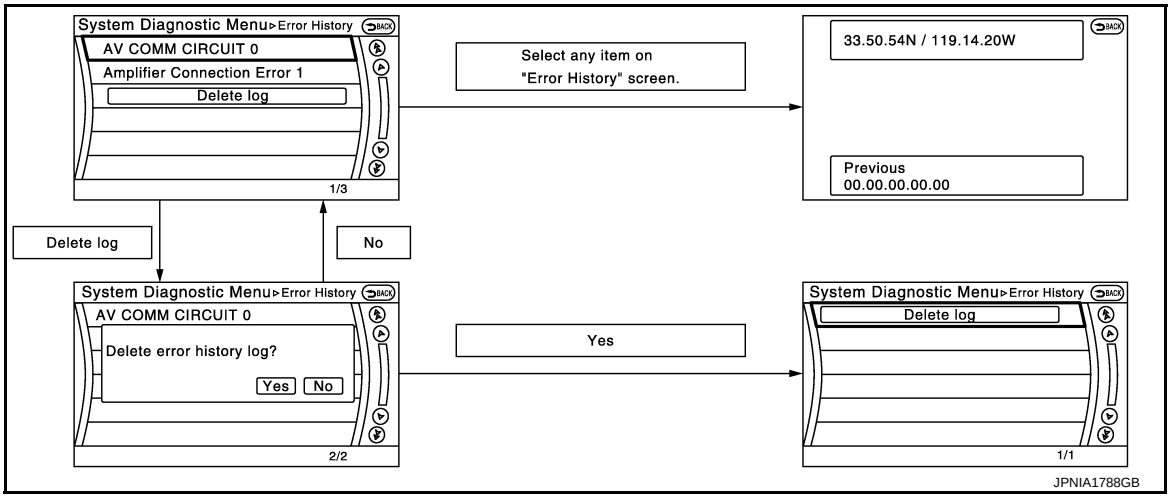
Count up method A

- The counter resets to 0 if an error occurs when IGN switch is turned ON. The counter increases by 1 if the condition is normal at a next IGN ON cycle.
- The counter upper limit is 39. Any counts exceeding 39 are ignored.“ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT-III.

Count up method B

- The counter increases by 1 if an error occurs when IGN switch is ON. The counter will not decrease even if the condition is normal at the next IGN ON cycle.
- The counter upper limit is 50. Any counts exceeding 50 are ignored. “ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT-III.

Display type of occurrence frequency	Error history display item
Count up method A	CAN communication line, control unit (CAN), AV communication line, control unit (AV)
Count up method B	Other than the above



Error item

Some error items may be displayed simultaneously according to the cause. If some error items are displayed simultaneously, the detection of the cause can be performed by the combination of display items

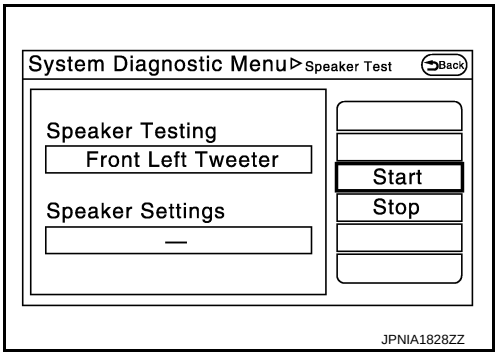
Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT	CAN communication malfunction is detected.	Perform diagnosis with CONSULT-III, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-809, "CONSULT - III Function (MULTI AV)".

Error item	Description	Possible malfunction factor/Action to take
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	
FLASH-ROM Error Of Control Unit	AV control unit malfunction is detected.	
Connection Of Gyro		
Connection of G Sensor		
CAN Controller Memory Error		
Bluetooth Module Connection Error		
Sub CPU Connection Error		
iPod authentification chip error		
Audio connection error		
DSP Connection Error	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
DSP Communication Error		
HDD Connection Error	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
HDD Read Error		
HDD Write Error		
HDD Communication Error		
HDD Access Error		
GPS Communication Error	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.
GPS ROM Error		
GPS RAM Error		
GPS RTC Error		
Unfinished configuration	The writing of configuration data is incomplete.	Write configuration data with CONSULT-III.
USB Controller Communication Error	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.
DVD Mechanism Communication Error	AV control unit malfunction is detected.	• If DVD can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
Steer. Angle Sensor Calibration	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor. Refer to AV-809, "CONSULT - III Function (MULTI AV)".
Front Display Connection Error	When either one of the following items are detected: • front display unit power supply and ground circuits malfunction is detected. • malfunction is detected in communication circuits between AV control unit and front display unit.	• Front display unit power supply and ground circuits. • Communication circuits between AV control unit and front display unit.
Rear Display Connection Error	When either one of the following items are detected: • rear display unit power supply and ground circuits malfunction is detected. • malfunction is detected in communication circuits between video distributor and rear display unit.	• Rear display unit power supply and ground circuits. • Communication circuits between video distributor and rear display unit.

Error item	Description	Possible malfunction factor/Action to take
GPS Antenna Error	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.
• AV COMM CIRCUIT • Switches Connection Error	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT • AVM Connection Error	Around view monitor control unit power supply and ground circuits are malfunctioning.	Around view monitor control unit power supply and ground circuits.
• AV COMM CIRCUIT • AVM Sonar Connection Error	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between AV control unit and sonar control unit.
• AV COMM CIRCUIT • Video Distributor Connection Error • Rear Display Connection Error	When either one of the following items are detected: • video distributor power supply and ground circuits are malfunctioning. • AV communication circuits between around view monitor control unit and video distributor are malfunctioning.	• Video distributor power supply and ground circuits. • AV communication circuits between around view monitor control unit and video distributor.
• AV COMM CIRCUIT • Video Distributor Connection Error • Rear Display Connection Error • AVM Connection Error	AV communication circuits between multifunction switch and around view monitor control unit are malfunctioning.	AV communication circuits between multifunction switch and around view monitor control unit.
• AV COMM CIRCUIT • Switches Connection Error • Video Distributor Connection Error • Rear Display Connection Error • AVM Connection Error	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

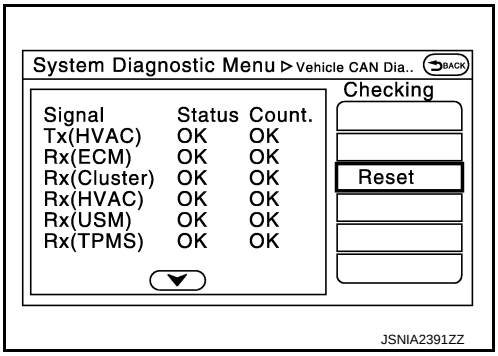
Speaker Test

Select “SPEAKER DIAGNOSIS” to display the Speaker Diagnosis screen. Press “Start” to generate a test tone in a speaker. Press “Start” to generate a test tone in the next speaker. Press “Stop” to stop the test tones.



Vehicle CAN Diagnosis

- CAN communication status and error counter is displayed.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if “Reset” is pressed.

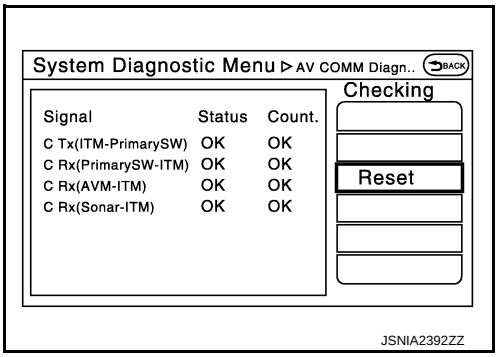


Items	Display (Current)	Malfunction counter (Past)
Tx(HVAC)	OK / ???	OK / 0 – 39
Rx(ECM)	OK / ???	OK / 0 – 39
Rx(Cluster)	OK / ???	OK / 0 – 39
Rx(HVAC)	OK / ???	OK / 0 – 39
Rx(USM)	OK / ???	OK / 0 – 39
Rx(TPMS)	OK / ???	OK / 0 – 39
Rx(STRG)	OK / ???	OK / 0 – 39

NOTE:
“???” indicates UNKWN.

AV COMM Diagnosis

- Displays the communication status between AV control unit (master unit) and each unit.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if “Reset” is pressed.

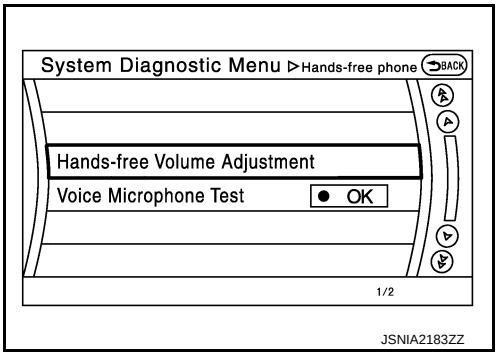


Items	Status (Current)	Counter (Past)
C Tx(ITM–PrimarySW)	OK / ???	OK / 0 – 39
C Rx(PrimarySW–ITM)	OK / ???	OK / 0 – 39
C Rx(AVM–ITM)	OK / ???	OK / 0 – 39
C Rx(Sonar–ITM)	OK / ???	OK / 0 – 39

NOTE:
“???” indicates UNKWN

Hands-Free Phone

The hands-free phone reception volume adjustment and microphone and speaker test functions are also available.

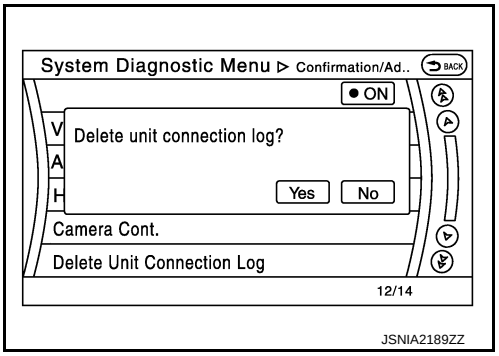


Camera Cont.

Refer to AV-814, "On Board Diagnosis Function".

Delete Unit Connection Log

Deletes any unit connection records and error records from the AV control unit memory. (Clear the records of the unit that has been removed.)

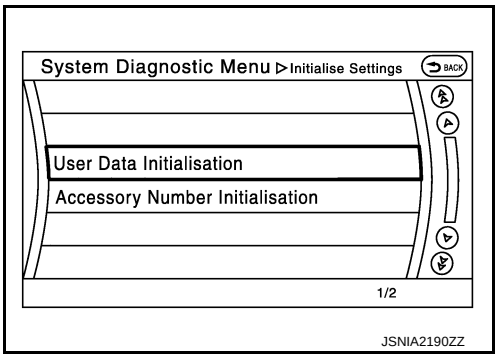


Initialize Settings

"User Data Initialization" and "Accessory Number Initialization" are possible.

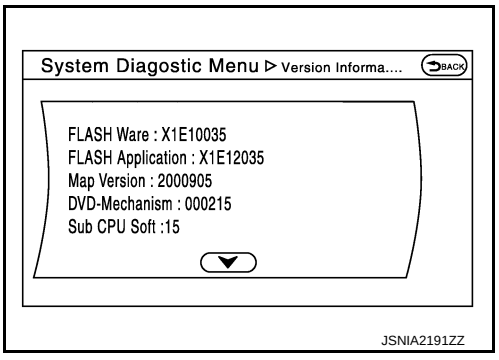
CAUTION:

- **Never perform Accessory Number Initialization except when configuration is unsuccessful.**
- **Accessory Number Initialization requires configuration. For details, refer to AV-859, "CONFIGURATION (AV CONTROL UNIT) : Description".**



Version Information

Version information of the AV control unit is displayed.



CONSULT - III Function (MULTI AV)

INFOID:0000000006071835

CONSULT-III FUNCTIONS

CONSULT-III performs the following functions via the communication with the AV control unit.

Diagnosis mode	Description
Ecu Identification	The part number of AV control unit can be checked.
Self Diagnostic Result	Performs a diagnosis on the AV control unit and a connection diagnosis for the communication circuit of the Multi AV system, and displays the current and past malfunctions collectively.

Diagnosis mode	Description
Data Monitor	The diagnosis of vehicle signal that is input to the AV control unit can be performed.
Work Support	Steering angle sensor can be adjusted.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing AV control unit.

AV COMMUNICATION

When “AV communication” of “CAN Diag Support Monitor” is selected, the following function will be performed.

AV communication	AV&NAVI C/U	Displays the communication status from AV control unit to each unit as well as the error counter.
	AUDIO	Displays the AV control unit communication status and the error counter.

ECU IDENTIFICATION

The part number of AV control unit is displayed.

SELF DIAGNOSIS RESULT

- In CONSULT-III self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates “CRNT”. The past malfunction indicates “PAST”.
- The timing is displayed as “0” if any of the error codes [U1000], [U1010], [U1300] and [U1310] is detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.

Self-diagnosis Results Display Item

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detected.	Refer to AV-867, "Diagnosis Procedure".
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	
Cont Unit [U1200]	AV control unit malfunction is detected.	
GYRO NO CONN [U1201]		
G-SENSOR NO CONN [U1202]		
CAN CONT [U1216]		
BLUETOOTH MODULE [U1217]		
SUB CPU CONN [U1228]		
iPod CERTIFICATION [U1229]		
Built-in AUDIO CONN [U122E]		
HDD CONN [U1218]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
HDD READ [U1219]		
HDD WRITE [U121A]		
HDD COMM [U121B]		
HDD ACCESS [U121C]		
GPS COMM [U1204]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.
GPS ROM [U1205]		
GPS RAM [U1206]		
GPS RTC [U1207]		
USB CONTROLLER [U1225]	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.

Error item	Description	Possible malfunction factor/Action to take
DSP CONN [U121D] DSP COMM [U121E]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
DVD COMM [U1227]	AV control unit malfunction is detected.	• If DVD can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.
CONFIG UNFINISH [U122A]	The writing of configuration data is incomplete.	Write configuration data with CONSULT-III.
ST ANGLE SEN CALIB [U1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor. Refer to BRC-11, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".
FRONT DISP CONN [U1243]	When either one of the following items are detected: • front display unit power supply and ground circuits malfunction is detected. • communication circuits between AV control unit and front display unit.	• front display unit power supply and ground circuits. • Communication circuits between AV control unit and front display unit.
GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.
XM ANTENNA CONN [U1258]	Satellite radio antenna connection malfunction is detected.	Satellite radio antenna disconnection.
REAR DISP CONN [U1247]	When either one of the following items are detected: • rear display unit power supply and ground circuits malfunction is detected. • malfunction is detected in communication circuits between video distributor and rear display unit.	• Rear display unit power supply and ground circuits. • Communication circuits between video distributor and rear display unit.
USB OVERCURRENT [U1263]	Detection of overcurrent in USB connecter.	Check USB harness between the AV control unit and USB connector.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT [U1300] • AROUND CAMERA CONN [U125B]	Around view monitor control unit power supply and ground circuits are malfunctioning.	Around view monitor control unit power supply and ground circuits.
• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between AV control unit and sonar control unit.

Error item	Description	Possible malfunction factor/Action to take
• AV COMM CIRCUIT [U1300] • VIDEO DIST CONN [U1246] • REAR DISP CONN [U1247]	When either one of the following items are detected: • video distributor power supply and ground circuits are malfunctioning. • AV communication circuits between around view monitor control unit and video distributor are malfunctioning.	• Video distributor power supply and ground circuits. • AV communication circuits between around view monitor control unit and video distributor.
• AV COMM CIRCUIT [U1300] • VIDEO DIST CONN [U1246] • REAR DISP CONN [U1247] • AROUND CAMERA CONN [U125B]	AV communication circuits between multi-function switch and around view monitor control unit are malfunctioning.	AV communication circuits between multi-function switch and around view monitor control unit.
• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • VIDEO DIST CONN [U1246] • REAR DISP CONN [U1247] • AROUND CAMERA CONN [U125B]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

DATA MONITOR

ALL SIGNALS
- Displays the status of the following vehicle signals inputted into the AV control unit.
- For each signal, actual signal can be compared with the condition recognized on the system.

Display Item	Display	Vehicle status	Remarks
VHCL SPD SIG	On	Vehicle speed >0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed =0 km/h (0 MPH)	
PKB SIG	On	Parking brake is applied.	
	Off	Parking brake is released.	
ILLUM SIG	On	Block the light beam from the auto light optical sensor when the light SW is ON.	—
	Off	Expose the auto light optical sensor to light when the light SW is OFF or ON.	
IGN SIG	On	Ignition switch ON	
	Off	Ignition switch in ACC position	
REV SIG	On	Selector lever in R position	Changes in indication may be delayed. This is normal.
	Off	Selector lever in any position other than R	
SIDE VIEW SW	Off	This item is displayed, but cannot be monitored.	—
ROOM LAMP*	On	5 seconds after opening any door.	Check 10 seconds after closing all doors.
	Off	Except for above.	

*:For vehicles without driver door switch signal circuit, the ON/OFF indication is fixed to off.

SELECTION FROM MENU
Allows the technician to select which vehicle signals should be displayed and displays the status of the selected vehicle signals.

Item to be selected	Description
VHCL SPD SIG	The same as when “ALL SIGNALS” is selected.
PKB SIG	
ILLUM SIG	
IGN SIG	
REV SIG	
SIDE VIEW SW	
ROOM LAMP	

WORK SUPPORT

Adjusts the neutral position of the steering angle sensor.

CAUTION:

For vehicles with VDC, adjust the steering angle sensor neutral position on the ABS actuator control unit side.

Item	Description
ST ANGLE SENSOR ADJUSTMENT	Adjusts the neutral position of the steering angle sensor.

CONFIGURATION

Configuration has three functions as follows.

Function	Description
READ CONFIGURATION	• Reads the vehicle configuration of current AV control unit. • Saves the read vehicle configuration.
WRITE CONFIGURATION-Manual selection	Writes the vehicle configuration with manual selection.
WRITE CONFIGURATION-Config file	Writes the vehicle configuration with saved data.

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

On Board Diagnosis Function

INFOID:0000000006071836

The diagnosis function of around view monitor control unit is displayed when selecting “Camera Cont.” of Confirmation/Adjustment mode in the multi AV system.

Around view monitor control unit diagnosis item

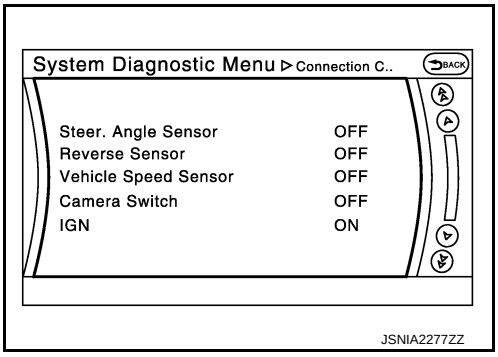
AV control unit Confirmation/Adjustment mode			Function
Camera Cont.	Connection Confirmation		The status of signals input to around view monitor control unit can be checked.
	Calibrating Camera Image	Rear Camera	Performs the calibration of rear camera.
		Pass-Side Camera	Performs the calibration of side camera RH.
		Front Camera	Performs the calibration of front camera.
		Dr-Side Camera	Performs the calibration of side camera LH.
		Initialize Camera Image Calibration*	The calibration can be initialized to NISSAN factory shipment condition.
	Fine Tuning of Birds-Eye View		• The confirmation and adjustment of the difference between each camera can be performed. • The system changes to the ZOOM function by the operation of shift and the ZOOM ratio of each camera can be changed.
	Correct Draw Line of Wide View	Rear-Wide View	The position of rear wide view guideline can be changed.

CAUTION:

***: Never perform other operations for approximately 10 seconds after performing "Initialize Camera Image Calibration".**

Connection Confirmation

The status of signals inputted to around view monitor control unit can be checked.



Connection Confirmation item list

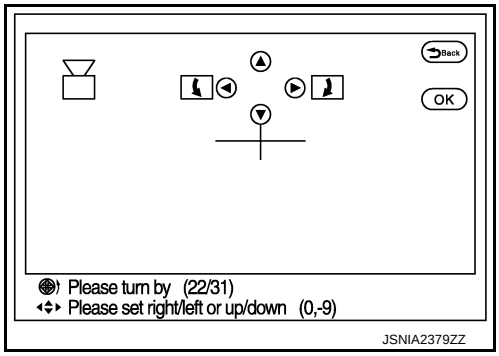
Diagnosis item	Display	Description
Steer. Angle Sensor	ON/OFF	• Input status of steering angle sensor is displayed by ON/OFF. • When all of steering signals 1, 2, and 3 are input, it is turned ON. It remains ON until connection confirmation mode is stopped.
Reverse Sensor	ON/OFF	Input status of reverse signal inputted to around view monitor control unit is displayed by ON/OFF in real time.
Vehicle Speed Sensor	ON/OFF	• Input status of vehicle speed signal inputted to around view monitor control unit is displayed by ON/OFF. • When the vehicle speed signal is input, it is turned ON. It remains ON until connection confirmation mode is stopped.
Camera Switch	ON/OFF	• The status of camera switch signal received via AV communication from NAVI control unit is displayed by ON/OFF. • When the camera switch signal is received once, it is turned ON. It remains ON until connection confirmation mode is stopped.
IGN	ON/OFF	Input status of ignition signal inputted to around view monitor control unit is displayed by ON/OFF in real time.

Diagnosis item	Display	Description
ILL	ON/OFF	Input status of illumination signal inputted to around view monitor control unit is displayed by ON/OFF in real time.
Type of Steer. Angle Sensor	Abslt.	The input type of steering angle sensor is displayed. (“Abslt.” is displayed on this model.)
Type of Steer. Gear ratio	1	The type of steering gear ratio is displayed. (“1” is displayed on this model.)
Left or Right Steer.	Right/Left	The steering position is displayed.
Rear Camera Image Output signal	OK/NG	The input status of rear camera image signal is displayed by OK/NG in real time.
Rear Camera COMM Status	OK/NG	The communication status with rear camera is displayed by OK/NG in real time.
Rear Camera COMM Line	OK/NG	The status of communication line with rear camera is displayed by OK/NG in real time.
Front Camera Image Output signal	OK/NG	The input status of front camera image signal is displayed by OK/NG in real time.
Front Camera COMM Status	OK/NG	The communication status with front camera is displayed by OK/NG in real time.
Front Camera COMM Line	OK/NG	The status of communication line with front camera is displayed by OK/NG in real time.
Pass-Side Camera Image Output signal	OK/NG	The input status of side camera RH image signal is displayed by OK/NG in real time.
Pass-Side Camera COMM Status	OK/NG	The communication status with side camera RH is displayed by OK/NG in real time.
Pass-Side Camera COMM Line	OK/NG	The status of communication line with side camera RH is displayed by OK/NG in real time.
Dr-Side Camera Image Output signal	OK/NG	The input status of side camera LH image signal is displayed by OK/NG in real time.
Dr-Side Camera COMM Status	OK/NG	The communication status with side camera LH is displayed by OK/NG in real time.
Dr-Side Camera COMM Line	OK/NG	The status of communication line with side camera LH is displayed by OK/NG in real time.

Calibrating Camera Image

- Perform the calibration of camera image caused by the incorrect mounting position of each camera, etc. Always perform calibration after performing the following work.
- When each camera or each camera mount (door mirror, front grille, etc.) is removed
- When replacing around view monitor control unit
- When performing the calibration initialization, it can be set to the NISSAN factory shipment condition.

Refer to AV-861, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement" for the calibration procedure.



Adjustment range

Rotating direction	: 31 patterns (16 on the center)
Upper/lower direction	: –99 – 99
Left/right direction	: –99 – 99

Calibrating Camera Image item

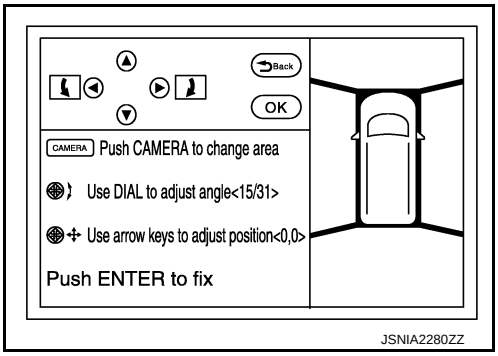
Items	Description
Rear Camera	Performs the calibration of rear camera.
Pass-Side Camera	Performs the calibration of side camera RH.
Front Camera	Performs the calibration of front camera.
Dr-Side Camera	Performs the calibration of side camera LH.
Initialize Camera Image Calibration*	The calibration can be initialized to the factory shipment setting.

CAUTION:

***: Never perform other operations for approximately 10 seconds after performing "Initialize Camera Image Calibration".**

Fine Tuning of Birds-Eye View

- The fine adjustment function of camera calibration can check and adjust the difference between each camera.
- Fine adjustments can be performed for each camera. Move the “+”-mark to select the camera by pressing the “CAMERA” switch.
- Perform the adjustment with the center dial and upper/lower/left/right switches.



JSNIA2280ZZ

CAUTION:

Operate the center dial slowly because the changing of the screen takes approximately 1 second.

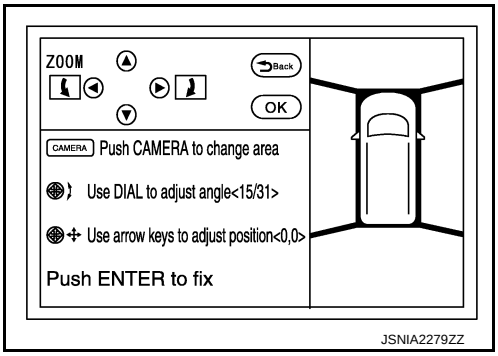
NOTE:

- It can be initialized to the NISSAN factory shipment setting with “Initialize Camera Image Calibration” of “Calibrating Camera Image”.
- The adjustment value is cancelled in this mode by performing “Initialize Camera Image Calibration”.

Adjustment range	
Rotating direction	: 31 patterns (16 on the center)
Upper/lower direction	: –99 – 99
Left/right direction	: –99 – 99

ZOOM function

- The ZOOM ratio of camera can be changed when calibrating the camera.
- It shifts to ZOOM function mode by shifting the selector lever to a position other than the “R” position → “R” position → other than “R” position in the “Fine Tuning of Birds-Eye View” mode.
- The changing of ZOOM ratio can be performed for each camera. Move the “+”-mark to select the camera by pressing “CAMERA” switch and press the left/right switch to change the ZOOM ratio.



JSNIA2279ZZ

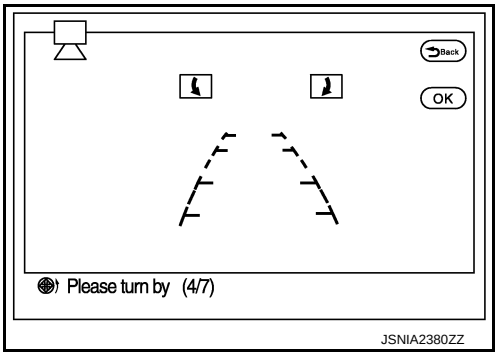
NOTE:

- When the position is not correct in “Fine Tuning of Birds-Eye View” mode, use this "ZOOM" function to adjust it.
- If this function is used, always adjust the upper/lower/left/right position again on the “Fine Tuning of Birds-Eye View” screen.

Correct Draw Line of Wide View

The display position of guiding lines when displayed on the rear-wide view can be changed.

Adjustment range	
Rotating direction	: 7 patterns



JSNIA2380ZZ

Correct Draw Line of Camera Image item

Items	Description
Rear-Wide View	The position of rear wide view guideline can be changed.

DIAGNOSIS SYSTEM (SONAR CONTROL UNIT)

CONSULT-III Function (SONAR)

INFOID:0000000006071837

DESCRIPTION

CONSULT-III can display each diagnostic item using the diagnostic test modes shown as follows:

Test mode	Function
Ecu Identification	Sonar control unit part number can be read.
Self Diagnostic Result	Sonar control unit checks the conditions and displays memorized error.
Data Monitor	Sonar control unit input/output data in real time.
Active Test	Gives a drive signal to a load to check the operation.
Work support	Changes setting of each function.

ECU IDENTIFICATION

Displays the part number of sonar control unit.

SELF-DIAGNOSTIC RESULTS

For details, refer to AV-847, "DTC Index".

DATA MONITOR

Monitor Item	Display	Description
SONAR OPE	On	Around view monitor is ON. (sonar system is ON)
	Off	Around view monitor is OFF. (sonar system is OFF)
BUZZER OUTPUT	On	Buzzer is output condition.
	Off	Buzzer is not output condition.
CR SEN [FL] CR SEN [FR] CR SEN [RL] CR SEN [RR]	ERROR	When a sensor is abnormal.
	LV.0	When a sensor is not detection.
	LV.2	The distance between the corner sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).
	LV.3	The distance between the corner sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).
	LV.4	The distance between corner sensor and an obstacle less than 40 cm (15.7 in).

ACTIVE TEST

Active test item	Function
BUZZER	This test is able to check buzzer operation.
SONAR SENSOR	This test is able to check each sonar sensor operation.

WORK SUPPORT

Work support item	Function
CORNER SEN DISTANCE SET	Corner sensor warning buzzer distance is adjustable to 4 phases.

CORNER SEN DISTANCE SET

Corner sensor warning buzzer distance can be set to 4 phases as follows.

Warning item	FARTHER	FAR	NORMAL	NEAR
Second warning	70 – 80 cm (27.5 – 31.4 in)	60 – 70 cm (23.6 – 27.5 in)	50 – 60 cm (19.6 – 23.6 in)	40 – 50 cm (15.7 – 19.6 in)
Third warning	50 – 70 cm (19.6 – 27.5 in)	40 – 60 cm (15.7 – 23.6 in)	30 – 50 cm (11.8 – 19.6 in)	30 – 40 cm (11.8 – 15.7 in)
Fourth warning	Less than 50 cm (19.6 in)	Less than 40 cm (15.7 in)	Less than 30 cm (11.8 in)	Less than 30 cm (11.8 in)

The default of this model is “FAR”.

ECU DIAGNOSIS INFORMATION

AV CONTROL UNIT

Reference Value

INFOID:0000000006071838

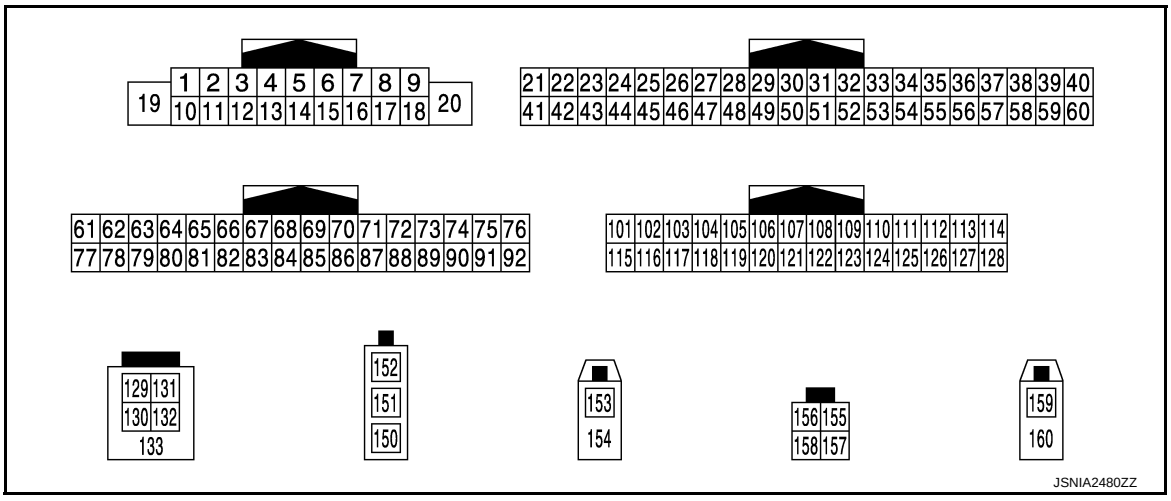
VALUES ON THE DIAGNOSIS TOOL

CONSULT-III MONITOR ITEM

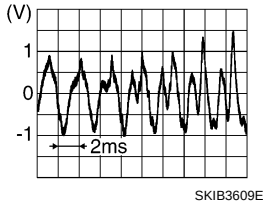
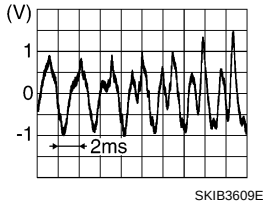
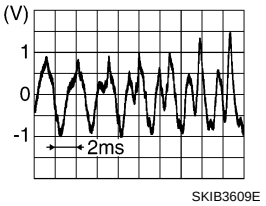
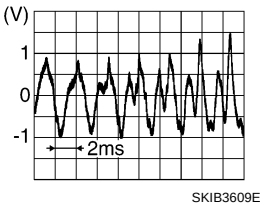
Monitor Item	Condition		Value/Status
VHCL SPD SIG	Ignition switch ON	Vehicle speed > 0 km/h (0 MPH)	On
		Vehicle speed = 0 km/h (0 MPH)	Off
PKB SIG	Ignition switch ON	Parking brake is applied.	On
		Parking brake is released.	Off
ILLUM SIG	Ignition switch ON	Light switch ON	On
		Light switch OFF	Off
IGN SIG	Ignition switch ON	—	On
	Ignition switch ACC	—	Off
REV SIG	Ignition switch ON	Selector lever in R position	On
		Selector lever in any position other than R	Off
SIDE VIEW SW	Ignition switch ON	This item is displayed, but cannot be monitored.	Off
ROOM LAMP*1	Ignition switch ON	Five seconds after opening any door.*2	On
		Except for above.	Off

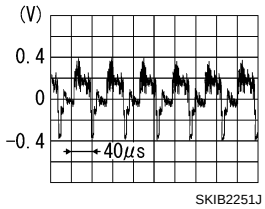
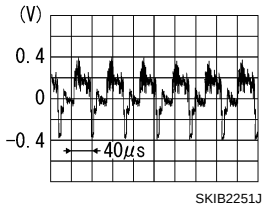
*1:For vehicles without driver door switch signal circuit, the ON/OFF indication is fixed to off.
*2:Check 10 seconds after closing all doors.

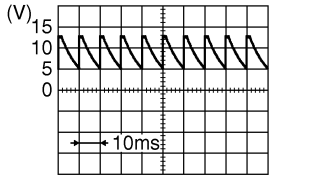
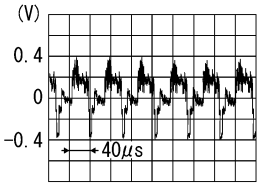
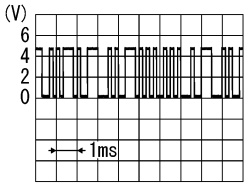
TERMINAL LAYOUT

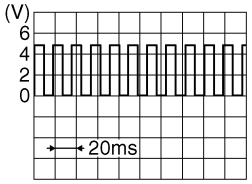
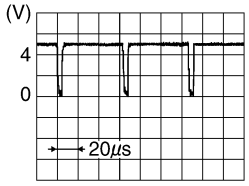
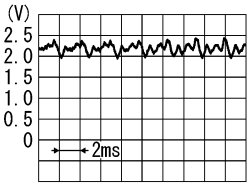
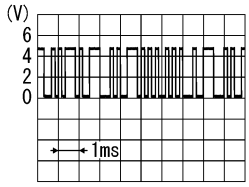
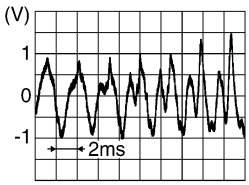


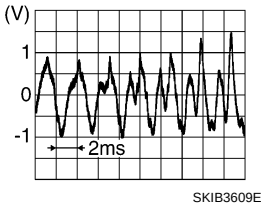
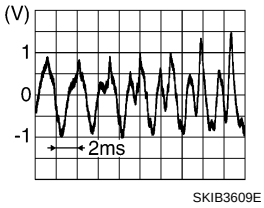
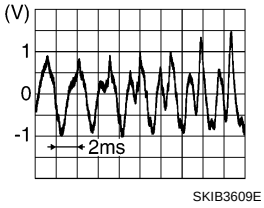
PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (V)	Ground	AMP. ON signal	Input	Ignition switch ON	—	12.0 V
2 (P)*1 (R)*2	3 (L)*1 (G)*2	Sound signal front LH	Output	Ignition switch ON	Sound output	 SKIB3609E
4 (V)*1 (BR)*2	5 (LG)*1 (Y)*2	Sound signal rear LH	Output	Ignition switch ON	Sound output	 SKIB3609E
6 (P)	15 (B)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing MENU UP switch.	1.0 V
					Keep pressing MENU DOWN switch.	2.0 V
					Keep pressing switch	3.0 V
					Keep pressing ENTER switch.	4.0 V
					Except for above.	5.0 V
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
10 (B)	—	Shield	—	—	—	—
11 (R)*1 (P)*2	12 (G)*1 (L)*2	Sound signal front RH	Output	Ignition switch ON	Sound output	 SKIB3609E
13 (BR)*1 (LG)*3 (V)*4	14 (Y)*1 (LG)*2	Sound signal rear RH	Output	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
16 (L)	15 (B)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	1.0 V
					Keep pressing ☎ switch.	2.0 V
					Keep pressing ⮌ switch.	3.0 V
					Except for above.	5.0 V
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
20 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
26 (Y)*1 (BR)*2	Ground	AUX image signal	Input	Ignition switch ON	At AUX image is displayed.	 SKIB2251J
29 (SB)*5 (Y)*6	Ground	Disk eject signal	Input	Ignition switch ON	Pressing the eject switch.	0 V
					Except for above.	5.0 V
30 (SB)	Ground	Mode change signal	Output	Ignition switch ON	Driver's Audio Stage ON	0 V
					Driver's Audio Stage OFF	8.5 V
33 (G)	Ground	Shield (composite image signal ground)	—	Ignition switch ON	—	0 V
34 (R)	Ground	Composite image signal	Output	Ignition switch ON	At DVD image is displayed.	 SKIB2251J
46 (BR)*1 (Y)*2	Ground	AUX image signal ground	—	Ignition switch ON	—	0 V
47	—	Shield	—	—	—	—
49 (BR)*5 (B)*6	Ground	Switch ground	—	Ignition switch ON	—	0 V
53	—	Shield	—	—	—	—

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
64 (GR)	Ground	Driver door switch signal	Input	Ignition switch ON	Door open (driver side)	0 V
					Door close (driver side)	 JPMIA0594GB
65 (V)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake is ON.	4.5 V
					Parking brake is OFF.	0 V
67 (B)*5 (L)*6	Ground	Composite image ground	—	Ignition switch ON	—	0 V
68 (R)*5 (P)*6	Ground	Composite image signal	Output	Ignition switch ON	At DVD image is displayed.	 SKIB2251J
71	—	Microphone shield	—	—	—	—
72 (G)*5 (R)*6	Ground	Microphone VCC	Output	Ignition switch ON	—	5.0 V
73 (R)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
74 (P)	—	CAN–L	Input/ Output	—	—	—
75 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
76 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
79 (R)	Ground	Illumination signal	Input	Ignition switch OFF	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12.0 V
80 (G)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
81 (O)	Ground	Reverse signal	Input	Ignition switch ON	R position	12.0 V
					Other than R position	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
82 (R)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** Maximum voltage may be 12.0 V due to specifications (connected units).  SKIA6649J
83	—	Shield	—	—	—	—
84 (W)	Ground	Composite image synchronizing signal	Output	Ignition switch ON	—	 SKIB0825E
87 (R)*5 (G)*6	71	Microphone signal	Input	Ignition switch ON	Give a voice	 PKIB5037J
88 (B)*2	—	Shield	—	—	—	—
89 (G)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
90 (L)	—	CAN–H	Input/ Output	—	—	—
91 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
92 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
104 (W)	119 (B)	AUX sound signal LH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
106 (L)	120 (P)	Headphone sound signal LH	output	Ignition switch ON	Headphone sound output.	 SKIB3609E
107 (BR)	121 (GR)	Headphone sound signal RH	output	Ignition switch ON	Headphone sound output.	 SKIB3609E
117	—	Shield	—	—	—	—
118 (R)	119 (B)	AUX sound signal RH	Input	Ignition switch ON	When AUX mode is selected.	 SKIB3609E
122 (B)	—	Shield	—	—	—	—
129 (G)	—	USB ground	—	—	—	—
130 (R)	—	USB D– signal	Input/ Output	—	—	—
131 (W)	—	V BUS signal	Output	—	—	—
132 (L)	—	USB D+ signal	Input/ Output	—	—	—
133	—	Shield	—	—	—	—
150	—	AM-FM main	Input	—	—	—
151	—	FM sub	Input	—	—	—
152	Ground	Antenna amp. ON signal	Input	Ignition switch ON	—	12.0 V
153	Ground	GPS antenna signal	Input	Ignition switch ON	Not connected GPS antenna connector.	5.0 V
154	—	Shield	—	—	—	—
157	Ground	RGB digital image signal (–)	Output	Ignition switch ON	Not connected connector.	3.0 V
158	Ground	RGB digital image signal (+)	Output	Ignition switch ON	Not connected connector.	3.0 V

• *1: With gasoline engine

- *2: With diesel engine
- *3: LHD models with diesel engine
- *4: RHD models with diesel engine
- *5: LHD models with gasoline engine
- *6: Except LHD models with gasoline engine
- *7:Some vehicles do not include driver door switch signal circuit, depending on the vehicle specification.

Fail-Safe

INFOID:0000000006071839

When the ambiance temperature becomes extremely low or extremely high, AV control unit displays the message and limits the AV control unit function.

FAIL-SAFE CONDITIONS

When the ambiance temperature is –20°C (–4°F) or lower, or when it is 70°C (158°F) or higher

Display

The messages displayed on fail-safe conditions are as shown below:

Fail-safe mode	Display (display of the fail-safe condition)
When HDD temperature is low	HDD system is experiencing problems due to extreme low temperature. Normal operation will resume when temperature rises.
When HDD temperature is high	HDD system is experiencing problems due to extreme high temperature. Normal operation will resume when temperature drops.

DESCRIPTION OF CONTROLS

Function		When Fail-safe Function is activated
Air conditioner	Operation	Only multifunction switch (preset switch) can be operated.
	Display	• LED of multifunction switch (preset switch) illuminates. • Aimed temperature, blow angle, and flow rate are displayed in simplified mode.
Audio	Operation	Only ON/OFF and volume control operations by multifunction switch (preset switch) are possible.
	Display	No display (“Fail-safe mode” is displayed)
Camera	Operation	Image tone cannot be controlled.
	Display	Cannot be superimposed. (warning display, tone control display)
Hands-free phone	Operation	Cannot be operated.
Navigation	Operation	Cannot be operated.
Self diagnosis		The display in simplified mode of fail-safe condition
CONSULT-III diagnosis		Cannot be operated.

Ability Operation Mode

There is an ability operation mode for Fail-safes due to low or high ambiance temperature.
If HDD data can be read, fail-safe is shown, then normal displays are displayed only for functions which can be operated.

RELEASE CONDITIONS OF FAIL-SAFE

Fail-safe is released on following conditions and normal mode is restored.

When The Temperature of HDD Is Low or High

If the ambient temperature becomes out of fail-safe condition range, normal mode is restored.

DTC Index

INFOID:0000000006071840

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	AV-867, "Diagnosis Procedure"
U1010	CONTROL UNIT (CAN) [1010]	AV-868, "DTC Logic"
U1200	Cont Unit [U1200]	AV-869, "DTC Logic"

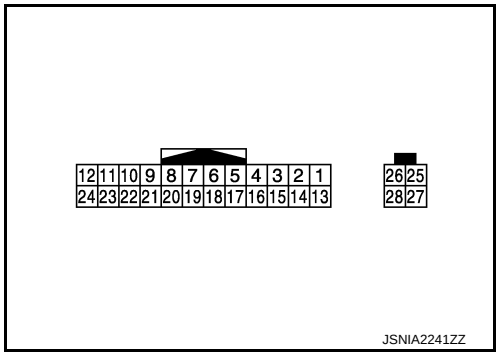
DTC	Display item	Refer to
U1201	GYRO NO CONN [U1201]	AV-870, "DTC Logic"
U1202	G-SENSOR NO CONN [U1202]	AV-871, "DTC Logic"
U1204	GPS COMM [U1204]	AV-872, "Diagnosis Procedure"
U1205	GPS ROM [U1205]	AV-873, "Diagnosis Procedure"
U1206	GPS RAM [U1206]	AV-874, "Diagnosis Procedure"
U1207	GPS RTC [U1207]	AV-875, "Diagnosis Procedure"
U1216	CAN CONT [U1216]	AV-876, "DTC Logic"
U1217	BLUETOOTH MODULE [U1217]	AV-877, "DTC Logic"
U1218	HDD CONN [U1218]	AV-878, "Diagnosis Procedure"
U1219	HDD READ [U1219]	AV-879, "Diagnosis Procedure"
U121A	HDD WRITE [U121A]	AV-880, "Diagnosis Procedure"
U121B	HDD COMM [U121B]	AV-881, "Diagnosis Procedure"
U121C	HDD ACCESS [U121C]	AV-882, "Diagnosis Procedure"
U121D	DSP CONN [U121D]	AV-883, "Diagnosis Procedure"
U121E	DSP COMM [U121E]	AV-884, "Diagnosis Procedure"
U1225	USB CONTROLLER [U1225]	AV-885, "DTC Logic"
U1227	DVD COMM [U1227]	AV-886, "Diagnosis Procedure"
U1228	SUB CPU CONN [U1228]	AV-887, "DTC Logic"
U1229	iPod CERTIFICATION [U1229]	AV-888, "DTC Logic"
U122A	CONFIG UNFINISH [U122A]	AV-889, "Diagnosis Procedure"
U122E	Built-in AUDIO CONN [U122E]	AV-890, "DTC Logic"
U1232	ST ANGLE SEN CALIB [1232]	AV-891, "Diagnosis Procedure"
U1243	FRONT DISP CONN [U1243]	AV-892, "Diagnosis Procedure"
U1244	GPS ANTENNA CONN [U1244]	AV-894, "Diagnosis Procedure"
U1247	REAR DISP CONN [U1247]	AV-895, "Diagnosis Procedure"
U1263	USB OVERCURRENT [U1263]	AV-897, "Diagnosis Procedure"
U1310	CONTROL UNIT (AV) [U1310]	AV-899, "DTC Logic"
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	AV-898, "Description"
U1300 U125B	• AV COMM CIRCUIT [U1300] • AROUND CAMERA CONN [U125B]	
U1300 U125C	• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	
U1300 U1246 U1247	• AV COMM CIRCUIT [U1300] • VIDEO DIST CONN [U1246] • REAR DISP CONN [U1247]	
U1300 U1246 U1247 U125B	• AV COMM CIRCUIT [U1300] • VIDEO DIST CONN [U1246] • REAR DISP CONN [U1247] • AROUND CAMERA CONN [U125B]	
U1300 U1240 U1246 U1247 U125B	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • VIDEO DIST CONN [U1246] • REAR DISP CONN [U1247] • AROUND CAMERA CONN [U125B]	

FRONT DISPLAY UNIT

Reference Value

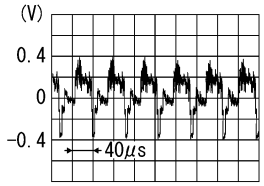
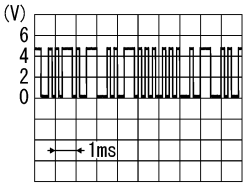
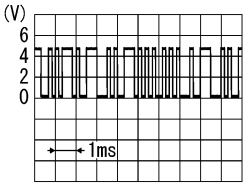
INFOID:0000000006084576

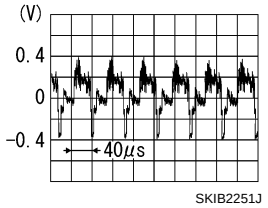
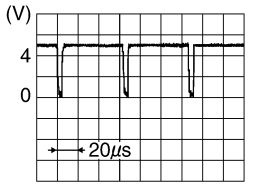
TERMINAL LAYOUT



JSNIA2241ZZ

PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
6	—	Shield	—	—	—	—
7 (B)*1	—	Shield	—	—	—	—
8 (W)	Ground	Camera image signal	Input	Ignition switch ON	At camera image is displayed.	 SKIB2251J
9 (G)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
10 (R)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
11 (P)*2 (Y)*3	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
18 (R)*2 (P)*3	Ground	Composite image signal	Input	Ignition switch ON	At DVD image is displayed.	 SKIB2251J
19 (B)*2 (L)*3	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
20 (W)	Ground	Composite image synchro-nizing signal	Input	Ignition switch ON	—	 SKIB0825E
22 (B)*1	—	Shield	—	—	—	—
23 (L)*2 (V)*3	Ground	ACC power supply	Input	—	—	—
27	—	RGB digital image signal (–)	Input	—	—	—
28	—	RGB digital image signal (+)	Input	—	—	—

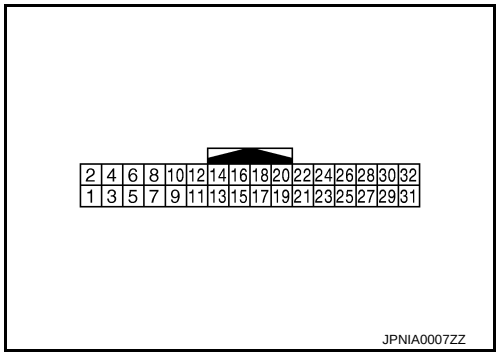
- *1: With diesel engine
- *2: LHD models with gasoline engine
- *3: Except LHD models with gasoline engine

REAR DISPLAY UNIT

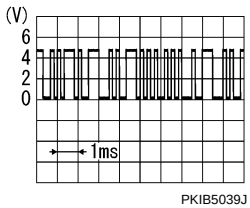
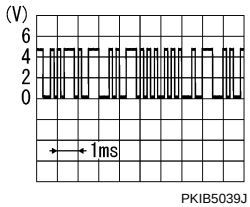
Reference Value

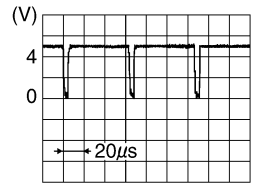
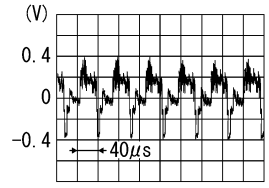
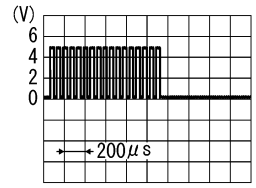
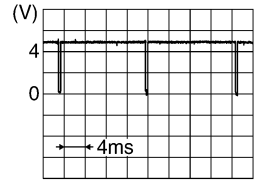
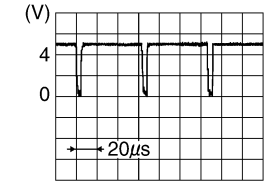
INFOID:0000000006071842

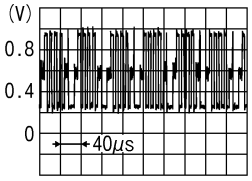
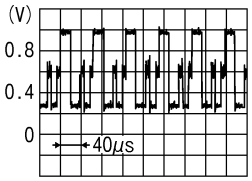
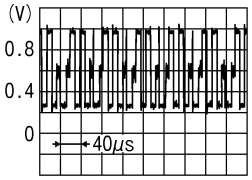
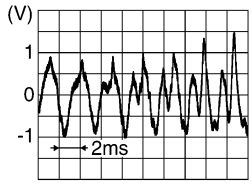
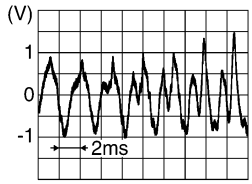
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
3 (Y)	Ground	Battery power supply	Input	Ignition switch ON	—	Battery voltage
4 (LG)	Ground	Battery power supply	Input	Ignition switch ON	—	Battery voltage
5 (P)	Ground	Headphone ON signal	Input	Ignition switch ON	Headphone mode is ON.	4.0 V
					Headphone mode is OFF.	0 V
6 (O)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
8	—	Shield	—	—	—	—
9 (V)	Ground	Communication signal (DISP→DIST)	Output	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear displayed.	 PKIB5039J
10 (SB)	Ground	Communication signal (DIST→DISP)	Input	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear displayed.	 PKIB5039J

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
11 (O)	Ground	Ignition signal	Input	Ignition switch ON	—	0 V
				Ignition switch ACC	—	5.0 V
12	—	Shield	—	—	—	—
13 (G)	Ground	Composite image synchronizing signal	Input	Ignition switch ON	When AUX or DVD image is displayed on rear display unit.	 SKIB0825E
14 (R)	Ground	Composite image signal	Input	Ignition switch ON	When AUX or DVD image is displayed on rear display unit.	 SKIB2251J
15 (BR)	Ground	RGB area (YS) signal	Input	Ignition switch ON	When AUX or DVD image is displayed.	0 V
					Rear seat remote controller operation when AUX or DVD image is displayed on rear display.	 PKIB4948J
16	—	Shield	—	—	—	—
17 (Y)	Ground	Vertical synchronizing (VP) signal	Output	Ignition switch ON	—	 SKIB3598E
18 (O)	Ground	Horizontal synchronizing (HP) signal	Output	Ignition switch ON	—	 SKIB0825E
19	—	Shield	—	—	—	—

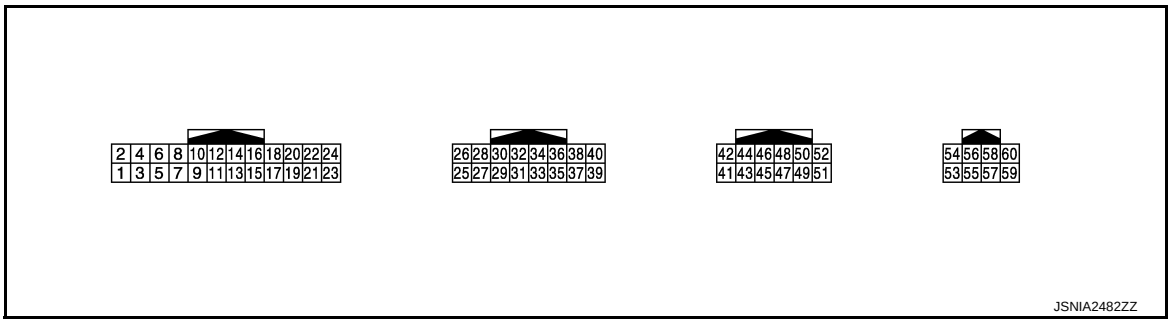
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
20 (B)	Ground	RGB signal (B: blue) for rear display unit	Input	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 JSNIA1031ZZ
21 (R)	Ground	RGB signal (G: green) for rear display unit	Input	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 JSNIA1030ZZ
22 (W)	Ground	RGB signal (R: red) for rear display unit	Input	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 JSNIA1029ZZ
24 (BR)	—	Shield	—	—	—	—
27 (BR)	25 (Y)	Headphone sound signal RH	Input	Ignition switch ON	Headphone sound output	 SKIB3609E
28 (L)	26 (P)	Headphone sound signal LH	Input	Ignition switch ON	Headphone sound output	 SKIB3609E

VIDEO DISTRIBUTOR

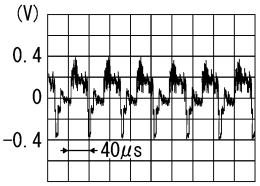
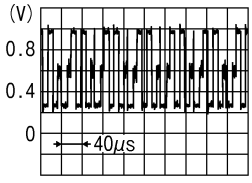
Reference Value

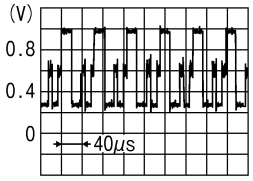
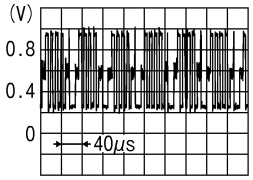
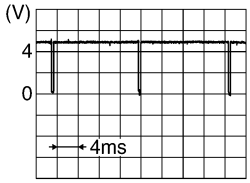
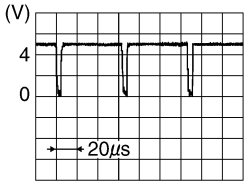
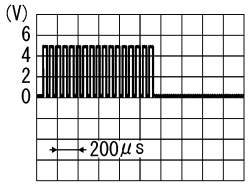
INFOID:0000000006071843

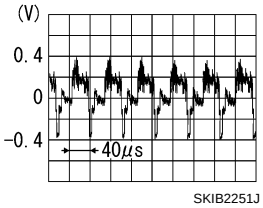
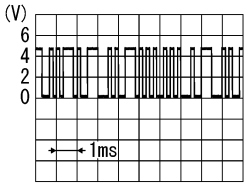
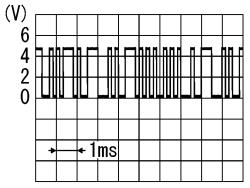
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
2 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
3 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
4 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
15 (B)	—	Ground	—	—	—	—
16 (B)	—	Ground	—	—	—	—
21	—	Shield	—	—	—	—
22 (G)	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
23 (R)	Ground	Composite image signal	Input	Ignition switch ON	When AUX or DVD image is displayed.	 SKIB2251J
25 (W)	Ground	RGB signal (R: red) for rear display unit	Output	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 JSNIA1029ZZ

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
26 (R)	Ground	RGB signal (G: green) for rear display unit	Output	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 JSNIA1030ZZ
27	Ground	Shield	—	—	—	—
28 (B)	Ground	RGB signal (B: blue) for rear display unit	Output	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 JSNIA1031ZZ
29 (R)	Ground	Vertical synchronizing (VP) signal	Input	Ignition switch ON	—	 SKIB3598E
30 (W)	Ground	Horizontal synchronizing (HP) signal	Input	Ignition switch ON	—	 SKIB0825E
31	—	Shield	—	—	—	—
32 (B)	Ground	RGB area (YS) signal	Output	Ignition switch ON	When AUX or DVD image is displayed on rear display unit.	0 V
					Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 PKIB4948J
33 (G)	Ground	Composite image ground	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
34 (R)	Ground	Composite image signal	Output	Ignition switch ON	When AUX or DVD image is displayed on rear display unit.	 SKIB2251J
35	—	Shield	—	—	—	—
36 (O)	Ground	Ignition signal	Output	Ignition switch ON	—	0 V
				Ignition switch ACC	—	5.0 V
38	—	Shield	—	—	—	—
39 (V)	Ground	Communication signal (DISP→DIST)	Input	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 PKIB5039J
40 (SB)	Ground	Communication signal (DIST→DISP)	Output	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 PKIB5039J
51 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
53 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
54 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
55 (SB)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
56 (G)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
60 (P)	Ground	Headphone ON signal	Output	Ignition switch ON	Headphone mode is ON.	4.0 V
					Headphone mode is OFF.	0 V

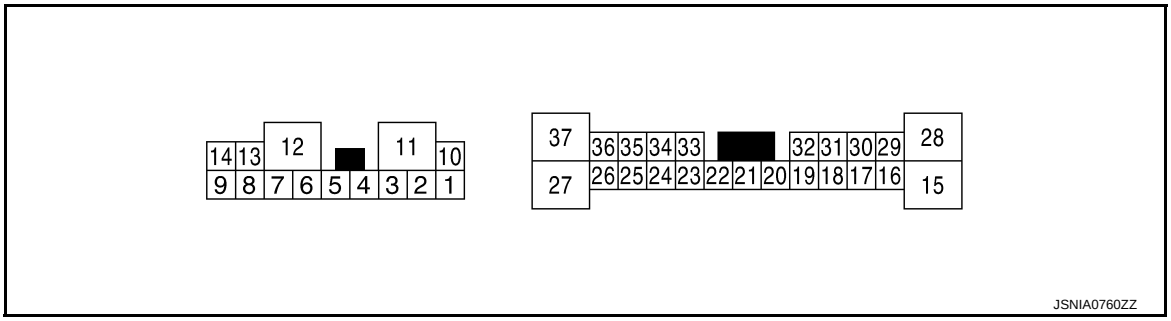
BOSE AMP.

LHD MODELS

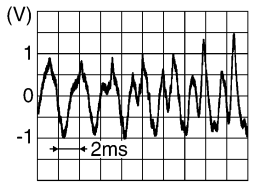
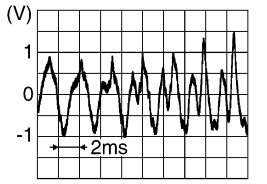
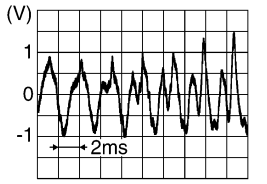
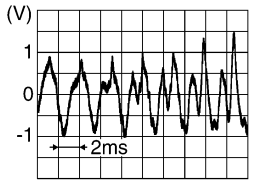
LHD MODELS : Reference Value

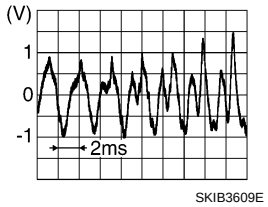
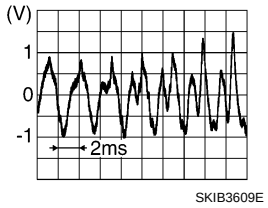
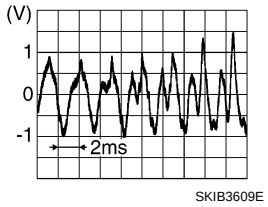
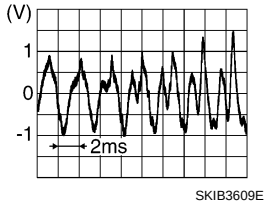
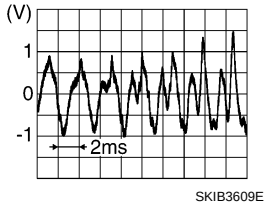
INFOID:0000000006084577

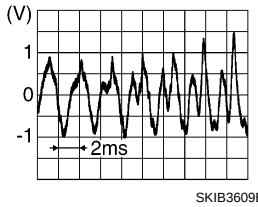
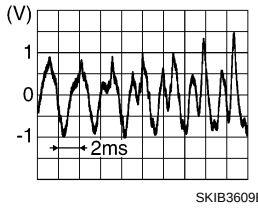
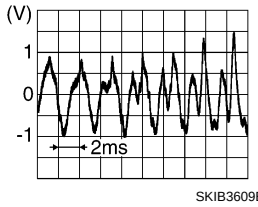
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (Y)	10 (G)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
2 (SB)	3 (V)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
4 (L)	5 (P)	Sound signal front door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
6 (O)	7 (W)	Sound signal front squawker LH	Output	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
8 (LG)	13 (Y)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
9 (G)	14 (R)	Sound signal woofer and rear squawker	Output	Ignition switch ON	Sound output	 SKIB3609E
11 (GR)	Ground	Battery power supply	Input	Ignition switch ON	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
15 (Y)	28 (G)	Sound signal center speaker	Output	Ignition switch ON	Sound output	 SKIB3609E
17 (O)*1 (SB)*2	Ground	Mode change signal	Input	Ignition switch ON	Driver's Audio Stage ON	0 V
					Driver's Audio Stage OFF	8.5 V
18 (P)*1 (R)*2	32 (L)*1 (G)*2	Sound signal front LH	Input	Ignition switch ON	Sound output	 SKIB3609E
19 (R)*1 (P)*2	20 (G)*1 (L)*2	Sound signal front RH	Input	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
21 (V)*1 (BR)*2	22 (SB)*1 (Y)*2	Sound signal rear LH	Input	Ignition switch ON	Sound output	 SKIB3609E
23 (BR)*1 (V)*2	33 (Y)*1 (SB)*2	Sound signal rear RH	Input	Ignition switch ON	Sound output	 SKIB3609E
25 (GR)	Ground	Woofer amp. ON signal	Output	Ignition switch ON	—	12.0 V
31 (GR)	Ground	AMP. ON signal	Input	Ignition switch ON	—	12.0 V
37 (V)	27 (LG)	Sound signal front squawker RH	Output	Ignition switch ON	Sound output	 SKIB3609E

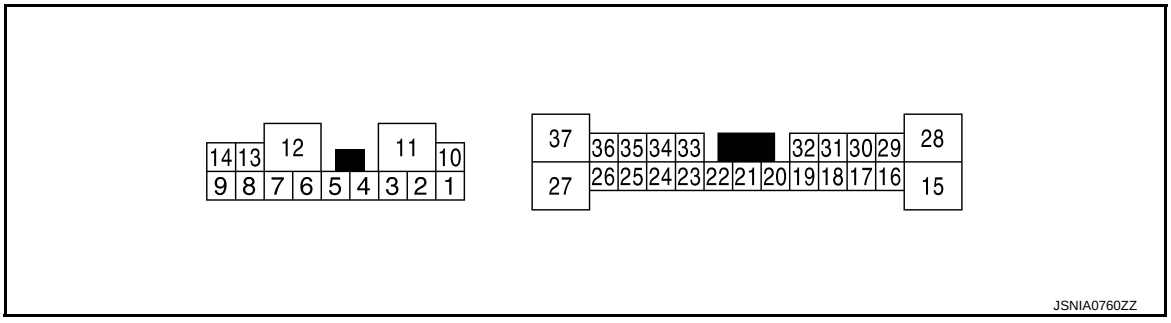
- *1: With gasoline engine
- *2: With diesel engine

RHD MODELS

RHD MODELS : Reference Value

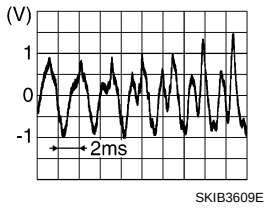
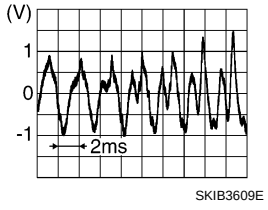
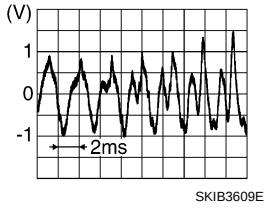
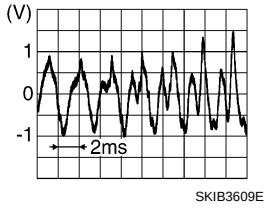
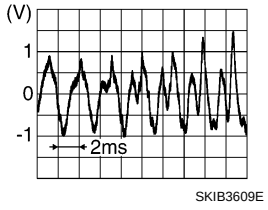
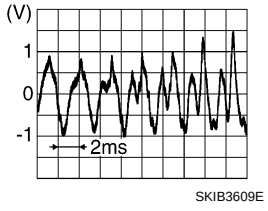
INFOID:0000000006084580

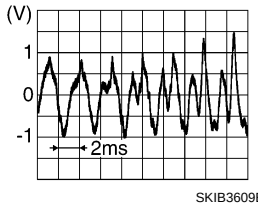
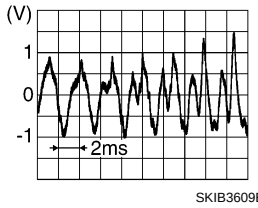
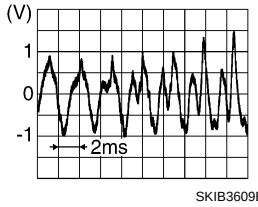
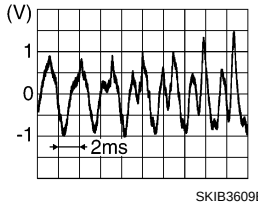
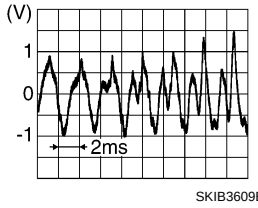
TERMINAL LAYOUT

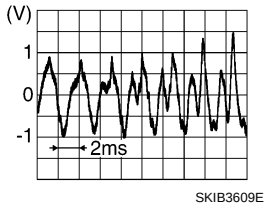


JSNIA0760ZZ

PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (SB)	10 (V)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
2 (Y)	3 (G)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
4 (O)	5 (GR)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
6 (V)	7 (LG)	Sound signal front squawker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
8 (L)	13 (P)	Sound signal front door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
9 (G)	14 (R)	Sound signal woofer and rear squawker	Output	Ignition switch ON	Sound output	 SKIB3609E
11 (GR)	Ground	Battery power supply	Input	Ignition switch ON	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
15 (Y)	28 (G)	Sound signal center speaker	Output	Ignition switch ON	Sound output	 SKIB3609E
17 (SB)	Ground	Mode change signal	Input	Ignition switch ON	Deiver's Audio Stage ON	0 V
					Deiver's Audio Stage OFF	8.5 V
18 (R)*1 (P)*2	32 (G)*1 (L)*2	Sound signal front RH	Input	Ignition switch ON	Sound output	 SKIB3609E
19 (P)*1 (R)*2	20 (L)*1 (G)*2	Sound signal front LH	Input	Ignition switch ON	Sound output	 SKIB3609E
21 (BR)*1 (V)*2	22 (Y)*1 (SB)*2	Sound signal rear RH	Input	Ignition switch ON	Sound output	 SKIB3609E
23 (V)*1 (BR)*2	33 (SB)*1 (Y)*2	Sound signal rear LH	Input	Ignition switch ON	Sound output	 SKIB3609E
25 (GR)	Ground	Woofer amp. ON signal	Input	Ignition switch ON	—	12.0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
31 (GR)	Ground	AMP. ON signal	Input	Ignition switch ON	—	12.0 V
37 (O)	27 (W)	Sound signal front squawker LH	Output	Ignition switch ON	Sound output	

SKIB3609E

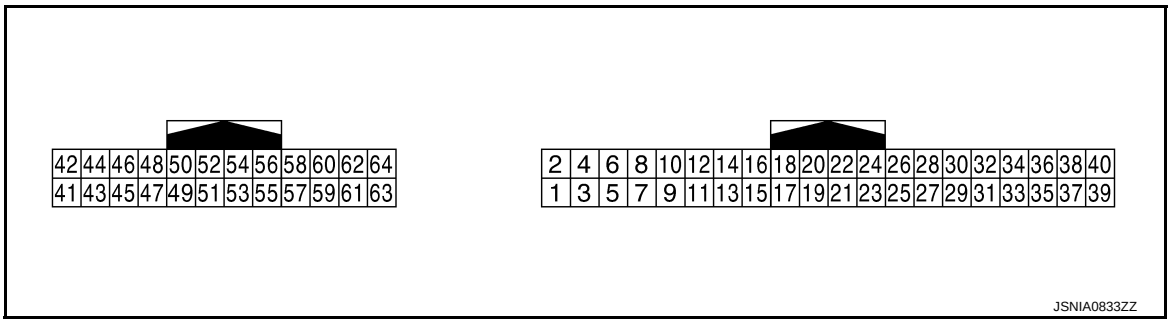
- *1: With gasoline engine
- *2: With diesel engine

AROUND VIEW MONITOR CONTROL UNIT

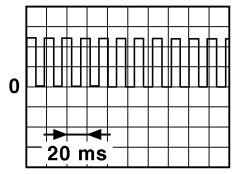
Reference Value

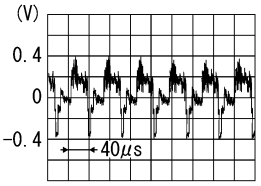
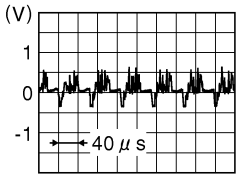
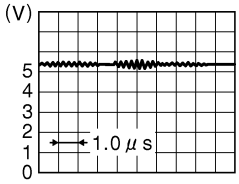
INFOID:0000000006084583

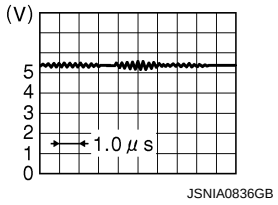
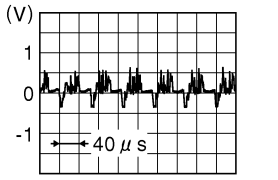
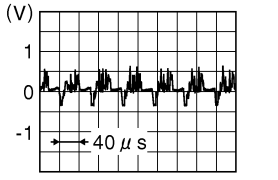
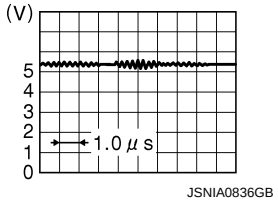
TERMINAL LAYOUT

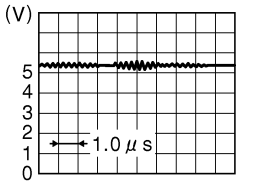
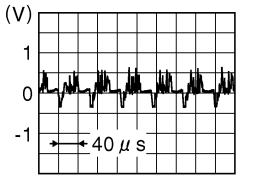


PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
3 (G)*1 (P)*2	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
4 (GR)*1 (LG)*2	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
5 (O)*1 (R)*2	Ground	Illumination signal	Input	Ignition switch OFF	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12.0 V
6 (SB)*1 (V)*2	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB
7 (V)*1 (P)*3 (O)*4	Ground	Reverse signal	Input	Ignition switch ON	R position	12.0 V
					Other than R position	0 V
9 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
13 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
17 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
18 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
21 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
22 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
23 (LG)	24 (G)	Auxiliary infrared LED power supply	Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	5.5 V
27 (W)	Ground	Camera image signal	Output	Ignition switch ON	At camera image display	 SKIB2251J
28 (B)*5	—	Shield	—	—	—	—
29 (Y)*1 (R)*2	30 (G)*1 (Y)*2	Side camera passenger side image signal	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0834GB
31	—	Shield	—	—	—	—
32 (B)*1 (W)*2	Ground	Side camera passenger side ground	—	Ignition switch ON	—	0 V
33 (W)*1 (BR)*2	Ground	Side camera passenger side communication signal	Input/ Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0836GB
34 (R)*1 (L)*2	Ground	Side camera passenger side power supply	Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
35 (L)*1 (W)*2	Ground	Rear camera communication signal	Input/ Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0836GB
36 (BR)*1 (G)*2	Ground	Rear camera power supply	Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	6.0 V
37	—	Shield	—	—	—	—
38 (R)*1 (L)*2	Ground	Rear camera ground	—	Ignition switch ON	—	0 V
39 (Y)	40 (W)*1 (BR)*2	Rear camera image signal	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0834GB
41 (Y)*1 (L)*2	42 (G)*1 (BR)*2	Front camera image signal	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0834GB
43	—	Shield	—	—	—	—
44 (B)*1 (Y)*2	Ground	Front camera ground	—	Ignition switch ON	—	0 V
45 (W)	Ground	Front camera communication signal	Input/ Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0836GB
46 (R)*1 (G)*2	Ground	Front camera power supply	Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
47 (L)*1 (BR)*2	Ground	Side camera driver side communication signal	Input/ Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0836GB
48 (BR)*1 (L)*2	Ground	Side camera driver side power supply	Output	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	6.0 V
49	—	Shield	—	—	—	—
50 (R)*1 (W)*2	Ground	Side camera driver side ground	—	Ignition switch ON	—	0 V
51 (Y)*1 (R)*2	52 (W)*1 (Y)*2	Side camera driver side image signal	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0834GB

- *1: LHD models with diesel engine
- *2: Except LHD models with diesel engine
- *3: RHD models with diesel engine
- *4: With gasoline engine
- *5: With diesel engine

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

Reference Value

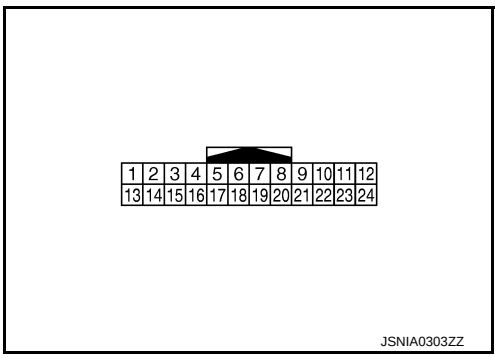
INFOID:0000000006084584

VALUES ON THE DIAGNOSIS TOOL

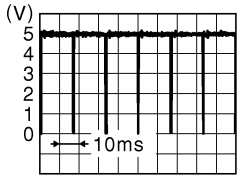
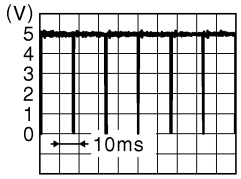
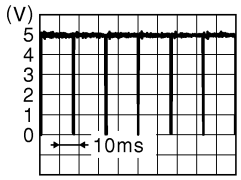
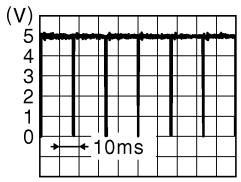
CONSULT-III MONITOR ITEM

Monitor Item	Condition		Value/Status
SONAR OPE	Ignition switch ON	Around view monitor operating (sonar operating).	On
		Around view monitor non-operating (sonar non-operating).	Off
BUZZER OUTPUT	Ignition switch ON	Buzzer is output condition.	On
		Buzzer is not output condition.	Off
CR SEN [FL]	Ignition switch ON	When a sensor is abnormal.	ERROR
		When a sensor is not detection.	LV.0
		The distance between the corner sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).	LV.2
		The distance between the corner sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).	LV.3
		The distance between corner sensor and an obstacle less than 40 cm (15.7 in).	LV.4
CR SEN [FR]	Ignition switch ON	When a sensor is abnormal.	ERROR
		When a sensor is not detection.	LV.0
		The distance between the corner sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).	LV.2
		The distance between the corner sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).	LV.3
		The distance between corner sensor and an obstacle less than 40 cm (15.7 in).	LV.4
CR SEN [RL]	Ignition switch ON	When a sensor is abnormal.	ERROR
		When a sensor is not detection.	LV.0
		The distance between the corner sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).	LV.2
		The distance between the corner sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).	LV.3
		The distance between corner sensor and an obstacle less than 40 cm (15.7 in).	LV.4
CR SEN [RR]	Ignition switch ON	When a sensor is abnormal.	ERROR
		When a sensor is not detection.	LV.0
		The distance between the corner sensor and an obstacle is 60 cm (23.6 in) or more and less then 70 cm (27.5 in).	LV.2
		The distance between the corner sensor and an obstacle is 40 cm (15.7 in) or more and less then 60 cm (23.6 in).	LV.3
		The distance between corner sensor and an obstacle less than 40 cm (15.7 in).	LV.4

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
3 (W)	12 (B)	Corner sensor signal front LH	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0837GB
4 (R)	12 (B)	Corner sensor signal front RH	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0837GB
5 (W)*1 (G)*2	12 (B)	Corner sensor signal rear LH	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0837GB
6 (R)*1 (Y)*2	12 (B)	Corner sensor signal rear RH	Input	Ignition switch ON	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0837GB
12 (B)	Ground	Sensor ground	—	Ignition switch ON	—	0 V
13 (V)*3 (L)*4	Ground	ACC power supply	Input	Ignition switch ACC	—	12.0 V

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal name	Input/ Output			
18 (P)*5 (O)*6	—	K-line (CONSULT-III)	—	—	—	—
19 (G)	—	AV communication (H)	Input/ Output	—	—	—
20 (R)	—	AV communication (L)	Input/ Output	—	—	—
24 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

- *1: With gasoline engine
- *2: With diesel engine
- *3: LHD models
- *4: RHD models
- *5: LHD models with gasoline engine
- *6: Except LHD models with gasoline engine

Fail-Safe

INFOID:0000000006071847

- Sonar control unit has diagnosis function which can detect corner sensor malfunction and sensor harness disconnection.
- It transmits the malfunction status to around view monitor control unit and informs the malfunction to the user by displaying continuously red sonar indicator.

DTC Index

INFOID:0000000006085677

DTC	Display item	Malfunction is detected when...	Reference
B2700	CORNER SENSOR [FL] [B2700]	Corner sensor (FL) is malfunctioning.	AV-900, "DTC Logic"
B2701	SENSOR HARNESS OPEN [CR-FL] [B2701]	Corner sensor (FL) harness circuit is open.	AV-901, "Diagnosis Procedure"
B2702	CORNER SENSOR [FR] [B2702]	Corner sensor (FR) is malfunctioning.	AV-902, "DTC Logic"
B2703	SENSOR HARNESS OPEN [CR-FR] [B2703]	Corner sensor (FR) harness circuit is open.	AV-903, "Diagnosis Procedure"
B2704	CORNER SENSOR [RL] [B2704]	Corner sensor (RL) is malfunctioning.	AV-904, "DTC Logic"
B2705	SENSOR HARNESS OPEN [CR-RL] [B2705]	Corner sensor (RL) harness circuit is open.	AV-905, "Diagnosis Procedure"
B2706	CORNER SENSOR [RR] [B2706]	Corner sensor (RR) is malfunctioning.	AV-906, "DTC Logic"
B2707	SENSOR HARNESS OPEN [CR-RR] [B2707]	Corner sensor (RR) harness circuit is open.	AV-907, "Diagnosis Procedure"

NOTE:
"TIME" means the following.
- 0: Means detected malfunction at present. (From malfunction detection to turning ignition switch OFF)
- 1–39: Means detected malfunction in past.

WIRING DIAGRAM

BOSE AUDIO WITH NAVIGATION (TWIN MONITOR)

Wiring Diagram

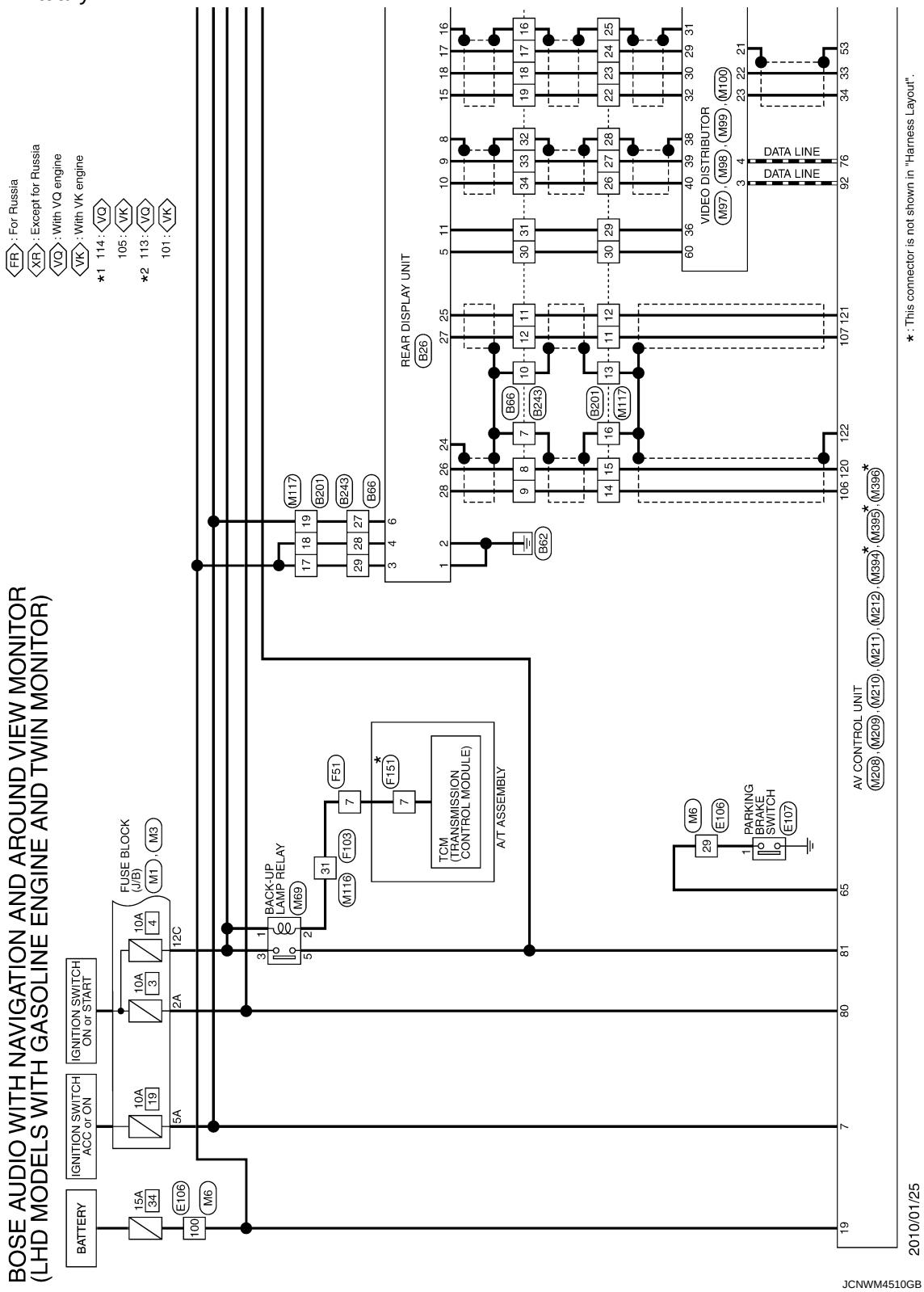
INFOID:0000000006071849

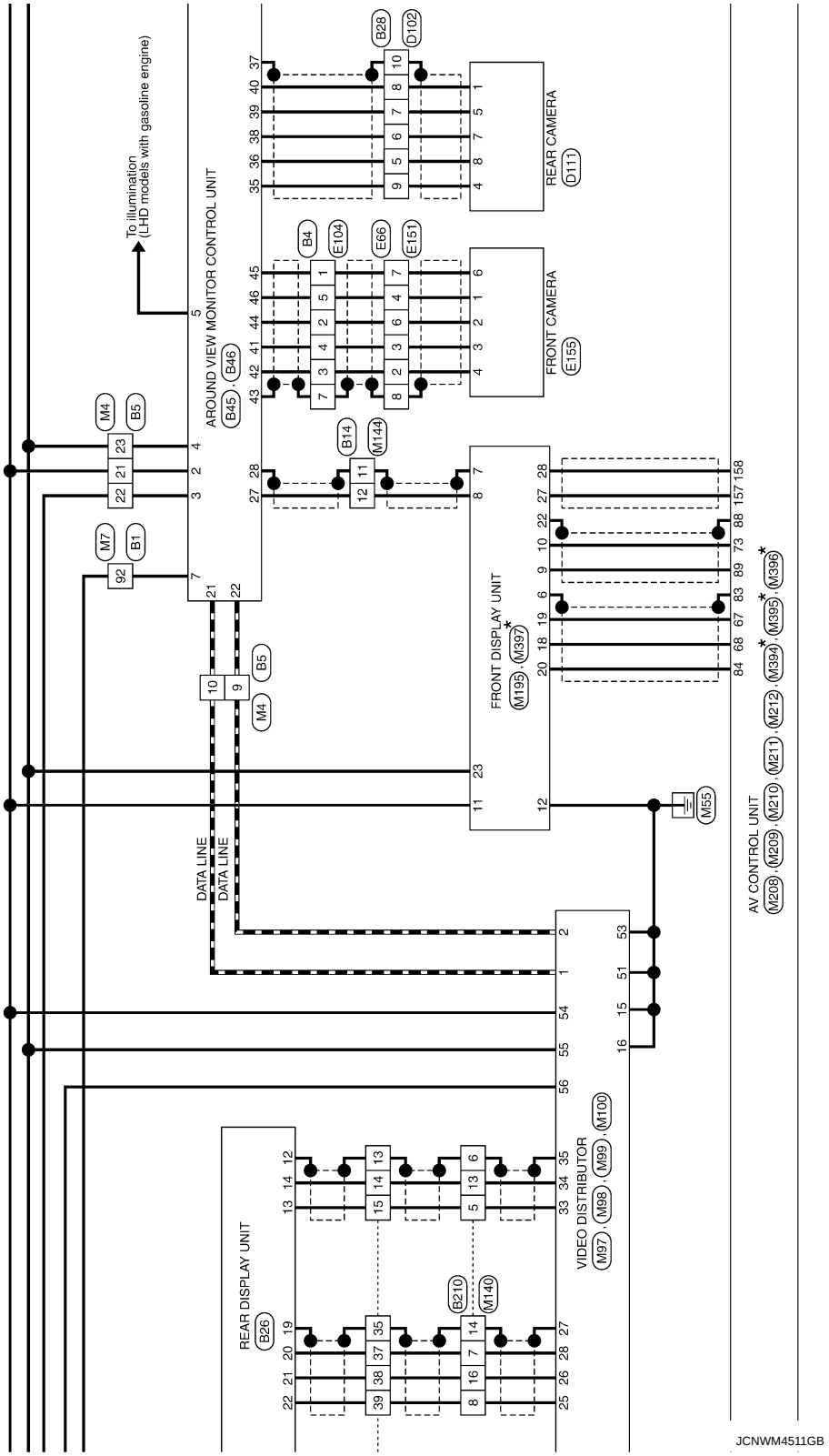
For connector terminal arrangements, harness layouts, and alphabets in a ⬭ (option abbreviation; if not described in wiring diagram), refer to GI-12, "Connector Information".

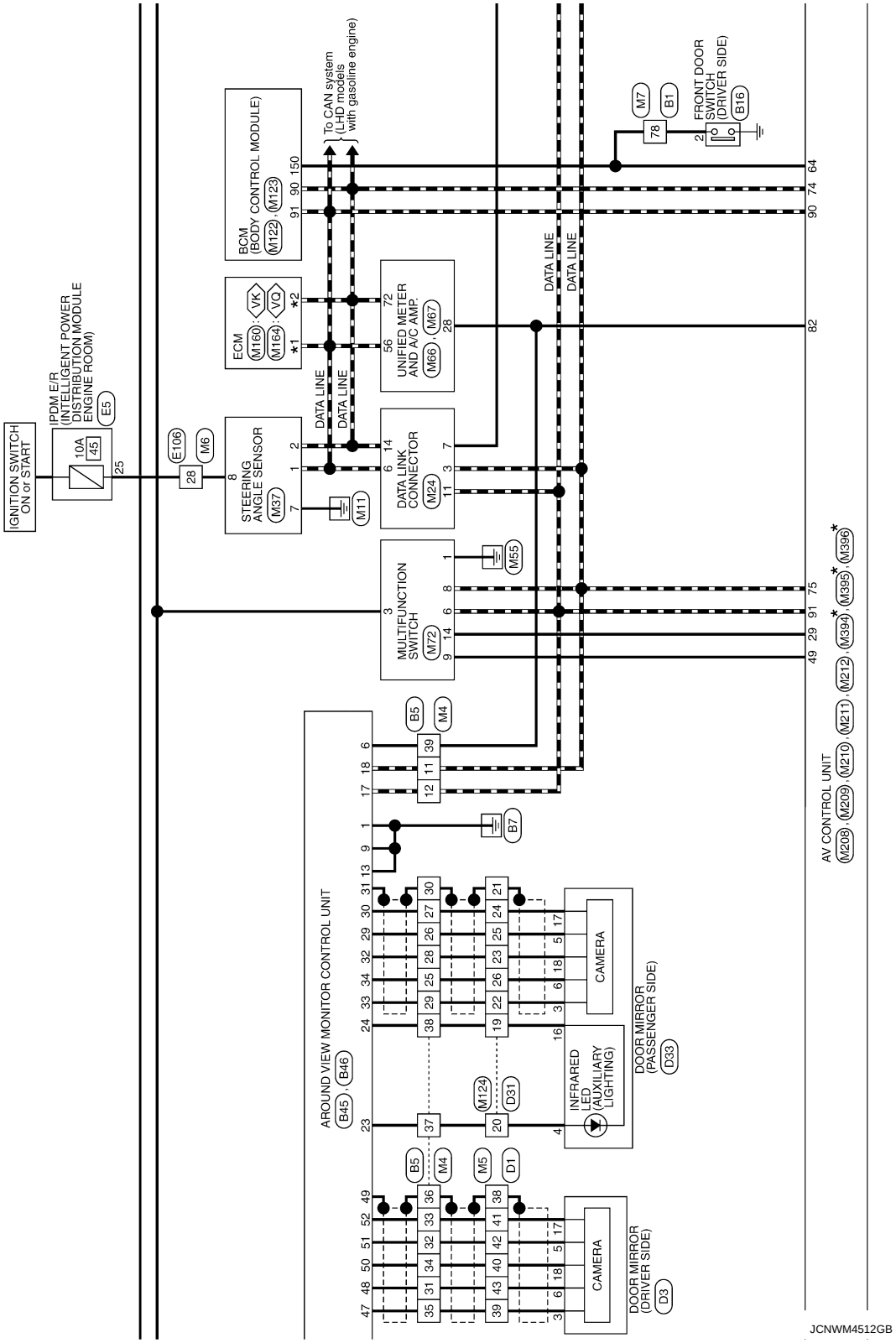
NOTE:

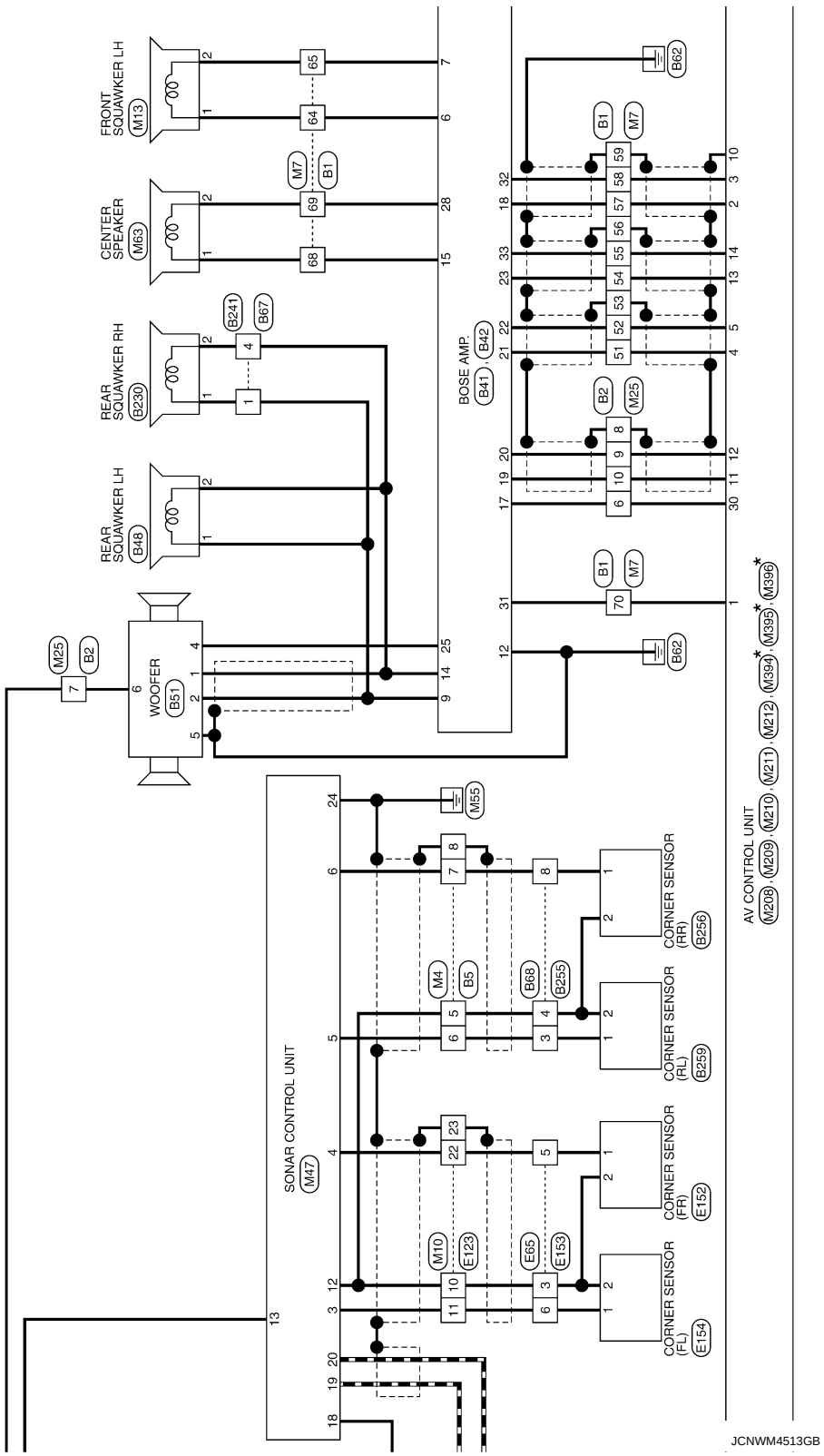
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

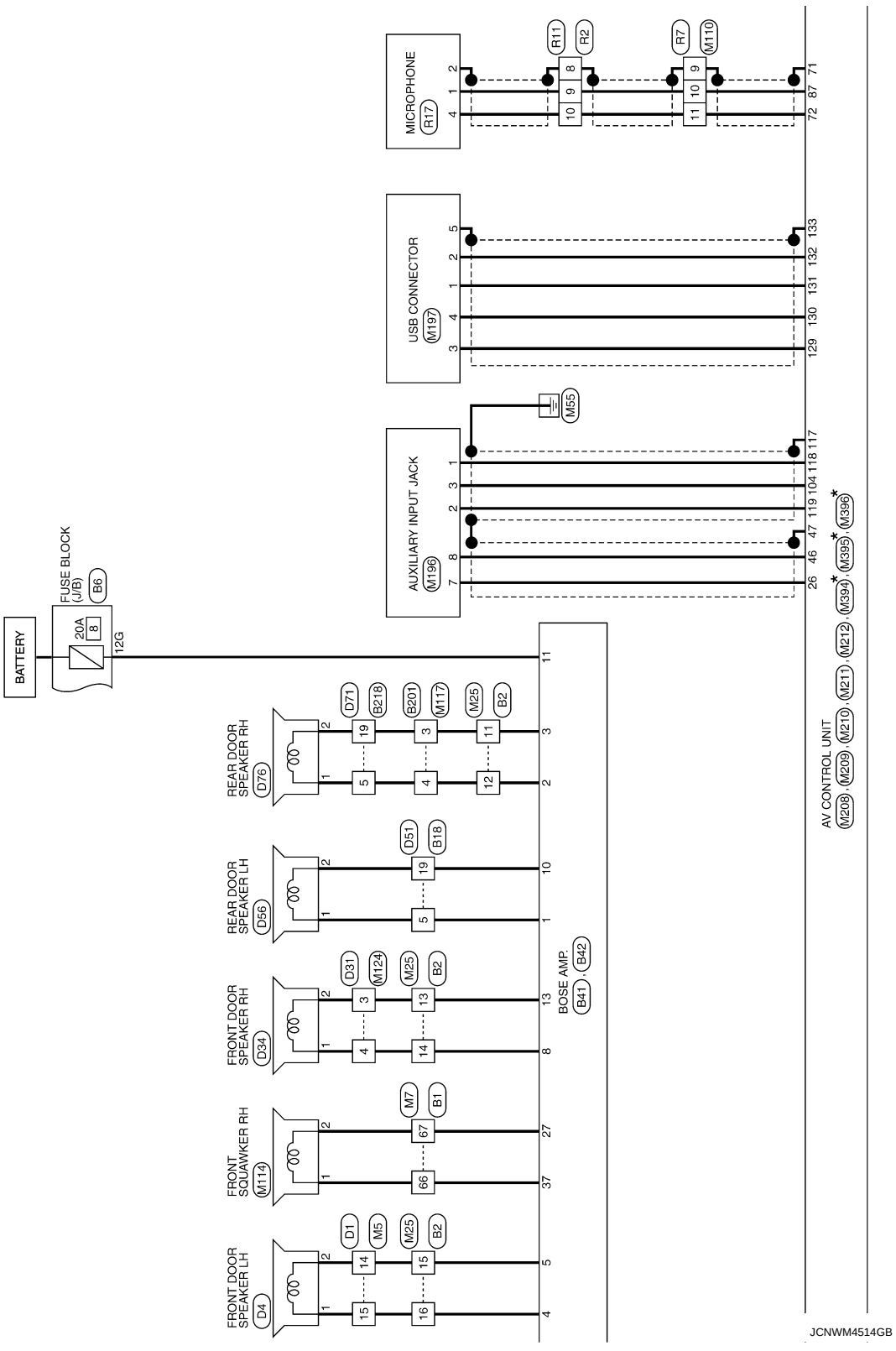
BOSE AUDIO WITH NAVIGATION AND AROUND VIEW MONITOR
(LHD MODELS WITH GASOLINE ENGINE AND TWIN MONITOR)

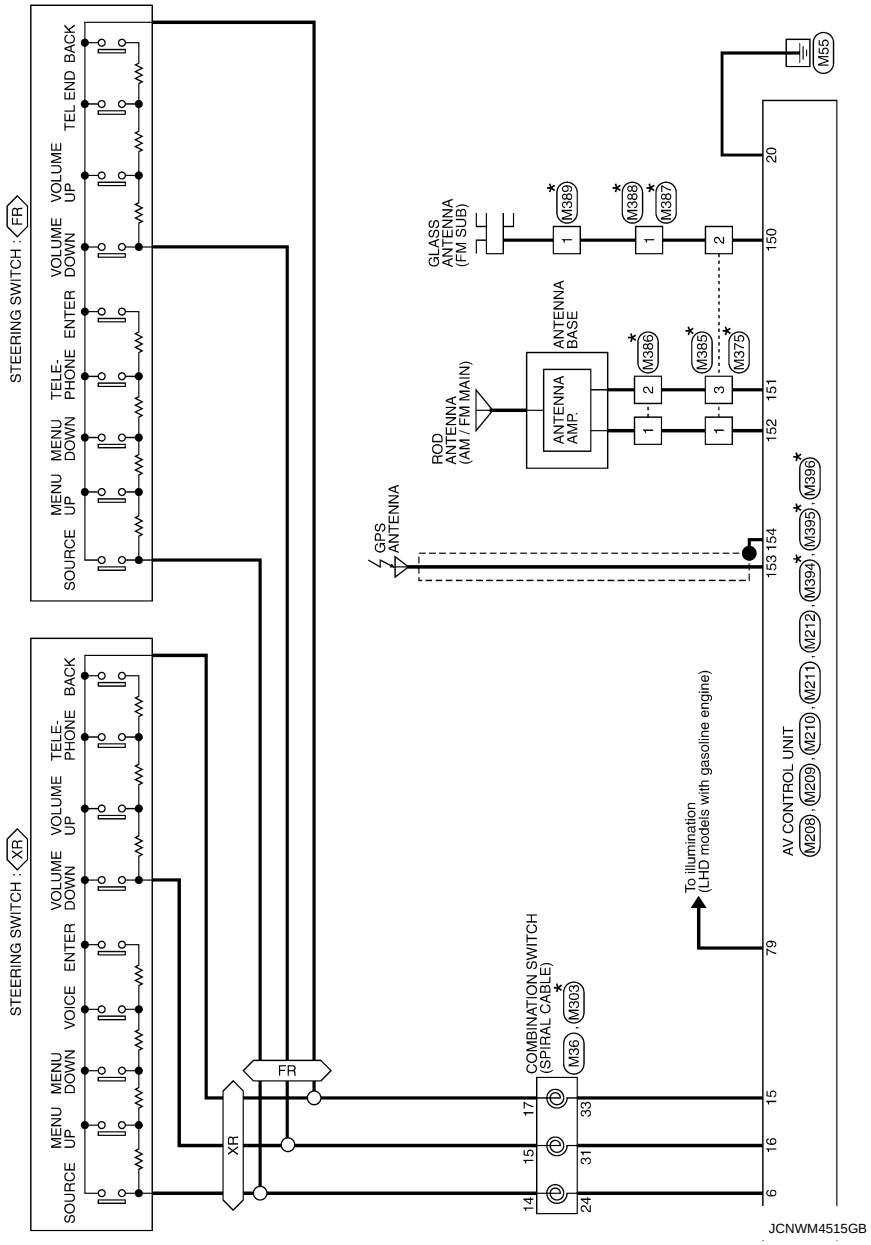



To illumination
(LHD models with gasoline engine)
AROUND VIEW MONITOR CONTROL UNIT
B45, B46
REAR CAMERA
D111
B28
D102
FRONT CAMERA
E155
B4
E104
E66
E151
FRONT DISPLAY UNIT
M195, M397
AV CONTROL UNIT
M208, M209, M210, M211, M212, M394, M395, M396
M55
DATA LINE
DATA LINE
VIDEO DISTRIBUTOR
M97, M98, M99, M100
REAR DISPLAY UNIT
B26
B210
M140
B14
M144
M4
B5
M7
B1
JCNWM4511GB


IGNITION SWITCH ON or START
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) E5
10A 45
25
E106
28
M6
8
STEERING ANGLE SENSOR M37
7
M11
DATA LINE
DATA LINE
ECM M160, M164
VK
VQ
*2
*1
BCM (BODY CONTROL MODULE) M122, M123
150 90 91
To CAN system (LHD models with gasoline engine)
UNIFIED METER AND A/C AMP. M66, M67
72 56 28
DATA LINK CONNECTOR M24
14 6 7 2 1 11 3
DATA LINE
DATA LINE
MULTIFUNCTION SWITCH M72
3 1 8 6 14 9
M55
M7
78
B1
2
FRONT DOOR SWITCH (DRIVER SIDE) B16
64 74 90
82
75 91 29 49
AV CONTROL UNIT M208, M209, M210, M211, M212, *M394, *M395, *M396
B5
M4
39 11 12
6 18 17
B7
1 9 13
AROUND VIEW MONITOR CONTROL UNIT B45, B46
30 27 24 21
31 30 29 26 25 28 23 22
32 29 34 25 33 26 38 19
24
CAMERA
DOOR MIRROR (PASSENGER SIDE) D33
INFRARED LED (AUXILIARY LIGHTING)
M124
D31
37 20
23 4
B5
M4
M5
D1
36 33 32 34 31 40 43 38 41 42 39 35
49 52 51 50 48 47
CAMERA
DOOR MIRROR (DRIVER SIDE) D3
JCNWM4512GB


FRONT SQUAWKER LH (M13)
CENTER SPEAKER (M63)
REAR SQUAWKER RH (B230)
REAR SQUAWKER LH (B48)
WOOFER (B51)
BOSE AMP (B41), (B42)
SONAR CONTROL UNIT (M47)
CORNER SENSOR (FL) (E154)
CORNER SENSOR (FR) (E152)
CORNER SENSOR (RL) (B259)
CORNER SENSOR (RR) (B256)
AV CONTROL UNIT (M208), (M209), (M210), (M211), (M212), (M394)*, (M395)*, (M396)*
JCNWM4513GB


BATTERY
FUSE BLOCK (J/B) B6
20A 8
12G
MICROPHONE R17
USB CONNECTOR M197
AUXILIARY INPUT JACK M196
M55
AV CONTROL UNIT M208, M209, M210, M211, M212, M394*, M395*, M396*
BOSE AMP. B41, B42
REAR DOOR SPEAKER RH D76
REAR DOOR SPEAKER LH D56
FRONT DOOR SPEAKER RH D34
FRONT SQUAWKER RH M114
FRONT DOOR SPEAKER LH D4
JCNWM4514GB


STEERING SWITCH : FR
SOURCE
MENU UP
MENU DOWN
TELE-PHONE
ENTER
VOLUME DOWN
VOLUME UP
TEL END
BACK
STEERING SWITCH : XR
VOICE
XR
FR
COMBINATION SWITCH (SPIRAL CABLE)
M36
M303
GLASS ANTENNA (FM SUB)
M389
M388
M387
ROD ANTENNA (AM / FM MAIN)
ANTENNA AMP.
ANTENNA BASE
M386
M385
M375
GPS ANTENNA
M396
M395
M394
M212
M211
M210
M209
M208
AV CONTROL UNIT
To illumination (LHD models with gasoline engine)
M55
JCNWM4515GB

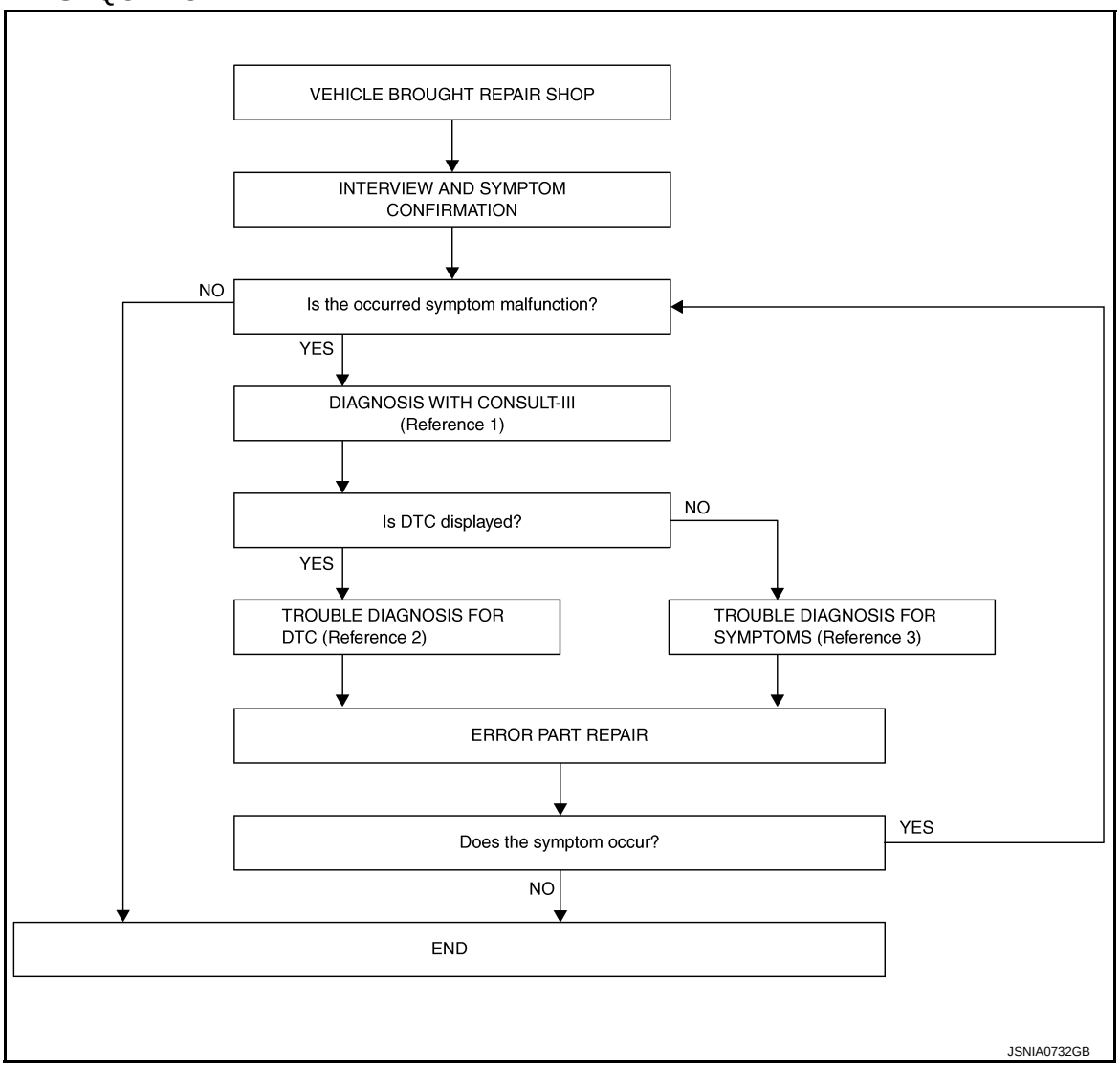
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow (Multi AV)

INFOID:0000000006071850

OVERALL SEQUENCE



- Reference 1··· Refer to AV-809, "CONSULT - III Function (MULTI AV)".
- Reference 2··· Refer to AV-825, "DTC Index".
- Reference 3··· Refer to AV-953, "Symptom Table".

DETAILED FLOW

1.INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.
NO >> INSPECTION END

2.DIAGNOSIS WITH CONSULT-III

1. Connect CONSULT-III and perform a self-diagnosis for “MULTI AV”. Refer to AV-809, "CONSULT - III Function (MULTI AV)".
   NOTE:
   Skip to step 4 of the diagnosis procedure if “MULTI AV” is not displayed.
2. Check if any DTC is displayed in the self-diagnosis results.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-825, "DTC Index".

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-953, "Symptom Table".

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “MULTI AV” with CONSULT-III.
   NOTE:
   Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

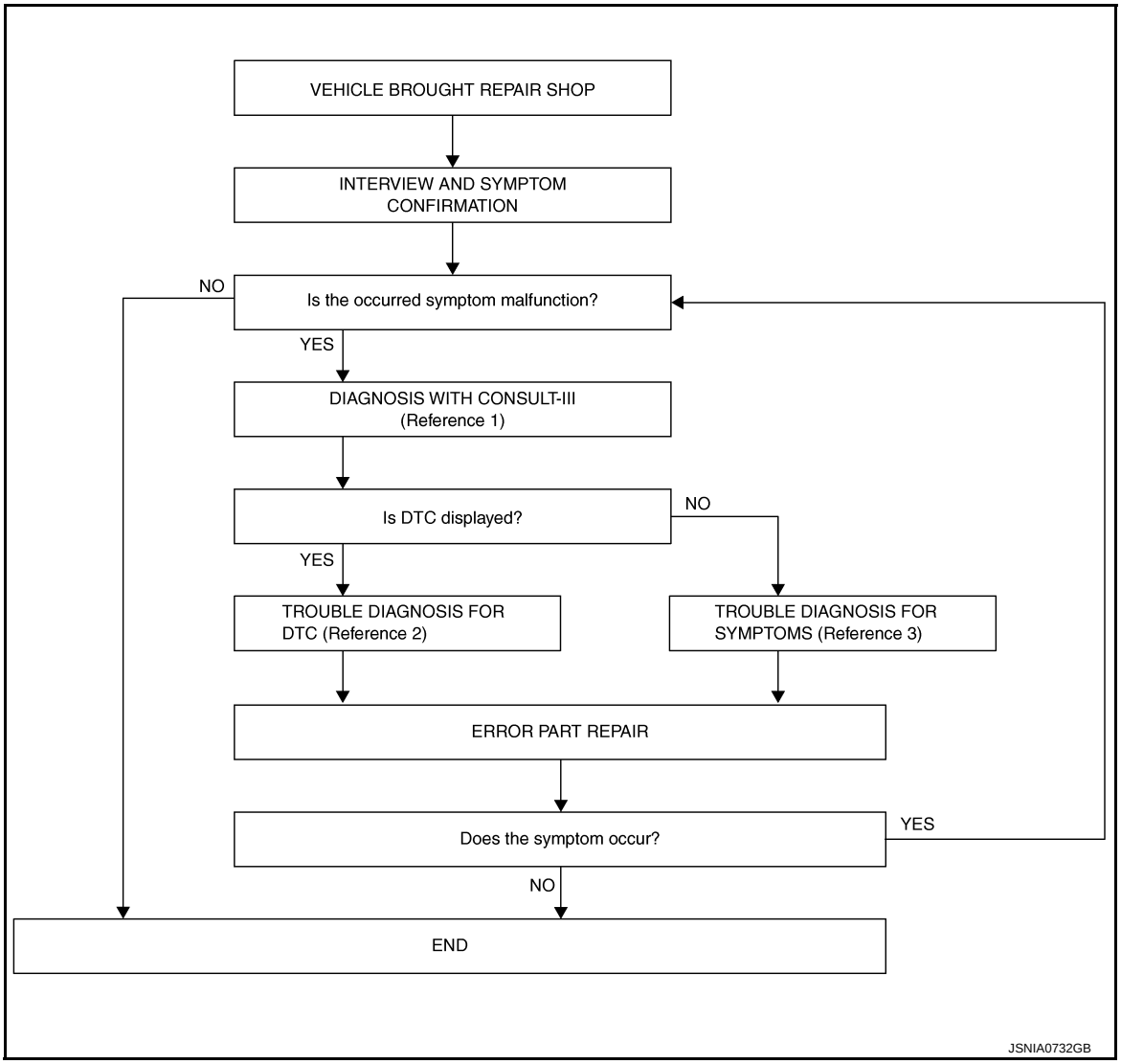
Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

Work Flow (Camera Assistance Sonar)

INFOID:0000000006071851

OVERALL SEQUENCE



- Reference 1··· Refer to AV-817, "CONSULT-III Function (SONAR)".
- Reference 2··· Refer to AV-847, "DTC Index".
- Reference 3··· Refer to AV-953, "Symptom Table".

DETAILED FLOW

1. INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.
NO >> INSPECTION END

2. DIAGNOSIS WITH CONSULT-III

1. Connect CONSULT-III and perform a self-diagnosis for “SONAR”. Refer to AV-817, "CONSULT-III Function (SONAR)".
   NOTE:
   Skip to step 4 of the diagnosis procedure if “SONAR” is not displayed.

2. Check if any DTC is displayed in the self-diagnosis results.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-847, "DTC Index".

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-953, "Symptom Table".

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “SONAR” with CONSULT-III.
   NOTE:
   Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description

INFOID:0000000006080758

BEFORE REPLACEMENT

When replacing AV control unit, save or print current vehicle specification with CONSULT-III configuration before replacement.

AFTER REPLACEMENT

CAUTION:

When replacing AV control unit, you must perform “WRITE CONFIGURATION” with CONSULT-III.

- **Complete the procedure of “WRITE CONFIGURATION” in order.**
- **If you set incorrect “WRITE CONFIGURATION”, incidents might occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Special Repair Requirement

INFOID:0000000006080759

1. SAVING VEHICLE SPECIFICATION

-CONSULT-III Configuration

Perform “READ CONFIGURATION” to save or print current vehicle specification. Refer to AV-859, "CONFIGURATION (AV CONTROL UNIT) : Description".

NOTE:

If “READ CONFIGURATION” can not be used, use the “WRITE CONFIGURATION - Manual selection”.

>> GO TO 2.

2. REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to AV-965, "Exploded View".

>> GO TO 3.

3. WRITING VEHICLE SPECIFICATION

-CONSULT-III Configuration

Perform “WRITE CONFIGURATION - Config file” or “WRITE CONFIGURATION - Manual selection” to write vehicle specification. Refer to AV-860, "CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement".

>> GO TO 4.

4. OPERATION CHECK

Check that the operation of the AV control unit and camera images (fixed guide lines and predictive course lines) are normal.

>> WORK END

CONFIGURATION (AV CONTROL UNIT)

CONFIGURATION (AV CONTROL UNIT) : Description

INFOID:0000000006080760

- Since vehicle specifications are not included in the AV control unit after replacement, it is required to write vehicle specifications with CONSULT-III.
- Configuration has three functions as follows.

Function	Description
READ CONFIGURATION	• Reads the vehicle configuration of current AV control unit. • Saves the read vehicle configuration.
WRITE CONFIGURATION-Manual selection	Writes the vehicle configuration with manual selection.
WRITE CONFIGURATION-Config file	Writes the vehicle configuration with saved data.

CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement

INFOID:0000000006080761

NOTE:
If “WRITE CONFIGURATION” is unsuccessful, perform “Accessory Number Initialization”. For details, refer to AV-799, "On Board Diagnosis Function".
After performing “Accessory Number Initialization”, reboot the AV control unit to perform “WRITE CONFIGURATION”.

1. WRITING MODE SELECTION

CONSULT-III Configuration
Select “CONFIGURATION” of “MULTI AV”.

When writing saved data>>GO TO 2.
When writing manually>>GO TO 3.

2. PERFORM “WRITE CONFIGURATION-CONFIG FILE”

CONSULT-III Configuration
Perform “WRITE CONFIGURATION-Config file”.

>> WORK END

3. PERFORM “WRITE CONFIGURATION-MANUAL SELECTION”

CONSULT-III Configuration
Select “WRITE CONFIGURATION-Manual selection” to write vehicle specifications into the AV control unit. For data to write, refer to AV-860, "CONFIGURATION (AV CONTROL UNIT) : Configuration List".

>> GO TO 4.

4. OPERATION CHECK

Check that the operation of the AV control unit and camera images (fixed guide lines and predictive course lines) are normal.

>> WORK END

CONFIGURATION (AV CONTROL UNIT) : Configuration List

INFOID:0000000006080762

CAUTION:
Check vehicle specifications before servicing.

MANUAL SETTING ITEM	
Items	Setting value
STEERING	LHD
	RHD
CAMERA SYSTEM	NONE/AVM
	REAR CAMERA
	REAR+SIDE
SOUND SYSTEM	BASE
	BOSE

NOTE:
AVM: Around view monitor

PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT

PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Description

INFOID:0000000006080763

Adjust the center position of the predictive course line of the rear view monitor if it is shifted.

PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Special Repair Requirement

INFOID:0000000006080764

1. DRIVING

Drive the vehicle straight ahead 100 m (328.1 ft) or more at a speed of 30 km/h (18.6 MPH) or more.

>> END

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Description

INFOID:0000000006080765

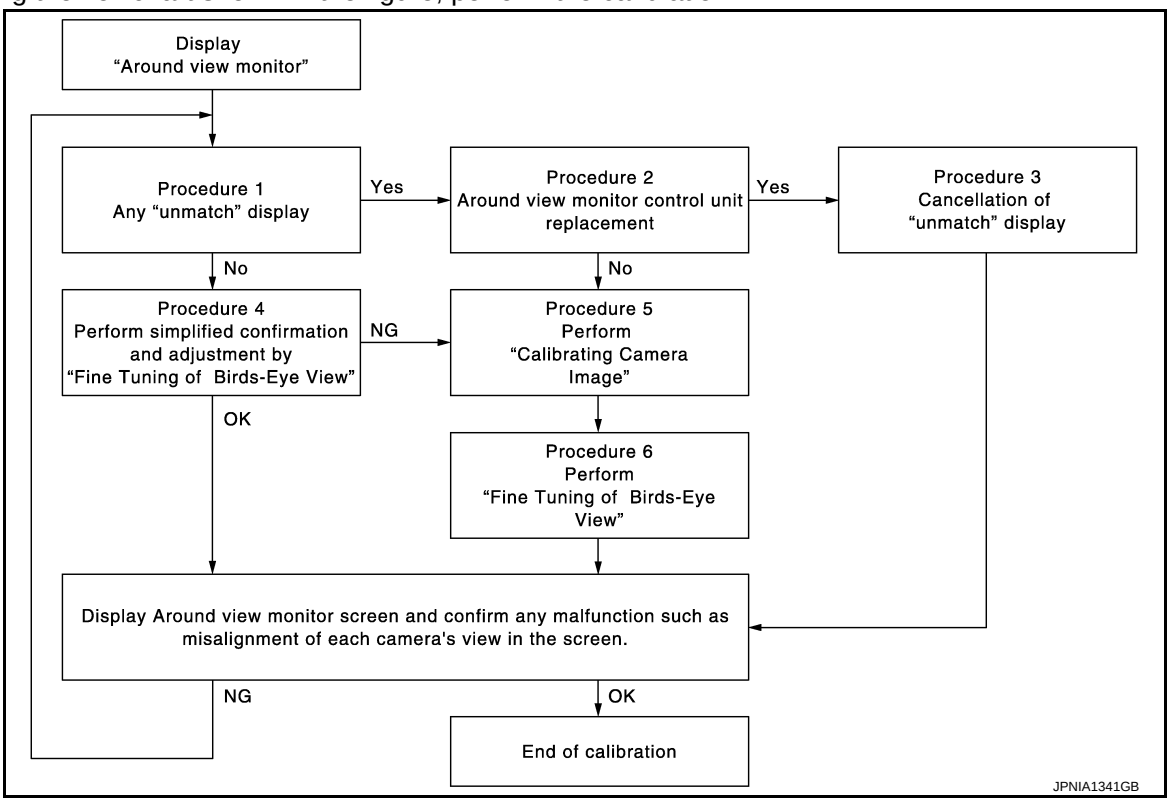
- Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.
- Align the white lines on the road near the vehicle at the boundary of each camera image by this camera calibration. The white lines far from the vehicle may not be aligned at the boundary of each camera image. The farther the line, the greater the difference is.

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement

INFOID:0000000006080766

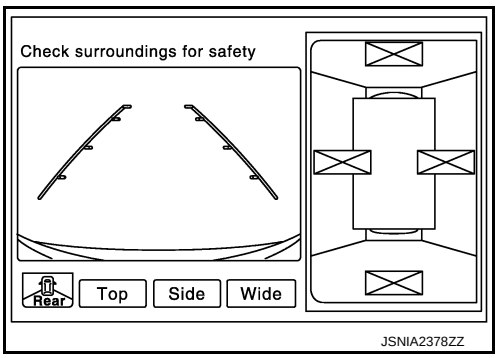
Calibration flowchart

Following the flowchart shown in the figure, perform the calibration.



NOTE:

In the un-match display, the un-match camera position is indicated as "⊠" on the birds-eye view.



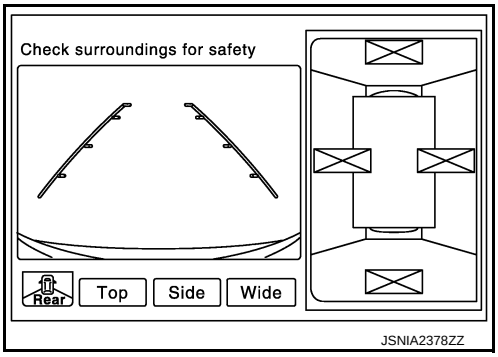
Calibration procedure

1.AROUND VIEW MONITOR SCREEN CONFIRMATION

Check that there is the un-match display in any camera.

Is the un-match display visible?

YES >> GO TO 2.
NO >> GO TO 4.



2.CHECK THAT AROUND VIEW MONITOR CONTROL UNIT IS REPLACED

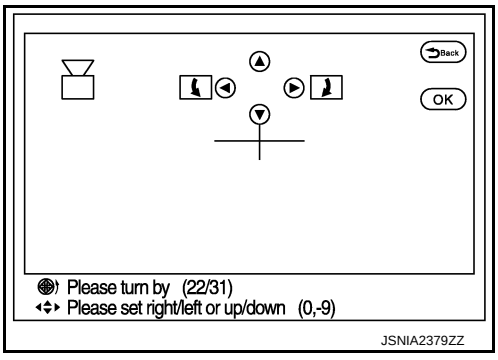
Check that the around view monitor control unit is replaced.

Is the around view monitor control unit replaced?

YES >> GO TO 3.
NO >> GO TO 5.

3.RELEASE UN-MATCH DISPLAY (PERFORM ONLY WHEN THE AROUND VIEW MONITOR CONTROL UNIT IS REPLACED)

1. Select "Camera Cont." of Confirmation/ Adjustment mode, and then set to "Calibrating Camera Image" mode.
2. Press the "ENTER" switch of the multifunction switch on each screen of "Rear Camera", "Front Camera", "Dr-Side Camera", "Pass-Side Camera".
   CAUTION:
   - **Do never operate the center dial and up/down/left/right switches. Only press the "ENTER" switch.**
   - **Never perform "Initialize Camera Image Calibration".**
3. Display the around view monitor screen, and check that there is no malfunction such as a difference between each camera image.



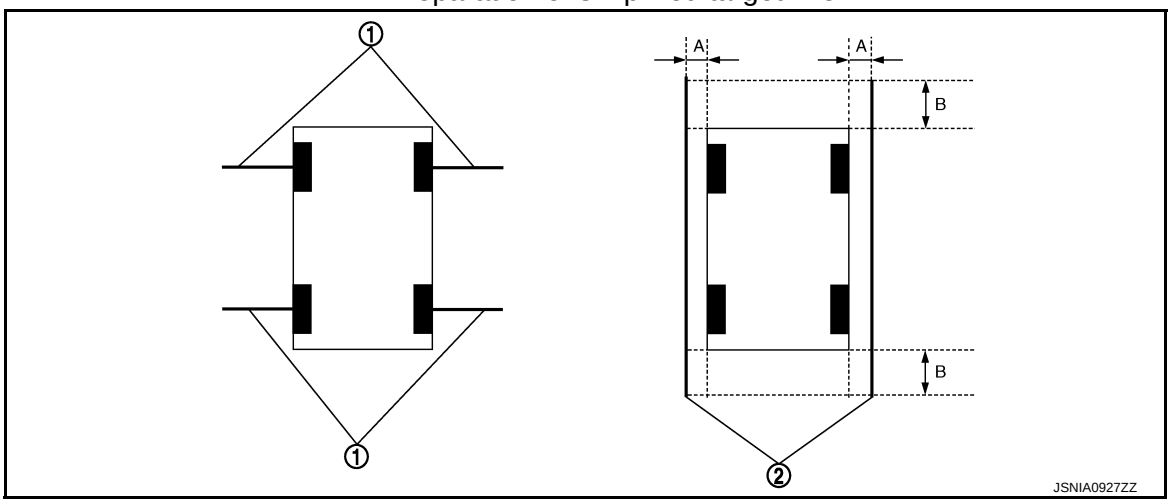
Is there a malfunction?

YES >> Calibration end
NO >> GO TO 1.

4.PERFORM SIMPLIFIED CONFIRMATION/ADJUSTMENT BY "FINE TUNING OF BIRDS-EYE VIEW"

1. Put target line 1 on the ground beside each axle using packing tape, etc.
2. Put target lines 2 equal to the vehicle total length + approximately 1.0 m (39.3 in) from the vehicle side (right and left) at approximately 30 cm (11.8 in) away from the vehicle (make the line as parallel with the vehicle as possible)

Preparation of simplified target line



1. Target lines 1
2. Target lines 2
A. Approx. 30 cm (11.8 in)
B. Approx. 1.0 m (39.3 in)

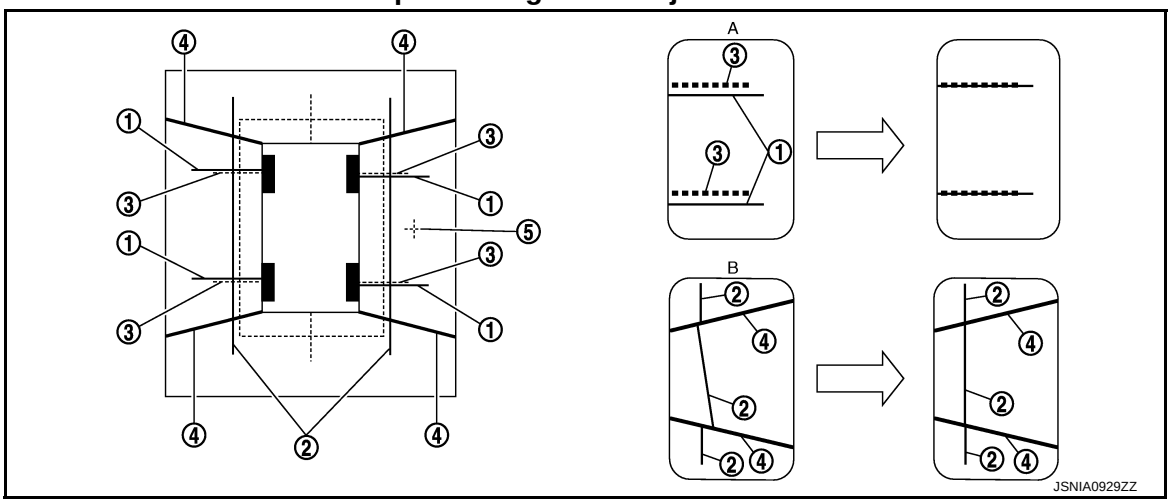
3. Select “Camera Cont.” of Confirmation/ Adjustment mode, and then set to “Fine Tuning of Birds-Eye View” mode.
4. Select left and right cameras by pressing the “CAMERA” switch, and perform the following confirmation.

- Check that target line 1 is aligned with the marker on the screen. Overlap the line aligned to the marker with the upper/lower switches if necessary.
- Check if there is a difference between target lines 2 between cameras. Adjust target lines 2 to be straight lines by operating the center dial and left/right switches if necessary.

CAUTION:

- **Never adjust the front camera and rear camera. Only adjust the right and left cameras.**
- **Operate the center dial slowly because the changing of the screen takes approximately 1 second.**

Simplified target line adjustment method



1. Target lines 1
2. Target lines 2
3. Marker for target line 1
4. Boundary between cameras
5. Crosshairs cursor (mark indicated the selected camera)
A. Adjustment method for target lines 1 (right)
B. Adjustment method for target lines 2 (right)

5. Adjust left and right cameras. Check that the difference between target line 1 and the marker on the screen, and between target lines 2 is solved.

NOTE:

- It can be initialized to the NISSAN factory default condition with “Initialize Camera Image Calibration” of “Calibrating Camera Image”.

• The adjustment value is cancelled on this mode by performing “Initialize Camera Image Calibration”.

Is the difference corrected?

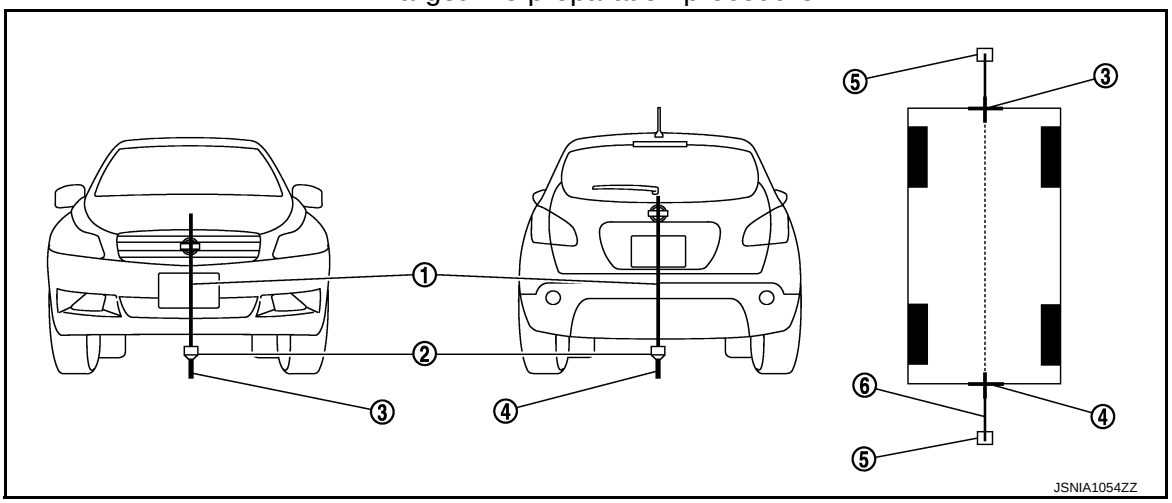
YES >> Finish the writing to around view monitor control unit by pressing “ENTER” switch.
NO >> GO TO 5.

5. PERFORM “CALIBRATING CAMERA IMAGE”

Preparation of target line

1. Hang a string with a weight as shown in the figure. Put the points FM0, RM0 (mark) on the ground at the center of the vehicle front end and rear end with white packing tape or a pen.
2. Route the vinyl string under the vehicle, and then pull and fix it on the point approximately 1.0 m (39.9 in) to the front and rear of the vehicle through the points FM0 and RM0 using packing tape.

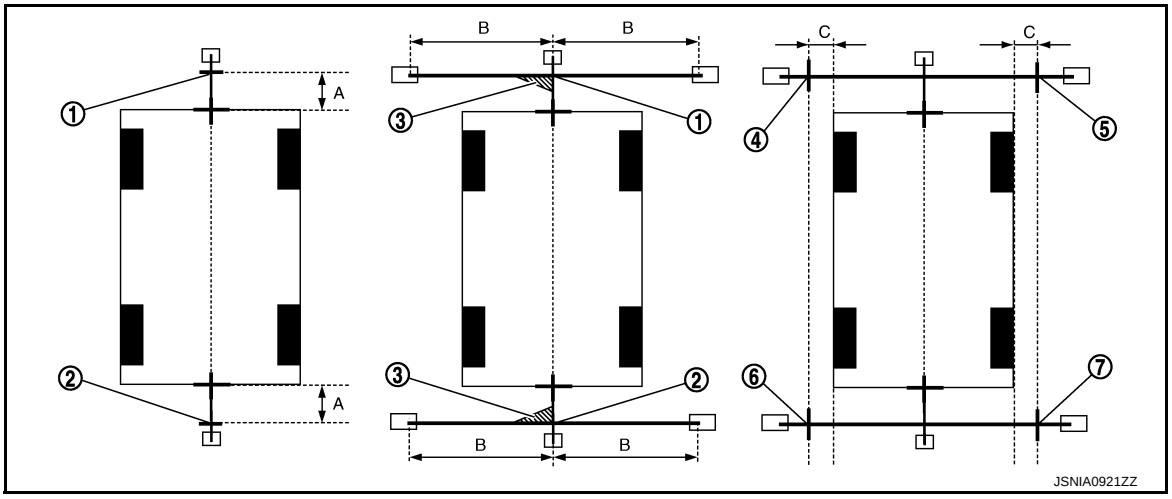
Target line preparation procedure 1



1. Thread
2. Weight
3. Point FM0 (mark)
4. Point RM0 (mark)
5. Packing tape (to fix the vinyl string)
6. Vinyl string

3. Put the points FM and RM (mark) 75 cm (29.5 in) from the points FM0 and RM0 individually.
4. Route the vinyl string through the points FM and RM using a triangle scale, and then fix it at approximately 1.5 m (59 in) on both sides with packing tape.
5. Put the points FL, FR, RL, and RR (mark) to both right and left [vehicle width / 2 + 30 cm (11.8 in)] from the points FM and RM.

Target line preparation procedure 2



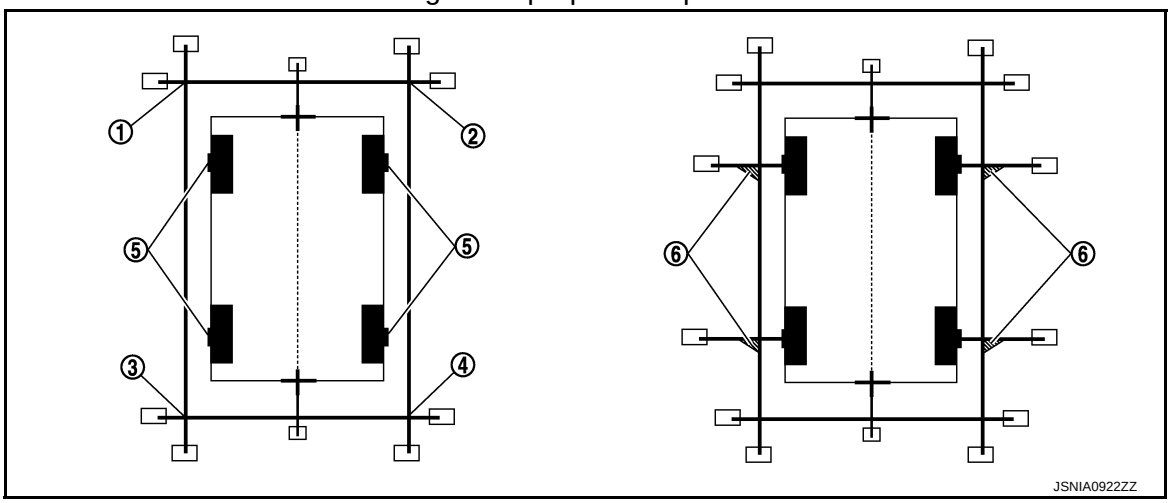
1. Point FM
2. Point RM
3. Triangle scale
4. Point FL (mark)
5. Point FR (mark)
6. Point RL (mark)

7. Point RR (mark)

A. 75 cm (29.5 in) B. Approx. 1.5 m (59 in) C. 30 cm (11.8 in) [Vehicle width/ 2 + 30 cm (11.8 in) from the points FM and RM]

6. Draw the lines of the points FL – RL and FR – RR with vinyl string, and fix it with packing tape.
7. Put a mark on the center of each axle, draw vertical lines to the lines of the points FL – RL and FR – RR from the marks on the center of the axle using a triangle scale, and then fix the lines using packing tape.

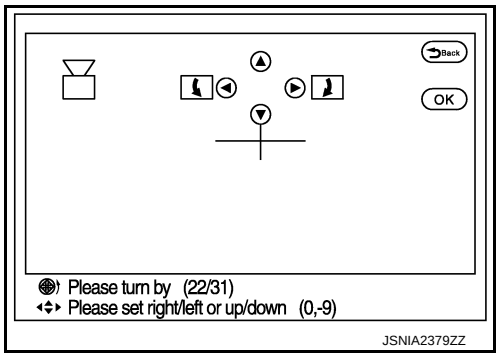
Target line preparation procedure 3



1. Point FL 2. Point FR 3. Point RL
4. Point RR 5. Center position of axle 6. Triangle scale

Perform “Calibrating Camera Image”

1. Select “Camera Cont.” of “Confirmation/ Adjustment” mode, and then set to “Calibrating Camera Image” mode.
2. Overlap the target lines drawn on the ground with the calibration marker on the screen by operating the center dial and upper/ lower/left/right switches of multifunction switch on each screen of “Rear Camera”, “Pass-Side Camera”, “Front Camera”, “Dr-Side Camera”.



Adjustment range	
Rotation direction (Center dial)	: 31 patterns (16 on the center)
Upper/lower direction (upper/lower switch)	: –99 – 99
Left/right direction (left/right switch)	: –99 – 99

3. “Writing...” is displayed by pressing the “ENTER” switch, and then the adjustment result is written to the around view monitor control unit.
   CAUTION:
   Check that “Writing...” is displayed. Do never perform other operations while “Writing...” is displayed.

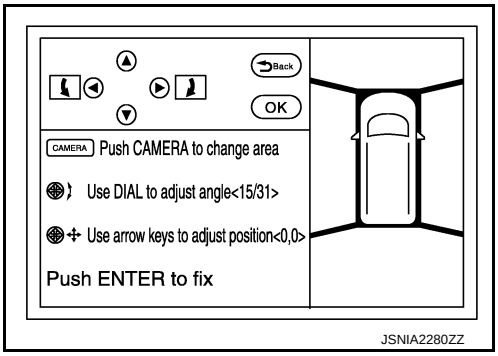
>> GO TO 6.

6. PERFORM “FINE TUNING OF BIRDS-EYE VIEW”

This mode is designed to align the boundary between each camera image that could not be aligned in the “Calibrating Camera Image” mode.

1. Select “Camera Cont.” of “Confirmation/ Adjustment” mode, and then set to “Fine Tuning of Birds-Eye View” mode.

2. Operate the center dial and upper/lower/left/right switch to overlap the marker on the screen and the target lines on the ground.
NOTE:
Move the “+”- mark on the camera position to adjustment by pressing the “CAMERA” switch.
3. When the target line is overlapped on the marker, press the “ENTER” switch to write the adjustment result to the around view monitor control unit.
CAUTION:
Check that “Writing...” is displayed. Do never perform other operations while “Writing...” is displayed.
NOTE:



- It can be initialized to the NISSAN factory default condition with “Initialize Camera Image Calibration” of “Calibrating Camera Image”.
- The adjustment value is cancelled on this mode by performing “Initialize Camera Image Calibration”.

>> Calibration end

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:0000000006080873

CAN (Controller Area Network) is a serial communication line for real-time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-39, "CAN Communication Signal Chart".

DTC Logic

INFOID:0000000006080874

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Probable malfunction location
U1000	CAN COMM CIRCUIT [U1000]	AV control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

Diagnosis Procedure

INFOID:0000000006080875

1.PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of “MULTI AV”.

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to LAN-29, "Trouble Diagnosis Procedure".
NO >> Refer to GI-34, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

DTC Logic

INFOID:0000000006080877

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Probable malfunction factor
U1010	CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1200 AV CONTROL UNIT

DTC Logic

INFOID:0000000006080879

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1200	Cont Unit [U1200]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1201 AV CONTROL UNIT

DTC Logic

INFOID:0000000006080881

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1201	GYRO NO CONN [U1201]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1202 AV CONTROL UNIT

DTC Logic

INFOID:0000000006080883

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1202	G-SENSOR NO CONN [U1202]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1204 AV CONTROL UNIT

Description

INFOID:0000000006080884

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, navigation, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • The RGB digital image signal and composite image signal are output to front display unit. • Amp. ON signal, sound signal and mode change signal transmitted to BOSE amp. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000006080885

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1204	GPS CONN [U1204]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000006080886

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-965, "Exploded View".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1205 AV CONTROL UNIT

Description

INFOID:0000000006089169

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, navigation, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • The RGB digital image signal and composite image signal are output to front display unit. • Amp. ON signal, sound signal and mode change signal transmitted to BOSE amp. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000006080888

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1205	GPS ROM [U1205]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000006080889

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer toAV-965, "Exploded View".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1206 AV CONTROL UNIT

Description

INFOID:0000000006103523

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, navigation, USB connection, DVD play and vehicle information functions. • It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function. • It inputs the illumination signals that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • The RGB digital image signal and composite image signal are output to front display unit. • Amp. ON signal, sound signal and mode change signal transmitted to BOSE amp. • Update of map data is performed with the DVD-ROM.

DTC Logic

INFOID:0000000006080891

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1206	GPS RAM [U1206]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000006080892

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-965, "Exploded View".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1207 AV CONTROL UNIT

DTC Logic

INFOID:0000000006080894

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1207	GPS RTC [U1207]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000006080895

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-965, "Exploded View".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1216 AV CONTROL UNIT

DTC Logic

INFOID:0000000006080897

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1216	CAN CONT [U1216]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1217 AV CONTROL UNIT

DTC Logic

INFOID:0000000006080899

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1217	BLUETOOTH MODULE [U1217]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1218 AV CONTROL UNIT

DTC Logic

INFOID:0000000006080901

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1218	HDD CONN [U1218]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000006080902

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

U1219 AV CONTROL UNIT

DTC Logic

INFOID:0000000006080904

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1219	HDD READ [U1219]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000006080905

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

U121A AV CONTROL UNIT

DTC Logic

INFOID:0000000006080907

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121A	HDD WRITE [U121A]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000006080908

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

U121B AV CONTROL UNIT

DTC Logic

INFOID:0000000006080910

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121B	HDD COMM [U121B]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000006080911

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

U121C AV CONTROL UNIT

DTC Logic

INFOID:0000000006080913

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121C	HDD ACCESS [U121C]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000006080914

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

U121D AV CONTROL UNIT

DTC Logic

INFOID:0000000006080916

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121D	DSP CONN [U121D]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000006080917

1.CHECK PLAYBACK OF A DISK (CD)

Can a disk (CD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

U121E AV CONTROL UNIT

DTC Logic

INFOID:0000000006080919

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U121E	DSP COMM [U121E]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000006080920

1.CHECK PLAYBACK OF A DISK (CD)

Can a disk (CD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

U1225 AV CONTROL UNIT

DTC Logic

INFOID:0000000006080922

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1225	USB CONTROLLER [U1225]	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.

U1227 AV CONTROL UNIT

DTC Logic

INFOID:0000000006080924

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1227	DVD COMM [U1227]	AV control unit malfunction is detected.	• If DVD can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly.

Diagnosis Procedure

INFOID:0000000006080925

1.CHECK PLAYBACK OF A DISK (DVD)

Can a disc (DVD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

U1228 AV CONTROL UNIT

DTC Logic

INFOID:0000000006080927

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1228	SUB CPU CONN [U1228]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1229 AV CONTROL UNIT

DTC Logic

INFOID:0000000006080929

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1229	iPod CERTIFICATION [U1229]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U122A AV CONTROL UNIT

DTC Logic

INFOID:0000000006080931

DTC	Display contents of CONSULT-III	DTC detection condition	Action to take
U122A	CONFIG UNFINISH [U122A]	The writing of configuration data is incomplete.	Write configuration data with CONSULT-III.

Diagnosis Procedure

INFOID:0000000006080932

1.PERFORM THE SELF-DIAGNOSIS

When U122A is detected, write configuration data with CONSULT-III.

>> Write configuration data with CONSULT-III. Refer to AV-860, "CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement".

U122E AV CONTROL UNIT

DTC Logic

INFOID:0000000006080934

DTC DETECTION LOGIC

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U122E	Built-in AUDIO CONN [U122E]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

U1232 STEERING ANGLE SENSOR

DTC Logic

INFOID:0000000006080936

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1232	ST ANGLE SEN CALIB [1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.

Diagnosis Procedure

INFOID:0000000006080937

1.ADJUST THE PREDICTIVE COURSE LINE CENTER POSITION OF THE STEERING ANGLE SENSOR

When U1232 is detected, adjust the predictive course line center position of the steering angle sensor.

>> Adjusts the steering angle sensor neutral position on ABS actuator and electrical unit (control unit) side. Refer to BRC-11, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement".

U1243 FRONT DISPLAY UNIT

DTC Logic

INFOID:0000000006080939

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1243	FRONT DISP CONN [U1243]	When either one of the following items are detected: • front display unit power supply and ground circuit malfunction is detected. • communication circuit between AV control unit and front display unit.	• Front display unit power supply and ground circuit. • Communication circuit between AV control unit and front display unit.

Diagnosis Procedure

INFOID:0000000006080940

1.CHECK FRONT DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check front display unit power supply and ground circuit. Refer to AV-908, "FRONT DISPLAY UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector and AV control unit harness connector.

Front display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M195	9	M210	89	Existed
	10		73	

4. Check continuity between front display unit harness connector and ground.

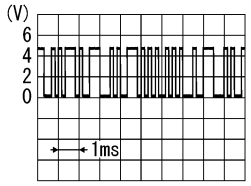
Front display unit		Ground	Continuity
Connector	Terminals		
M195	9		Not existed
	10		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK COMMUNICATION SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector and ground.

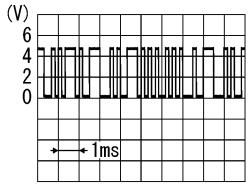
(+)		(–)	Condition	Reference value
Front display unit				
Connector	Terminal			
M195	9	Ground	When adjusting display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

4. CHECK COMMUNICATION SIGNAL

Check signal between front display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Front display unit				
Connector	Terminal			
M195	10	Ground	When adjusting display brightness.	 PKIB5039J

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace front display unit. Refer to AV-967, "Exploded View".

U1244 GPS ANTENNA

DTC Logic

INFOID:0000000006080942

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1244	GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.

Diagnosis Procedure

INFOID:0000000006080943

1.GPS ANTENNA CHECK

Visually check GPS antenna and antenna feeder.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Disconnect GPS antenna connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit and ground.

(+)	(–)	Voltage (Approx.)
AV control unit		
Terminal		
153	Ground	5.0 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

U1247 REAR DISPLAY UNIT

DTC Logic

INFOID:0000000006071910

DTC	Display contents of CONSULT-III	DTC Detection Condition	Possible causes
U1247	REAR DISP CONN [U1247]	When either one of the following items is detected: • rear display unit power supply and ground circuits are malfunctioning. • serial communication circuits between video distributor and rear display unit are malfunctioning.	• Rear display unit power supply and ground circuits. • Serial communication circuits between AV control unit and rear display unit.

Diagnosis Procedure

INFOID:0000000006071911

1.CHECK REAR DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check rear display unit power supply and ground circuits. Refer to AV-909, "REAR DISPLAY UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY SERIAL COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector and video distributor connector.
3. Check continuity between rear display unit harness connector and video distributor harness connector.

Rear display unit		Video distributor		Continuity
Connector	Terminals	Connector	Terminals	
B26	9	M97	39	Existed
	10		40	

4. Check continuity between rear display unit harness connector and ground.

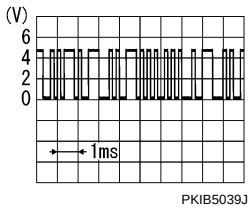
Rear display unit		Ground	Continuity
Connector	Terminals		
B26	9		Not existed
	10		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK SERIAL COMMUNICATION SIGNAL

1. Connect rear display unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector and ground.

(+)		(–)	Condition		Reference value
Rear display unit					
Connector	Terminal				
B26	9	Ground	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear displayed.	

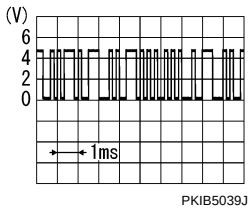
PKIB5039J

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace rear display unit.

4. CHECK SERIAL COMMUNICATION SIGNAL

Check signal between rear display unit harness connector and ground.

(+)		(–)	Condition		Reference value
Rear display unit					
Connector	Terminal				
B26	10	Ground	Ignition switch ON	Rear seat remote controller operation when AUX or DVD image is displayed on rear displayed.	

PKIB5039J

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace video distributor.

U1263 USB

DTC Logic

INFOID:0000000006071914

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1263	USB OVERCURRENT [U1263]	Detection of overcurrent in USB connector.	Check USB harness between the AV control unit and USB connector.

Diagnosis Procedure

INFOID:0000000006071915

1.CHECK USB HARNESS

Visually check USB harness.

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-965, "Exploded View".
NO >> Replace USB harness.

U1300 AV COMM CIRCUIT

Description

INFOID:0000000006071916

U1300 is indicated when malfunction occurs in communication signal of multi AV system. Indicated simultaneously, without fail, with the malfunction of control units connected to AV control unit with communication line. Determine the possible malfunction cause from the table below.

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
U1300 U125B	• AV COMM CIRCUIT [U1300] • AROUND CAMERA CONN [U125B]	around view monitor control unit power supply and ground circuits are malfunctioning.	Around view monitor control unit power supply and ground circuits.
U1300 U125C	• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • AV communication circuits between AV control unit and sonar control unit.
U1300 U1246 U1247	• AV COMM CIRCUIT [U1300] • VIDEO DIST CONN [U1246] • REAR DISP CONN [U1247]	When either one of the following items are detected: • video distributor power supply and ground circuits are malfunctioning. • AV communication circuits between around view monitor control unit and video distributor are malfunctioning.	• Video distributor power supply and ground circuits. • AV communication circuits between around view monitor control unit and video distributor.
U1300 U1246 U1247 U125B	• AV COMM CIRVUIT [U1300] • VIDEO DIST CONN [U1246] • REAR DISP CONN [1247] • AROUND CAMERA CONN [U125B]	AV communication circuits between AV control unit and around view monitor control unit are malfunctioning.	AV communication circuits between AV control unit and around view monitor control unit.
U1300 U1240 U1246 U1247 U125B	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • VIDEO DIST CONN [U1246] • REAR DISP CONN [U1247] • AROUND CAMERA CONN [U125B]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

U1310 AV CONTROL UNIT

DTC Logic

INFOID:0000000006080945

DTC	Display contents of CONSULT-III	DTC detection condition	Possible malfunction factor
U1310	CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace the AV control unit if the malfunction occurs constantly.

B2700 CORNER SENSOR [FL]

DTC Logic

INFOID:0000000006080947

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2700	CORNER SENSOR [FL] [B2700]	Corner sensor (FL) is malfunctioning.	Replace corner sensor (FL).

B2701 SENSOR HARNESS OPEN [CR-FL]

DTC Logic

INFOID:0000000006080949

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2701	SENSOR HARNESS OPEN [CR-FL] [B2701]	Corner sensor (FL) harness circuit is open.	Check corner sensor (FL) circuit.

Diagnosis Procedure

INFOID:0000000006080950

1.CHECK HARNESS CORNER SENSOR (FL) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and corner sensor (FL) connector.
3. Check continuity between sonar control unit harness connector and corner sensor (FL) harness connector.

Sonar control unit		Corner sensor (FL)		Continuity
Connector	Terminal	Connector	Terminal	
M47	3	E154	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	3		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CORNER SENSOR (FL) GROUND CIRCUIT

Check continuity between sonar control unit harness connector and corner sensor (FL) harness connector.

Sonar control unit		Corner sensor (FL)		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	E154	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

B2702 CORNER SENSOR [FR]

DTC Logic

INFOID:0000000006080952

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2702	CORNER SENSOR [FR] [B2702]	Corner sensor (FR) is malfunctioning.	Replace corner sensor (FR).

B2703 SENSOR HARNESS OPEN [CR-FR]

DTC Logic

INFOID:0000000006080954

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2703	SENSOR HARNESS OPEN [CR-FR] [B2703]	Corner sensor (FR) harness circuit is open.	Check corner sensor (FR) circuit.

Diagnosis Procedure

INFOID:0000000006080955

1.CHECK HARNESS CORNER SENSOR (FR) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and corner sensor (FR) connector.
3. Check continuity between sonar control unit harness connector and corner sensor (FR) harness connector.

Sonar control unit		Corner sensor (FR)		Continuity
Connector	Terminal	Connector	Terminal	
M47	4	E152	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	4		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CORNER SENSOR (FR) GROUND CIRCUIT

Check continuity between sonar control unit harness connector and corner sensor (FR) harness connector.

Sonar control unit		Corner sensor (FR)		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	E152	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

B2704 CORNER SENSOR [RL]

DTC Logic

INFOID:0000000006080957

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2704	CORNER SENSOR [RL] [B2704]	Corner sensor (RL) is malfunctioning.	Replace corner sensor (RL).

B2705 SENSOR HARNESS OPEN [CR-RL]

DTC Logic

INFOID:0000000006080959

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2705	SENSOR HARNESS OPEN [CR-RL] [B2705]	Corner sensor (RL) harness circuit is open.	Check corner sensor (RL) circuit.

Diagnosis Procedure

INFOID:0000000006080960

1.CHECK HARNESS CORNER SENSOR (RL) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and corner sensor (RL) connector.
3. Check continuity between sonar control unit harness connector and corner sensor (RL) harness connector.

Sonar control unit		Corner sensor (RL)		Continuity
Connector	Terminal	Connector	Terminal	
M47	5	B259	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	5		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CORNER SENSOR (RL) GROUND CIRCUIT

Check continuity between sonar control unit harness connector and corner sensor (RL) harness connector.

Sonar control unit		Corner sensor (RL)		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	B259	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

B2706 CORNER SENSOR [RR]

DTC Logic

INFOID:0000000006080962

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2706	CORNER SENSOR [RR] [B2706]	Corner sensor (RR) is malfunctioning.	Replace corner sensor (RR).

B2707 SENSOR HARNESS OPEN [CR-RR]

DTC Logic

INFOID:0000000006080964

DTC DETECTION LOGIC

DTC No.	CONSULT-III indication	DTC detection condition	Troubleshooting
B2707	SENSOR HARNESS OPEN [CR-RR] [B2707]	Corner sensor (RR) harness circuit is open.	Check corner sensor (RR) circuit.

Diagnosis Procedure

INFOID:0000000006080965

1.CHECK HARNESS CORNER SENSOR (RR) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and corner sensor (RR) connector.
3. Check continuity between sonar control unit harness connector and corner sensor (RR) harness connector.

Sonar control unit		Corner sensor (RR)		Continuity
Connector	Terminal	Connector	Terminal	
M47	6	B256	1	Existed

4. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	6		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HARNESS CORNER SENSOR (RR) GROUND CIRCUIT

Check continuity between sonar control unit harness connector and corner sensor (RR) harness connector.

Sonar control unit		Corner sensor (RR)		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	B256	2	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

POWER SUPPLY AND GROUND CIRCUIT

AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000006080966

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34*1
	74*2
Ignition switch ACC or ON	19

- *1: Gasoline engine models
- *2: Diesel engine models

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M208	19	OFF	Battery voltage
ACC power supply	M208	7	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between AV control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connectors.
3. Check continuity between AV control unit harness connectors and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M208	20	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

FRONT DISPLAY UNIT

FRONT DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000006080967

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34*1
	74*2
Ignition switch ACC or ON	19

- *1: Gasoline engine models
- *2: Diesel engine models

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between front display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M195	11	OFF	Battery voltage
ACC power supply	M195	23	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between front display unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector.
3. Check continuity between front display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M195	12	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

REAR DISPLAY UNIT

REAR DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000006071932

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between rear display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B26	3	OFF	Battery voltage
		4		
ACC power supply	B26	6	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between rear display unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector.
3. Check continuity between rear display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B26	1	OFF	Existed
		2		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

VIDEO DISTRIBUTOR

VIDEO DISTRIBUTOR : Diagnosis Procedure

INFOID:0000000006071933

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between video distributor harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M99	54	OFF	Battery voltage
ACC power supply	M99	55	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between video distributor and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect video distributor connector.
3. Check continuity between video distributor harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M98	15, 16	OFF	Existed
	M99	53		
	M100	51		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

BOSE AMP.

BOSE AMP. : Diagnosis Procedure

INFOID:0000000006080968

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	8

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B42	11	OFF	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between BOSE amp. and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector.
3. Check continuity between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B42	12	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:0000000006080969

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34*1
	74*2
Ignition switch ACC	19

- *1: Gasoline engine models
- *2: Diesel engine models

Is inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUITS

Check voltage between around view monitor control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B46	2	OFF	Battery voltage
ACC power supply	B46	4	ACC	Battery voltage

Is inspection result normal?

YES >> GO TO 3.
NO >> Check harness between around view monitor control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector.
3. Check continuity between around view monitor control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B46	1	OFF	Existed

Is inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : Diagnosis Procedure

INFOID:0000000006080970

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between sonar control unit harness connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M47	13		Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace sonar control unit power supply harness.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector.
3. Check continuity between sonar control unit harness connector and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	24		Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace sonar control unit ground harness.

RGB (G: GREEN) SIGNAL CIRCUIT (VIDEO DISTRIBUTOR TO REAR DISPLAY UNIT)

Description

INFOID:0000000006071937

Transmit the image displayed with video distributor with RGB signal to the rear display unit.

Diagnosis Procedure

INFOID:0000000006071938

1.CHECK CONTINUITY RGB (G: GREEN) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector and video distributor connector.
3. Check continuity between rear display unit harness connector and video distributor harness connector.

Rear display unit		Video distributor		Continuity
Connector	Terminal	Connector	Terminal	
B26	21	M97	26	Existed

4. Check continuity between rear display unit harness connector and ground.

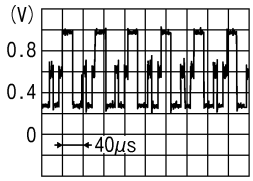
Rear display unit		Ground	Continuity
Connector	Terminal		
B26	21		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (G: GREEN) SIGNAL

1. Connect rear display unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Rear display unit				
Connector	Terminal			
B26	21	Ground	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 JSNIA1030ZZ

Is the inspection result normal?

YES >> Replace rear display unit. Refer to AV-968, "Exploded View".
NO >> Replace video distributor. Refer to AV-969, "Exploded View".

RGB (R: RED) SIGNAL CIRCUIT (VIDEO DISTRIBUTOR TO REAR DISPLAY UNIT)

Description

INFOID:0000000006071939

Transmit the image displayed with video distributor with RGB signal to the rear display unit.

Diagnosis Procedure

INFOID:0000000006071940

1.CHECK CONTINUITY RGB (R: RED) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector and video distributor connector.
3. Check continuity between rear display unit harness connector and video distributor harness connector.

Rear display unit		Video distributor		Continuity
Connector	Terminal	Connector	Terminal	
B26	22	M97	25	Existed

4. Check continuity between rear display unit harness connector and ground.

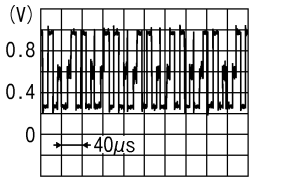
Rear display unit		Ground	Continuity
Connector	Terminal		
B26	22		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (R: RED) SIGNAL

1. Connect rear display unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector and ground using an oscilloscope.

(+)		(–)	Condition	Reference value
Rear display unit				
Connector	Terminal			
B26	22	Ground	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	

JSNIA1029ZZ

Is the inspection result normal?

YES >> Replace rear display unit. Refer to AV-968, "Exploded View".
NO >> Replace video distributor. Refer to AV-969, "Exploded View".

RGB (B: BLUE) SIGNAL CIRCUIT (VIDEO DISTRIBUTOR TO REAR DISPLAY UNIT)

Description

INFOID:0000000006071941

Transmit the image displayed with video distributor with RGB signal to the rear display unit.

Diagnosis Procedure

INFOID:0000000006071942

1.CHECK CONTINUITY RGB (B: BLUE) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector and video distributor connector.
3. Check continuity between rear display unit harness connector and video distributor harness connector.

Rear display unit		Video distributor		Continuity
Connector	Terminal	Connector	Terminal	
B26	20	M97	28	Existed

4. Check continuity between rear display unit harness connector and ground.

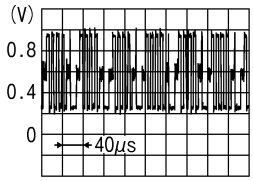
Rear display unit		Ground	Continuity
Connector	Terminal		
B26	20		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB (B: BLUE) SIGNAL

1. Connect rear display unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Rear display unit				
Connector	Terminal			
B26	20	Ground	Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	 JSNIA1031ZZ

Is the inspection result normal?

YES >> Replace rear display unit. Refer to AV-968, "Exploded View".
NO >> Replace video distributor. Refer to AV-969, "Exploded View".

RGB AREA (YS) SIGNAL CIRCUIT (VIDEO DISTRIBUTOR TO REAR DISPLAY UNIT)

Description

INFOID:0000000006071943

Transmits the display area of RGB image displayed by video distributor with RGB area (YS) signal to rear display unit.

Diagnosis Procedure

INFOID:0000000006071944

1.CHECK CONTINUITY RGB AREA (YS) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector and video distributor connector.
3. Check continuity between rear display unit harness connector and video distributor harness connector.

Rear display unit		Video distributor		Continuity
Connector	Terminal	Connector	Terminal	
B26	15	M97	32	Existed

4. Check continuity between rear display unit harness connector and ground.

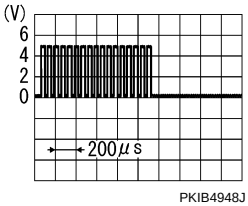
Rear display unit		Ground	Continuity
Connector	Terminal		
B26	15		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB AREA (YS) SIGNAL

1. Connect rear display unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Rear display unit				
Connector	Terminal			
B26	15	Ground	When AUX or DVD image is displayed on rear display unit.	0 V
			Rear seat remote controller operation when AUX or DVD image is displayed on rear display unit.	

PKIB4948J

Is the inspection result normal?

YES >> Replace rear display unit. Refer to AV-968, "Exploded View".
NO >> Replace video distributor. Refer to AV-969, "Exploded View".

VERTICAL SYNCHRONIZING SIGNAL CIRCUIT (REAR DISPLAY UNIT TO VIDEO DISTRIBUTOR)

Description

INFOID:0000000006071945

In composite image (DVD and AUX images), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from rear display unit to video distributor so as to synchronize the RGB images displayed with video distributor such as the image quality adjusting menu, etc.

Diagnosis Procedure

INFOID:0000000006071946

1.CHECK CONTINUITY VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector and video distributor connector.
3. Check continuity between rear display unit harness connector and video distributor harness connector.

Rear display unit		Video distributor		Continuity
Connector	Terminal	Connector	Terminal	
B26	17	M97	29	Existed

4. Check continuity between rear display unit harness connector and ground.

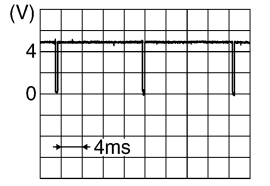
Rear display unit		Ground	Continuity
Connector	Terminal		
B26	17		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VERTICAL SYNCHRONIZING (VP) SIGNAL

1. Connect rear display unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Rear display unit				
Connector	Terminal			
B26	17	Ground	—	

SKIB3598E

Is the inspection result normal?

YES >> Replace video distributor. Refer to AV-969, "Exploded View".
NO >> Replace rear display unit. Refer to AV-968, "Exploded View".

HORIZONTAL SYNCHRONIZING SIGNAL CIRCUIT (REAR DISPLAY UNIT TO VIDEO DISTRIBUTOR)

Description

INFOID:0000000006071947

In composite image (DVD and AUX images), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from rear display unit to video distributor so as to synchronize the RGB images displayed with video distributor such as the image quality adjusting menu, etc.

Diagnosis Procedure

INFOID:0000000006071948

1.CHECK CONTINUITY HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear display unit connector and video distributor connector.
3. Check continuity between rear display unit harness connector and video distributor harness connector.

Rear display unit		Video distributor		Continuity
Connector	Terminal	Connector	Terminal	
B26	18	M97	30	Existed

4. Check continuity between rear display unit harness connector and ground.

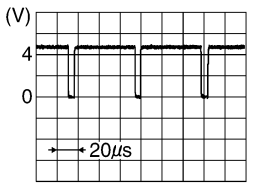
Rear display unit		Ground	Continuity
Connector	Terminal		
B26	18		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK HORIZONTAL SYNCHRONIZING (HP) SIGNAL

1. Connect rear display unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Rear display unit				
Connector	Terminal			
B26	18	Ground	—	

SKIB3601E

Is the inspection result normal?

YES >> Replace video distributor. Refer to AV-969, "Exploded View".
NO >> Replace rear display unit. Refer to AV-968, "Exploded View".

COMPOSITE IMAGE SIGNAL CIRCUIT (VIDEO DISTRIBUTOR TO REAR DISPLAY UNIT)

Description

INFOID:0000000006071949

- DVD is played by inserting DVD into the AV control unit.
- DVD image signals are transmitted to the front display unit and video distributor.
- AV control unit receives the image signal from the auxiliary input jacks and USB (video data) and then transmits it to the video distributor.
- Video distributor receives the image signal from the AV control unit and then transmits it to the rear display unit.

Diagnosis Procedure

INFOID:0000000006071950

1.CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect video distributor connector and rear display unit connector.
3. Check continuity between video distributor harness connector and rear display unit harness connector.

Video distributor		Rear display unit		Continuity
Connector	Terminal	Connector	Terminal	
M97	34	B26	14	Existed

4. Check continuity between rear display unit harness connector and ground.

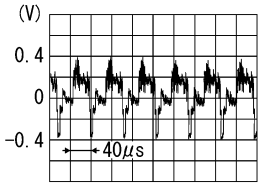
Rear display unit		Ground	Continuity
Connector	Terminal		
B26	14		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMPOSITE IMAGE SIGNAL

1. Connect video distributor connector and rear display unit connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector.

(+)		(–)	Condition	Reference value
Rear display unit				
Connector	Terminal			
B26	14	Ground	When AUX or DVD image is displayed on rear display unit.	

SKIB2251J

Is the inspection result normal?

YES >> Replace rear display unit. Refer to AV-968, "Exploded View".
NO >> Replace video distributor. Refer to AV-969, "Exploded View".

COMPOSITE IMAGE SIGNAL CIRCUIT (AV CONTROL UNIT TO VIDEO DISTRIBUTOR)

Description

INFOID:0000000006071951

- DVD is played by inserting DVD into the AV control unit.
- DVD image signals are transmitted to the front display unit and video distributor.
- AV control unit receives the image signal from the auxiliary input jacks and USB (video data) and then transmits it to the video distributor.
- Video distributor receives the image signal from the AV control unit and then transmits it to the rear display unit.

Diagnosis Procedure

INFOID:0000000006071952

1.CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect video distributor connector and AV control unit connector.
3. Check continuity between video distributor harness connector and AV control unit harness connector.

Video distributor		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M98	23	M209	34	Existed

4. Check continuity between rear display unit harness connector and ground.

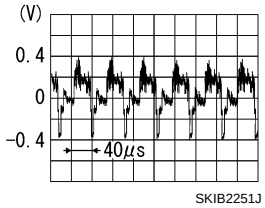
Video distributor		Ground	Continuity
Connector	Terminal		
M98	23		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMPOSITE IMAGE SIGNAL

1. Connect video distributor connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between video distributor harness connector.

(+)		(–)	Condition	Reference value
Rear display unit				
Connector	Terminal			
M98	23	Ground	When AUX or DVD image is displayed on rear display unit.	

SKIB2251J

Is the inspection result normal?

YES >> Replace video distributor. Refer to AV-969, "Exploded View".
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

COMPOSITE IMAGE SIGNAL CIRCUIT (AV CONTROL UNIT TO FRONT DISPLAY UNIT)

Description

INFOID:0000000006071955

- DVD is played by inserting DVD into the AV control unit.
- DVD image signals are transmitted to the front display unit and video distributor.
- AV control unit receives the image signal from the auxiliary input jacks and USB (video data) and then transmits it to the video distributor.
- Video distributor receives the image signal from the AV control unit and then transmits it to the rear display unit.

Diagnosis Procedure

INFOID:0000000006071956

1.CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and front display unit connector.
3. Check continuity between AV control unit harness connector and front display unit harness connector.

AV control unit		Front display unit		Continuity
Connector	Terminal	Connector	Terminal	
M210	68	M195	18	Existed

4. Check continuity between AV control unit harness connector and ground.

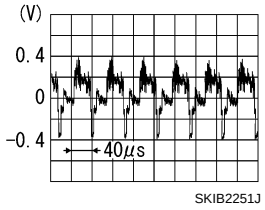
AV control unit		Ground	Continuity
Connector	Terminal		
M210	68		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMPOSITE IMAGE SIGNAL

1. Connect AV control unit connector and front display unit connector.
2. Turn ignition switch ON.
3. Check signal between auxiliary input jacks harness connector and ground.

(+) AV control unit		(–)	Condition	Reference value
Connector	Terminal			
M210	68	Ground	At DVD image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace front display unit. Refer to AV-967, "Exploded View".
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

RGB DIGITAL IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000006080971

Transmit the image displayed with AV control unit with RGB digital image signal to the front display unit.

Diagnosis Procedure

INFOID:0000000006080972

1.CHECK CONTINUITY RGB DIGITAL IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and AV control unit connector.
3. Check continuity between front display unit harness connector and AV control unit harness connector.

Front display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M397	27	M396	157	Existed
	28		158	

4. Check continuity between front display unit harness connector and ground.

Front display unit		Ground	Continuity
Connector	Terminals		
M397	27		Not existed
	28		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB DIGITAL IMAGE SIGNAL

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Front display unit				
Connector	Terminal			
M397	27	Ground	—	3.0 V
	28			

Is the inspection result normal?

YES >> Replace front display unit. Refer to AV-967, "Exploded View".
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

AUX IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000006080973

- Transmits the image signal of AUX device from auxiliary input jacks to AV control unit.
- AV control unit transmits the image signal that is input to the front display unit.

Diagnosis Procedure

INFOID:0000000006080974

1.CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect auxiliary input jacks connector and AV control unit connector.
3. Check continuity between auxiliary input jacks harness connector and AV control unit harness connector.

Auxiliary input jacks		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M196*1	7	M209	26	Existed
M325*2				

- *1: A/T models
- *2 M/T models

4. Check continuity between auxiliary input jacks harness connector and ground.

Auxiliary input jacks		Ground	Continuity
Connector	Terminal		
M196*1	7		Not existed
M325*2			

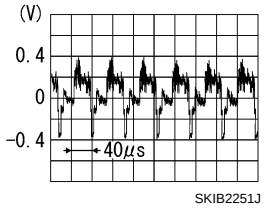
- *1: A/T models
- *2 M/T models

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AUX IMAGE SIGNAL

1. Connect auxiliary input jacks connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between auxiliary input jacks harness connector and ground.

(+)		(–)	Condition	Reference value
Auxiliary input jacks				
Connector	Terminal			
M196*1	7	Ground	At AUX image is displayed.	
M325*2				

SKIB2251J

- *1: A/T models
- *2 M/T models

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-965, "Exploded View".
NO >> Check that there is no malfunction in the external device.

DISK EJECT SIGNAL CIRCUIT

Description

INFOID:0000000006080975

The eject signal is output to AV control unit when the eject switch of multifunction switch is pressed.

Diagnosis Procedure

INFOID:0000000006080976

1.CHECK CONTINUITY DISK EJECT SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect multifunction switch connector and AV control unit connector.
3. Check continuity between multifunction switch harness connector and AV control unit harness connector.

Multifunction switch		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M72	14	M209	29	Existed

4. Check continuity between multifunction switch harness connector and ground.

Multifunction switch		Ground	Continuity
Connector	Terminal		
M72	14		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Connect multifunction switch connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M209	29	Ground	Pressing the eject switch	0 V
			Except for above	5.0 V

Is the inspection result normal?

YES >> Replace preset switch. Refer to AV-979, "Exploded View".
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

MODE CHANGE SIGNAL CIRCUIT

Description

INFOID:0000000006080977

- AV control unit transmits the mode change signal to BOSE amp.
- Driver's Audio Stage controls the speaker's output characteristic by BOSE amp. so that the driver's seat is to be the center of sounds.

Diagnosis Procedure

INFOID:0000000006080978

1.CHECK CONTINUITY MODE CHANGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector and AV control unit connector.
3. Check continuity between BOSE amp. harness connector and AV control unit harness connector.

BOSE amp.		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
B41	17	M209	30	Existed

4. Check continuity between BOSE amp. harness connector and ground.

BOSE amp.		Ground	Continuity
Connector	Terminal		
B41	17		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK MODE CHANGE SIGNAL

1. Connect BOSE amp. connector.
2. Turn ignition switch ON.
3. Check signal between BOSE amp. harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
BOSE amp.				
Connector	Terminal			
B41	17	Ground	Driver's Audio Stage ON	0 V
			Driver's Audio Stage OFF	8.5 V

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-965, "Exploded View".
NO >> Replace BOSE amp. Refer to AV-976, "Exploded View".

MICROPHONE SIGNAL CIRCUIT

Description

INFOID:0000000006080979

Supply power from AV control unit to microphone. The microphone transmits the sound/voice to the AV control unit.

Diagnosis Procedure

INFOID:0000000006080980

1.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and microphone connector.
3. Check continuity between AV control unit harness connector and microphone harness connector.

AV control unit		Microphone		Continuity
Connector	Terminals	Connector	Terminals	
M210	71	R17	2	Existed
	72		4	
	87		1	

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminals		
M210	72		Not existed
	87		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE MICROPHONE VCC

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

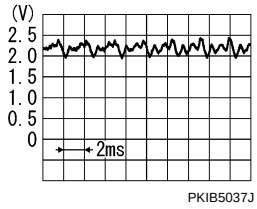
(+)		(–)	Voltage (Approx.)
AV control unit		Ground	
Connector	Terminal		
M210	72		5.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.
2. Check signal between AV control unit harness connector.

(+)		(–)		Condition	Reference value
AV control unit		AV control unit			
Connector	Terminal	Connector	Terminal		
M210	87	M210	71	Give a voice.	

PKIB5037J

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-965, "Exploded View".
NO >> Replace microphone. Refer to AV-983, "Exploded View".

CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000006080981

Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.

Diagnosis Procedure

INFOID:0000000006080982

1.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and around view monitor control unit connector.
3. Check continuity between front display unit harness connector and around view monitor control unit harness connector.

Front display unit		Around view monitor control unit		Continuity
Connector	Terminal	Connector	Terminal	
M195	8	B46	27	Existed

4. Check continuity between front display unit harness connector and ground.

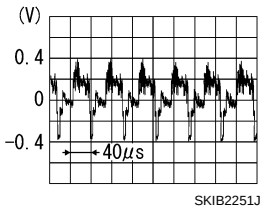
Front display unit		Ground	Continuity
Connector	Terminal		
M195	8		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK CAMERA IMAGE SIGNAL

1. Connect front display unit connector and around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Front display unit				
Connector	Terminal			
M195	8	Ground	At camera image is displayed.	

SKIB2251J

Is inspection result normal?

YES >> Replace front display unit. Refer to AV-967, "Exploded View".
NO >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".

FRONT CAMERA COMMUNICATION SIGNAL CIRCUIT

Description

INFOID:0000000006080983

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

Diagnosis Procedure

INFOID:0000000006080984

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and front camera connector.
3. Check continuity between around view monitor control unit harness connector and front camera harness connector.

Around view monitor control unit		Front camera		Continuity
Connector	Terminal	Connector	Terminal	
B45	45	E155	6	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

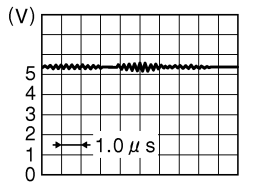
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	45		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and front camera connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+) Around view monitor control unit		(–)	Condition	Reference value
Connector	Terminal			
B45	45	Ground	“CAMERA” switch is ON or shift position is “R”.	

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Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".
NO >> Replace front camera. Refer to AV-987, "Exploded View".

FRONT CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000006080985

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

Diagnosis Procedure

INFOID:0000000006080986

1.CHECK CONTINUITY FRONT CAMERA POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and front camera connector.
3. Check continuity between around view monitor control unit harness connector and front camera harness connector.

Around view monitor control unit		Front camera		Continuity
Connector	Terminals	Connector	Terminals	
B45	44	E155	2	Existed
	46		1	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	46		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE FRONT CAMERA POWER SUPPLY

1. Connect around view monitor control unit connector and front camera connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B45	46	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".

3.CHECK CONTINUITY FRONT CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and front camera connector.
3. Check continuity between around view monitor control unit harness connector and front camera harness connector.

Around view monitor control unit		Front camera		Continuity
Connector	Terminals	Connector	Terminals	
B45	41	E155	3	Existed
	42		4	

4. Check continuity between around view monitor control unit harness connector and ground.

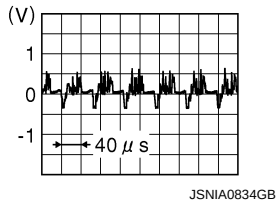
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B45	41, 42		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK FRONT CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit connector and front camera connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B45	41	B45	42	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0834GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".
NO >> Replace front camera. Refer to AV-987, "Exploded View".

REAR CAMERA COMMUNICATION SIGNAL CIRCUIT

Description

INFOID:0000000006080987

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

Diagnosis Procedure

INFOID:0000000006080988

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and rear camera connector.
3. Check continuity between around view monitor control unit harness connector and rear camera harness connector.

Around view monitor control unit		Rear camera		Continuity
Connector	Terminal	Connector	Terminal	
B46	35	D111	4	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

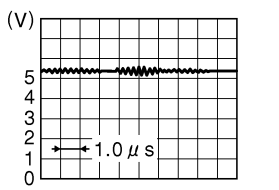
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	35		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and rear camera connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+) Around view monitor control unit		(–)	Condition	Reference value
Connector	Terminal			
B46	35	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".
NO >> Replace rear camera. Refer to AV-988, "Exploded View".

REAR CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000006080989

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

Diagnosis Procedure

INFOID:0000000006080990

1.CHECK CONTINUITY REAR CAMERA POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and rear camera connector.
3. Check continuity between around view monitor control unit harness connector and rear camera harness connector.

Around view monitor control unit		Rear camera		Continuity
Connector	Terminals	Connector	Terminals	
B46	36	D111	8	Existed
	38		7	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	36		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE REAR CAMERA POWER SUPPLY

1. Connect around view monitor control unit connector and rear camera connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B46	36	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".

3.CHECK CONTINUITY REAR CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and rear camera connector.
3. Check continuity between around view monitor control unit harness connector and rear camera harness connector.

Around view monitor control unit		Rear camera		Continuity
Connector	Terminals	Connector	Terminals	
B46	39	D111	5	Existed
	40		1	

4. Check continuity between around view monitor control unit harness connector and ground.

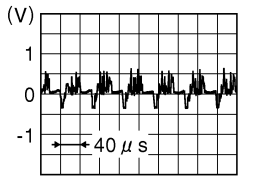
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B46	39, 40		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK REAR CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit connector and rear camera connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B46	39	B46	40	“CAMERA” switch is ON or shift position is “R”.	

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Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".
NO >> Replace rear camera. Refer to AV-988, "Exploded View".

SIDE CAMERA LH COMMUNICATION SIGNAL CIRCUIT

LHD MODELS

LHD MODELS : Description

INFOID:0000000006080991

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

LHD MODELS : Diagnosis Procedure

INFOID:0000000006080992

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
B45	47	D3	3	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

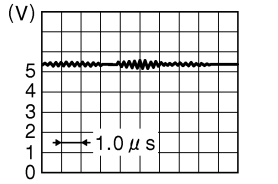
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	47		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Reference value
Around view monitor control unit				
Connector	Terminal			
B45	47	Ground	“CAMERA” switch is ON or shift position is “R”.	

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Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".
NO >> Replace side camera LH. Refer to AV-989, "LHD MODELS : Exploded View".

RHD MODELS

RHD MODELS : Description

INFOID:0000000006080993

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

RHD MODELS : Diagnosis Procedure

INFOID:0000000006080994

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
B46	33	D2	3	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

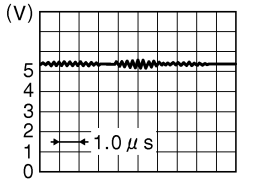
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	33		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+) Around view monitor control unit		(–)	Condition	Reference value
Connector	Terminal			
B46	33	Ground	“CAMERA” switch is ON or shift position is “R”.	

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Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".
NO >> Replace side camera LH. Refer to AV-990, "RHD MODELS : Exploded View".

SIDE CAMERA LH IMAGE SIGNAL CIRCUIT
LHD MODELS

LHD MODELS : Description

INFOID:0000000006080995

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

LHD MODELS : Diagnosis Procedure

INFOID:0000000006080996

1.CHECK CONTINUITY SIDE CAMERA LH POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminals	Connector	Terminals	
B45	48	D3	6	Existed
	50		18	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	48		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE SIDE CAMERA LH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B45	48	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".

3.CHECK CONTINUITY SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.

3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminals	Connector	Terminals	
B45	51	D3	5	Existed
	52		17	

4. Check continuity between around view monitor control unit harness connector and ground.

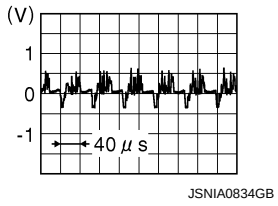
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B45	51, 52		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK SIDE CAMERA LH IMAGE SIGNAL

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B45	51	B45	52	“CAMERA” switch is ON or shift position is “R”.	

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Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".
NO >> Replace side camera LH. Refer to AV-989, "LHD MODELS : Exploded View".

RHD MODELS

RHD MODELS : Description

INFOID:0000000006080997

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

RHD MODELS : Diagnosis Procedure

INFOID:0000000006080998

1. CHECK CONTINUITY SIDE CAMERA LH POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect control unit connector and door mirror (passenger side) connector.

3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminals	Connector	Terminals	
B46	32	D2	18	Existed
	34		6	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	34		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE SIDE CAMERA LH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B46	34	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".

3.CHECK CONTINUITY SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminals	Connector	Terminals	
B46	29	D2	5	Existed
	30		17	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B46	29, 30		Not existed

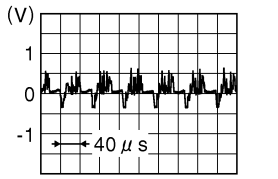
Is inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

4. CHECK SIDE CAMERA LH IMAGE SIGNAL

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B46	29	B46	30	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0834GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".
NO >> Replace side camera LH. Refer to AV-990, "RHD MODELS : Exploded View".

SIDE CAMERA RH COMMUNICATION SIGNAL CIRCUIT

LHD MODELS

LHD MODELS : Description

INFOID:0000000006080999

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

LHD MODELS : Diagnosis Procedure

INFOID:0000000006081000

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
B46	33	D33	3	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

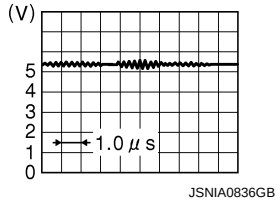
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	33		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Reference value
Around view monitor control unit				
Connector	Terminal			
B46	33	Ground	“CAMERA” switch is ON or shift position is “R”.	

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Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".
NO >> Replace side camera RH. Refer to AV-992, "LHD MODELS : Exploded View".

RHD MODELS

RHD MODELS : Description

INFOID:0000000006081001

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

RHD MODELS : Diagnosis Procedure

INFOID:0000000006081002

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
B45	47	D48	3	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

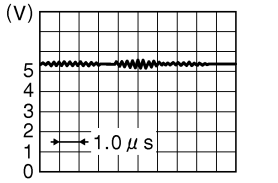
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	47		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+) Around view monitor control unit		(–)	Condition	Reference value
Connector	Terminal			
B45	47	Ground	“CAMERA” switch is ON or shift position is “R”.	

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Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".
NO >> Replace side camera RH. Refer to AV-993, "RHD MODELS : Exploded View".

SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

LHD MODELS

LHD MODELS : Description

INFOID:0000000006081003

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

LHD MODELS : Diagnosis Procedure

INFOID:0000000006081004

1.CHECK CONTINUITY SIDE CAMERA RH POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect control unit connector and door mirror (passenger side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminals	Connector	Terminals	
B46	32	D33	18	Existed
	34		6	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B46	34		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE SIDE CAMERA RH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B46	34	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".

3.CHECK CONTINUITY SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.

3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminals	Connector	Terminals	
B46	29	D33	5	Existed
	30		17	

4. Check continuity between around view monitor control unit harness connector and ground.

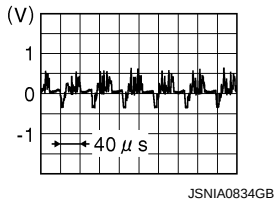
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B46	29, 30		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4.CHECK SIDE CAMERA RH IMAGE SIGNAL

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B46	29	B46	30	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0834GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".
NO >> Replace side camera RH. Refer to AV-992, "LHD MODELS : Exploded View".

RHD MODELS

RHD MODELS : Description

INFOID:0000000006081005

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predicted course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

RHD MODELS : Diagnosis Procedure

INFOID:0000000006081006

1.CHECK CONTINUITY SIDE CAMERA RH POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.

3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminals	Connector	Terminals	
B45	48	D48	6	Existed
	50		18	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B45	48		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE SIDE CAMERA RH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B45	48	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".

3.CHECK CONTINUITY SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminals	Connector	Terminals	
B45	51	D48	5	Existed
	52		17	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B45	51, 52		Not existed

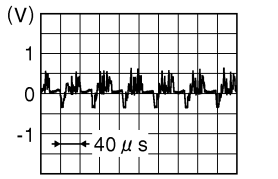
Is inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

4. CHECK SIDE CAMERA RH IMAGE SIGNAL

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B45	51	B45	52	“CAMERA” switch is ON or shift position is “R”.	 JSNIA0834GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-986, "Exploded View".
NO >> Replace side camera RH. Refer to AV-993, "RHD MODELS : Exploded View".

STEERING SWITCH SIGNAL A CIRCUIT

Description

INFOID:0000000006081007

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000006081008

1.CHECK STEERING SWITCH SIGNAL A CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	6	M36	24	Existed

3. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M208	6		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit		AV control unit		
Connector	Terminal	Connector	Terminal	
M208	6	M208	15	5.0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-947, "Component Inspection".

Is the inspection result normal?

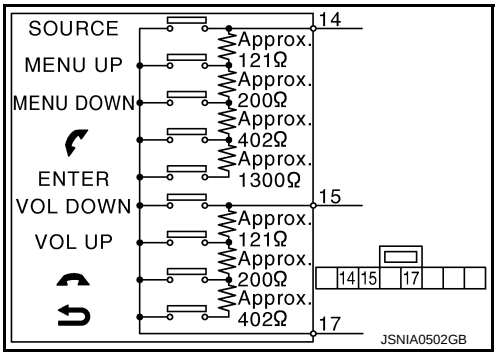
YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-980, "Exploded View".

Component Inspection

INFOID:0000000006071985

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

Standard



Between terminals 14 and 17

ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω

Between terminals 15 and 17

switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω

STEERING SWITCH SIGNAL B CIRCUIT

Description

INFOID:0000000006081009

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000006081010

1.CHECK STEERING SWITCH SIGNAL B CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	16	M36	31	Existed

3. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M208	16		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit		AV control unit		
Connector	Terminal	Connector	Terminal	
M208	16	M208	15	5.0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-949, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-980, "Exploded View".

Component Inspection

INFOID:0000000006133872

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

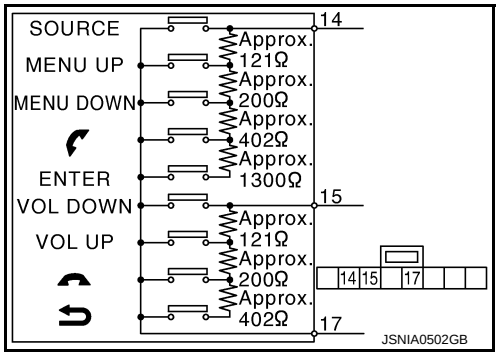
Standard

Between terminals 14 and 17

ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω

Between terminals 15 and 17

switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω



STEERING SWITCH GROUND CIRCUIT

Description

INFOID:0000000006081011

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000006081012

1.CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	15	M36	33	Existed

3. Connect AV control unit connector.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-18, "Exploded View".

3.CHECK GROUND CIRCUIT

1. Connect AV control unit connector.
2. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M208	15		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-965, "Exploded View".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-951, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering switch. Refer to AV-980, "Exploded View".

Component Inspection

INFOID:0000000006133873

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

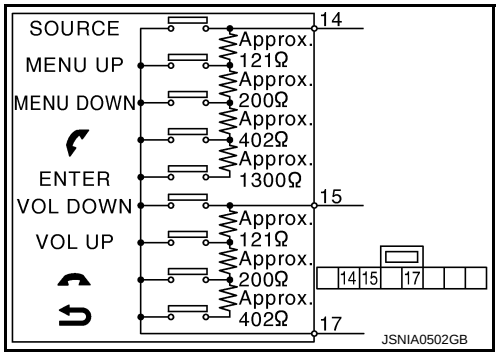
Standard

Between terminals 14 and 17

ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω

Between terminals 15 and 17

switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω



SYMPTOM DIAGNOSIS

MULTI AV SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000006080767

RELATED TO NAVIGATION

Symptoms	Check items	Probable malfunction location
Multifunction switch and preset switch operation does not work.	• All switches cannot be operated. • “MULTI AV” is displayed on system selection screen when the CONSULT-III is started.	• Multifunction switch power supply and ground circuit malfunction. • AV communication circuit between AV control unit and multifunction switch. Perform CONSULT-III self-diagnosis. Refer to AV-809, "CONSULT - III Function (MULTI AV)".
	• All switches cannot be operated. • “MULTI AV” is not displayed on system selection screen when the CONSULT-III is initialized.	AV control unit power supply and ground circuit malfunction. Refer to AV-908, "AV CONTROL UNIT : Diagnosis Procedure".
	Only specified switch cannot be operated.	Multifunction switch or preset switch malfunction. Perform multifunction switch and preset switch self-diagnosis function. Refer to AV-799, "On Board Diagnosis Function".
Fuel economy display is abnormal.	There is malfunction in the CONSULT-III “self-diagnosis result” of “MULTI AV”.	Perform detected DTC diagnosis. Refer to AV-825, "DTC Index".
	There is no malfunction in the CONSULT-III “self-diagnosis results” of “MULTI AV”.	Ignition signal circuit malfunction.
Start of the AV control unit takes time.*	—	Driver door switch signal circuit malfunction.
Guide sound is not heard or too low.	On the setting display select “system sound (guide sound volume, etc.),” and confirm that guide sound is ON.	AV control unit malfunction. Replace AV control unit. Refer to AV-965, "Exploded View".

*:Models with driver door switch signal circuit.

RELATED TO HANDS-FREE PHONE

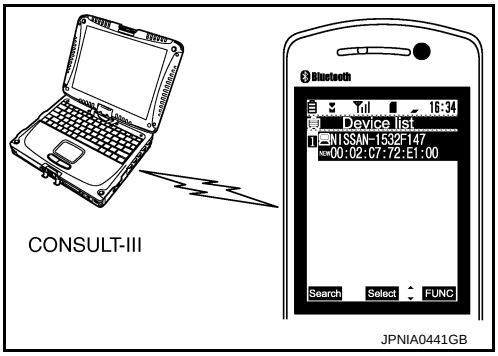
- Check that the cellular phone is the corresponding type (Bluetooth™ enabled) and Bluetooth™ turns ON.
- Malfunction may occur due to the version change of the phone type, etc. even though it is the corresponding type. The cell phone must support at least hands-free profile V1.0 and object push V1.0. Refer to cell phone instruction manual.
- When customers contact concerning Bluetooth™ compatible cell phone malfunction for the first time, always suggest customers to update cellular phone software if possible.
- Check that customer cellular phone is compatible on the published list. The dealer should contact its RBU/NSC for the list.
- Take note of any exceptions that the list may detail, i.e. no ringing tone or no phonebook transfer etc. If the customer phone is not listed then its full function cannot be guaranteed. NISSAN should not replace the AV control unit if the cell phone does not appear on the list or the cell phone is operating as described on the list e.g. no ringing tone, no phonebook transfer etc.
- Take note of any exceptions to other phones made by the same manufacturer as the customers. Any exceptions on one model by a specific manufacturer may be common to all models made by that manufacturer.

Simple Check for Bluetooth™ Communication

If cellular phone and AV control unit cannot be connected with Bluetooth™ communication, following procedure allows the technician to judge which device has malfunction.

1. Turn ON cellular phone, not connecting Bluetooth™ communication.
2. Start CONSULT-III, then start Windows®.
3. Set CONSULT-III near a cellular phone.

4. When operated Bluetooth™ registration by cellular phone, check if CONSULT-III* would be displayed on the device name.
   (If other Bluetooth™ device is located near cellular phone, a name of the device would be displayed also.)
   NOTE:
   *:Displayed device name is “NISSAN-********”.



- If no device name is displayed, cellular phone is malfunctioning. Repair the cellular phone first, then perform diagnosis.
- If CONSULT-III is displayed on device name, cellular phone is normal*. Perform diagnosis as per the following table.

*: There is no 100% guarantee that cellular phone operates all functions on AV control unit. Different phone manufacturers implement Bluetooth™ in different ways. Phones on Supported Phone List are tested and any minor exceptions are listed.

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection. (no connection is displayed on the display at the guide.)	Repeat the registration of cellular phone.	AV control unit malfunction. Replace AV control unit. Refer to AV-965, "Exploded View".
Hands-free phone cannot be established.	• Hands-free phone operation can be made, but the communication cannot be established. • Hands-free phone operation can be performed, however, voice between each other cannot be heard during the conversation.	
The other party's voice cannot be heard by hands-free phone.	Check the “microphone speaker” in Inspection & Adjustment Mode if sound is heard.	
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-926, "Diagnosis Procedure".
The system cannot be operated.	Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN”, “ENTER” switch works, but “☎” it does not work.	Steering switch malfunction. Replace steering switch. Refer to SR-16, "Exploded View".
	Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN”, “ENTER” switch works, but “✆” it does not work.	Steering switch signal A circuit malfunction. Refer to AV-949, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-951, "Diagnosis Procedure".

RELATED TO CAMERA

Symptoms	Check items	Probable malfunction location / Action to take
It does not switch to camera image even when the “CAMERA” switch is pressed or the selector lever is in the reverse position.	“Camera Cont.” of “Confirmation/Adjustment” can be selected.	Ignition signal circuit malfunction (around view monitor control unit).
	“Camera Cont.” of “Confirmation/Adjustment” cannot be selected.	• Around view monitor control unit power supply and ground circuits malfunction. Refer to AV-911, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure". • AV communication circuits malfunction. Refer to AV-809, "CONSULT - III Function (MULTI AV)".

Symptoms	Check items		Probable malfunction location / Action to take
The screen switches when pressing the “CAMERA” switch or shifting the selector lever to the reverse position, however, all views are not displayed.	Only superimposing is displayed. (Only the image displayed by AV control unit is displayed)		Camera image signal circuit between around view monitor control unit and display unit malfunction. Refer to AV-928, "Diagnosis Procedure".
	Superimposing is not displayed.		Communication circuit between AV control unit and display unit malfunction. Refer to AV-809, "CONSULT - III Function (MULTI AV)".
Camera image is rolling.	—		Communication circuit between AV control unit and display unit malfunction. Refer to AV-809, "CONSULT - III Function (MULTI AV)".
It cannot be switched to rear view monitor even when the selector lever is in the reverse position.	The front view is displayed normally.		Reverse signal circuit malfunction. (AV control unit)
The predicted course line display in front view and rear view is malfunctioning.	The “Steer. Angle Sensor” is not turned ON at “Connection Confirmation” of “Camera Cont.”		Steering angle sensor signal circuits.
• The front view screen is not displayed. • The front of Birds-Eye view screen is not displayed.	Check the item Front Camera in “Connection Confirmation” mode of “Camera Cont.”	• Image Output Signal: NG • COMM Status: NG • COMM Line: NG	• Front camera image signal circuit malfunction. • Front camera power supply and ground circuits malfunction. Refer to AV-930, "Diagnosis Procedure".
		• Image Output Signal: OK • COMM Status: NG • COMM Line: NG	Front camera communication signal circuit malfunction. Refer to AV-929, "Diagnosis Procedure".
• The rear view screen is not displayed. • The rear of Birds-Eye view screen is not displayed.	Check the item Rear Camera in “Connection Confirmation” mode of “Camera Cont.”	• Image Output Signal: NG • COMM Status: NG • COMM Line: NG	• Rear camera image signal circuit malfunction. • Rear camera power supply and ground circuits malfunction. Refer to AV-933, "Diagnosis Procedure".
		• Image Output Signal: OK • COMM Status: NG • COMM Line: NG	Rear camera communication signal circuits malfunction. Refer to AV-932, "Diagnosis Procedure".

Symptoms	Check items		Probable malfunction location / Action to take
• The front-side screen is not displayed. • The passenger side of Birds-Eye view screen is not displayed.	Check the item Pass-Side Camera in “Connection Confirmation” mode of “Camera Cont.”	• Image Output Signal: NG • COMM Status: NG • COMM Line: NG	LHD models • Side camera RH image signal circuit malfunction. • Side camera RH power supply and ground circuits malfunction. Refer to AV-943, "LHD MODELS : Diagnosis Procedure". RHD models • Side camera LH image signal circuit malfunction. • Side camera LH power supply and ground circuits malfunction. Refer to AV-938, "RHD MODELS : Diagnosis Procedure".
		• Image Output Signal: OK • COMM Status: NG • COMM Line: NG	LHD models • Side camera RH communication circuit malfunction. Refer to AV-941, "LHD MODELS : Diagnosis Procedure". RHD models • Side camera LH communication circuit malfunction. Refer to AV-936, "RHD MODELS : Diagnosis Procedure".
The driver side of Birds-eye view screen is not displayed.	Check the item Dr-Side Camera at “Connection Confirmation” mode of “Camera Cont.”	• Image Output Signal: NG • COMM Status: NG • COMM Line: NG	LHD models • Side camera LH image signal circuit malfunction. • Side camera LH power supply and ground circuits malfunction. Refer to AV-937, "LHD MODELS : Diagnosis Procedure". RHD models • Side camera RH image signal circuit malfunction. • Side camera RH power supply and ground circuits malfunction. Refer to AV-944, "RHD MODELS : Diagnosis Procedure".
		• Image Output Signal: OK • COMM Status: NG • COMM Line: NG	LHD models • Side camera LH communication circuit malfunction. Refer to AV-935, "LHD MODELS : Diagnosis Procedure". RHD models • Side camera RH communication circuit malfunction. Refer to AV-942, "RHD MODELS : Diagnosis Procedure".
When shift position is other than “R” the front-side and front screen or the Birds-Eye view and front screen remain displaying even if the vehicle speed increases.	—		Vehicle speed signal circuit malfunction (around view monitor control unit).

RELATED TO CAMERA ASSISTANCE SONAR

Symptoms	Check items	Probable malfunction location / Action to take
The malfunction is detected in the sonar indicator (Always displayed in red)	The malfunction is detected in only 1 indicator (Always displayed in red).	• Corner sensor malfunction in corresponding area. • Corner sensor harness circuit in corresponding area. Perform CONSULT-III “self-diagnosis” of “SONAR”. Refer to AV-817, "CONSULT-III Function (SONAR)".
	The malfunction is detected in all 4 indicators (Always displayed in red).	• Corner sensor ground circuit malfunction. Perform CONSULT-III “self-diagnosis” of “SONAR”. Refer to AV-817, "CONSULT-III Function (SONAR)". • Sonar control unit power supply and ground circuits malfunction. • AV communication circuits malfunction. Perform CONSULT-III “self-diagnosis” of “MULTI AV”. Refer to AV-809, "CONSULT - III Function (MULTI AV)".
The sonar indicator is normal, but the buzzer does not sound	—	Replace sonar control unit. Refer to AV-995, "Exploded View".

RELATED TO RGB IMAGE

Symptoms	Check items	Probable malfunction location
RGB image is not shown.	—	RGB digital image signal circuit malfunction. Refer to AV-922, "Diagnosis Procedure".

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to AV-924, "Diagnosis Procedure".
Audio sound is not heard.	No sound from all speakers.	• Amp. ON signal circuit malfunction. • BOSE amp. power supply and ground circuits malfunction. Refer to AV-910, "BOSE AMP. : Diagnosis Procedure".
	Sound is not heard from woofer.	• Woofer power supply and ground circuit malfunction. • Sound signal (woofer) circuit malfunction. • Woofer amp. ON signal circuit malfunction.
	Sound is heard only from specific places.	Sound signals circuit of suspect system.
It does not change to “Driver's Audio Stage” mode.	—	Mode change signal circuit malfunction. Refer to AV-925, "Diagnosis Procedure".
AM/FM radio is not received.	Other audio sounds are normal.	• Antenna amp. ON signal circuit malfunction. • Antenna feeder malfunction.

RELATED TO STEERING SWITCH

Symptoms	Probable malfunction location
None of the steering switch operations work.	Steering switch ground circuit malfunction. Refer to AV-951, "Diagnosis Procedure".
Only specified switch cannot be operated.	Steering switch malfunction. Replace steering switch. Refer to SR-16, "Exploded View".

Symptoms	Probable malfunction location
Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN”, “” and “ENTER” switches do not work.	Steering switch signal A circuit malfunction. Refer to AV-947, "Diagnosis Procedure".
Steering switch's “”, “VOL UP”, “VOL DOWN” and “” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-949, "Diagnosis Procedure".

RELATED TO USB

NOTE:

Check that there is no malfunction of USB equipment main body before performing a diagnosis.

Symptoms	Check items	Possible malfunction location / Action to take
iPod® or USB memory can not be recognized.	—	• USB harness malfunction. • USB connector malfunction.

iPod® is a trademark of Apple inc., registered in the U.S. and other countries.

RELATED TO DVD MODE

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to AV-924, "Diagnosis Procedure".
DVD image is not displayed.	Front display unit and rear display unit is not displayed.	Perform CONSULT-III self-diagnosis. Refer to AV-809, "CONSULT - III Function (MULTI AV)".
	Rear display unit is normal.	Composite image signal circuit between AV control unit and front display unit. Refer to AV-921, "Diagnosis Procedure".
	Front display unit is normal.	• Composite image signal circuit between AV control unit and video distributor. Refer to AV-920, "Diagnosis Procedure". • Composite image signal circuit between video distributor and rear display unit. Refer to . AV-919, "Diagnosis Procedure".
DVD sound is not heard.	No sound from all speakers.	• Amp. ON signal circuit malfunction. • BOSE amp. power supply and ground circuits malfunction. Refer to AV-910, "BOSE AMP. : Diagnosis Procedure".
	Sound is not heard from woofer.	• Woofer power supply and ground circuit malfunction. • Sound signal (woofer) circuit malfunction. • Woofer amp. ON signal circuit malfunction.
	Sound is heard only from specific places.	Sound signals circuit of suspect system.

RELATED TO AUXILIARY INPUT

NOTE:

Check that there is no malfunction of AUX equipment main body before performing a diagnosis.

Symptoms	Check items	Probable malfunction location
No voice sound is heard when AUX mode is selected.	Voice sound is heard when other modes are selected.	AUX sound signal circuit.
Image is not displayed when AUX mode is selected.	DVD image is displayed.	AUX image signal circuit malfunction. Refer to AV-923, "Diagnosis Procedure".
	DVD image is not displayed.	Composite image signal circuit between AV control unit and front display unit. Refer to AV-921, "Diagnosis Procedure".

RELATED TO HEADPHONE

Symptoms	Check items	Probable malfunction location
No sound is heard from headphones.	The LED for headphones sound transmission is illuminated.	Headphones sound signal circuit.
	The LED for headphones sound transmission is not illuminated.	Headphones ON signal circuit.
No sound is heard from headphones only for RH (LH).	—	Headphones sound signal circuit RH (LH).

RELATED TO REAR DISPLAY UNIT

Symptoms	Check items	Possible malfunction location / Action to take
The menu screen is not displayed.	For rear display unit, AUX and DVD image are normal.	• Vertical synchronizing (VP) signal circuit malfunction between video distributor and rear display unit. Refer to AV-917, "Diagnosis Procedure". • Horizontal synchronizing (HP) signal circuit malfunction between video distributor and rear display unit. Refer to AV-918, "Diagnosis Procedure". • RGB area (YS) signal circuit malfunction between video distributor and rear display unit. Refer to AV-916, "Diagnosis Procedure".
Color of RGB image (menu display screen) is not proper.	Light blue (Cyan) tint.	RGB signal (R: red) circuit malfunction between video distributor and rear display unit. Refer to AV-914, "Diagnosis Procedure".
	Purple (Magenta) tint.	RGB signal (G: green) circuit malfunction between video distributor and rear display unit. Refer to AV-913, "Diagnosis Procedure".
	Screen looks yellowish.	RGB signal (B: blue) circuit malfunction between video distributor and rear display unit. Refer to AV-915, "Diagnosis Procedure".
AUX and DVD image are not displayed.	Front display unit is not displayed.	Perform CONSULT-III self-diagnosis. Refer to AV-809, "CONSULT - III Function (MULTI AV)".
	Front display unit is normal.	• Composite image signal circuit between AV control unit and video distributor. Refer to AV-920, "Diagnosis Procedure". • Composite image signal circuit between video distributor and rear display unit. Refer to . AV-919, "Diagnosis Procedure".
Rear display unit does not open.	—	Perform CONSULT-III self-diagnosis. Refer to AV-809, "CONSULT - III Function (MULTI AV)".

NORMAL OPERATING CONDITION

Description

INFOID:0000000006071993

NOTE:
For Navigation system operation information, refer to Navigation system Owner's Manual.

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The systems in the video mode.	Press “DISC-AUX” to change the mode.
	The display is turned off.	Press “☀/☽” to turn on the display.
	The interior of the vehicle becomes the a little less than 80°C (176°F) or high temperature, and the protection of the display acts, and a display is turned off.	Wait until the interior of the vehicle has cooled down.
Screen not clear.	Contrast setting is not appropriate.	Adjust the contrast of the display.
No voice guidance is available. Or The volume is too high or too low.	The volume is not set correctly, or it is turned off.	Adjust the volume of voice guidance.
	Voice guidance is not provided for certain streets (roads displayed in gray).	This is not a malfunction.
No map is displayed on the screen.	A screen other than map screen is displayed.	Press “MAP”.
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the navigation system.

NOTE:
Locations stored in the Address Book and other memory functions may be lost if the vehicle's battery is disconnected or becomes discharged. If this occurs, service the vehicle's battery as necessary and re-enter the information in the Address Book.

RELATED TO AUDIO

- The majority of the audio malfunctions are the result of outside causes (bad CD, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and then determine the cause.

NOTE:
- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA, AAC, M4A) or could be incorrectly mastered by the customer on a computer.
- Check if the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the “red book” Compact Disc Standard and may not play.

Symptom	Cause and Counter measure
Cannot play	Check if the CD was inserted correctly.
	Check if the CD is scratched or dirty.
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.
	If there is a mixture of music CD files (CD-DA data) and MP3/WMA/AAC files on a CD, only the music CD files (CD-DA data) will be played.
	Files with extensions other than ".MP3", ".WMA", ".AAC", ".M4A", ".mp3", ".wma", ".aac", ".m4a" cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format, This may occur depending on the variation or the setting of MP3/WMA/AAC/M4A writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the disc.
	Check if the CD is protected by copyright.
	Disks recorded in live file system format are not supported. (For Microsoft Windows Vista, check the settings.)
Poor sound quality	Check if the CD is scratched or dirty.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA/AAC CD, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.
Move immediately to the next song when playing	When a non-MP3/WMA/AAC file has been given an extension of ".MP3", ".WMA", ".AAC", ".M4A", ".mp3", ".wma", ".aac" or ".m4a" or when play is prohibited by copyright protection, the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.

Noise resulting from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources, is not a malfunction.

NOTE:

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

RELATED TO DVD

Symptom	Possible cause	Possible solution
Not working as operated	Some operations may be rejected or may not function as intended because of the manufacturer's intent, depending on DVD.	This is not a malfunction.
Operation not accepted	If a requested operation is prohibited, then a message is displayed on the screen. (Message display depends on DVD.)	This is not a malfunction.

Symptom	Possible cause	Possible solution
DVD can not be played	Check that the DVD is inserted in the right place.	Upturn the DVD (facing the title upward).
	Check that there is no condensation inside the player.	Wait until the condensation evaporates (approximately one hour).
	DVD menu is displayed.	Select item to touch “ENTER”.
	Insertion of a DVD with a different region code.	DVDs with a different region code can not be played. Check DVD.
	Some DVD softwares may not be played because not all DVD softwares fully comply in the standard.	This is not a malfunction.
Interruption during playback or flicker in the display	Check that the DVD has no scratches and dirt.	Errors may not be corrected depending on the size of scratches.
		Wipe and clean the dirt on the disc.
Subtitles not shown	Subtitle setting is OFF.	Set subtitle.
	Subtitle is not included in the software.	Check DVD.
Not played in set language	If a language is not included in the DVD, then the DVD is played in a recommended language.	Check DVD.
Not played with set subtitle	If a set subtitle is not included in the DVD, then the DVD is played with a recommended subtitle.	Check DVD.
Angle unchangeable	Plural angles are not recorded in the software.	Check if the DVD is multi–angle capable.
Unusual screen display	Display mode to the output aspect ratio for the DVD software is inappropriate.	Switch to the appropriate display mode.
Distortion in picture	In the process of fast–forward or fast–reverse.	This is not a malfunction.
Low sound quality	Check that the DVD has no scratches and dirt.	Wipe and clean the dirt on the disc.
Subtitle and language not selectable (not played with set subtitle or in set language)	The DVD is not multilanguage–capable.	The inclusion of the number of languages depends on DVD. Languages may be selectable on the Menu screen. Check DVD.
	The DVD has a priority language or setting.	If the DVD has a priority language or settings, then settings changed with this device are not reflected.
Playback time is indicated, but no sound comes out.	Playback of Mix mode Truck 1. (Mix mode: Format including Truck 1 with data other than music and Trucks from Truck 2 with music data.)	Play music data included in trucks from Truck 2.

RELATED TO VEHICLE ICON

Symptom	Possible cause	Possible solution
Names of roads differ between Plan View and Birdview™.	This is because the quantity of the displayed information is reduced so that the screen does not become too crowded. There is also a chance that names of the roads may be displayed multiple times, and the names appearing on the screen may be different because of a processing procedure.	This is not a malfunction.
The vehicle icon is not displayed in the correct position.	The vehicle was transported after the ignition switch was pressed off, for example, by a ferry or car transporter.	Drive the vehicle for a while on a road where GPS signals can be received.
	The position and direction of the vehicle icon may be incorrect depending on the driving environments and the levels of positioning accuracy of the navigation system.	This is not a malfunction. Drive the vehicle for a while to automatically correct the position and direction of the vehicle icon.
When the vehicle is traveling on a new road, the vehicle icon is located on another road nearby.	Because the new road is not stored in the map data, the system automatically places the vehicle icon on the nearest road available.	Updated road information will be included in the next version of the map data.

Symptom	Possible cause	Possible solution
The screen does not switch to the night screen even after turning on the headlights.	The daytime screen was set the last time the headlights were turned on.	Set the screen to the night screen mode using <Day/Night> when you turn on the headlights.
The map does not scroll even when the vehicle is moving.	The current location map screen is not displayed.	Press “MAP”.
The vehicle icon is not displayed.	The current location map screen is not displayed.	Press “MAP”.
The location of the vehicle icon is misaligned from the actual position.	When using tire chains or replacing the tires, speed calculations based on the speed sensor may be incorrect.	Drive the vehicle for a while [at approximately 30 km/h (19 MPH) for about 30 minutes] to automatically correct the vehicle icon position. If this does not correct the vehicle icon position, contact an INFINITI dealer.
	The map data has a mistake or is incomplete (the vehicle icon position is always misaligned in the same area).	Updated road information will be included in the next version of the map data.

RELATED TO ROUTE CALCULATION AND VISUAL GUIDANCE

Symptom	Possible cause	Possible solution
Waypoints are not included in the auto reroute calculation.	Waypoints that you have already passed are not included in the auto reroute calculation.	If you want to go to that waypoint again, you need to edit the route.
Route information is not displayed.	Route calculation has not yet been performed.	Set the destination and perform route calculation.
	You are not driving on the suggested route.	Drive on the suggested route.
	Route guidance is set to off.	Turn on route guidance.
	Route information is not provided for certain types of roads (roads displayed in gray).	This is not a malfunction.
The auto reroute calculation (or detour calculation) suggests the same route as the one previously suggested.	Route calculations took priority conditions into consideration, but the same route was calculated.	This is not a malfunction.
A waypoint cannot be added.	Five waypoints are already set on the route, including ones that you have already passed.	A maximum of 5 waypoints can be set on the route. If you want to go to 6 or more waypoints, perform route calculations multiple times as necessary.
The suggested route is not displayed.	Roads near the destination cannot be calculated.	Reset the destination to a main or ordinary road, and recalculate the route.
	The starting point and destination are too close.	Set a more distant destination.
	The starting point and destination are too far away.	Divide your trip by selecting one or two intermediate destinations, and perform route calculations multiple times.
	There are time restricted roads (by the day of the week, by time) near the current vehicle location or destination.	Set [Use Time Restricted Roads] to off.
The part of the route that you have already passed is deleted.	A route is managed by sections between waypoints. If you passed the first waypoint, the section between the starting point and the waypoint is deleted. (It may not be deleted depending on the area.)	This is not a malfunction.
An indirect route is suggested.	If there are restrictions (such as one-way streets) on roads close to the starting point or destination, the system may suggest an indirect route.	Adjust the location of the starting of the starting point or destination.
	The system may suggest an indirect route because route calculation does not take into consideration some areas such as narrow streets (gray roads.)	Reset the destination to a main or ordinary road, and recalculate the route.

Symptom	Possible cause	Possible solution
The landmark information does not correspond to the actual information.	This may be caused by insufficient or incorrect map data.	Updated information will be included in the next version of the data.
The suggested route does not exactly connect to the starting point, waypoints, or destination.	There is no data for route calculation closes to these locations.	Set the starting point, waypoints and destination on a main road, and perform route calculation.

RELATED TO VOICE GUIDANCE

Symptom	Possible cause	Possible solution
Voice guidance is not available	Voice guidance is only available at certain intersections marked with? In some case, voice guidance is not available even when the vehicle should make a turn.	This is not a malfunction.
	The vehicle has deviated from the suggested route.	Go back to the suggested route or request route calculation again
	Voice guide is set to off.	Turn on voice guidance.
	Route guidance is set to off.	Turn on voice guidance.
The guidance contact does not correspond to the actual condition.	The contact of voice guidance may vary, depending on the types of intersections at which turn are made.	Follow all traffic rules and regulations.

REMOVAL AND INSTALLATION

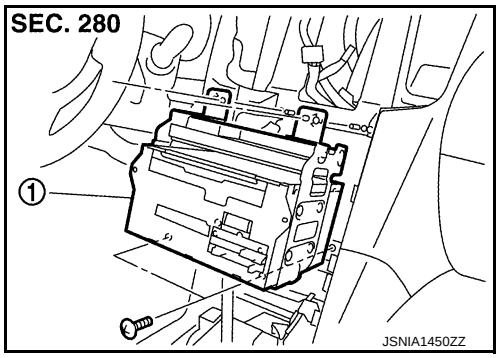
AV CONTROL UNIT

Exploded View

INFOID:0000000006080780

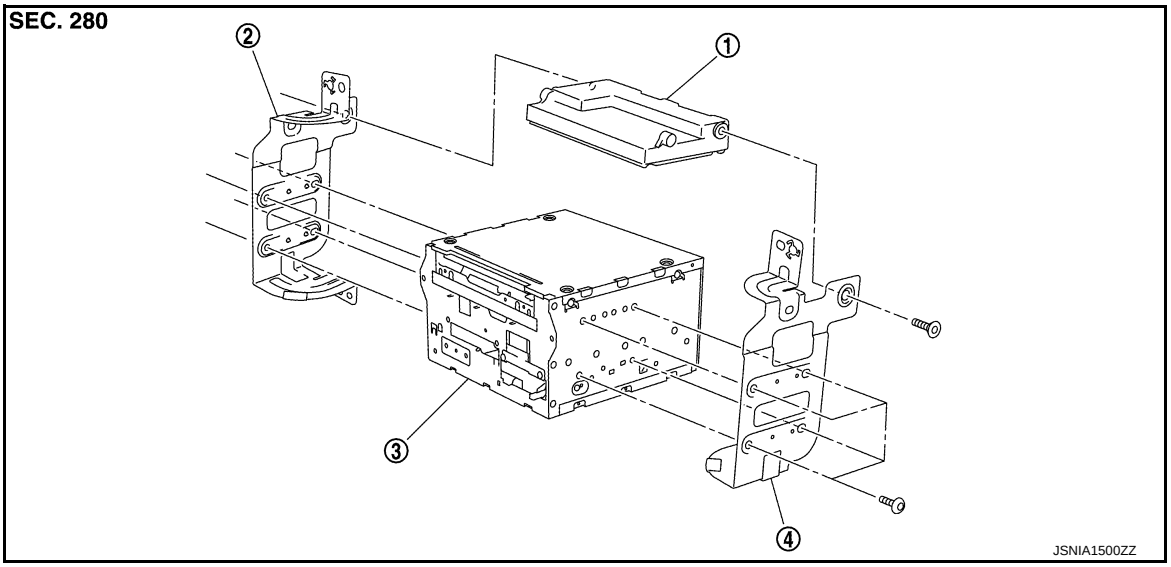
CAUTION:
Before replacing AV control unit, perform "READ CONFIGURATION" to save or print current vehicle specification. For details, refer to AV-859, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description".

REMOVAL



1: AV control unit

DISASSEMBLY



1. Unified meter and A/C amp.
2. Bracket LH
3. AV control unit
4. Bracket RH

Removal and Installation

INFOID:0000000006080781

REMOVAL

CAUTION:
Before replacing AV control unit, perform "READ CONFIGURATION" to save or print current vehicle specification. For details, refer to AV-859, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Description".

1. Remove front display unit. Refer to AV-967, "Exploded View".
2. Remove AV control unit with a unified meter and A/C amp. as a single unit from the body.
3. Remove bracket screws, and then remove AV control unit.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

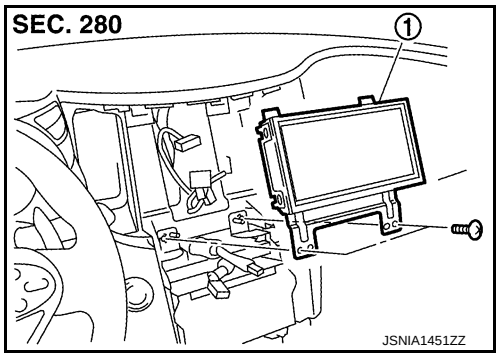
Be sure to perform “WRITE CONFIGURATION” when replacing AV control unit.

FRONT DISPLAY UNIT

Exploded View

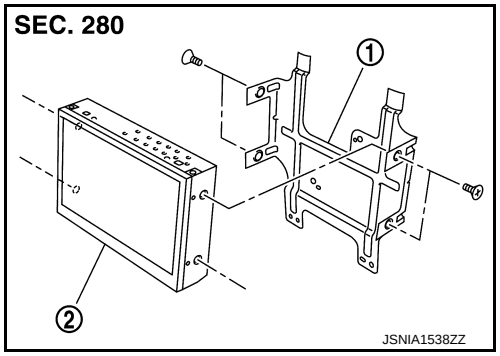
INFOID:0000000006080782

REMOVAL



1. Front display unit

DISASSEMBLY



1. Bracket
2. Front display unit

Removal and Installation

INFOID:0000000006080783

REMOVAL

1. Remove cluster lid D. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove front display unit mounting screws.
3. Disconnect connector, and remove front display unit.

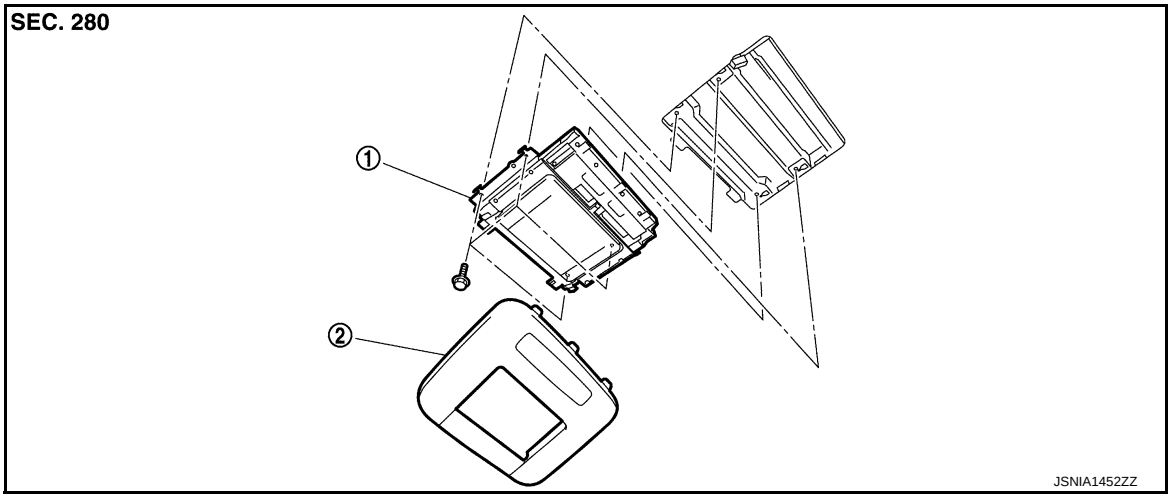
INSTALLATION

Installation is the reverse order of removal.

REAR DISPLAY UNIT

Exploded View

INFOID:0000000006071998



1. Rear display unit
2. Rear display cover

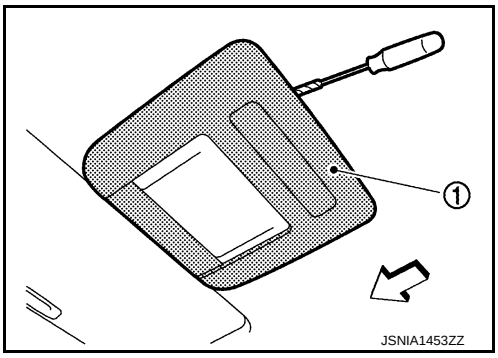
Removal and Installation

INFOID:0000000006071999

REMOVAL

1. Insert cloth-covered driver into gaps between rear display cover (1) and headlining, and remove rear display cover.

⇦: Vehicle front



2. Remove rear display unit mounting bolts.
3. Disconnect connector, and remove rear display unit.

INSTALLATION

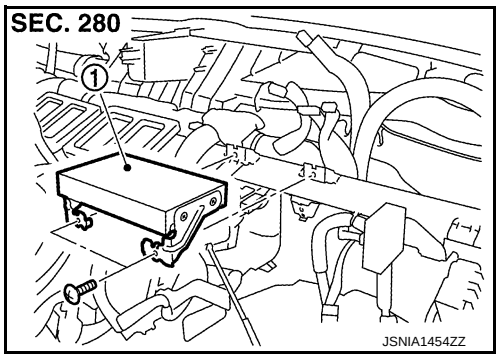
Install in the reverse order of removal.

VIDEO DISTRIBUTOR

Exploded View

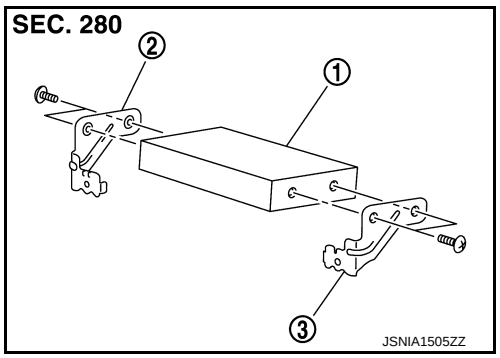
INFOID:0000000006072000

REMOVAL



1: Video distributor

DISASSEMBLY



1. Video distributor
2. Bracket LH
3. Bracket RH

Removal and Installation

INFOID:0000000006072001

REMOVAL

1. Remove instrument panel. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove video distributor mounting screws.
3. Disconnect connector and remove video distributor.

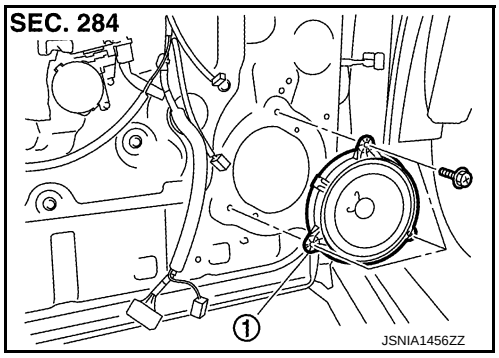
INSTALLATION

Install in the reverse order of removal.

FRONT DOOR SPEAKER

Exploded View

INFOID:0000000006080785



1. Front door speaker

Removal and Installation

INFOID:0000000006080786

REMOVAL

1. Remove front door finisher. Refer to INT-13, "Exploded View".
2. Remove front door speaker mounting bolts.
3. Disconnect connector and remove front door speaker.

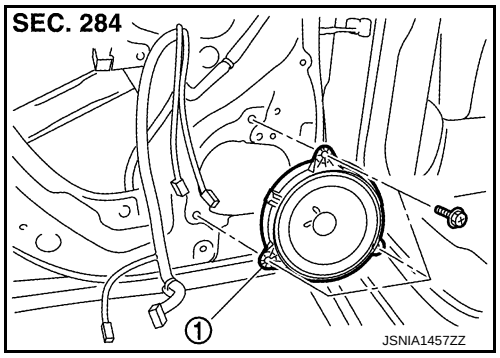
INSTALLATION

Installation is the reverse order of removal.

REAR DOOR SPEAKER

Exploded View

INFOID:0000000006080787



1. Rear door speaker

Removal and Installation

INFOID:0000000006080788

REMOVAL

1. Remove rear door finisher. Refer to INT-16, "Exploded View".
2. Remove rear door speaker mounting bolts.
3. Disconnect connector and remove rear door speaker.

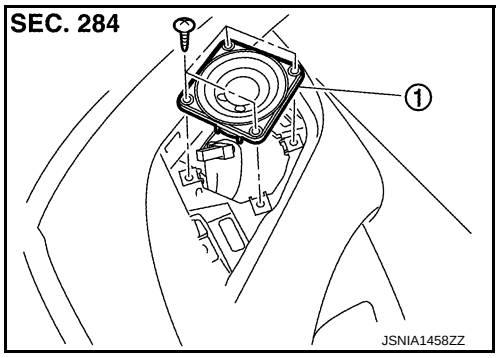
INSTALLATION

Installation is the reverse order of removal.

FRONT SQUAWKER

Exploded View

INFOID:0000000006080789



1. Front squawker

Removal and Installation

INFOID:0000000006080790

REMOVAL

1. Remove speaker grille. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove front squawker mounting screws.
3. Disconnect connector and remove front squawker.

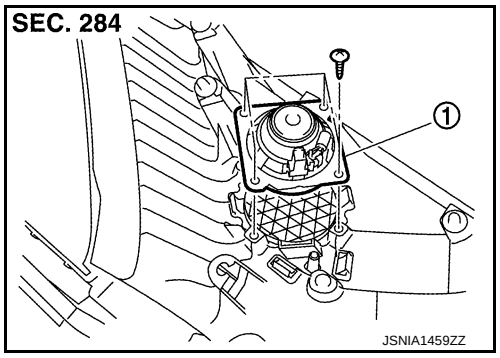
INSTALLATION

Installation is the reverse order of removal.

REAR SQUAWKER

Exploded View

INFOID:0000000006080791



1. Rear squawker

Removal and Installation

INFOID:0000000006080792

REMOVAL

1. Remove luggage side finisher upper. Refer to INT-34, "FOR RUSSIA : Exploded View".
2. Remove rear squawker mounting screws.
3. Remove rear squawker.

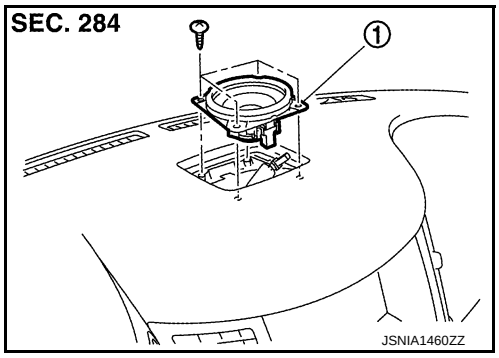
INSTALLATION

Installation is the reverse order of removal.

CENTER SPEAKER

Exploded View

INFOID:0000000006080793



1. Center speaker

Removal and Installation

INFOID:0000000006080794

REMOVAL

1. Remove center speaker grille. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove center speaker mounting screws, lift up the center speaker and disconnect connector.
3. Remove center speaker.

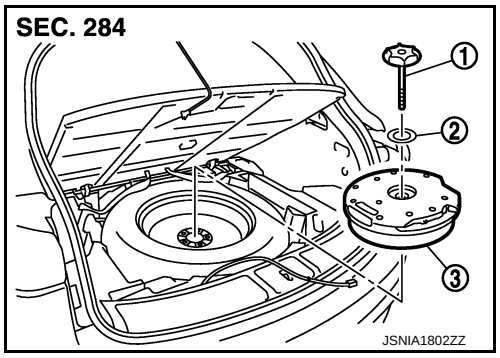
INSTALLATION

Installation is the reverse order of removal.

WOOFER

Exploded View

INFOID:0000000006080795



1. Woofer clamp
2. Spacer
3. Woofer

Removal and Installation

INFOID:0000000006080796

REMOVAL

1. Pull up luggage finisher center and hang the strap to upper body.
2. Remove woofer clamp.
3. Remove harness clip and connector.
4. Remove woofer.

INSTALLATION

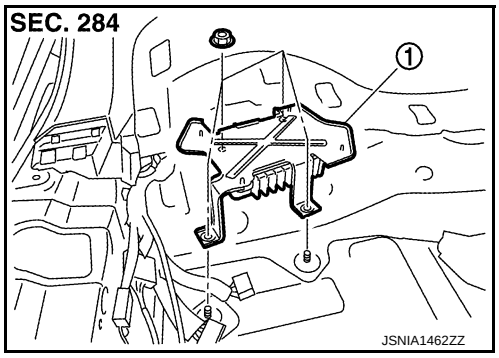
Installation is the reverse order of removal.

BOSE AMP.

Exploded View

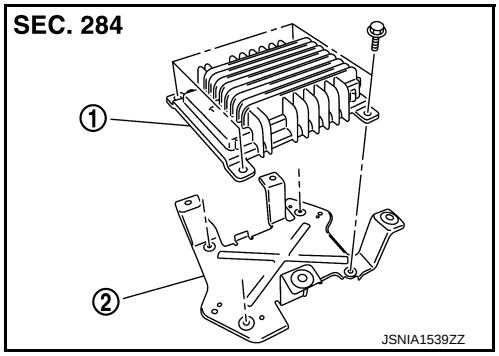
INFOID:0000000006080797

REMOVAL



1. BOSE amp.

DISASSEMBLY



1. BOSE amp.
2. Bracket

Removal and Installation

INFOID:0000000006080798

REMOVAL

1. Remove luggage floor spacer (LH). Refer to INT-34, "FOR RUSSIA : Exploded View".
2. Remove BOSE amp. mounting nuts.
3. Disconnect connector and remove BOSE amp.

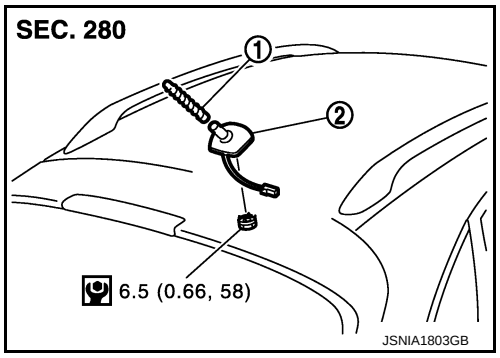
INSTALLATION

Installation is the reverse order of removal.

ANTENNA BASE

Exploded View

INFOID:0000000006080799



1. Antenna rod
2. Antenna base

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000006080800

REMOVAL

1. Remove headlining (rear). Keep a service area. Refer to INT-25, "Exploded View".
2. Remove antenna base mounting nut.
3. Disconnect connector and remove antenna base.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

Be careful about tightening torque. Antenna sensitivity becomes poor, and when it is excessive, roof panel may be deformed, when antenna base mounting nut tightening torque is loose.

MULTIFUNCTION SWITCH

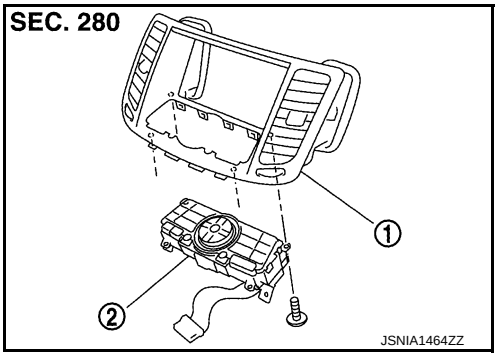
Exploded View

INFOID:0000000006080801

REMOVAL

Refer to IP-14, "A/T MODELS : Exploded View".

DISASSEMBLY



1. Cluster lid D
2. Multifunction switch

Removal and Installation

INFOID:0000000006080802

REMOVAL

1. Remove cluster lid D. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove multifunction switch mounting screws.
3. Disconnect connector and remove multifunction switch.

INSTALLATION

Installation is the reverse order of removal.

PRESET SWITCH

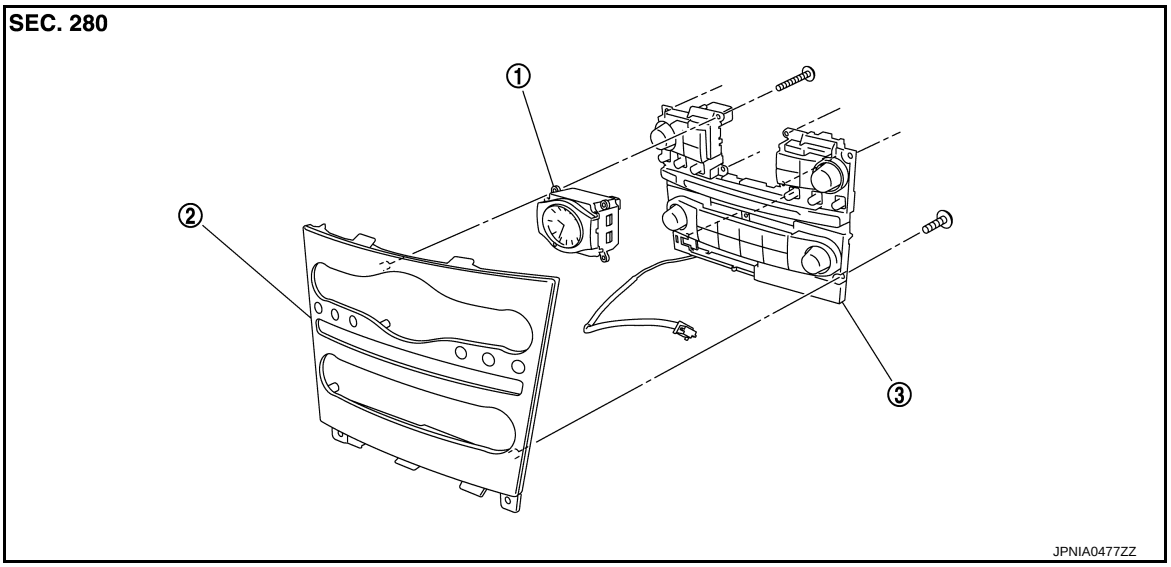
Exploded View

INFOID:0000000006080803

REMOVAL

Refer to IP-14, "A/T MODELS : Exploded View".

DISASSEMBLY



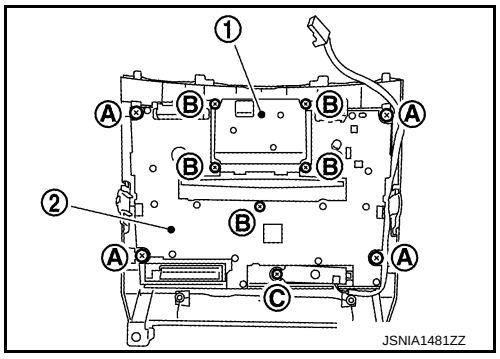
1. Clock
2. Cluster lid C
3. Preset switch

Removal and Installation

INFOID:0000000006080804

REMOVAL

1. Remove cluster lid C. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove preset switch mounting screws (A), (B) and (C).
3. Disconnect connector and remove preset switch.



1. Clock
2. Preset switch

INSTALLATION

Installation is the reverse order of removal.

NOTE:

When installing preset switch, do not allow the print wire that connects preset switch and multifunction switch to get caught in between audio unit and preset switch.

STEERING SWITCH

Exploded View

INFOID:0000000006080805

Refer to SR-16, "Exploded View".

Removal and Installation

INFOID:0000000006080806

REMOVAL

Refer to SR-16, "Removal and Installation".

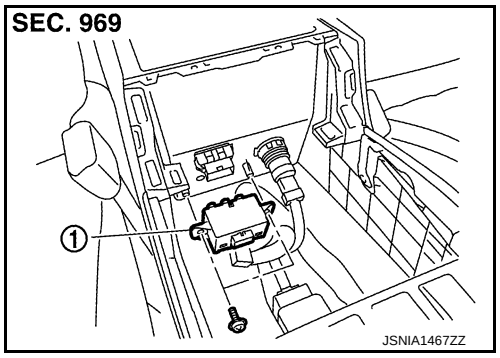
INSTALLATION

Install in the reverse order of removal.

AUXILIARY INPUT JACKS

Exploded View

INFOID:0000000006080807



1. Auxiliary input jacks

Removal and Installation

INFOID:0000000006080808

REMOVAL

1. Remove console box assembly. Refer to IP-37, "A/T MODELS : Exploded View".
2. Remove auxiliary mounting screws.
3. Disconnect connector and remove auxiliary input jacks.

INSTALLATION

Installation is the reverse order of removal.

USB CONNECTOR

Removal and Installation

INFOID:0000000006080809

REMOVAL

1. Remove console box assembly. Refer to IP-37, "A/T MODELS : Exploded View".
2. Press the pawl from the back of console box assembly to remove USB connector.

INSTALLATION

Install in the reverse order of removal.

MICROPHONE

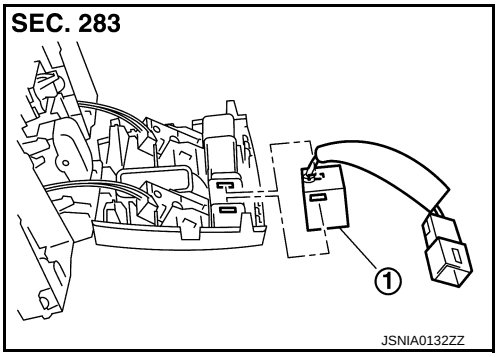
Exploded View

INFOID:0000000006080810

REMOVAL

Refer to INT-25, "Exploded View".

DISASSEMBLY



1. Microphone

Removal and Installation

INFOID:0000000006080811

REMOVAL

1. Remove map lamp assembly. Refer to INT-25, "Exploded View".
2. Remove microphone, stretching pawls of map lamp assembly.

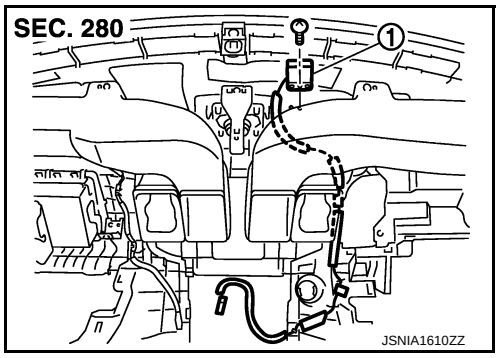
INSTALLATION

Installation is the reverse order of removal.

GPS ANTENNA

Exploded View

INFOID:0000000006080812



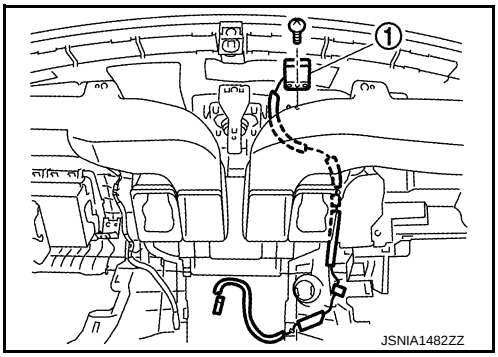
1. GPS antenna

Removal and Installation

INFOID:0000000006080813

REMOVAL

1. Remove instrument panel. Refer to IP-14, "A/T MODELS : Exploded View".
2. Remove GPS antenna mounting screw.
3. Remove GPS antenna (1).



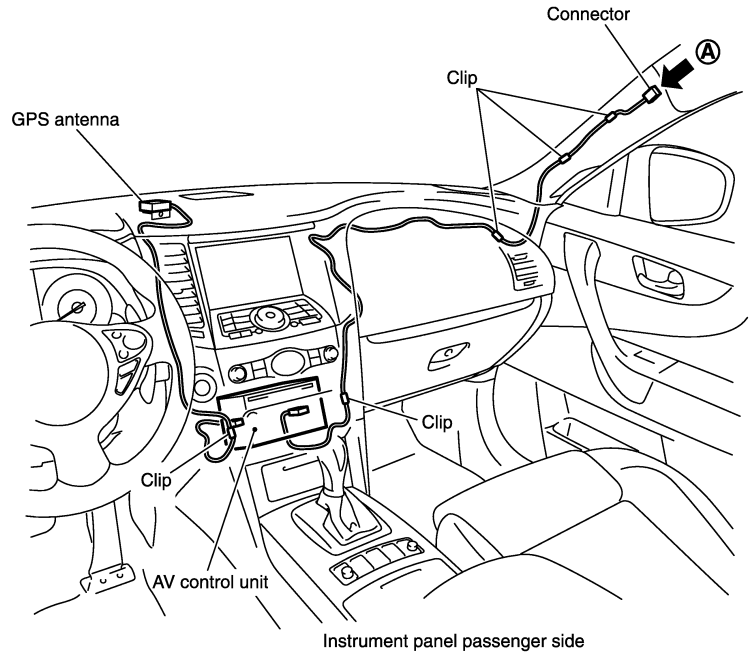
INSTALLATION

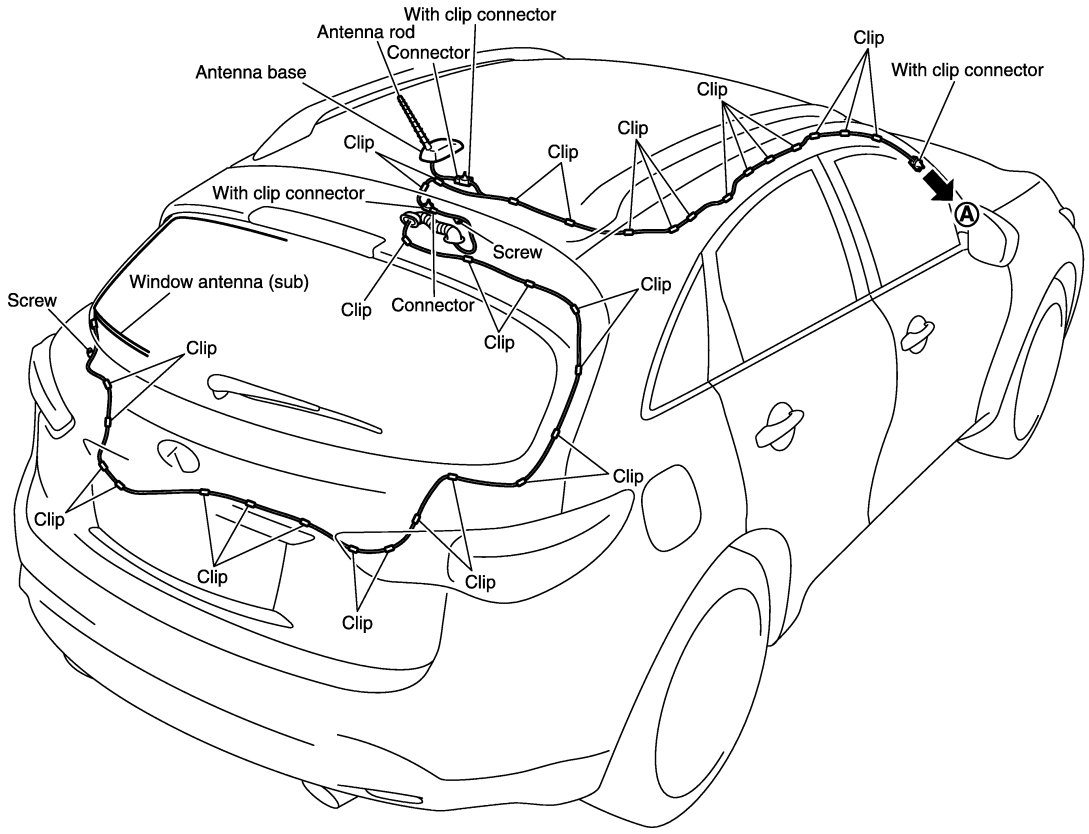
Installation is the reverse order of removal.

Feeder Layout

INFOID:0000000006080814

SEC. 280



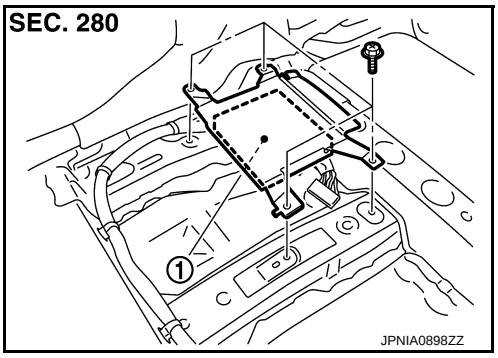


JSNIA2260GB

AROUND VIEW MONITOR CONTROL UNIT

Exploded View

INFOID:0000000006080815



1. Around view monitor control unit

Removal and Installation

INFOID:0000000006080816

REMOVAL

1. Remove front seat (LH side). Refer to SE-90, "Exploded View".
2. Remove floor carpet. Keep a service area.
3. Remove around view monitor control unit mounting screws.
4. Disconnect connector and remove around view monitor control unit.

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-861, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".
3. Perform predictive course line center position adjustment. Refer to AV-861, "PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Special Repair Requirement".

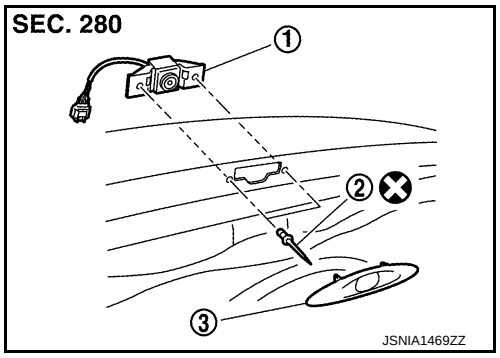
CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

FRONT CAMERA

Exploded View

INFOID:0000000006080817



1. Front camera
2. Rivet
3. Front camera finisher

Refer to GI-4, "Components" for symbols in the figure.

Removal and Installation

INFOID:0000000006080818

REMOVAL

1. Remove front camera finisher.
2. Remove front camera mounting rivet.
3. Remove front camera.

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-861, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

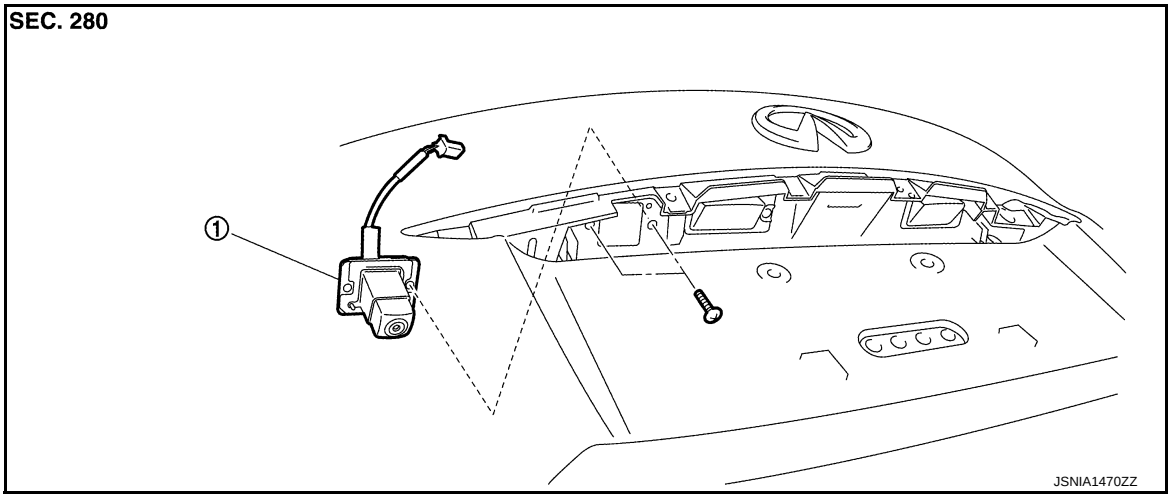
CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

REAR CAMERA

Exploded View

INFOID:0000000006080819



1. Rear camera

Removal and Installation

INFOID:0000000006080820

REMOVAL

1. Remove door handle cover upper. Refer to EXT-52, "Exploded View".
2. Remove rear camera mounting screws and rear camera harness connector.
3. Remove rear camera.

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-861, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

CAUTION:

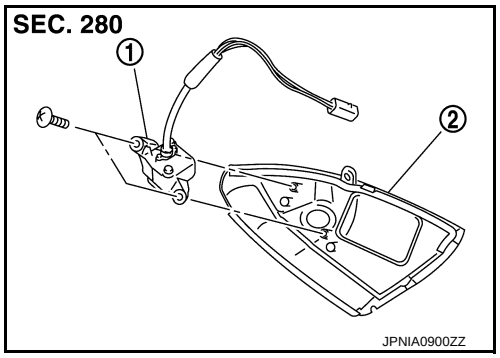
Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

SIDE CAMERA LH

LHD MODELS

LHD MODELS : Exploded View

INFOID:0000000006080821



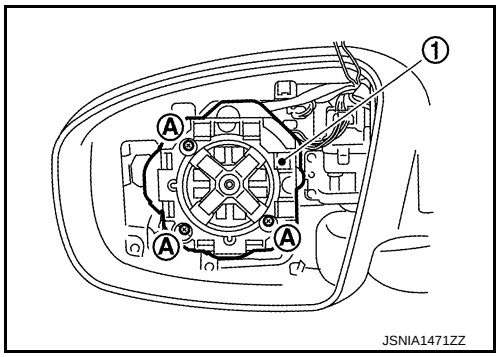
1. Side camera (LH)
2. Side camera finisher assembly

LHD MODELS : Removal and Installation

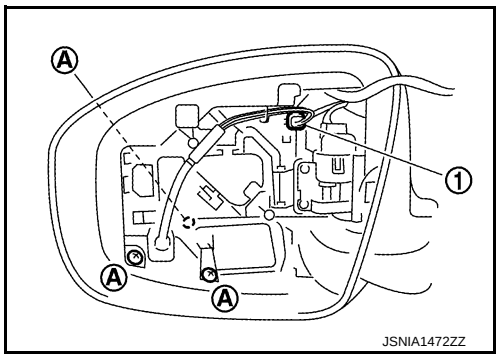
INFOID:0000000006080822

REMOVAL

1. Remove glass mirror (driver side). Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
2. Remove screws (A), and actuator connector, and then actuator (1).



3. Remove door mirror cover. Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
4. Remove screws (A) and connector (1), and then remove side camera finisher assembly (LH).



5. Remove side camera (LH) mounting screws
6. Remove side camera (LH).

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-861, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

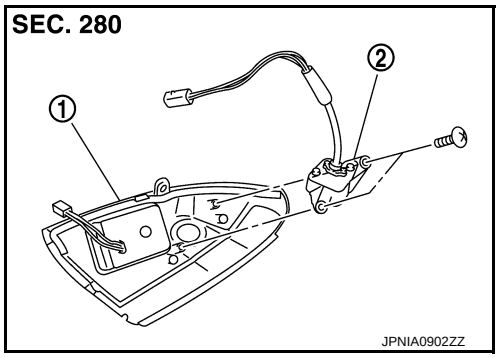
CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

RHD MODELS

RHD MODELS : Exploded View

INFOID:0000000006080823



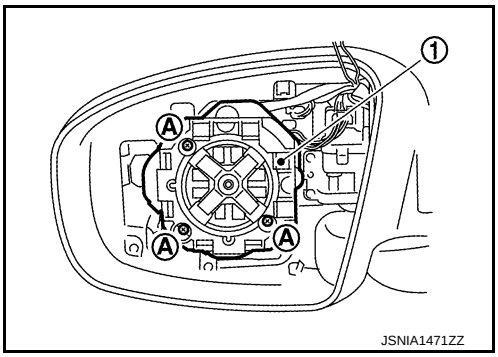
1. Side camera finisher assembly
2. Side camera (RH)

RHD MODELS : Removal and Installation

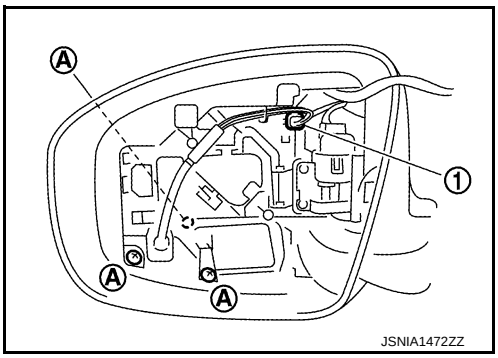
INFOID:0000000006080824

REMOVAL

1. Remove glass mirror (driver side). Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
2. Remove screws (A) and actuator connector, and then actuator (1).



3. Remove door mirror cover. Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
4. Remove screws (A) and connector (1), and then remove side camera finisher assembly (LH).



5. Remove side camera (LH) screws.
6. Remove side camera (LH).

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-861, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

CAUTION:

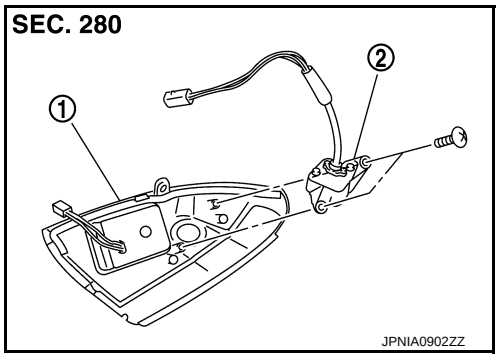
Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

SIDE CAMERA RH

LHD MODELS

LHD MODELS : Exploded View

INFOID:0000000006080825



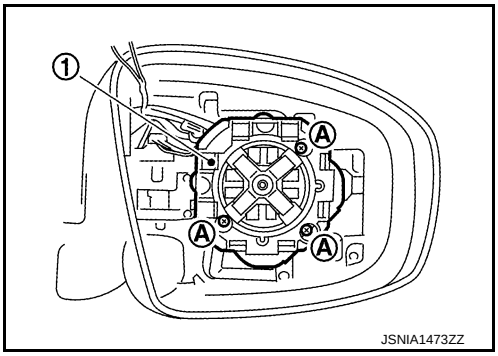
1. Side camera finisher assembly
2. Side camera (RH)

LHD MODELS : Removal and Installation

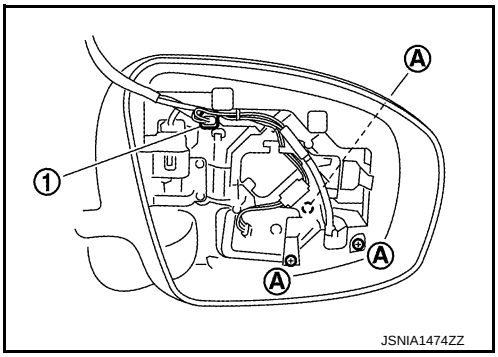
INFOID:0000000006080826

REMOVAL

1. Remove glass mirror (passenger side). Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
2. Remove screws (A) and actuator connector, and then actuator (1).



3. Remove door mirror cover. Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
4. Remove screws (A) and connector (1), and then remove side camera finisher assembly (RH).



5. Remove side camera (RH) screws.
6. Remove side camera (RH).

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-861, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

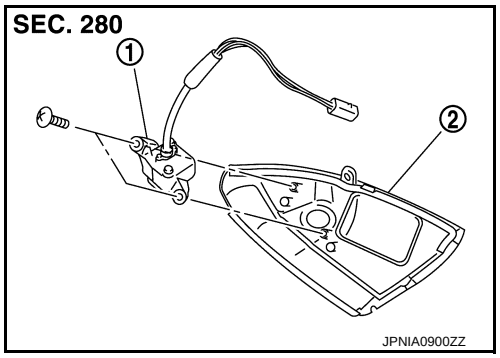
CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

RHD MODELS

RHD MODELS : Exploded View

INFOID:0000000006080827



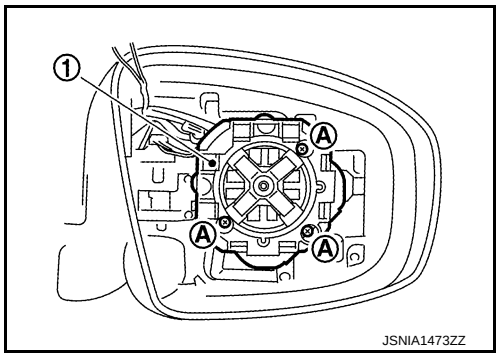
1. Side camera (RH)
2. Side camera finisher assembly

RHD MODELS : Removal and Installation

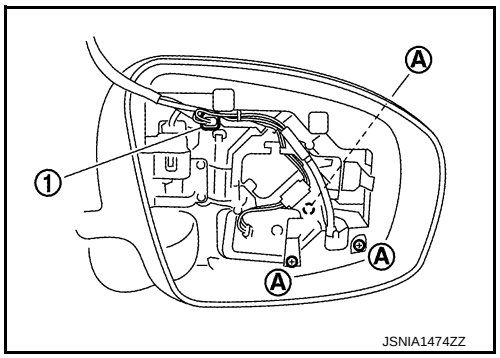
INFOID:0000000006080828

REMOVAL

1. Remove glass mirror (passenger side). Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
2. Remove screws (A), and actuator connector, and then actuator (1).



3. Remove door mirror cover. Refer to MIR-62, "DOOR MIRROR ASSEMBLY : Exploded View".
4. Remove screws (A) and connector (1), and then remove side camera finisher assembly (RH).



5. Remove side camera (RH) mounting screws
6. Remove side camera (RH).

INSTALLATION

1. Installation is the reverse order of removal.
2. Perform camera image calibration. Refer to AV-861, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

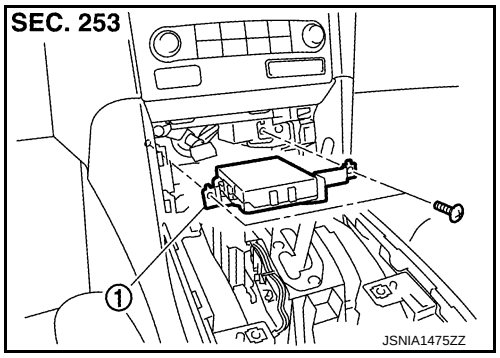
CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

Exploded View

INFOID:0000000006080829



1. Sonar control unit

Removal and Installation

INFOID:0000000006080830

REMOVAL

1. Remove AV control unit. Refer to AV-965, "Exploded View".
2. Remove screws and connector, and then sonar control unit.

INSTALLATION

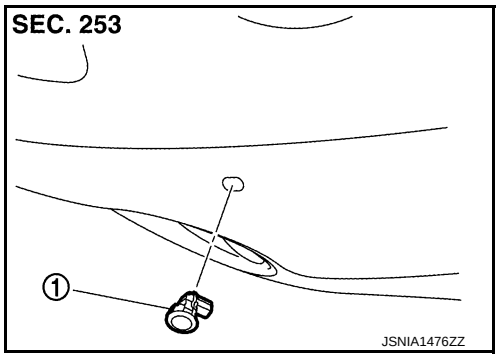
Install in the reverse order of removal.

SONAR SENSOR

FRONT

FRONT : Exploded View

INFOID:0000000006080831



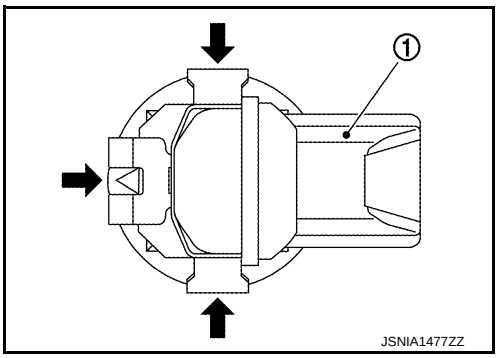
1. Sonar sensor (front)

FRONT : Removal and Installation

INFOID:0000000006080832

REMOVAL

1. Remove fender protector. Keep a service area. Refer to EXT-28, "FENDER PROTECTOR : Exploded View".
2. Remove sonar sensor connector.
3. Press the sonar sensor (1) outside the front bumper, pressing the metal clips on the back to the direction of black arrows.



INSTALLATION

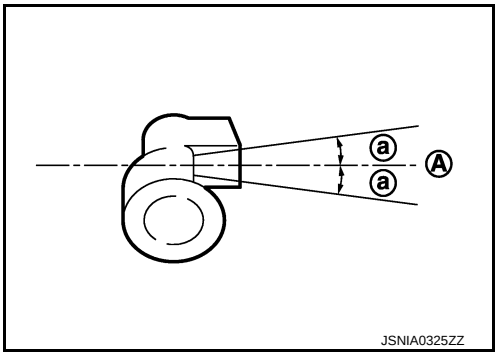
Install the bumper when the pawl engages.

CAUTION:

The connector direction is within ±10° from the horizontal position when assembling the bumper.

A : Horizontal position

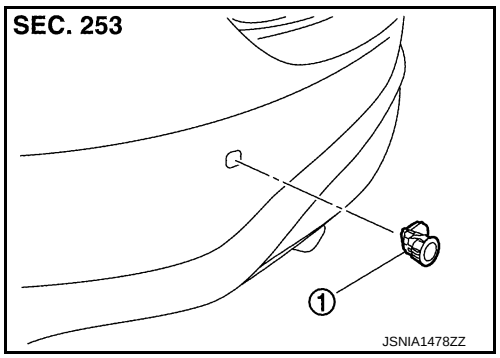
a : 10°



REAR

REAR : Exploded View

INFOID:0000000006080833



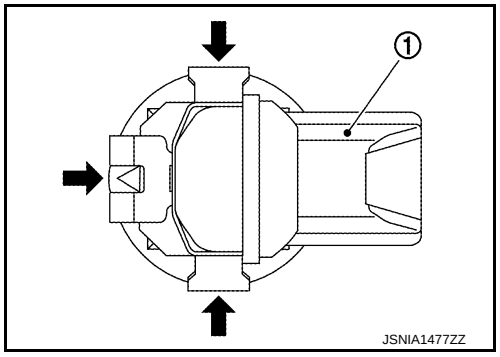
1. Sonar sensor (rear)

REAR : Removal and Installation

INFOID:0000000006080834

REMOVAL

1. Remove sonar sensor connector.
2. Press the sonar sensor (1) outside the front bumper, pressing the metal clips on the back to the direction of black arrows.



INSTALLATION

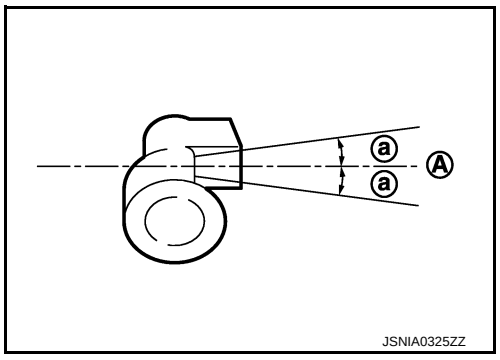
Install the bumper when the pawl engages.

CAUTION:

The connector direction is within ±10° from the horizontal position when assembling the bumper.

A : Horizontal position

a : 10°

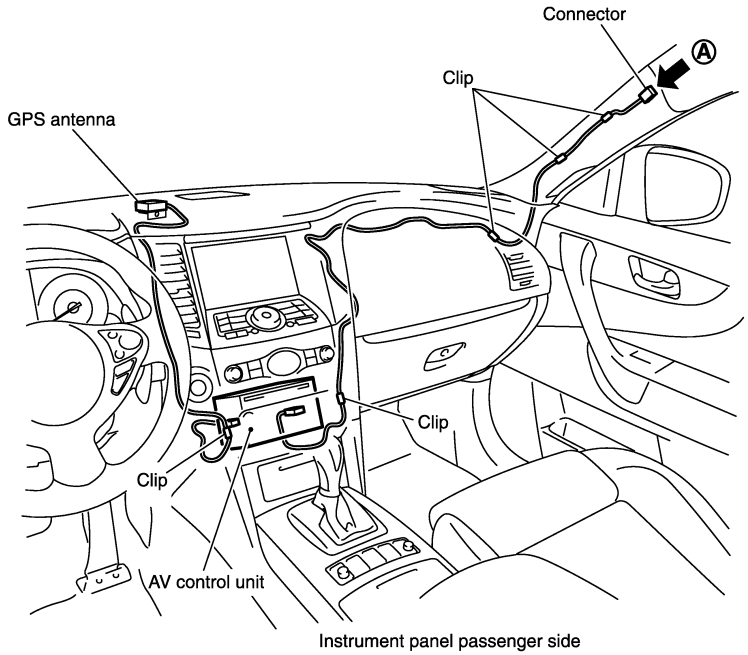


ANTENNA FEEDER

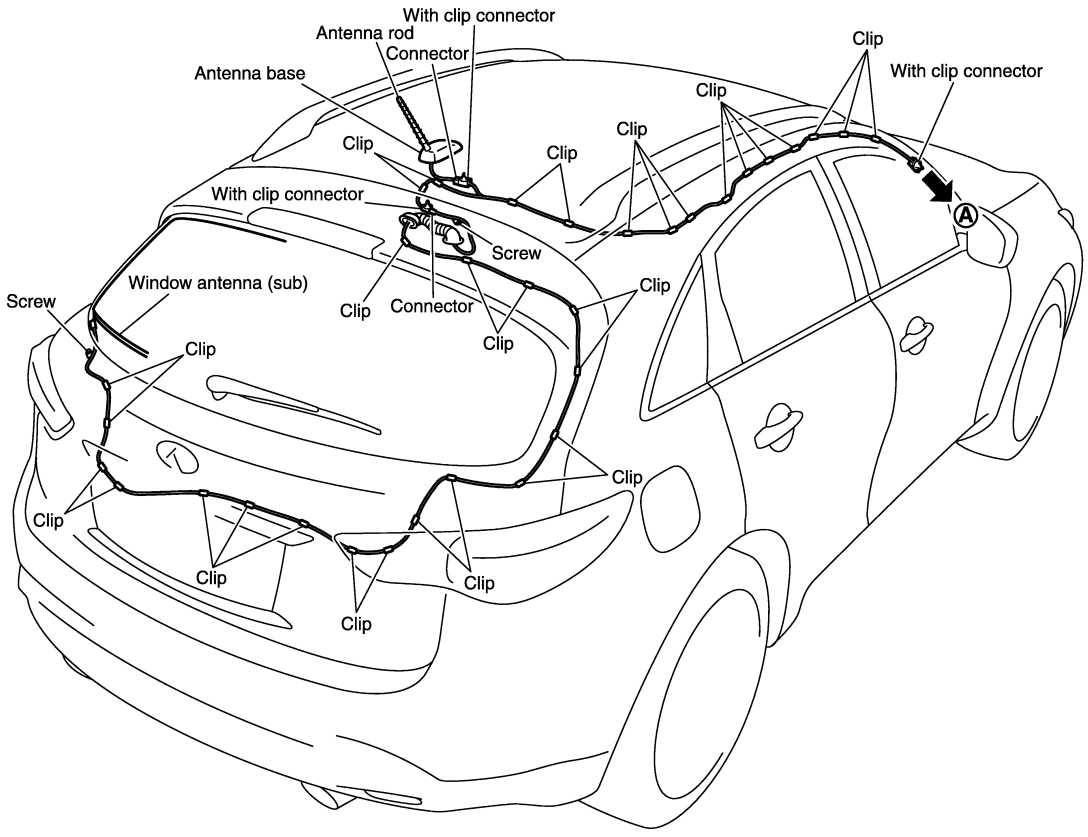
Feeder Layout

INFOID:0000000006080838

SEC. 280



Instrument panel passenger side



Rear view of vehicle

JSNIA2260GB