

SECTION **AV**

AUDIO, VISUAL & NAVIGATION SYSTEM

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PRECAUTION

PRECAUTIONS

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

INFOID:000000010578399

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:**

Always observe the following items for preventing accidental activation.

- 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 "SRS AIR BAG".
- Never 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:**

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never 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:000000010578401

AV COMMUNICATION SYSTEM

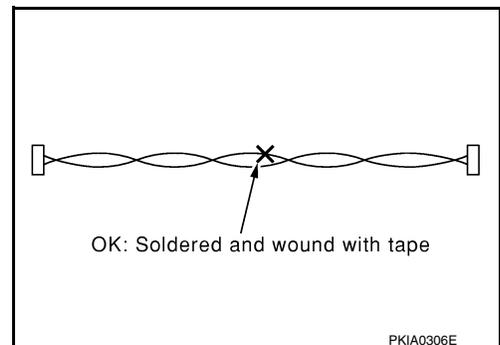
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

INFOID:000000010578402

AV COMMUNICATION SYSTEM

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

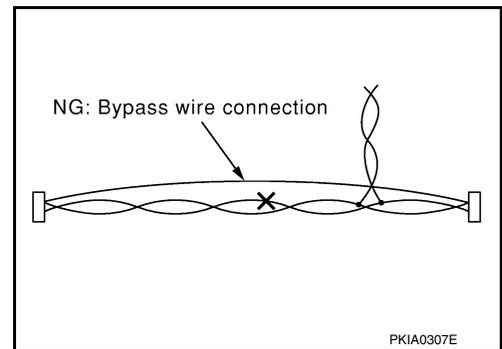


## PRECAUTIONS

### < PRECAUTION >

[WITHOUT NAVIGATION]

- 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.)



INFOID:000000011008570

### Precautions for Removing Battery Terminal

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

**NOTE:**

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

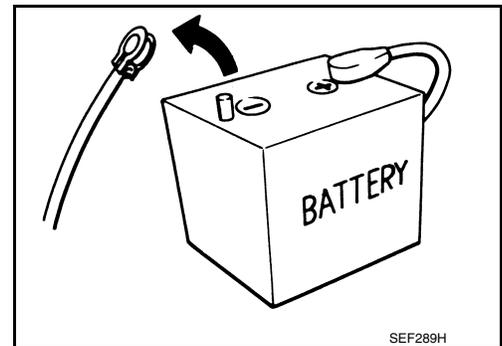
**NOTE:**

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

**NOTE:**

The removal of 12V battery may cause a DTC detection error.

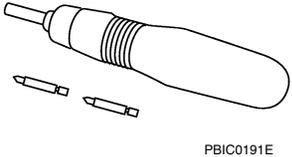


# PREPARATION

## PREPARATION

### Commercial Service Tools

INFOID:0000000010578403

Tool name	Description
<p>Power tool</p>  <p>PBIC0191E</p>	<p>Loosening screws</p>

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# COMPONENT PARTS

< SYSTEM DESCRIPTION >

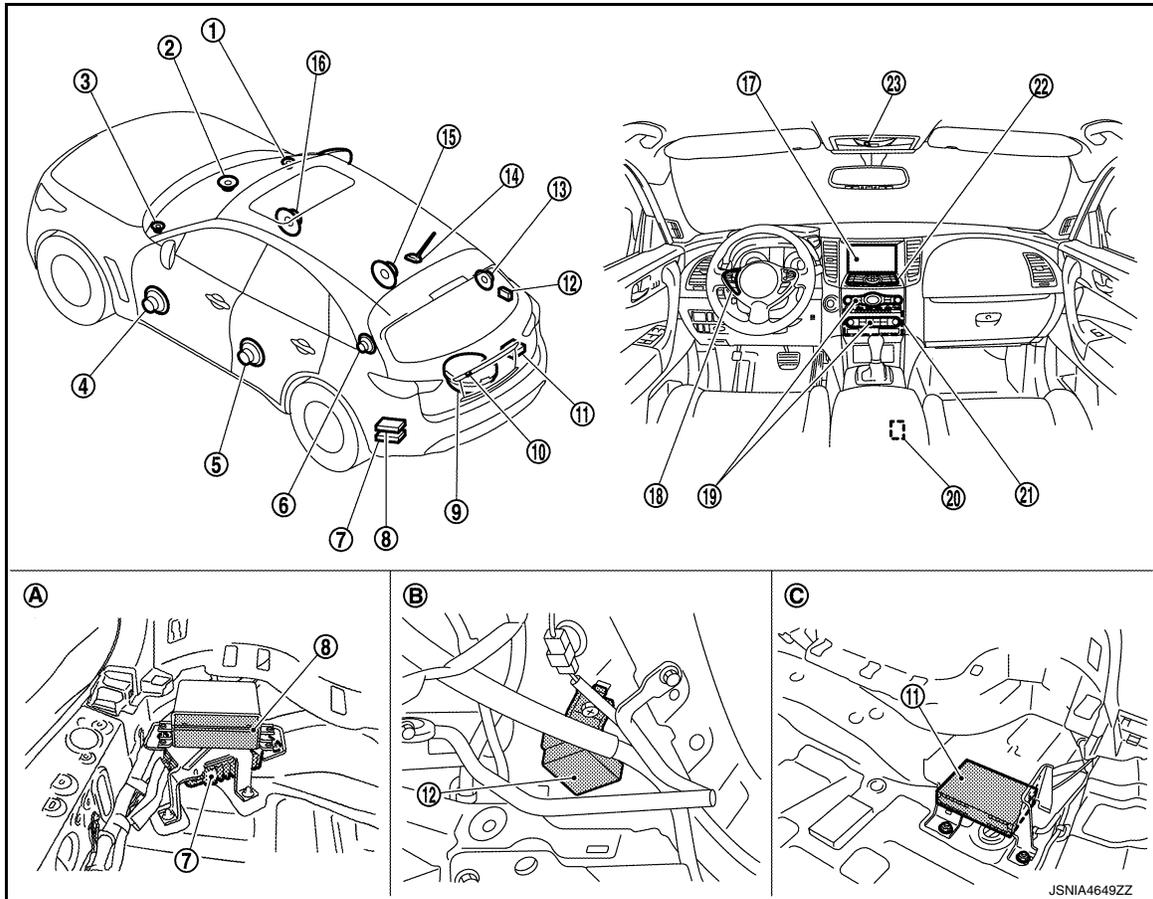
[WITHOUT NAVIGATION]

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000010578404



- |                            |   |  |
|----------------------------|---|--|
| 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. Satellite radio tuner                             | 12. TEL antenna                              |
| 13. Rear squawker RH       | 14. Antenna base (antenna amp. and satellite antenna) | 15. Rear door speaker RH                     |
| 16. Front door speaker RH  | 17. Front display unit                                | 18. Steering switch                          |
| 19. Preset switch          | 20. USB connector                                     | 21. AV control unit                          |
| 22. Multifunction switch   | 23. Microphone  |  |
| A. Luggage floor (LH side) | B. Luggage side RH                                    | C. Console pocket assembly removed condition |

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[WITHOUT NAVIGATION]

## Component Description

INFOID:000000010578405

Part name	Description
AV control unit	<ul style="list-style-type: none"> <li>Integrates flash memory allowing music data to be stored.</li> <li>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.</li> <li>The AV control unit includes the audio, USB connection and vehicle information functions.</li> <li>It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function.</li> <li>It is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function.</li> <li>It inputs the illumination signals that are required for the display dimming control.</li> <li>It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake).</li> <li>TEL voice signal and voice guidance signal are input from TEL adapter unit.</li> </ul>
Front display unit	<ul style="list-style-type: none"> <li>Front display image is controlled by the serial communication from AV control unit.</li> <li>It receives the power (signal VCC and inverter VCC) from the AV control unit and operates.</li> <li>RGB image signal is input from AV control unit (RGB, RGB area and RGB synchronizing).</li> <li>Composite image signals (camera images) are input from AV control unit.</li> <li>Synchronizing signal (HP, VP) is output to AV control unit.</li> </ul>
BOSE amp.	<ul style="list-style-type: none"> <li>Inputs sound signal from AV control unit, and outputs sound signal to each speaker.</li> <li>Inputs mode change signal from AV control unit.</li> </ul>
Front door speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
Rear door speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
Front squawker	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs mid range sounds.</li> </ul>
Rear squawker	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs mid range sounds.</li> </ul>
Center speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs high and mid range sounds.</li> </ul>
Woofers	<ul style="list-style-type: none"> <li>Inputs power (woofer amp. ON signal) and sound signal from BOSE amp.</li> <li>Outputs low range sound.</li> </ul>
Multifunction switch	<ul style="list-style-type: none"> <li>Operation panel is equipped with the centralized switch where audio, etc. operations are integrated.</li> <li>Connected with preset switch via cable, and operation signal is transmitted to AV control unit via AV communication.</li> </ul>
Preset switch	<ul style="list-style-type: none"> <li>Operation panel is equipped with the centralized switch where audio and air conditioner, etc. operations are integrated.</li> <li>Connected with multifunction switch via cable, and operation signal is transmitted to AV control unit via AV communication.</li> <li>The disk ejection operating signal is performed by hardware.</li> </ul>
Rear view camera	<ul style="list-style-type: none"> <li>Camera power supply is input from AV control unit.</li> <li>The image of vehicle rear view is transmitted to AV control unit.</li> </ul>
Steering switch	<ul style="list-style-type: none"> <li>Operations for audio and hands-free phone are possible.</li> <li>Steering switch signal (operation signal) is output to AV control unit.</li> </ul>
Microphone	<ul style="list-style-type: none"> <li>Used for hands-free phone operation.</li> <li>Microphone signal is transmitted to TEL adapter unit.</li> <li>Power (Microphone VCC) is supplied from TEL adapter unit.</li> </ul>
USB connector	Sound signal of USB input is transmitted to AV control unit.

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## COMPONENT PARTS

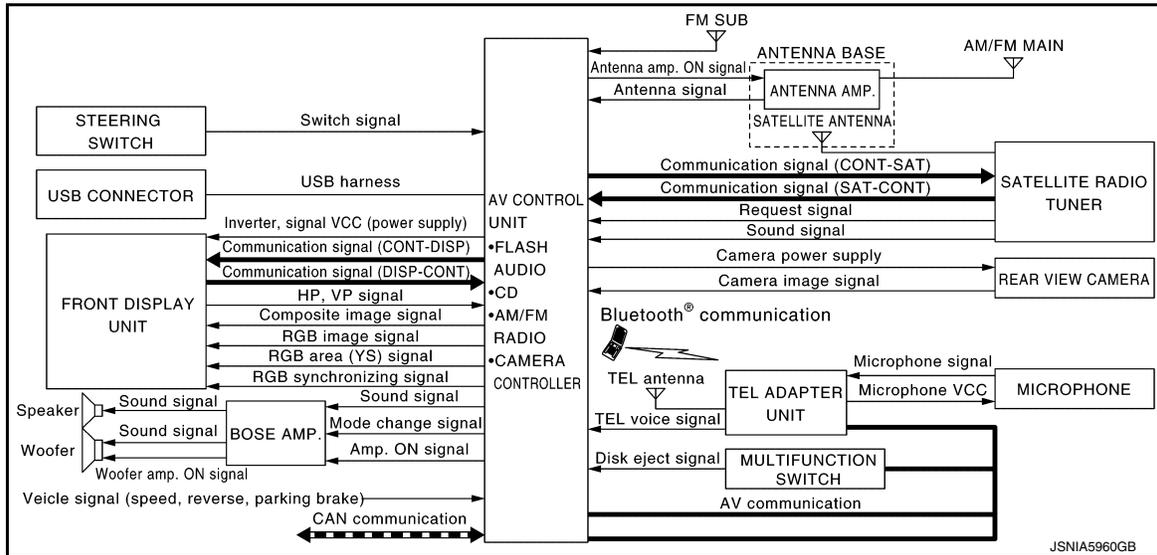
< SYSTEM DESCRIPTION >

[WITHOUT NAVIGATION]

Part name	Description
Antenna base	<p>An antenna base integrated with radio antenna amp. and satellite radio antenna is adopted.</p> <p>ANTENNA AMP.</p> <ul style="list-style-type: none"><li>• Radio signal received by rod antenna is amplified and transmitted to AV control unit.</li><li>• Power (antenna amp. ON signal) is supplied from AV control unit.</li></ul> <p>SATELLITE RADIO ANTENNA</p> <ul style="list-style-type: none"><li>• Receives the satellite radio waves and outputs it to satellite radio tuner.</li></ul>
Satellite radio tuner	<ul style="list-style-type: none"><li>• Inputs the satellite radio signal from satellite radio antenna and outputs the sound signal to the AV control unit.</li><li>• It is controlled with the AV control unit and serial communication (communication signal and request signal).</li></ul>
TEL adapter unit	<ul style="list-style-type: none"><li>• Inputs the TEL voice signal from TEL antenna and outputs it to the AV control unit.</li><li>• It is connected with the AV control unit via AV communication and controlled with the AV control unit.</li></ul>
TEL antenna	Receives the TEL voice signal and outputs it to the TEL adapter unit.

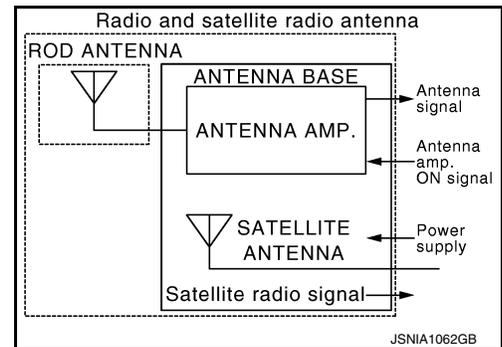
SYSTEM  
MULTI AV SYSTEM

MULTI AV SYSTEM : System Diagram



NOTE:

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



MULTI AV SYSTEM : System Description

Multi AV system means that the following systems are integrated.

FUNCTION NAME
Audio function
Hands-free phone function
Rear view monitor function
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. Transmitting/receiving of data signal is performed by BCM. Also, it transmits the required signal of vehicle setting and receives the response signal.
- AV control unit is connected with front display unit and serial communication, and it transmits the required signal of front display unit and display control and receives the response signal from front display unit.

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AV

**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 front display.

FUNCTION
AM/FM radio
Satellite radio (except for Mexico)
CD
USB connection function
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 hardware.
- Operating signal is transmitted to AV control unit with steering switch signal when it is operated by steering switch.

**Screen Display**

- Switching of front display is performed with serial communication between front 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.

**Satellite Radio Mode**

- Satellite radio tuner is controlled by communication signal and request signal with AV control unit.
- Sound signal (satellite radio) is received by satellite antenna and transmitted to AV control unit. AV control unit outputs sound signal (satellite radio) to BOSE amp. The signal is also outputted from BOSE amp. to both woofer and each speaker.

**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.

**USB Connection Function**

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

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

**NOTE:**

Use the enclosed USB harness when connecting iPod<sup>®</sup> 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<sup>®</sup> 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 speaker when operating the cellular phone.
- TEL adapter unit has the on board self-diagnosis function. Refer to [AV-31, "On Board Diagnosis Function"](#).

## 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.

A

## 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.

B

C

## REAR VIEW MONITOR FUNCTION

- 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 AV control 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 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.

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## 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.
- AV control unit is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function.

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AV

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# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[WITHOUT NAVIGATION]

## DIAGNOSIS SYSTEM (AV CONTROL UNIT)

### On Board Diagnosis Function

INFOID:000000010578408

#### MULTIFUNCTION SWITCH AND PRESET SWITCH SELF-DIAGNOSIS FUNCTION

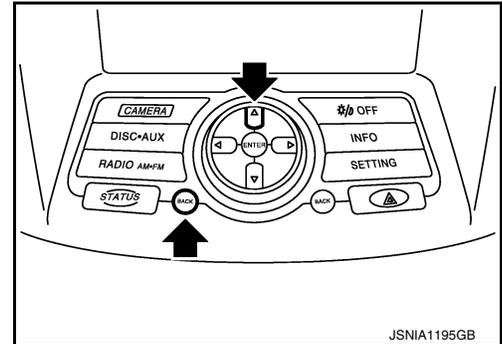
The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

##### 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 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 front 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	<ul style="list-style-type: none"> <li>• AV control unit diagnosis.</li> <li>• Diagnoses the connections across system components, between AV control unit and each unit.</li> </ul>

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

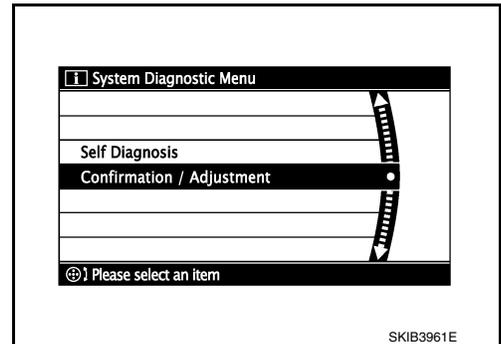
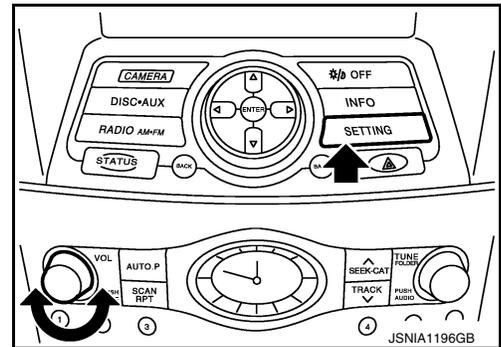
< SYSTEM DESCRIPTION >

[WITHOUT NAVIGATION]

	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.	<ul style="list-style-type: none"> <li>Guiding line position that overlaps rear view camera image can be adjusted.</li> <li>Configuration stored in the AV control unit can be checked.</li> </ul>
	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.

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AV

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[WITHOUT NAVIGATION]

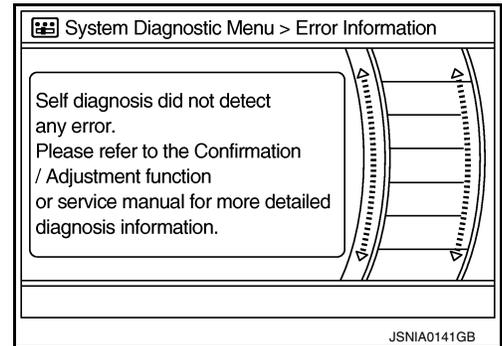
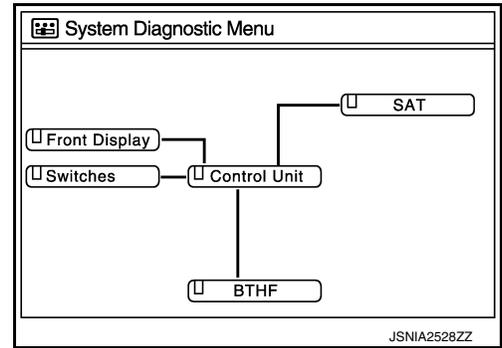
2. Diagnosis results are displayed after the self-diagnosis is completed. The unit names and the connection lines are color-coded according to the diagnostic results.

Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction <sup>Note</sup>	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-130. "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.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

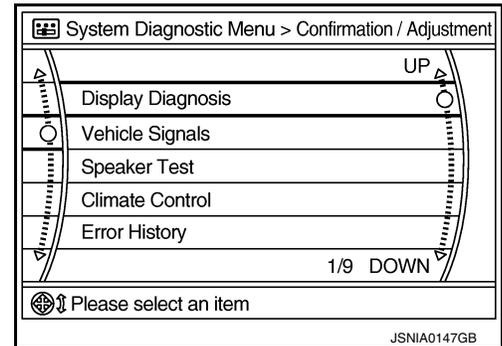
< SYSTEM DESCRIPTION >

[WITHOUT NAVIGATION]

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 ↔ SAT	When either one of the following items is detected: <ul style="list-style-type: none"> <li>• satellite radio tuner power supply and ground circuit malfunction is detected.</li> <li>• malfunction is detected in communication circuits between AV control unit and satellite radio tuner.</li> <li>• malfunction is detected in request signal circuit between AV control unit and satellite radio tuner.</li> </ul>	<ul style="list-style-type: none"> <li>• Satellite radio tuner power supply and ground circuit.</li> <li>• Communication circuit between AV control unit and satellite radio tuner.</li> <li>• Request signal circuit between AV control unit and satellite radio tuner.</li> </ul>
Control unit ↔ BT/HF	When either one of the following items is detected: <ul style="list-style-type: none"> <li>• TEL adapter unit power supply and ground circuits are malfunctioning.</li> <li>• AV communication circuits between AV control unit and TEL adapter unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• TEL adapter unit power supply and ground circuits.</li> <li>• AV communication circuits between AV control unit and TEL adapter unit are malfunctioning.</li> </ul>

## 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.

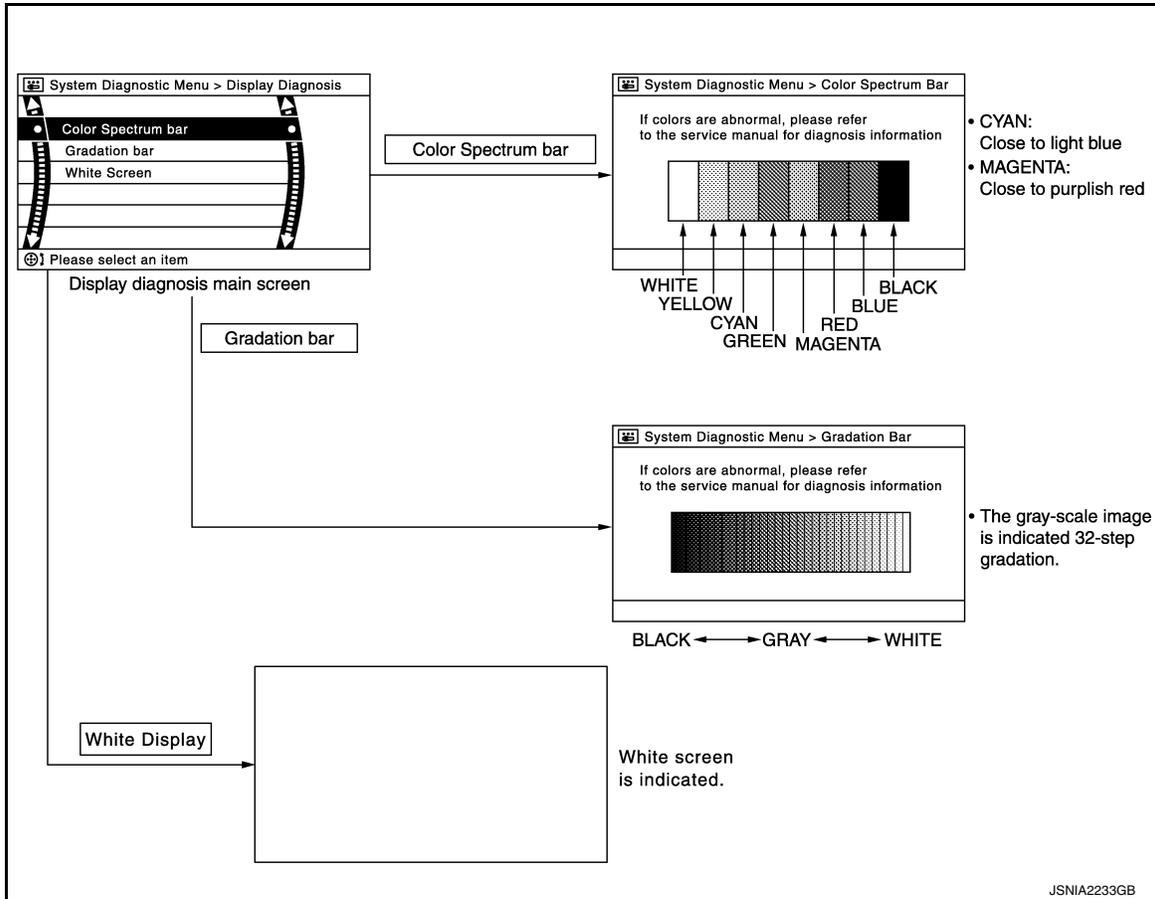


# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

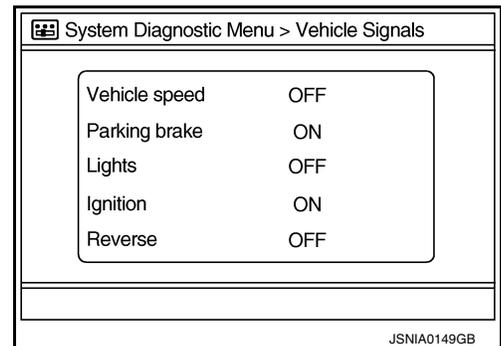
[WITHOUT NAVIGATION]

## 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 SYSTEM (AV CONTROL UNIT)

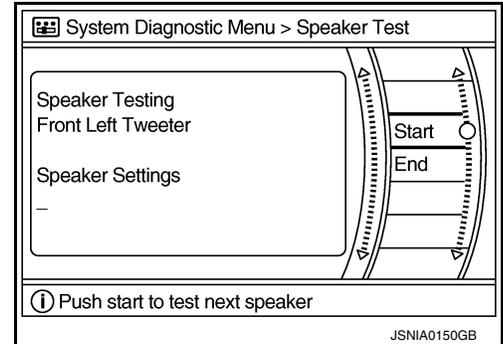
< SYSTEM DESCRIPTION >

[WITHOUT NAVIGATION]

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 ignition switch is turned ON. The counter increases by 1 if the condition is normal at a next ignition 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.

#### Count up method B

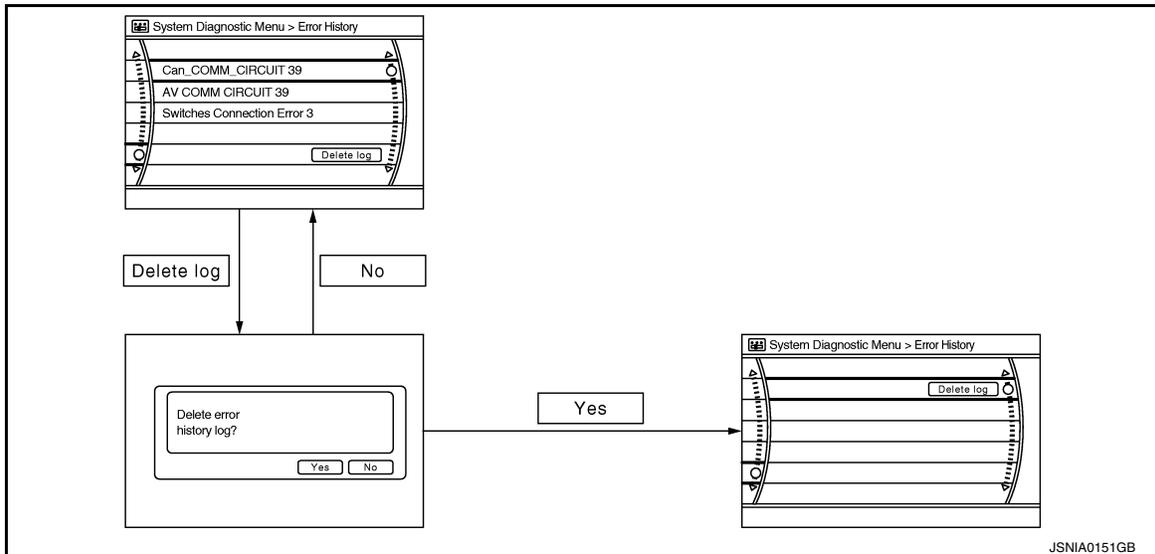
- The counter increases by 1 if an error occurs when ignition switch is ON. The counter will not decrease even if the condition is normal at the next ignition ON cycle.
- The counter upper limit is 50. Any counts exceeding 50 are ignored. The counter can be reset (no error record display) with the "Delete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

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

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[WITHOUT NAVIGATION]



## 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, and then repair the malfunctioning parts according to the diagnosis results. Refer to <a href="#">AV-27. "CONSULT Function (MULTI AV)".</a>
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 authentication chip error		
Audio connection error		
DSP Connection Error	AV control unit malfunction is detected.	<ul style="list-style-type: none"> <li>If a disc can be played, then there is a possibility of the detection of a temporary malfunction.</li> <li>Replace the AV control unit if the malfunction occurs constantly.</li> </ul>
DSP Communication Error		
Unfinished configuration	The writing of configuration data is incomplete.	Write configuration data with CONSULT.
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. Refer to <a href="#">AV-27. "CONSULT Function (MULTI AV)".</a>
Front Display Connection Error	When either one of the following items is detected: <ul style="list-style-type: none"> <li>front display unit power supply and ground circuits malfunction is detected.</li> <li>malfunction is detected in communication circuits between AV control unit and front display unit.</li> </ul>	<ul style="list-style-type: none"> <li>Front display unit power supply and ground circuits.</li> <li>Communication circuits between AV control unit and front display unit.</li> </ul>

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

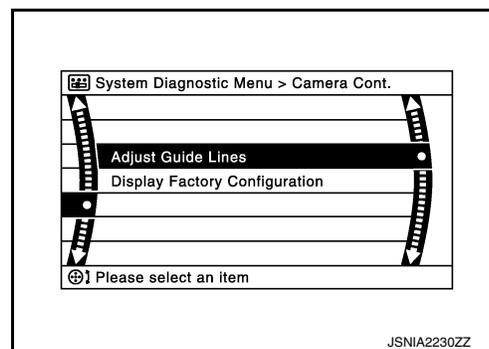
< SYSTEM DESCRIPTION >

[WITHOUT NAVIGATION]

Error item	Description	Possible malfunction factor/Action to take
XM Connection Error	When either one of the following items is detected: <ul style="list-style-type: none"> <li>• satellite radio tuner power supply and ground circuit malfunction is detected.</li> <li>• malfunction is detected in communication circuits between AV control unit and satellite radio tuner.</li> <li>• malfunction is detected in request signal circuit between AV control unit and satellite radio tuner.</li> </ul>	<ul style="list-style-type: none"> <li>• Satellite radio tuner power supply and ground circuit.</li> <li>• Communication circuit between AV control unit and satellite radio tuner.</li> <li>• Request signal circuit between AV control unit and satellite radio tuner.</li> </ul>
USB electric current Error	Detection of overcurrent in USB connector.	Check USB harness between the AV control unit and USB connector.
<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT</li> <li>• Switches Connection Error</li> </ul>	When either one of the following items is detected: <ul style="list-style-type: none"> <li>• multifunction switch power supply and ground circuits are malfunctioning.</li> <li>• AV communication circuits between AV control unit and multifunction switch are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Multifunction switch power supply and ground circuits.</li> <li>• AV communication circuits between AV control unit and multifunction switch.</li> </ul>
<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT</li> <li>• H/F Unit Connection Error</li> </ul>	When either one of the following items is detected: <ul style="list-style-type: none"> <li>• TEL adapter unit power supply and ground circuits are malfunctioning.</li> <li>• AV communication circuits between AV control unit and TEL adapter unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• TEL adapter unit power supply and ground circuits.</li> <li>• AV communication circuits between AV control unit and TEL adapter unit.</li> </ul>
<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT</li> <li>• Switches Connection Error</li> <li>• H/F Unit Connection Error</li> </ul>	Malfunction is detected in AV communication circuits between AV control unit and multifunction switch.	AV communication circuits between AV control unit and multifunction switch.

## Camera Cont.

The two functions of “Correct Draw Line of Rear view Cam”, “Confirm Configuration” are available.

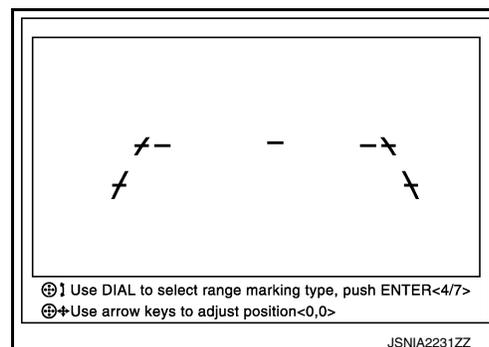


## Adjust Offset of Rear view Camera

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

### CAUTION:

After the adjustment, never perform other operations for one minute.



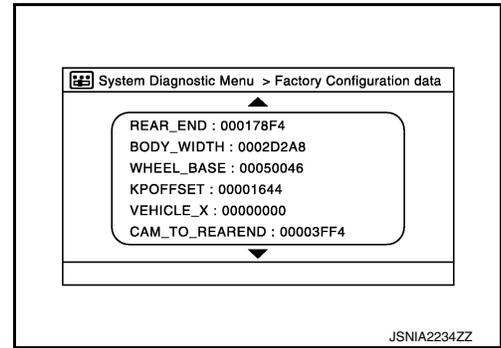
## Factory Configuration Confirmation

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[WITHOUT NAVIGATION]

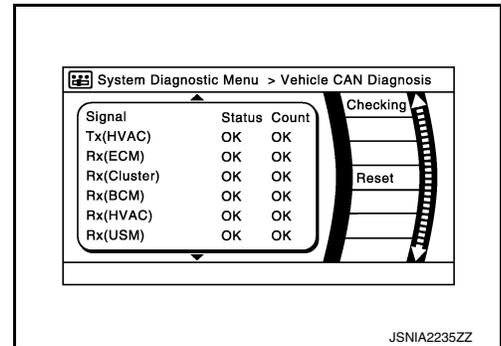
- Configuration stored in the AV control unit can be checked.



## 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(BCM)	OK / ???	OK / 0 – 39
Rx(HVAC)	OK / ???	OK / 0 – 39
Rx(USM)	OK / ???	OK / 0 – 39
Rx(STRG)	OK / ???	OK / 0 – 39



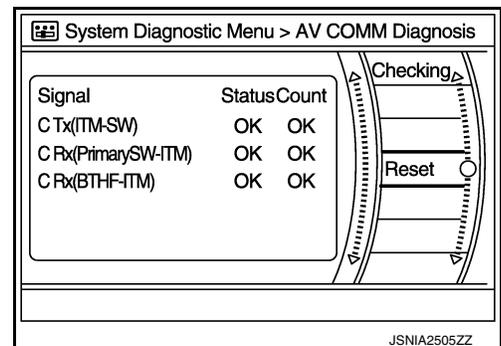
### NOTE:

“???” 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



### NOTE:

“???” indicates UNKWN.

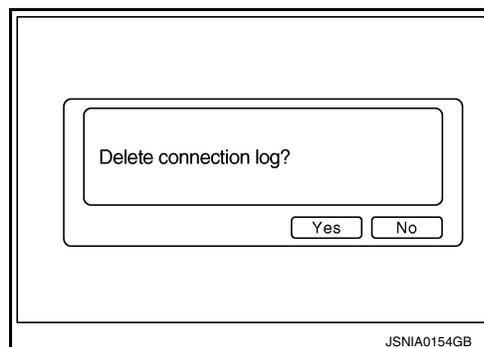
Delete Unit Connection Log

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[WITHOUT NAVIGATION]

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

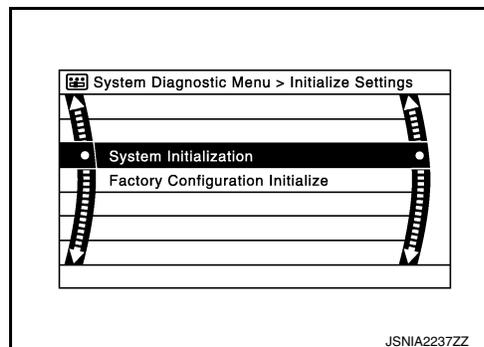


## Initialize Settings

“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-73, "CONFIGURATION \(AV CONTROL UNIT\) : Description"](#).**



## CONSULT Function (MULTI AV)

INFOID:0000000010578409

### CONSULT FUNCTIONS

CONSULT 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	<ul style="list-style-type: none"> <li>• Read and save the vehicle specification.</li> <li>• Write the vehicle specification when replacing AV control unit.</li> </ul>

### 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 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

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[WITHOUT NAVIGATION]

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detected.	Refer to <a href="#">AV-76, "Diagnosis Procedure"</a> .
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.	<ul style="list-style-type: none"> <li>• If a disc can be played, then there is a possibility of the detection of a temporary malfunction.</li> <li>• Replace the AV control unit if the malfunction occurs constantly.</li> </ul>
DSP COMM [U121E]		
CONFIG UNFINISH [U122A]	The writing of configuration data is incomplete.	Write configuration data with CONSULT.
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 <a href="#">BRC-9, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement"</a> .
FRONT DISP CONN [U1243]	<p>When either one of the following items is detected:</p> <ul style="list-style-type: none"> <li>• Front display unit power supply and ground circuits malfunction is detected.</li> <li>• Communication circuits between AV control unit and front display unit.</li> </ul>	<ul style="list-style-type: none"> <li>• Front display unit power supply and ground circuits.</li> <li>• Communication circuits between AV control unit and front display unit.</li> </ul>
SAT CONN [U1255]	<p>When either one of the following items is detected:</p> <ul style="list-style-type: none"> <li>• satellite radio tuner power supply and ground circuit malfunction is detected.</li> <li>• malfunction is detected in communication circuits between AV control unit and satellite radio tuner.</li> <li>• malfunction is detected in request signal circuit between AV control unit and satellite radio tuner.</li> </ul>	<ul style="list-style-type: none"> <li>• Satellite radio tuner power supply and ground circuit.</li> <li>• Communication circuit between AV control unit and satellite radio tuner.</li> <li>• Request signal circuit between AV control unit and satellite radio tuner.</li> </ul>
USB OVERCURRENT [U1263]	Detection of overcurrent in USB connector.	Check USB harness between the AV control unit and USB connector.
<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• SWITCH CONN [U1240]</li> </ul>	<p>When either one of the following items is detected:</p> <ul style="list-style-type: none"> <li>• multifunction switch power supply and ground circuits are malfunctioning.</li> <li>• AV communication circuits between AV control unit and multifunction switch are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Multifunction switch power supply and ground circuits.</li> <li>• AV communication circuits between AV control unit and multifunction switch.</li> </ul>

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[WITHOUT NAVIGATION]

Error item	Description	Possible malfunction factor/Action to take
<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• HAND FREE CONN [U1256]</li> </ul>	When either one of the following items is detected: <ul style="list-style-type: none"> <li>• TEL adapter unit power supply and ground circuits are malfunctioning.</li> <li>• AV communication circuits between AV control unit and TEL adapter unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• TEL adapter unit power supply and ground circuits.</li> <li>• AV communication circuits between AV control unit and TEL adapter unit.</li> </ul>
<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• SWITCH CONN [U1240]</li> <li>• HAND FREE CONN [U1256]</li> </ul>	Malfunction is detected in AV communication circuits between AV control unit and multifunction switch.	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 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.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[WITHOUT NAVIGATION]

## CONFIGURATION

Configuration includes functions as follows.

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in AV control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the AV control unit.
Manual Configuration		Allows the writing of the vehicle specification into the AV control unit by hand.

# DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

[WITHOUT NAVIGATION]

## DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

### On Board Diagnosis Function

INFOID:000000010578410

#### 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.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

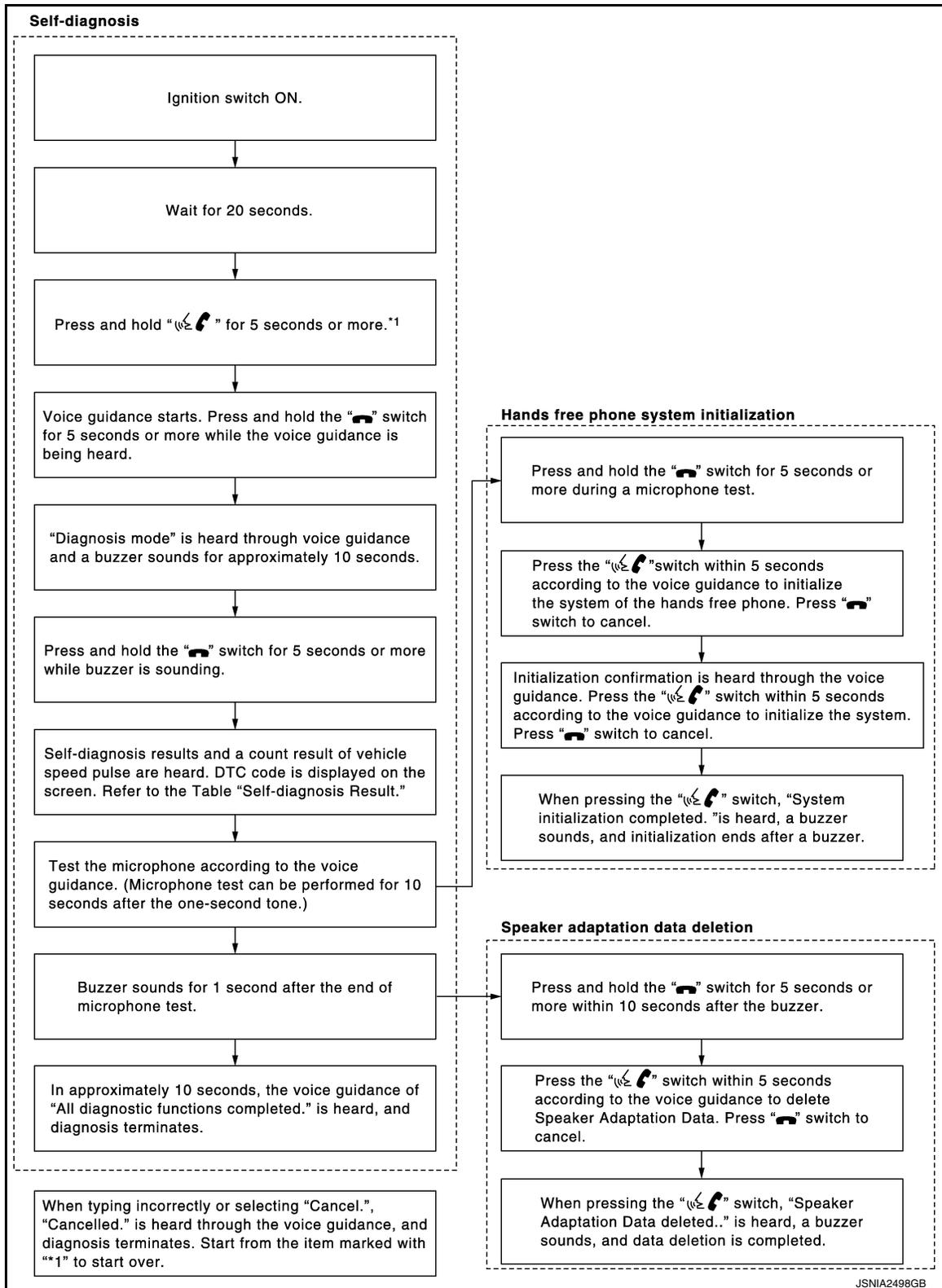
AV

# DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

[WITHOUT NAVIGATION]

## FLOW CHART OF TROUBLE DIAGNOSIS



# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[WITHOUT NAVIGATION]

## ECU DIAGNOSIS INFORMATION

### AV CONTROL UNIT

#### Reference Value

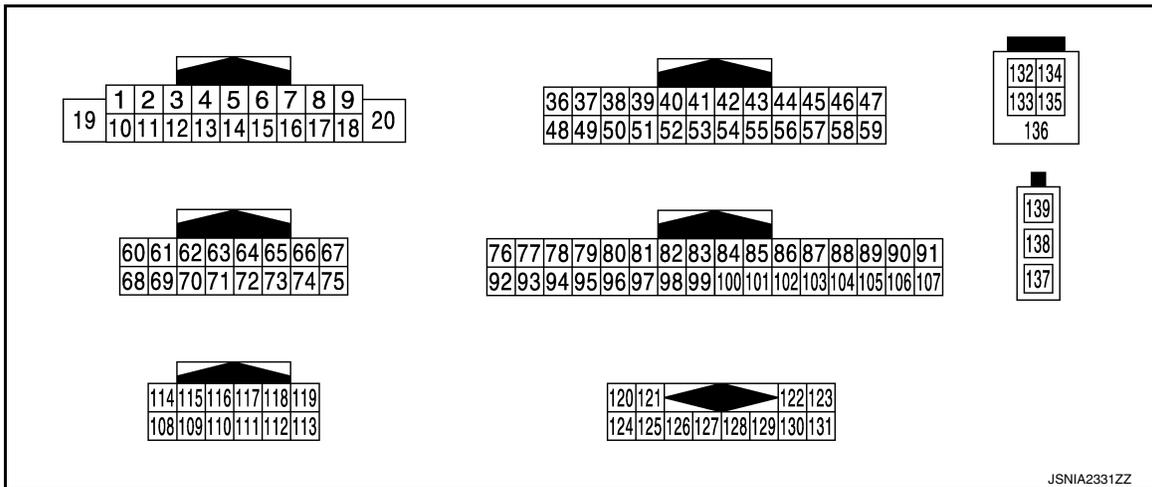
INFOID:0000000010578411

#### VALUES ON THE DIAGNOSIS TOOL

CONSULT 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	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

A  
B  
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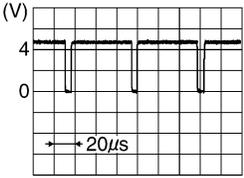
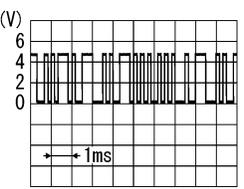
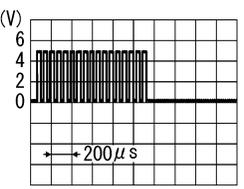
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# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

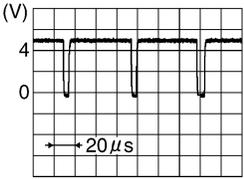
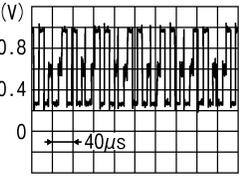
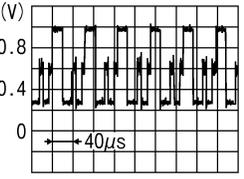
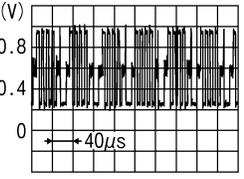
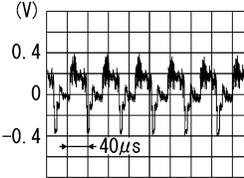
[WITHOUT NAVIGATION]

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 (BG)	Ground	Signal VCC	Output	Ignition switch ACC	—	8.8 V
37 (LG)	Ground	Signal ground	—	Ignition switch OFF	—	0 V
38 (R)	Ground	Horizontal synchronizing (HP) signal	Input	Ignition switch ON	—	 SKIB3601E
39 (BR)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
40 (B)	Ground	RGB area (YS) signal	Output	Ignition switch ON	At RGB image is displayed.	5.0 V
					At camera image is dis- played.	 PKIB4948J
41	—	Shield	—	—	—	—

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
42 (G)	Ground	RGB synchronizing signal	Output	Ignition switch ON	—	 SKIB3603E
43 (B)	Ground	RGB signal (R: red)	Output	Ignition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	 JSNIA1029ZZ
44 (W)	Ground	RGB signal (G: green)	Output	Ignition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	 JSNIA1030ZZ
45 (R)	Ground	RGB signal (B: blue)	Output	Ignition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	 JSNIA1031ZZ
46 (BG)	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
47 (SB)	Ground	Composite image signal	Output	Ignition switch ON	At camera image is dis- played.	 SKIB2251J
48 (Y)	Ground	Inverter VCC	Output	Ignition switch ACC	—	8.8 V
49 (BR)	Ground	Inverter ground	—	Ignition switch OFF	—	0 V

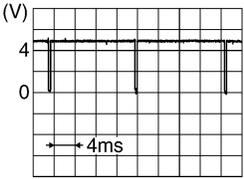
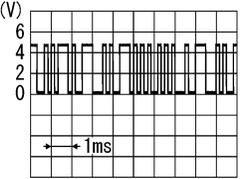
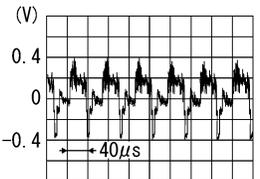
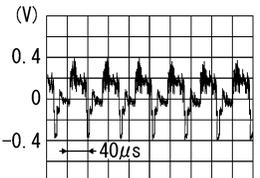
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AV

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

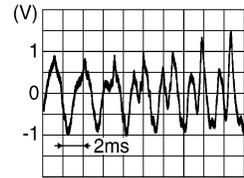
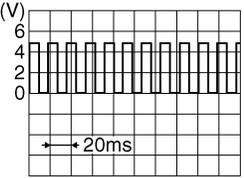
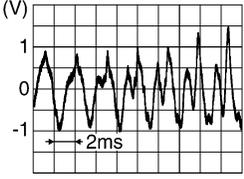
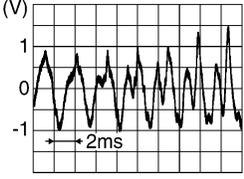
[WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
50 (W)	Ground	Vertical synchronizing (VP) signal	Input	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">SKIB3598E</p>
51 (Y)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	 <p style="text-align: right; font-size: small;">PKIB5039J</p>
52 (SB)	—	Shield	—	—	—	—
57	—	Shield	—	—	—	—
62 (W)	Ground	Camera image signal	Input	Ignition switch ON	At camera image is displayed.	 <p style="text-align: right; font-size: small;">SKIB2251J</p>
63	—	Shield	—	—	—	—
72 (B)	—	Camera ground	—	Ignition switch ON	—	0 V
73 (R)	Ground	Camera power supply	Output	Ignition switch ON	At camera image is displayed.	 <p style="text-align: right; font-size: small;">SKIB2251J</p>
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	—	—	—

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)	
+	-	Signal name	Input/ Output			
82 (BR)	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.	 <small>SKIB3609E</small>
92 (R)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	<p><b>NOTE:</b> Maximum voltage may be 12.0 V due to specifications (connected units).</p>  <small>SKIA6649J</small>
93 (V)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake is ON.	4.5 V
					Parking brake is OFF.	0 V
94 (BG)	Ground	Reverse signal	Input	Ignition switch ON	Shift the selector lever to R position.	12.0 V
					Shift the selector lever other than R position.	0 V
95 (G)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
96 (SB)	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.	 <small>SKIB3609E</small>
104 (R)	102 (B)	AUX sound signal RH	Input	Ignition switch ON	When AUX mode is selected.	 <small>SKIB3609E</small>

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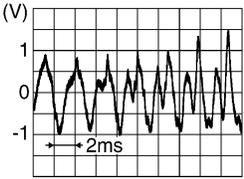
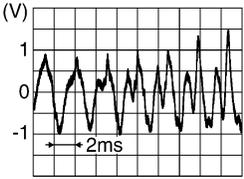
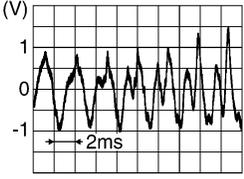
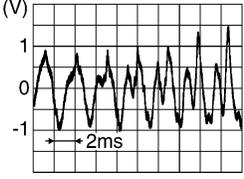
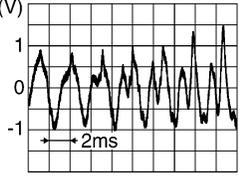
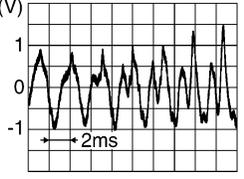
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# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

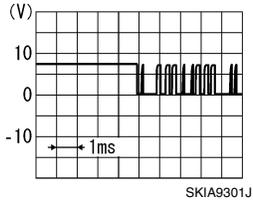
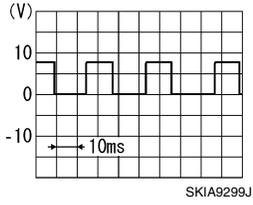
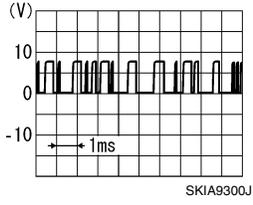
[WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
108 (BR)	114 (Y)	Sound signal rear RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
109 (R)	115 (G)	Sound signal front RH	Output	Ignition switch ON	Sound output.	 SKIB3609E
110 (V)	Ground	Amp. ON signal	Output	Ignition switch ACC	—	12.0 V
111 (B)	—	Shield	—	—	—	—
112 (V)	118 (LG)	Sound signal rear LH	Output	Ignition switch ON	Sound output.	 SKIB3609E
113 (P)	119 (L)	Sound signal front LH	Output	Ignition switch ON	Sound output.	 SKIB3609E
120 (B)	124 (W)	Satellite radio sound signal LH	Input	Ignition switch ON	When satellite radio mode is selected.	 SKIB3609E
121 (G)	125 (R)	Satellite radio sound signal RH	Input	Ignition switch ON	When satellite radio mode is selected	 SKIB3609E

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
122 (R)	Ground	Communication signal (CONT→SAT)	Output	Ignition switch ON	When satellite radio mode is selected.	
126	—	Shield	—	—	—	—
127	—	Shield	—	—	—	—
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
129 (W)	Ground	Request signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected.	
130 (B)	Ground	Communication signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected.	
132 (G)	—	USB ground	—	—	—	—
133 (R)	—	USB D- signal	—	—	—	—
134 (W)	—	V BUS signal	—	—	—	—
135 (L)	—	USB D+ signal	—	—	—	—
136	—	Shield	—	—	—	—
137	—	FM sub	Input	—	—	—
138	—	AM-FM main	Input	—	—	—
139	Ground	Antenna amp. ON signal	Input	Ignition switch ACC	—	12.0 V

## DTC Index

INFOID:000000010578412

## SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	<a href="#">AV-76, "Diagnosis Procedure"</a>
U1010	CONTROL UNIT (CAN) [1010]	<a href="#">AV-77, "DTC Logic"</a>

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[WITHOUT NAVIGATION]

DTC	Display item	Refer to
U1200	Cont Unit [U1200]	<a href="#">AV-78, "DTC Logic"</a>
U1216	CAN CONT [U1216]	<a href="#">AV-79, "DTC Logic"</a>
U121D	DSP CONN [U121D]	<a href="#">AV-80, "Diagnosis Procedure"</a>
U121E	DSP COMM [U121E]	<a href="#">AV-81, "Diagnosis Procedure"</a>
U1225	USB CONTROLLER [U1225]	<a href="#">AV-82, "DTC Logic"</a>
U1228	SUB CPU CONN [U1228]	<a href="#">AV-83, "DTC Logic"</a>
U1229	iPod CERTIFICATION [U1229]	<a href="#">AV-84, "DTC Logic"</a>
U122A	CONFIG UNFINISH [U122A]	<a href="#">AV-85, "Diagnosis Procedure"</a>
U122E	Built-in AUDIO CONN [U122E]	<a href="#">AV-86, "DTC Logic"</a>
U1232	ST ANGLE SEN CALIB [1232]	<a href="#">AV-87, "Diagnosis Procedure"</a>
U1243	FRONT DISP CONN [U1243]	<a href="#">AV-88, "Diagnosis Procedure"</a>
U1255	SAT CONN [U1255]	<a href="#">AV-90, "Diagnosis Procedure"</a>
U1263	USB OVERCURRENT [U1263]	<a href="#">AV-92, "Diagnosis Procedure"</a>
U1310	CONTROL UNIT (AV) [U1310]	<a href="#">AV-94, "DTC Logic"</a>
U1300 U1240	<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• SWITCH CONN [U1240]</li> </ul>	<a href="#">AV-93, "Description"</a>
U1300 U1256	<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• HAND FREE CONN [U1256]</li> </ul>	<a href="#">AV-93, "Description"</a>
U1300 U1240 U1256	<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• SWITCH CONN [U1240]</li> <li>• HAND FREE CONN [U1256]</li> </ul>	<a href="#">AV-93, "Description"</a>

# FRONT DISPLAY UNIT

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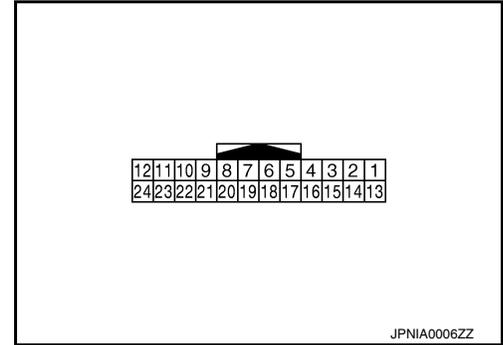
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## FRONT DISPLAY UNIT

### Reference Value

INFOID:000000010578413

### TERMINAL LAYOUT



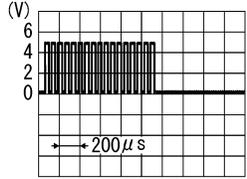
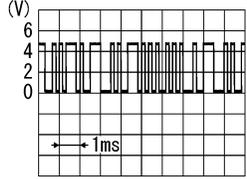
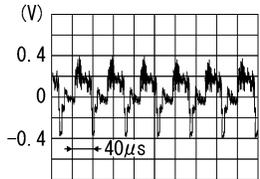
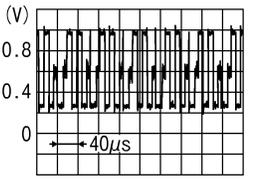
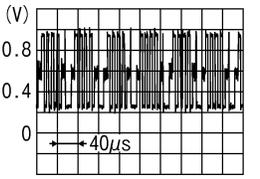
### PHYSICAL VALUES

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	—	8.8 V
3 (BG)	Ground	Signal VCC	Input	Ignition switch ACC	—	8.8 V
4 (BG)	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
6 (W)	Ground	RGB 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.	<p style="text-align: right; font-size: small;">JSNIA1030ZZ</p>
7	—	Shield	—	—	—	—
8 (R)	Ground	Horizontal synchronizing (HP) signal	Output	Ignition switch ON	—	<p style="text-align: right; font-size: small;">SKIB3601E</p>

# FRONT DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

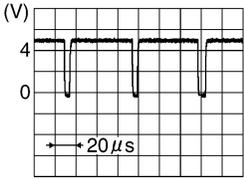
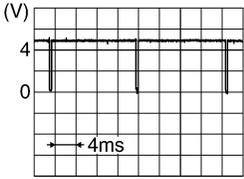
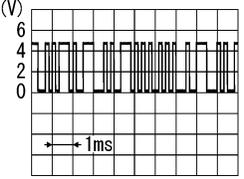
[WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
9 (B)	Ground	RGB area (YS) signal	Input	Ignition switch ON	At RGB image is displayed. 5.0 V
				At camera image is displayed.	 <p style="text-align: right; font-size: small;">PKIB4948J</p>
11 (Y)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.  <p style="text-align: right; font-size: small;">PKIB5039J</p>
13 (BR)	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 camera image is displayed.  <p style="text-align: right; font-size: small;">SKIB2251J</p>
17 (B)	Ground	RGB 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.  <p style="text-align: right; font-size: small;">JSNIA1029ZZ</p>
18 (R)	Ground	RGB 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.  <p style="text-align: right; font-size: small;">JSNIA1031ZZ</p>

# FRONT DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
19 (G)	Ground	RGB synchronizing signal	Input	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">SKIB3603E</p>
20 (W)	Ground	Vertical synchronizing (VP) signal	Output	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">SKIB3598E</p>
21	—	Shield	—	—	—	—
22 (BR)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	 <p style="text-align: right; font-size: small;">PKIB5039J</p>
23 (SB)	—	Shield	—	—	—	—

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# BOSE AMP.

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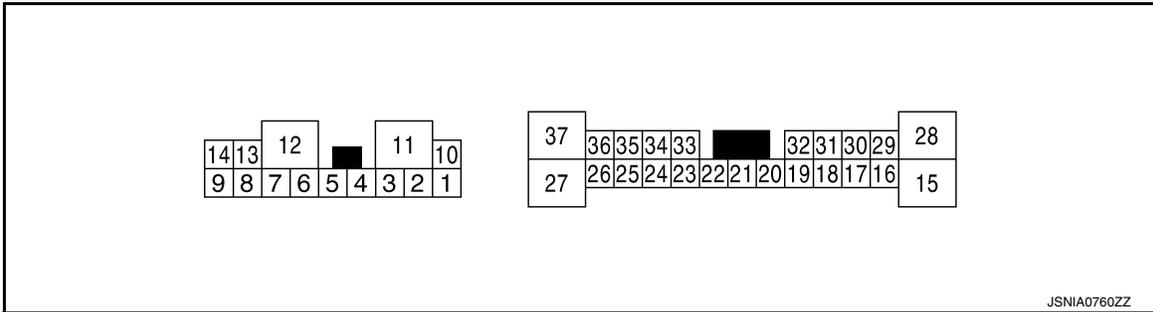
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## BOSE AMP.

### Reference Value

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### TERMINAL LAYOUT



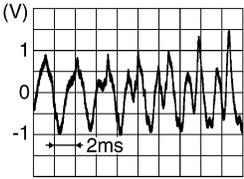
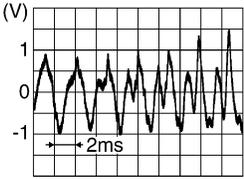
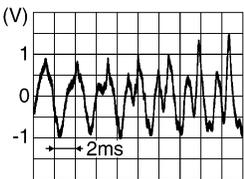
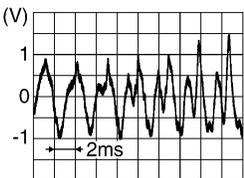
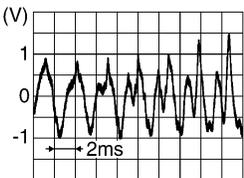
### PHYSICAL VALUES

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	<p>SKIB3609E</p>
2 (SB)	3 (V)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	<p>SKIB3609E</p>
4 (L)	5 (P)	Sound signal front door speaker LH	Output	Ignition switch ON	Sound output	<p>SKIB3609E</p>
6 (BG)	7 (W)	Sound signal front squawk- er LH	Output	Ignition switch ON	Sound output	<p>SKIB3609E</p>

# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

[WITHOUT NAVIGATION]

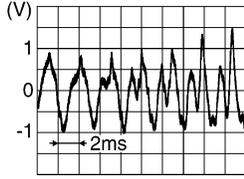
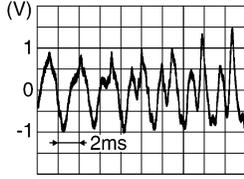
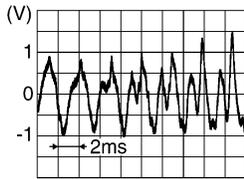
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
8 (LG)	13 (Y)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
9 (G)	14 (R)	Sound signal woofer and rear squawker	Output	Ignition switch ON	Sound output	 SKIB3609E
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 (BG)	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)	32 (L)	Sound signal front LH	Input	Ignition switch ON	Sound output	 SKIB3609E
19 (R)	20 (G)	Sound signal front RH	Input	Ignition switch ON	Sound output	 SKIB3609E

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# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

[WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
21 (V)	22 (SB)	Sound signal rear LH	Input	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
23 (BR)	33 (Y)	Sound signal rear RH	Input	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
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 squawk- er RH	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>

# SATELLITE RADIO TUNER

< ECU DIAGNOSIS INFORMATION >

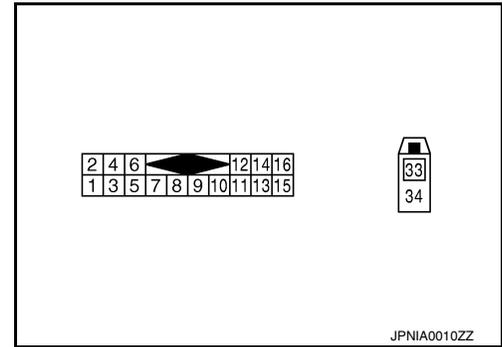
[WITHOUT NAVIGATION]

## SATELLITE RADIO TUNER

### Reference Value

INFOID:000000010578415

### TERMINAL LAYOUT



### PHYSICAL VALUES

Terminal		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/Output			
2 (B)	1 (W)	Satellite radio sound signal LH	Output	Ignition switch ON	When satellite radio mode is selected.	
4 (G)	3 (R)	Satellite radio sound signal RH	Output	Ignition switch ON	When satellite radio mode is selected	
5	—	Shield	—	—	—	—
6	—	Shield	—	—	—	—
8 (W)	Ground	Request signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected.	
9 (B)	Ground	Communication signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected.	

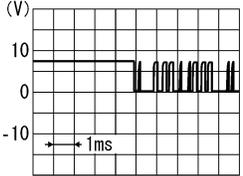
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# SATELLITE RADIO TUNER

< ECU DIAGNOSIS INFORMATION >

[WITHOUT NAVIGATION]

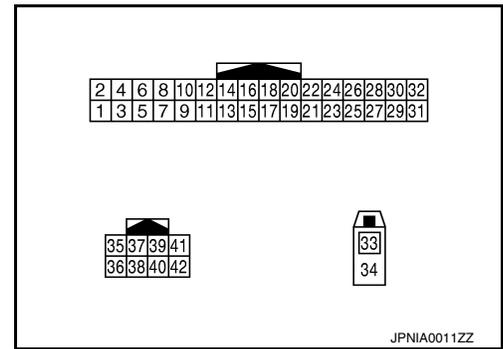
Terminal		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
10 (R)	Ground	Communication signal (CONT→SAT)	Input	Ignition switch ON	When satellite radio mode is selected.	 <p style="text-align: right; font-size: small;">SKIA9301J</p>
12 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
16 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
33	—	Satellite antenna signal	Input	—	—	—

TEL ADAPTER UNIT

Reference Value

INFOID:000000010578416

TERMINAL LAYOUT



PHYSICAL VALUES

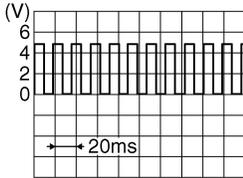
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/Output			
1 (GR)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
2 (LG)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
3 (W)	Ground	Ignition signal	Input	Ignition 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.	<p>PKIB5037J</p>
9 (Y)	10 (G)	TEL voice signal	Output	Ignition switch ON	During voice guide output with the  switch pressed.	<p>SKIB3609E</p>
20 (B)	Ground	Control signal	Input	Ignition switch ON	—	0 V
23 (B)	Ground	Control signal	Input	Ignition switch ON	—	0 V

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# TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

[WITHOUT NAVIGATION]

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)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is ap- prox. 40 km/h (25 MPH)	<p><b>NOTE:</b> Maximum voltage may be 12.0 V due to specifications (connected units).</p>  <p style="text-align: right; font-size: small;">SKIA6649J</p>
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	—	—	—

# BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[WITHOUT NAVIGATION]

## WIRING DIAGRAM

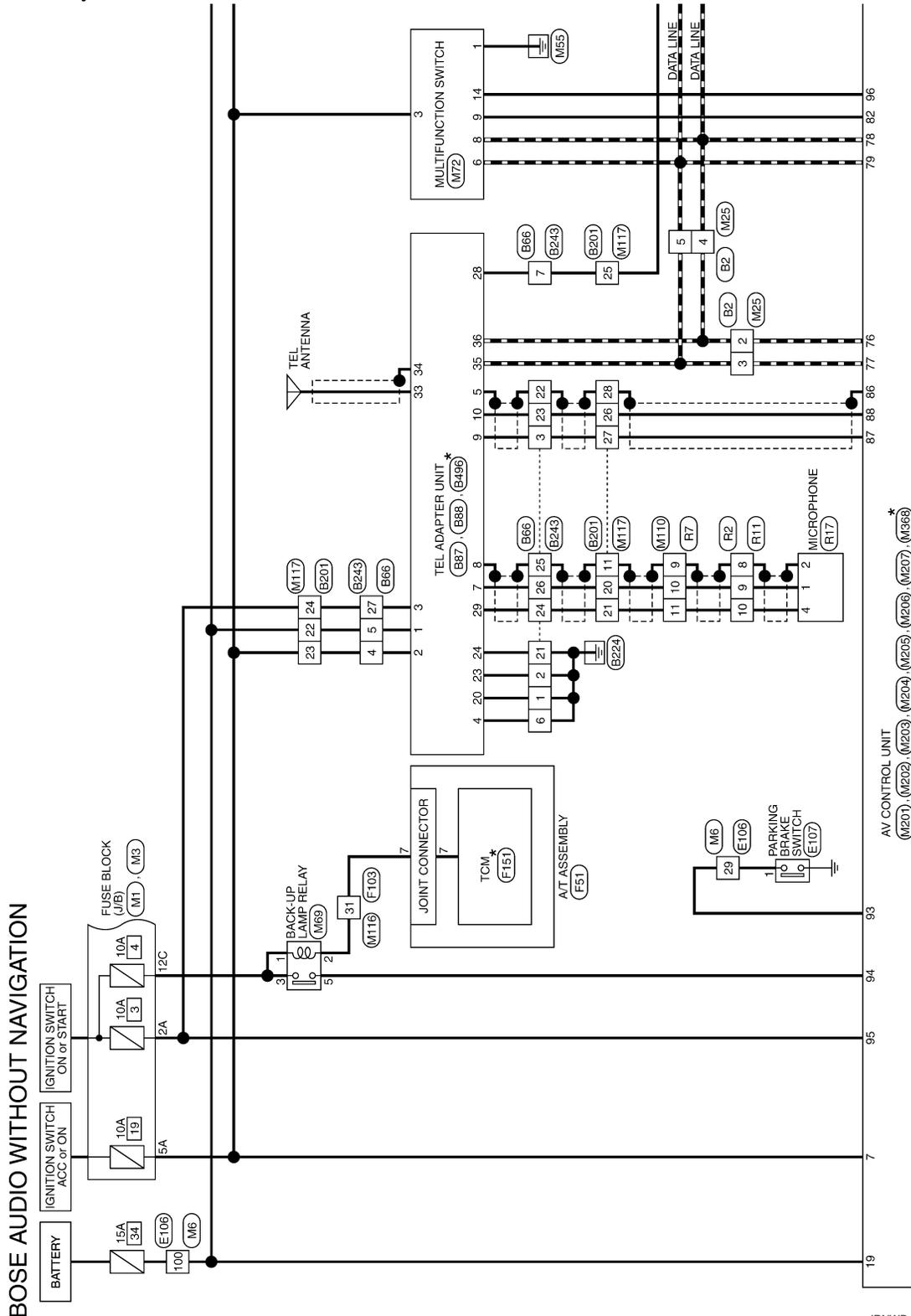
### BOSE AUDIO WITHOUT NAVIGATION

#### Wiring Diagram

INFOID:0000000010578417

**NOTE:**

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



\*: This connector is not shown in "Harness Layout".

2014/03/18

JRNWD4444GB

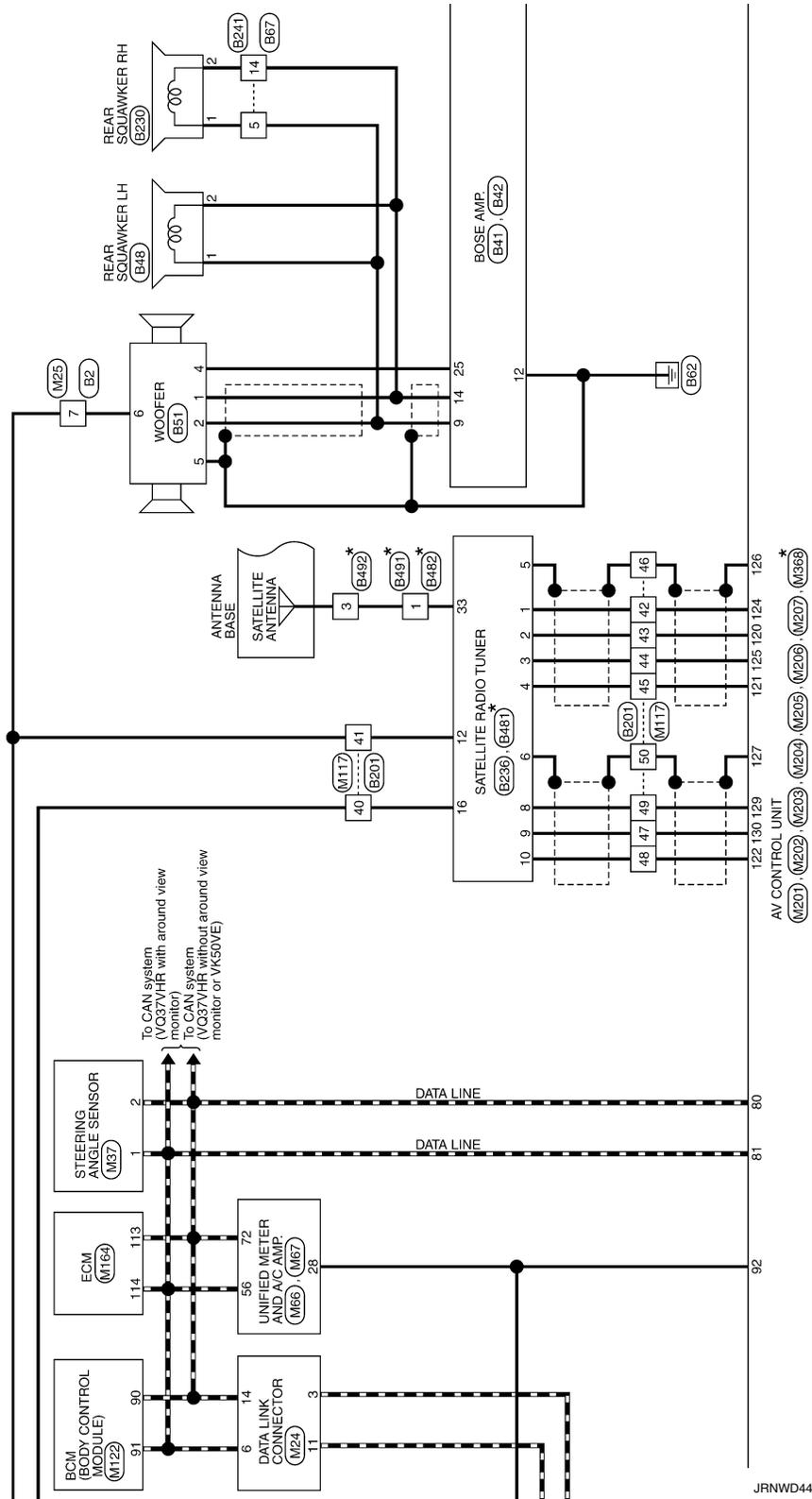
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# BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[WITHOUT NAVIGATION]



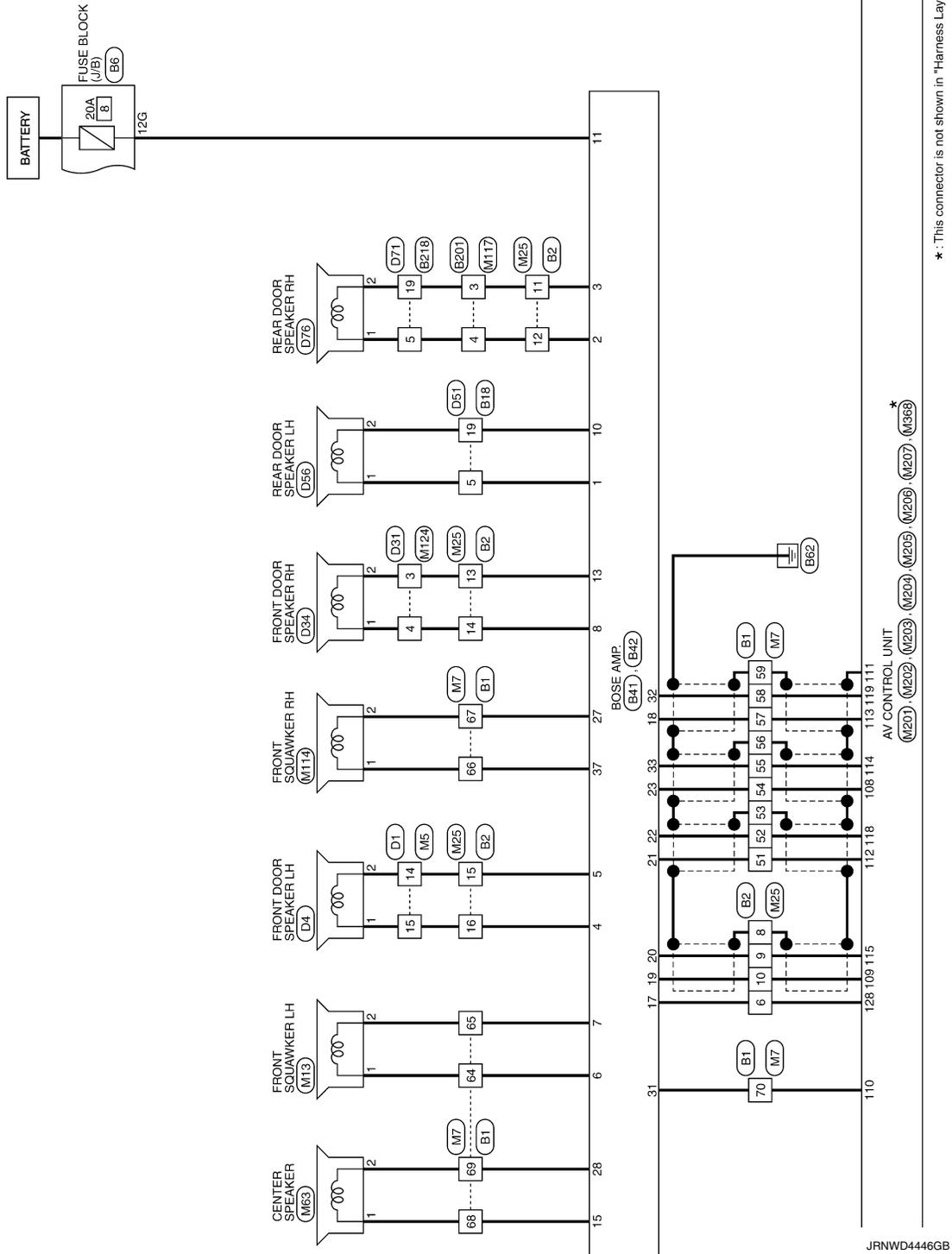
\*: This connector is not shown in "Harness Layout".

JRNWD4445GB

# BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[WITHOUT NAVIGATION]



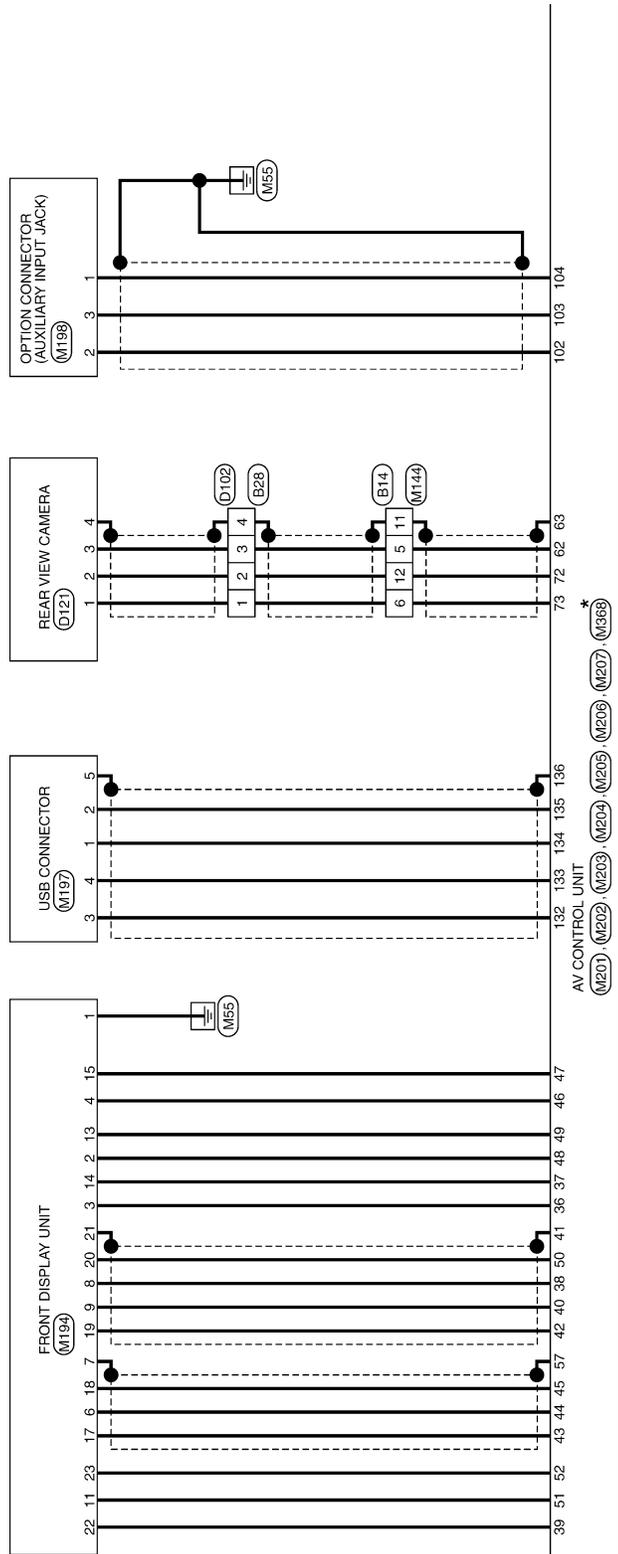
\* : This connector is not shown in "Harness Layout".

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# BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[WITHOUT NAVIGATION]



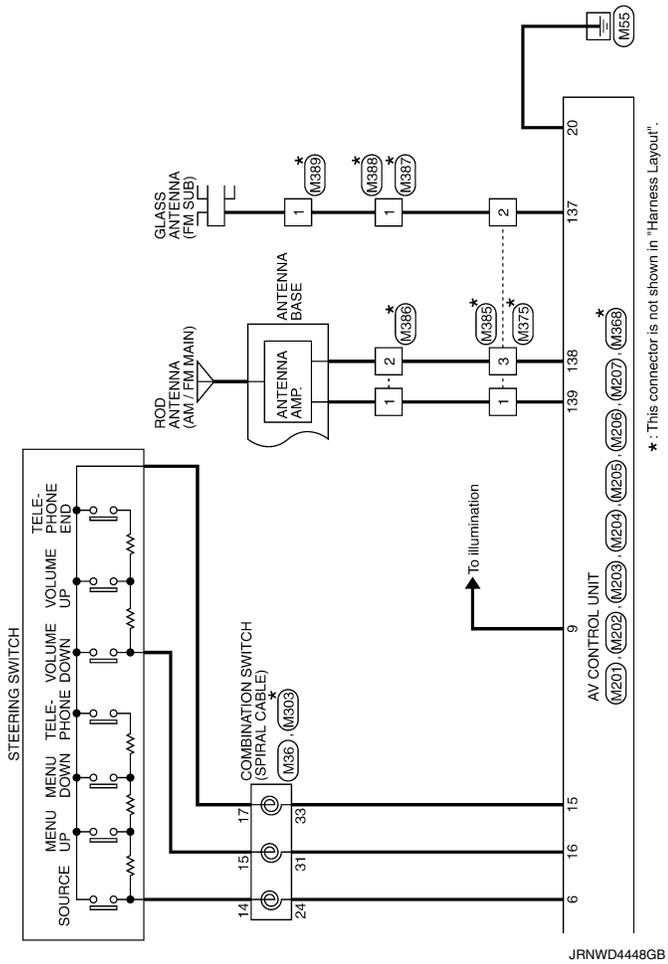
\*: This connector is not shown in "Harness Layout".

JRNWD4447GB

# BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[WITHOUT NAVIGATION]



\*: This connector is not shown in "Harness Layout".

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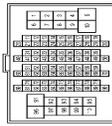
# BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[WITHOUT NAVIGATION]

## BOSE AUDIO WITHOUT NAVIGATION

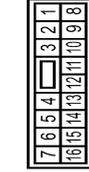
Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	L	-
3	W	-
4	G	-
5	P	-
6	BG	-
7	D	-
8	BG	-
10	SB	-
11	SB	-
12	B	-
13	G	-
14	R	-
15	W	-
16	SHIELD	-
17	L	-
18	P	-
19	G	-
20	Y	-
21	W	-
23	V	-
24	P	-
25	BR	-
26	GR	-
27	BG	-
28	W	-
38	B	-
39	B	-
43	SB	-
44	V	-
45	GR	-
51	V	-
52	SB	-
53	SHIELD	-
54	BR	-
55	Y	-
56	SHIELD	-

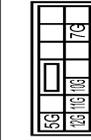
57	P	-
58	L	-
59	SHIELD	-
60	L	-
61	P	-
62	GR	-
63	G	-
64	BG	-
65	W	-
66	V	-
67	LG	-
68	Y	-
69	G	-
70	GR	-
71	G	-
72	B	-
73	W	-
74	V	-
75	BG	-
76	LG	-
77	L	-
78	GR	-
79	W	-
80	L	-
81	P	-
82	L	-
83	P	-
84	SB	-
85	R	-
86	Y	-
87	B	-
88	G	-
89	BR	-
91	R	-
92	BG	-
93	BR	-
94	V	-
96	BG	-
97	W	-
98	GR	-
99	W	-

Connector No.	B2
Connector Name	WIRE TO WIRE
Connector Type	NS18FM-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
2	LG	-
3	SB	-
4	LG	-
5	SB	-
6	BG	-
7	W	-
8	SHIELD	-
9	G	-
10	R	-
11	V	-
12	SB	-
13	Y	-
14	LG	-
15	P	-
16	L	-

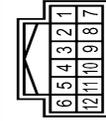
Connector No.	B6
Connector Name	FUSE BLOCK (JB)
Connector Type	NS12FBR-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10G	W	-
11G	W	-
12G	GR	-
5G	LG	-

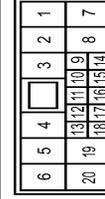
7G	BG
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Connector No.	B14
Connector Name	WIRE TO WIRE
Connector Type	TH12FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	LG	-
3	R	-
6	W	-
7	Y	-
11	SHIELD	-
12	B	- [Without around view monitor]
12	W	- [With around view monitor]

Connector No.	B18
Connector Name	WIRE TO WIRE
Connector Type	NH10FM-CS10



Terminal No.	Color Of Wire	Signal Name [Specification]
2	V	-
3	W	-
4	GR	-
5	Y	-
6	B	-
8	BR	-
12	LG	-

# BOSE AUDIO WITHOUT NAVIGATION

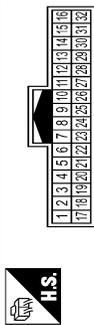
< WIRING DIAGRAM >

[WITHOUT NAVIGATION]

## BOSE AUDIO WITHOUT NAVIGATION

13	P	-
17	L	-
18	BG	-
19	G	-
20	W	-

Connector No.	B28
Connector Name	WIRE TO WIRE
Connector Type	TH2MW-NH



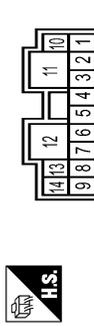
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	W	-
4	SHIELD	-
5	G	-
6	L	-
7	R	-
8	SHIELD	-
9	W	-
10	B	-
11	G	-
12	L	-
13	W	-
14	LG	-
15	BG	-
16	G	-
17	BG	-
18	V	-
19	W	-
20	B	-
21	G	-
22	LG	-
23	R	-
24	BG	-
25	BR	-
26	GR	-
27	L	-
32	BG	-

Connector No.	B41
Connector Name	BOSE AMP.
Connector Type	SCA19FBR-SGA4



Terminal No.	Color Of Wire	Signal Name [Specification]
15	Y	SOUND SIGNAL CENTER SPEAKER (+)
17	BG	MODE CHANGE SIGNAL
18	P	SOUND SIGNAL FRONT LH (+)
19	R	SOUND SIGNAL FRONT RH (+)
20	G	SOUND SIGNAL FRONT LH (-)
21	V	SOUND SIGNAL REAR LH (+)
22	SB	SOUND SIGNAL REAR RH (+)
23	BR	SOUND SIGNAL REAR LH (-)
25	GR	WOOFER AMP. ON SIGNAL
27	LG	SOUND SIGNAL FRONT SQUAWKER RH (+)
28	G	SOUND SIGNAL CENTER SPEAKER (-)
31	GR	AMP. ON SIGNAL
32	L	SOUND SIGNAL FRONT LH (-)
33	Y	SOUND SIGNAL REAR RH (-)
37	V	SOUND SIGNAL FRONT SQUAWKER RH (+)

Connector No.	B42
Connector Name	BOSE AMP.
Connector Type	SGA12FBR-SJA2



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	SOUND SIGNAL REAR DOOR SPEAKER LH (+)
2	SB	SOUND SIGNAL REAR DOOR SPEAKER RH (+)
3	V	SOUND SIGNAL REAR DOOR SPEAKER RH (-)
4	L	SOUND SIGNAL FRONT DOOR SPEAKER LH (+)
5	P	SOUND SIGNAL FRONT DOOR SPEAKER LH (-)

6	BG	SOUND SIGNAL FRONT SQUAWKER LH (+)
7	W	SOUND SIGNAL FRONT SQUAWKER LH (-)
8	LG	SOUND SIGNAL FRONT DOOR SPEAKER RH (+)
9	G	SOUND SIGNAL WOOFER AND REAR SQUAWKER (+)
10	G	SOUND SIGNAL REAR DOOR SPEAKER LH (-)
11	GR	BATTERY
12	B	GROUND
13	Y	SOUND SIGNAL FRONT DOOR SPEAKER RH (+)
14	R	SOUND SIGNAL WOOFER AND REAR SQUAWKER (-)

Connector No.	B48
Connector Name	REAR SQUAWKER LH
Connector Type	TK02FBR



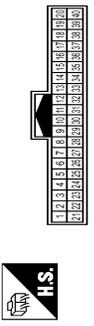
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	R	-

Connector No.	B51
Connector Name	WOOFER
Connector Type	RS06FGY-PR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	SOUND SIGNAL WOOFER (-)
2	G	SOUND SIGNAL WOOFER (+)
4	GR	WOOFER AMP. ON SIGNAL
5	B	GROUND
6	W	BATTERY

Connector No.	B66
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	B	-
3	V	-
4	LG	-
5	GR	-
6	B	-
7	V	-
21	B	-
22	SHIELD	-
23	G	-
24	P	-
25	SHIELD	-
26	L	-
27	W	-

Connector No.	B67
Connector Name	WIRE TO WIRE
Connector Type	NS16MBC-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	G	-
3	SHIELD	-
5	G	-
6	BR	-
9	G	-

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# BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[WITHOUT NAVIGATION]

## BOSE AUDIO WITHOUT NAVIGATION

10	SHIELD	-
11	L	-
12	GR	-
13	R	-
14	R	-

Connector No.	B87
Connector Name	TEL ADAPTER UNIT
Connector Type	TH32FM-NH



24	8	10	20	24	28	
1	3	5	7	9	23	27

Terminal Color Of No.	Wire	Signal Name [Specification]
35	SB	AV COMM (H)
36	LG	AV COMM (L)

Terminal Color Of No.	Wire	Signal Name [Specification]
1	GR	BATTERY
2	LG	ACC
3	W	IGNITION SIGNAL
4	B	GROUND
5	SHIELD	SHIELD
7	L	MICROPHONE SIGNAL
8	SHIELD	MICROPHONE GND
9	Y	TEL VOICE SIGNAL (+)
10	G	TEL VOICE SIGNAL (-)
20	B	CONTROL SIGNAL
23	B	CONTROL SIGNAL
24	B	CONTROL SIGNAL
28	V	VEHICLE SPEED SIGNAL (8-PULSE)
29	P	MICROPHONE VCC



1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83
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Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80FM-CS-6-TM4

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83
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Terminal Color Of No.	Wire	Signal Name [Specification]
1	G	-
2	R	-
3	BR	-
4	SB	-
6	BG	-
7	GR	-
8	W	-
10	G	-
11	SHIELD	-
20	L	-
21	P	-
22	GR	-
23	LG	-
24	W	-
25	V	-
26	G	-
27	Y	-
28	SHIELD	-

31	W	-	-
32	GR	-	-
33	SB	-	-
36	L	-	-
37	P	-	-
38	L	-	-
39	P	-	-
40	LG	- [With ICC]	-
40	V	- [Without ICC]	-
41	SB	- [With ICC]	-
41	Y	- [Without ICC]	-
42	V	- [With ICC]	-
42	W	- [Without ICC]	-
43	B	- [With ICC]	-
43	BR	- [Without ICC]	-
44	R	-	-
45	G	-	-
45	G	- [With ICC]	-
46	BG	- [Without ICC]	-
46	SHIELD	- [With ICC]	-
47	B	- [Without ICC]	-
48	P	- [With ICC]	-
48	R	- [Without ICC]	-
49	G	- [With ICC]	-
49	W	- [Without ICC]	-
50	SHIELD	-	-
51	W	-	-
52	R	-	-
53	G	-	-
54	L	-	-
55	SB	-	-
60	GR	-	-
61	LG	-	-
62	SB	-	-
63	P	-	-
64	BR	-	-
65	BG	-	-
66	Y	-	-
67	W	-	-
69	G	-	-
71	SB	-	-
72	V	-	-
73	LG	-	-
74	W	-	-
75	BR	-	-
76	V	-	-
77	LG	-	-
80	BG	-	-
82	P	-	-
83	Y	-	-

84	R	-	-
85	SB	-	-
86	GR	-	-
87	L	-	-
91	V	-	-
92	W	-	-
93	R	-	-
94	LG	-	-
95	GR	-	-
96	W	-	-
97	G	-	-
98	BG	-	-
99	L	-	-

Connector No.	B218
Connector Name	WIRE TO WIRE
Connector Type	NH10FM-CS10



6	5	4	3	2	1				
20	19	18	17	16	15	14	9	8	7

Terminal Color Of No.	Wire	Signal Name [Specification]
2	GR	-
3	W	-
4	R	-
5	SB	-
6	B	-
8	G	-
12	LG	-
13	P	-
17	SB	-
18	BR	-
19	BR	-
20	LG	-

# BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[WITHOUT NAVIGATION]

## BOSE AUDIO WITHOUT NAVIGATION

Connector No.	B230
Connector Name	REAR SQUAWKER RH
Connector Type	TK02FBR



Terminal Color Of No.	Wire	Signal Name [Specification]
1	G	-
2	R	-

Connector No.	B236
Connector Name	SATELLITE RADIO TUNER
Connector Type	A16FW



Terminal Color Of No.	Wire	Signal Name [Specification]
1	W	SATELLITE RADIO SOUND SIGNAL LH (-)
2	B	SATELLITE RADIO SOUND SIGNAL LH (+)
3	R	SATELLITE RADIO SOUND SIGNAL RH (-)
4	G	SATELLITE RADIO SOUND SIGNAL RH (+)
5	SHIELD	SHIELD
6	SHIELD	SHIELD
8	W	REQUEST (SAT->CONT)
9	B	COMM (SAT->CONT)
10	R	COMM (CONT->SAT)
12	Y	BATTERY
16	V	ACC

Connector No.	B241
Connector Name	WIRE TO WIRE
Connector Type	NS16FBR-CS



Terminal Color Of No.	Wire	Signal Name [Specification]
1	BR	-
2	G	-
3	SHIELD	-
5	G	-
8	L/P	-
9	UB	-
10	SHIELD	-
11	L	-
12	W	-
13	P	-
14	R	-

Connector No.	B243
Connector Name	WIRE TO WIRE
Connector Type	TH40FM-NH



Terminal Color Of No.	Wire	Signal Name [Specification]
1	B	-
2	B	-
3	Y	-
4	LG	-
5	GR	-
6	B	-
7	V	-
21	B	-
22	SHIELD	-

23	G	-
24	P	-
25	SHIELD	-
26	L	-
27	W	-

Connector No.	B481
Connector Name	SATELLITE RADIO TUNER
Connector Type	FAKRA



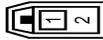
Terminal Color Of No.	Wire	Signal Name [Specification]
33	-	SATELLITE ANTENNA

Connector No.	B482
Connector Name	WIRE TO WIRE
Connector Type	GT16C-IS-HU



Terminal Color Of No.	Wire	Signal Name [Specification]
1	-	-

Connector No.	B491
Connector Name	WIRE TO WIRE
Connector Type	GT16C-IPP-HU



Terminal Color Of No.	Wire	Signal Name [Specification]
1	-	-

Connector No.	B492
Connector Name	ANTENNA BASE
Connector Type	GT16C-IPP-HU



Terminal Color Of No.	Wire	Signal Name [Specification]
3	-	SATELLITE ANTENNA

Connector No.	B496
Connector Name	TEL ADAPTER UNIT
Connector Type	GT16C-IS-HU



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# BOSE AUDIO WITHOUT NAVIGATION

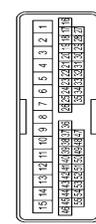
< WIRING DIAGRAM >

[WITHOUT NAVIGATION]

## BOSE AUDIO WITHOUT NAVIGATION

Terminal No.	Color Of Wire	Signal Name (Specification)
33	-	TEL-ANTENNA SIGNAL
34	-	SHIELD

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15



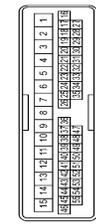
Terminal No.	Color Of Wire	Signal Name (Specification)
1	B	-
2	G	-
3	GR	-
4	W	-
5	SB	-
6	BR	-
7	O	-
8	LG	-
9	Y	-
10	P	-
11	L	-
12	LG	-
13	Y	-
14	P	-
15	L	-
16	LG	-
17	Y	-
18	P	-
19	L	-
20	LG	-
21	Y	-
22	GR	-
23	SB	-
24	LG	-
25	G	-
26	G	-
27	V	-
28	P	-
29	Y	-
30	LG	-
31	O	-
32	BR	-
33	L	-
34	GR	-
35	B	-
36	R	-
37	O	-
38	SHIELD	-

Connector No.	D4
Connector Name	FRONT DOOR SPEAKER LH
Connector Type	NS2FBR-CS



Terminal No.	Color Of Wire	Signal Name (Specification)
1	L	-
2	P	-

Connector No.	D31
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15



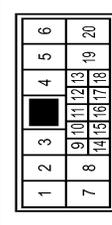
Terminal No.	Color Of Wire	Signal Name (Specification)
3	P	-
4	L	-
5	W	-
6	B	-
7	G	-
8	R	-
9	LG	-
10	B	-
11	V	-
12	Y	-
13	G	-
14	W	-
15	Y	-
16	LG	-
17	W	-
18	B	-
19	SHIELD	-
20	G	-
21	R	-
22	LG	-
23	R	-
24	SB	-
25	Y	-
26	GR	-
27	O	-
28	GR	-
29	O	-
30	Y	-
31	L	-
32	O	-
33	BR	-
34	V	-
35	P	-
36	W	-
37	R	-
38	O	-
39	SHIELD	-

Connector No.	D34
Connector Name	FRONT DOOR SPEAKER RH
Connector Type	NS2FBR-CS



Terminal No.	Color Of Wire	Signal Name (Specification)
1	L	-
2	P	-

Connector No.	D51
Connector Name	WIRE TO WIRE
Connector Type	NH10MW-CS10



Terminal No.	Color Of Wire	Signal Name (Specification)
2	V	-
3	L	-
4	R	-
5	SB	-
6	B	-
7	G	-
8	L	-
9	Y	-
10	O	-
11	BR	-
12	V	-
13	W	-
14	Y	-
15	O	-
16	BR	-
17	V	-
18	W	-
19	W	-
20	W	-

# BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[WITHOUT NAVIGATION]

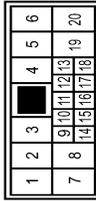
## BOSE AUDIO WITHOUT NAVIGATION

Connector No.	D56
Connector Name	REAR DOOR SPEAKER LH
Connector Type	NS02FBR-CS



Terminal Color Of No.	Wire	Signal Name [Specification]
1	SB	-
2	V	-

Connector No.	D71
Connector Name	WIRE TO WIRE
Connector Type	NH10MW-CS10



Terminal Color Of No.	Wire	Signal Name [Specification]
2	L	-
3	P	-
4	R	-
5	SB	-
6	B	-
8	G	-
12	L	-
13	Y	-
17	O	-
18	BR	-
19	V	-
20	W	-

Connector No.	D16
Connector Name	REAR DOOR SPEAKER RH
Connector Type	NS02FBR-CS



Terminal Color Of No.	Wire	Signal Name [Specification]
1	SB	-
2	V	-

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Type	TH82FM-NH



Terminal Color Of No.	Wire	Signal Name [Specification]
1	G	-
2	L	-
3	Y	-
4	SHIELD	-
5	R	-
6	G	-
7	Y	-
8	L	-
9	W	-
10	SHIELD	-
11	G	-
12	L	-
13	W	-
14	LG	-
15	BG	-
16	G	-
17	W	-
18	LG	-

19	BR	-
20	R	-
21	V	-
22	LG	-
23	P	-
24	BG	-
25	BG	-
26	GR	-
27	L	-
32	BG	-

Connector No.	D121
Connector Name	REAR VIEW CAMERA
Connector Type	TH84NH-NH



Terminal Color Of No.	Wire	Signal Name [Specification]
1	G	CAMERA POWER SUPPLY
2	L	CAMERA GND
3	Y	CAMERA IMAGE SIGNAL
4	SHIELD	SHIELD

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80FM-CS16-TM4



Terminal Color Of No.	Wire	Signal Name [Specification]
1	G	-
2	BG	-
3	SB	-
4	LG	-

5	Y	-
6	W	-
7	G	-
8	V	-
9	R	-
10	BR	-
11	B	-
12	G	-
13	R	-
14	W	-
15	SHIELD	-
16	SB	-
17	L	-
18	P	-
19	G	-
20	W	- [With ICC]
21	Y	- [Without ICC]
22	R	- [With ICC]
23	G	- [Without ICC]
24	L	- [With ICC]
25	L	- [Without ICC]
26	SHIELD	- [With ICC]
28	G	-
29	LG	-
30	BG	-
32	W	-
33	Y	-
34	BG	-
37	Y	-
38	GR	-
39	LG	-
41	LG	-
42	V	-
43	R	-
44	G	-
45	GR	-
46	W	-
47	L	-
48	P	-
49	SB	-
50	BR	-
51	B	-
52	Y	-
53	BG	-
54	R	-
55	SB	-

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# BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[WITHOUT NAVIGATION]

## BOSE AUDIO WITHOUT NAVIGATION

59	P	-	-
60	SB	-	-
61	V	-	-
62	P	-	-
63	LG	-	-
64	L	-	-
65	BG	-	-
69	L	-	-
70	SHIELD	-	-
71	G	-	-
72	G	-	-
73	R	-	-
74	BR	-	-
76	L	-	-
77	W	-	-
78	Y	-	-
80	SB	-	-
81	W	-	-
82	W	-	-
83	LG	-	-
84	GR	-	-
85	G	-	-
86	P	-	-
87	W	-	-
88	BG	-	-
89	LG	-	-
90	BR	-	-
91	GR	-	-
92	BR	-	-
93	SB	-	-
95	Y	-	-
96	W	-	-
97	W	-	-
98	SHIELD	-	-
100	Y	-	-

Connector No.	E107
Connector Name	PARKING BRAKE SWITCH
Connector Type	TB01FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	-

Connector No.	F51
Connector Name	AT ASSEMBLY
Connector Type	RK0FG-DGY



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	IGNITION POWER SUPPLY
2	R	BATTERY POWER SUPPLY (MEMORY BACK-UP)
3	L	CAN-H
4	V	K-LINE
5	B	GROUND
6	Y	IGNITION POWER SUPPLY
7	R	BACK-UP LAMP RELAY
8	P	CAN-L
9	GR	STARTER RELAY [With VQ engine]
9	LG	STARTER RELAY [With VK engine]
10	B	GROUND

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK38FW-NS10



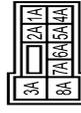
Terminal No.	Color Of Wire	Signal Name [Specification]
2	G	-
3	W	-
4	GR	- [With VK engine]
4	R	- [With VQ engine]
5	B	- [With VQ engine]
5	R	- [With VK engine]
7	B	-
9	W	- [With VK engine]
9	Y	- [With VQ engine]
10	GR	- [With VQ engine]
10	L	- [With VK engine]
19	O	-
20	Y	-
27	L	-
28	B	-
29	LG	-
31	R	-
34	LG	-
35	BR	-
36	W	-
37	Y	-
38	Y	-
43	P	-
44	L	-
45	Y	-
46	V	-

Connector No.	F151
Connector Name	TCM
Connector Type	SP10FG



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	IGNITION POWER SUPPLY
2	B	BATTERY POWER SUPPLY (MEMORY BACK-UP)
3	R	CAN-H
4	O	K-LINE
5	G	GROUND
6	GR	IGNITION POWER SUPPLY
7	L	BACK-UP LAMP RELAY
8	BR	CAN-L
9	Y	STARTER RELAY
10	WB	GROUND

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS06FW-M2



Terminal No.	Color Of Wire	Signal Name [Specification]
1A	BG	-
2A	G	-
3A	L	-
4A	R	-
5A	V	-
6A	Y	-
7A	R	-
8A	L	-

# BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[WITHOUT NAVIGATION]

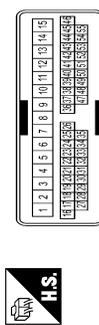
## BOSE AUDIO WITHOUT NAVIGATION

Connector No.	M3
Connector Name	FUSE BLOCK (UB)
Connector Type	NS12FW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10C	L	-
11C	LG	-
12C	R	-
7C	B	-
9C	BG	-

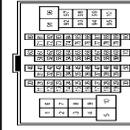
Connector No.	M5
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
3	SB	-
6	R	-
7	W	-
8	G	-
9	L	-
10	BG	-
11	G	-
12	V	-
13	Y	-
14	P	-
15	L	-
20	BG	-
21	LG	-

22	V	-
23	Y	-
24	P	-
26	SB	-
27	V	-
28	LG	-
29	R	-
30	P	-
31	BG	-
32	SB	-
33	L	-
34	R	-
35	B	-
36	R	-
37	G	-
38	SHIELD	-
39	W	-
40	B	-
41	SHIELD	-
42	G	-
43	R	-
44	G	-
45	Y	-
46	GR	-
47	W	-
48	L	-
49	R	-
50	BG	-
51	SB	-
52	R	-
53	Y	-
54	LG	-
55	L	-

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH60MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	BG	-
3	LG	- [Without Auto aircon seat] - [With Auto aircon seat]
4	SB	-
5	GR	-
6	W	-
7	G	-
8	W	-
9	P	-
10	BR	-
11	B	-
12	G	-
13	R	-
14	W	-
15	SHIELD	-
16	BR	-
17	L	-
18	P	-
19	G	-
20	GR	- [Without (ICC)] - [With (ICC)]
21	BR	- [Without (ICC)] - [With (ICC)]
22	L	- [Without (ICC)] - [With (ICC)]
23	G	- [Without (ICC)] - [With (ICC)]
24	L	- [Without (ICC)] - [With (ICC)]
25	W	- [Without (ICC)] - [With (ICC)]
26	SHIELD	-
28	GR	-
29	V	-
30	BG	-
32	W	-
33	Y	-
34	L	-
37	G	-
38	R	-
39	G	-
41	L	-
42	W	-
43	R	-
44	LG	-
45	GR	-
46	W	-
47	L	-

48	P	-
49	BG	-
50	LG	-
51	SB	-
52	Y	-
53	BG	-
54	BR	-
55	SB	-
59	SB	-
60	SB	-
61	V	-
62	P	-
63	R	-
64	L	-
65	BG	-
66	V	-
70	SHIELD	-
71	BG	-
72	GR	-
73	W	-
74	SB	-
76	V	-
77	V	-
78	Y	-
80	BG	-
81	L	-
82	W	-
83	Y	-
84	L	-
85	P	-
86	BR	-
87	P	-
88	V	-
89	G	-
90	P	-
91	R	-
92	R	-
93	GR	-
95	G	-
96	W	-
97	W	-
98	SHIELD	-
100	Y	-

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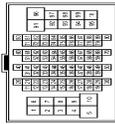
# BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[WITHOUT NAVIGATION]

## BOSE AUDIO WITHOUT NAVIGATION

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



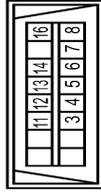
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	- [With Auto aircon seat]
1	Y	- [Without Auto aircon seat]
2	B	-
3	W	-
4	P	-
5	V	-
6	BG	-
7	W	-
8	BG	-
9	W	-
10	BG	-
11	BG	-
12	B	-
13	G	-
14	R	-
15	W	-
16	SHIELD	-
17	L	-
18	P	-
19	G	-
20	R	-
21	LG	-
23	V	-
24	P	-
25	BR	-
26	GR	-
27	BG	-
28	W	-
38	B	-
39	B	-
43	SB	-
44	W	-
45	B	-
51	V	-
52	LG	-
53	SHIELD	-
54	BR	-
55	Y	-
56	SHIELD	-

Connector No.	M13
Connector Name	FRONT SQUAWKER LH
Connector Type	TK02FBR



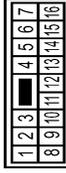
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	W	-

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	Color Of Wire	Signal Name [Specification]
3	LG	-
4	B	-
5	B	-
6	L	-
7	GR	-
8	G	-
11	SB	-
12	P	-
13	L	-
14	P	-
16	BG	-

Connector No.	M25
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
2	LG	-
3	SB	-
4	LG	-
5	SB	-
6	SB	-
7	Y	-
8	SHIELD	-
9	G	-
10	R	-
11	V	-
12	SB	-
13	Y	-
14	LG	-
15	P	-
16	L	-

Connector No.	M36
Connector Name	COMBINATION SWITCH (SPRAL CABLE)
Connector Type	TK08FGY-1V



Terminal No.	Color Of Wire	Signal Name [Specification]
24	P	-
25	SB	-
26	B	-
31	L	-
32	V	-

# BOSE AUDIO WITHOUT NAVIGATION

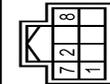
< WIRING DIAGRAM >

[WITHOUT NAVIGATION]

## BOSE AUDIO WITHOUT NAVIGATION

33	B	-
34	G	-

Connector No.	M37
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH08FM-NH



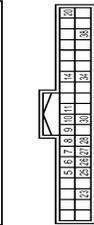
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	CANH
2	P	CANL
7	B	GROUND
8	GR	IGN

Connector No.	M65
Connector Name	CENTER SPEAKER
Connector Type	TK02FBR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	G	-

Connector No.	M66
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH40FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
5	L	MANUAL MODE SHIFT UP SIGNAL
6	BG	PADDLE SHIFTER UP SIGNAL
7	GR	COMMUNICATION SIGNAL (AMP->METER)
8	L	VEHICLE SPEED SIGNAL (2-PULSE)
9	SB	SEAT BELT FORCE SWITCH SIGNAL (DRIVER SIDE)
10	W	MANUAL MODE SIGNAL
11	G	NORMANUAL MODE SIGNAL
14	BR	COMMUNICATION SIGNAL (LCD->AMP)
20	L	ION SENSOR SIGNAL
23	Y	AT SNOW SWITCH SIGNAL
25	V	MANUAL MODE SHIFT DOWN SIGNAL
26	G	PADDLE SHIFTER DOWN SIGNAL
27	LG	COMMUNICATION SIGNAL (METER->AMP)
28	R	VEHICLE SPEED SIGNAL (8-PULSE)
30	V	PARKING BRAKE SWITCH SIGNAL
34	Y	COMMUNICATION SIGNAL (AMP->LCD)
38	L	BLOWER MOTOR CONTROL SIGNAL

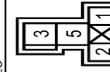
Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH32FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
41	V	ACC POWER SUPPLY
42	Y	FUEL LEVEL SENSOR SIGNAL
43	R	INTAKE SENSOR SIGNAL

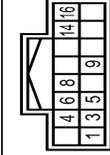
Terminal No.	Color Of Wire	Signal Name [Specification]
44	LG	IN-VEHICLE SENSOR SIGNAL
45	P	AMBIENT SENSOR SIGNAL
46	BG	SUNLOAD SENSOR SIGNAL
47	V	GAS SENSOR SIGNAL
53	G	IGNITION POWER SUPPLY
54	BG	BATTERY POWER SUPPLY
55	B	GROUND
56	L	CANH
57	W	BRAKE FLUID LEVEL SWITCH SIGNAL
58	B	FUEL LEVEL SENSOR GROUND
59	GR	INTAKE SENSOR GROUND
60	L	IN-VEHICLE SENSOR GROUND
61	BR	AMBIENT SENSOR GROUND
62	SB	SUNLOAD SENSOR GROUND
63	R	ION MODE SIGNAL
65	BG	ECV SIGNAL
69	L	A/C LAMP SIGNAL
70	R	EACH DOOR MOTOR POWER SUPPLY
71	B	GROUND
72	P	CANL

Connector No.	M69
Connector Name	BACK-UP LAMP RELAY
Connector Type	MS02FL-M2-LC



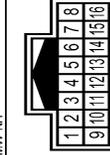
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	W	-
3	R	-
5	BG	-

Connector No.	M72
Connector Name	MULTI-FUNCTION SWITCH
Connector Type	TH18FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
3	V	ACC
4	R	ILL
6	R	ILL CONT
6	SB	AV COMM (H)
8	LG	AV COMM (L)
9	BR	SWY GND
14	SB	DISK EJECT SIGNAL
16	G	HAZARD ON

Connector No.	M110
Connector Name	WIRE TO WIRE
Connector Type	TH18FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	P	-
4	B	-
5	W	-
6	GR	-
7	SB	-
8	LG	-
9	SHIELD	-
10	R	-
11	G	-
15	R	-

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AV

# BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[WITHOUT NAVIGATION]

## BOSE AUDIO WITHOUT NAVIGATION

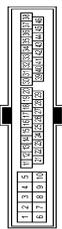
16	V	-
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Connector No.	M114
Connector Name	FRONT SQUAWKER RH
Connector Type	TK02FBR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	LG	-

Connector No.	M116
Connector Name	WIRE TO WIRE
Connector Type	TK36MW-NS10



Terminal No.	Color Of Wire	Signal Name [Specification]
2	W	-
3	L	-
4	B	- [With VK engine]
4	R	- [With VG engine]
5	B	- [With VK engine]
5	R	- [With VG engine]
7	B	-
9	L	- [With VK engine]
9	R	- [With VG engine]
10	R	-
19	BG	-
20	Y	-
27	L	-
28	B	-
29	LG	-

Terminal No.	Color Of Wire	Signal Name [Specification]
39	P	-
40	V	-
41	SB	- [With ICC]
41	Y	- [Without ICC]
42	V	- [With ICC]
42	W	- [Without ICC]
43	B	- [With ICC]
43	P	- [Without ICC]
44	R	-
45	G	- [With ICC]
45	L	- [Without ICC]
46	BG	- [With ICC]
46	SHIELD	- [Without ICC]
47	B	- [With ICC]
47	L	- [Without ICC]
48	P	- [With ICC]
48	R	- [Without ICC]
49	G	- [With ICC]
49	W	- [Without ICC]
50	SHIELD	-
51	BG	-
52	GR	-
53	G	-
54	L	-
55	P	-
60	LG	-
61	R	-
62	SB	-
63	V	-
64	Y	-
65	BR	-
66	BG	-
67	W	-
69	G	-
71	SB	-
72	V	-
73	V	-
74	LG	-
75	BR	-
76	V	-
77	LG	-
80	R	-
82	P	-
83	GR	-
87	G	-
88	V	-
90	P	-
91	L	-
92	LG	-
93	V	-
95	BG	-
96	GR	-
99	R	-
100	G	-
101	SB	-
102	BG	-
103	BR	-
103	LG	-
108	R	-
81	L	-
87	P	-
81	L	-
92	L	-



Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
74	SB	PASSENGER DOOR ANT-
75	BR	PASSENGER DOOR ANT+
76	V	DRIVER DOOR ANT-
77	LG	DRIVER DOOR ANT+
78	Y	ROOM ANT-
79	BR	ROOM ANT+
80	GR	NATS ANT AMP.
81	W	NATS ANT
82	P	IGN RELAY (F/B) CONT
83	GR	KEYLESS ENTRY RECEIVER SIGNAL
87	BR	COMBI SW INPUT 5
88	V	COMBI SW INPUT 3
90	P	CAN-L
91	L	CAN-H
92	LG	KEY SLOT ILL
93	V	ON IND
95	BG	ACC RELAY CONT
96	GR	AT SHIFT SELECTOR POWER SUPPLY
99	R	SHIFT P
100	G	PASSENGER DOOR REQUEST SW
101	SB	DRIVER DOOR REQUEST SW
102	BG	BLOWER FAN MOTOR RELAY CONT
103	BR	KEYLESS ENTRY RECEIVER POWER SUPPLY
103	LG	COMBI SW INPUT 1
108	R	COMBI SW INPUT 4
109	Y	COMBI SW INPUT 2
110	G	HAZARD SW

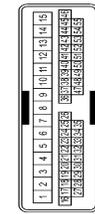
# BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[WITHOUT NAVIGATION]

## BOSE AUDIO WITHOUT NAVIGATION

Connector No.	M124
Connector Name	WIPE TO WIRE
Connector Type	TH40MW-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
3	Y	-
4	LG	-
5	SB	-
6	BR	-
7	G	-
8	V	-
9	LG	-
13	B	-
14	BG	-
15	W	-
19	G	-
20	LG	-
22	W	-
23	B	-
24	SHIELD	-
25	G	-
26	R	-
31	BG	-
32	Y	-
33	LG	-
34	SB	-
35	V	-
36	BG	-
37	GR	-
38	G	- [Without automatic drive positioner] - [With automatic drive positioner]
39	B	-
40	R	-
41	P	-
42	LG	-
43	L	-
44	Y	-
45	R	-
46	W	-
47	Y	-
48	BR	-

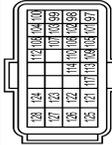
49	SHIELD	-
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Connector No.	M144
Connector Name	WIPE TO WIRE
Connector Type	TH12MW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	Y	-
3	R	-
5	W	-
6	R	-
7	Y	-
11	SHIELD	-
12	B	- [Without around view monitor] - [With around view monitor]
12	W	-

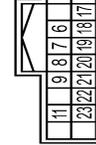
Connector No.	M164
Connector Name	ECM
Connector Type	RH4FGY-RZ8-R-LH-Z



Terminal No.	Color Of Wire	Signal Name [Specification]
97	R	ACCELERATOR PEDAL POSITION SENSOR 1
98	P	ACCELERATOR PEDAL POSITION SENSOR 2
98	Y	ACCELERATOR PEDAL POSITION SENSOR 3
99	G	SENSOR POWER SUPPLY (With NAV)
99	W	SENSOR POWER SUPPLY (Without NAV)
100	W	SENSOR GROUND
101	SB	ASD/CC STEERING SWITCH
102	LG	EVAP CONTROL SYSTEM PRESSURE SENSOR

103	G	SENSOR POWER SUPPLY (Without NAV)
103	L	SENSOR POWER SUPPLY (With NAV)
104	BR	SENSOR GROUND (With NAV)
104	GR	SENSOR GROUND (Without NAV)
105	L	REFRIGERANT PRESSURE SENSOR
106	W	FUEL TANK TEMPERATURE SENSOR
107	BG	SENSOR POWER SUPPLY
108	V	SENSOR GROUND
109	G	PNP SIGNAL
110	R	ENGINE SPEED OUTPUT SIGNAL
112	V	SENSOR GROUND (With NAV)
112	W	SENSOR GROUND (Without NAV)
113	P	CAN COMMUNICATION LINE
114	L	CAN COMMUNICATION LINE
117	GR	DATA LINK CONNECTOR
121	LG	EVAP CANISTER VENT CONTROL VALVE
122	B	STOP LAMP SWITCH
123	B	ECM GROUND
124	B	ECM GROUND
125	GR	POWER SUPPLY FOR ECM
126	BR	ASD/CC BRAKE SWITCH
127	B	ECM GROUND
128	B	ECM GROUND

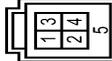
Connector No.	M194
Connector Name	FRONT DISPLAY UNIT
Connector Type	TH24FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
2	Y	INVERTER VCC
3	BG	SIGNAL VCC
4	BG	COMPOSITE IMAGE SIGNAL GND
6	W	RGB (G: GREEN) SIGNAL
7	SHIELD	SHIELD
8	R	#F
9	B	RGB AREA (Y) SIGNAL
11	Y	COMM (CONT-POSP)
13	BR	INVERTER GND
14	LG	SIGNAL GND

15	SB	COMPOSITE IMAGE SIGNAL
17	B	RGB (R: RED) SIGNAL
18	R	RGB (B: BLUE) SIGNAL
19	G	RGB SYNC SIGNAL
20	W	VP
21	SHIELD	SHIELD
22	BR	COMM (DISP->CONT)
23	SB	SHIELD

Connector No.	M197
Connector Name	USB CONNECTOR
Connector Type	HA404FG



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	L	-
3	G	-
4	R	-
5	SHIELD	-

Connector No.	M198
Connector Name	OPTION CONNECTOR (AUXILIARY INPUT JACK)
Connector Type	TH40MW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	W	-

A B C D E F G H I J K L M N O P

AV

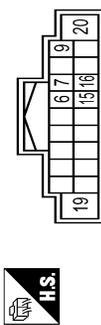
# BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[WITHOUT NAVIGATION]

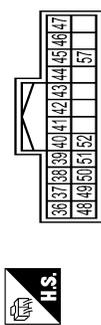
## BOSE AUDIO WITHOUT NAVIGATION

Connector No.	M201
Connector Name	AV CONTROL UNIT
Connector Type	TH18FW-CS2



Terminal No.	Color Of Wire	Signal Name [Specification]
6	P	STRG SW A
7	V	ACC
9	B	ILLUMINATION SIGNAL
15	B	STRG SW GND
16	V	STRG SW B
19	Y	BATTERY
20	B	GROUND

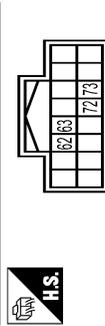
Connector No.	M202
Connector Name	AV CONTROL UNIT
Connector Type	TH24FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
36	BG	SIGNAL VCC
37	LG	SIGNAL GND
38	R	HP
39	BR	COMM (DISP->CONT)
40	B	RGB AREA (YS) SIGNAL
41	SHIELD	SHIELD
42	G	RGB SYNC
43	B	RGB (R-RED) SIGNAL
44	W	RGB (G-GREEN) SIGNAL
45	R	RGB (B-BLUE) SIGNAL
46	BG	COMPOSITE IMAGE SIGNAL GND
47	SB	COMPOSITE IMAGE SIGNAL
48	Y	INVERTER VCC

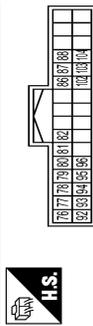
49	BR	INVERTER GND
50	W	VP
51	Y	COMM (CONT->DISP)
52	SB	SHIELD
57	SHIELD	SHIELD

Connector No.	M203
Connector Name	AV CONTROL UNIT
Connector Type	TH18FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
27	W	CAMERA IMAGE SIGNAL
28	SHIELD	SHIELD
29	B	CAMERA GND
30	R	CAMERA POWER SUPPLY

Connector No.	M204
Connector Name	AV CONTROL UNIT
Connector Type	TH182FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
76	LG	AV COMM (L)
77	SB	AV COMM (H)
78	LG	AV COMM (L)
79	SB	AV COMM (H)
80	P	CANLH
81	L	CANHL
82	BR	SW GND
86	SHIELD	SHIELD
87	L	TEL VOICE SIGNAL (+)

88	P	TEL VOICE SIGNAL (-)
92	R	VEHICLE SPEED SIGNAL (8-PULSE)
93	V	PARKING BRAKE SIGNAL
94	BG	REVERSE SIGNAL
95	G	IGNITION SIGNAL
96	SB	DISK EJECT SIGNAL
102	B	AUX. GND
103	W	AUX. AUDIO LH+
104	R	AUX. AUDIO RH+

Connector No.	M205
Connector Name	AV CONTROL UNIT
Connector Type	TH12FW-NH



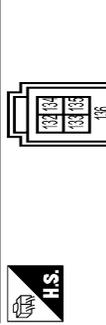
Terminal No.	Color Of Wire	Signal Name [Specification]
108	BR	SOUND SIGNAL REAR RH (+)
109	R	SOUND SIGNAL FRONT RH (+)
110	V	AMP. ON SIGNAL
111	B	SHIELD
112	V	SOUND SIGNAL REAR LH (+)
113	P	SOUND SIGNAL FRONT LH (+)
114	Y	SOUND SIGNAL FRONT RH (-)
115	G	SOUND SIGNAL FRONT LH (-)
118	LG	SOUND SIGNAL REAR LH (-)
119	L	SOUND SIGNAL FRONT LH (-)

Connector No.	M206
Connector Name	AV CONTROL UNIT
Connector Type	IA12FW



Terminal No.	Color Of Wire	Signal Name [Specification]
120	B	SATELLITE SOUND SIGNAL LH (+)
121	G	SATELLITE SOUND SIGNAL RH (+)
122	R	COMM (CONT->SAT)
124	W	SATELLITE SOUND SIGNAL LH (-)
125	R	SATELLITE SOUND SIGNAL RH (-)
126	SHIELD	SHIELD
127	SHIELD	SHIELD
128	SB	MODE CHANGE SIGNAL
129	W	REQUEST (SAT->CONT)
130	B	COMM (SAT->CONT)

Connector No.	M207
Connector Name	AV CONTROL UNIT
Connector Type	HA04DFL



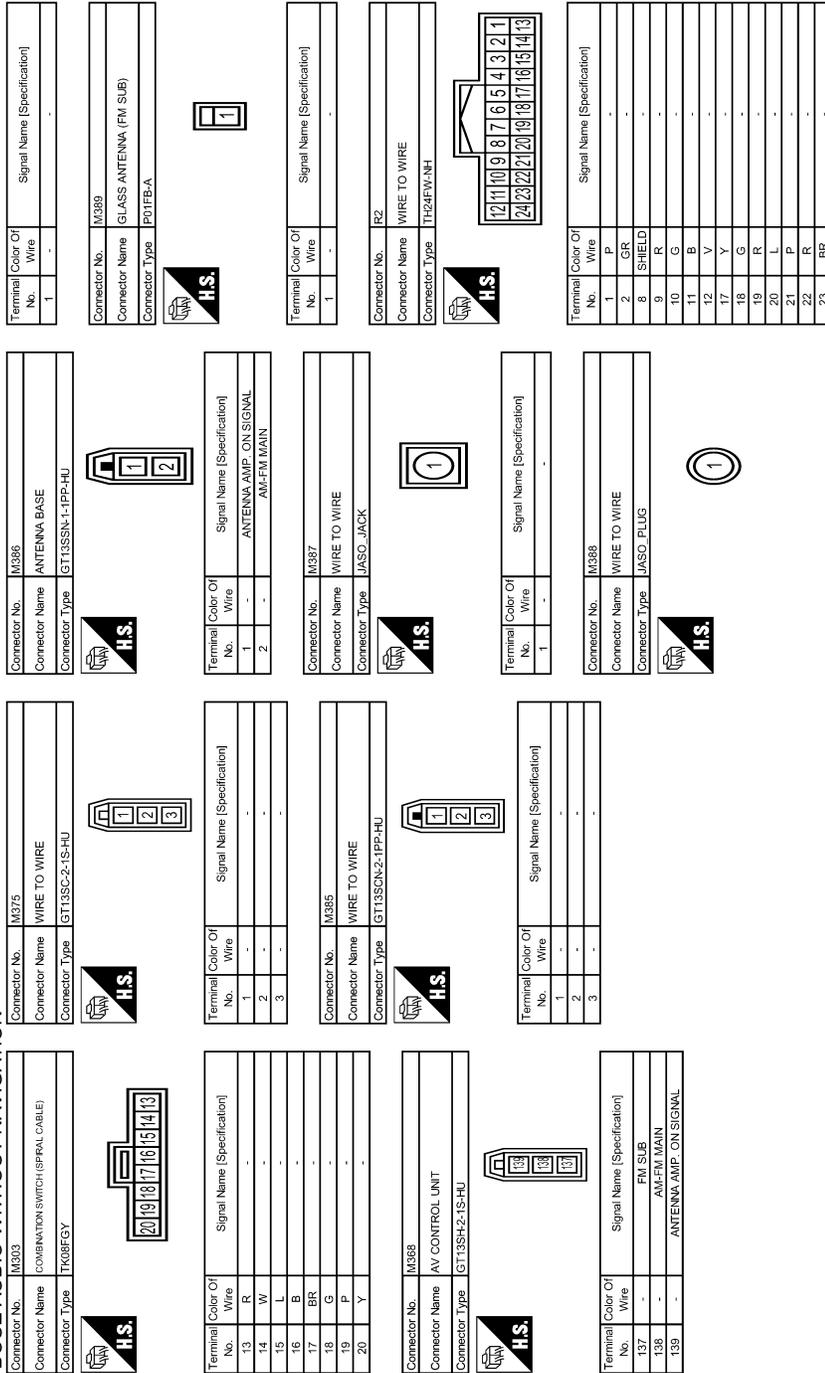
Terminal No.	Color Of Wire	Signal Name [Specification]
132	G	USB GND
133	R	USB D- SIGNAL
134	W	V BUS SIGNAL
135	L	USB D+ SIGNAL
136	SHIELD	SHIELD

# BOSE AUDIO WITHOUT NAVIGATION

< WIRING DIAGRAM >

[WITHOUT NAVIGATION]

## BOSE AUDIO WITHOUT NAVIGATION



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# BOSE AUDIO WITHOUT NAVIGATION

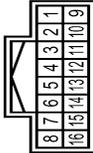
< WIRING DIAGRAM >

[WITHOUT NAVIGATION]

## BOSE AUDIO WITHOUT NAVIGATION

24	B	-
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Connector No.	R7
Connector Name	WIPE TO WIRE
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	B	-
4	B	-
5	BR	-
6	GR	-
7	SB	-
8	Y	-
9	SHIELD	-
10	R	-
11	G	-
15	R	-
16	V	-

Connector No.	R11
Connector Name	WIPE TO WIRE
Connector Type	TH24MW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	-
2	GR	-
3	SHIELD	-
4	L	-
10	R	-

11	B	-
12	V	-
17	Y	-
18	G	-
19	SB	-
20	P	-
21	L	-
22	R	-
23	BR	-
24	O	-

Connector No.	R17
Connector Name	MICROPHONE
Connector Type	TK64FW



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	MICROPHONE SIGNAL
2	SHIELD	MICROPHONE GND
4	L	MICROPHONE VCC

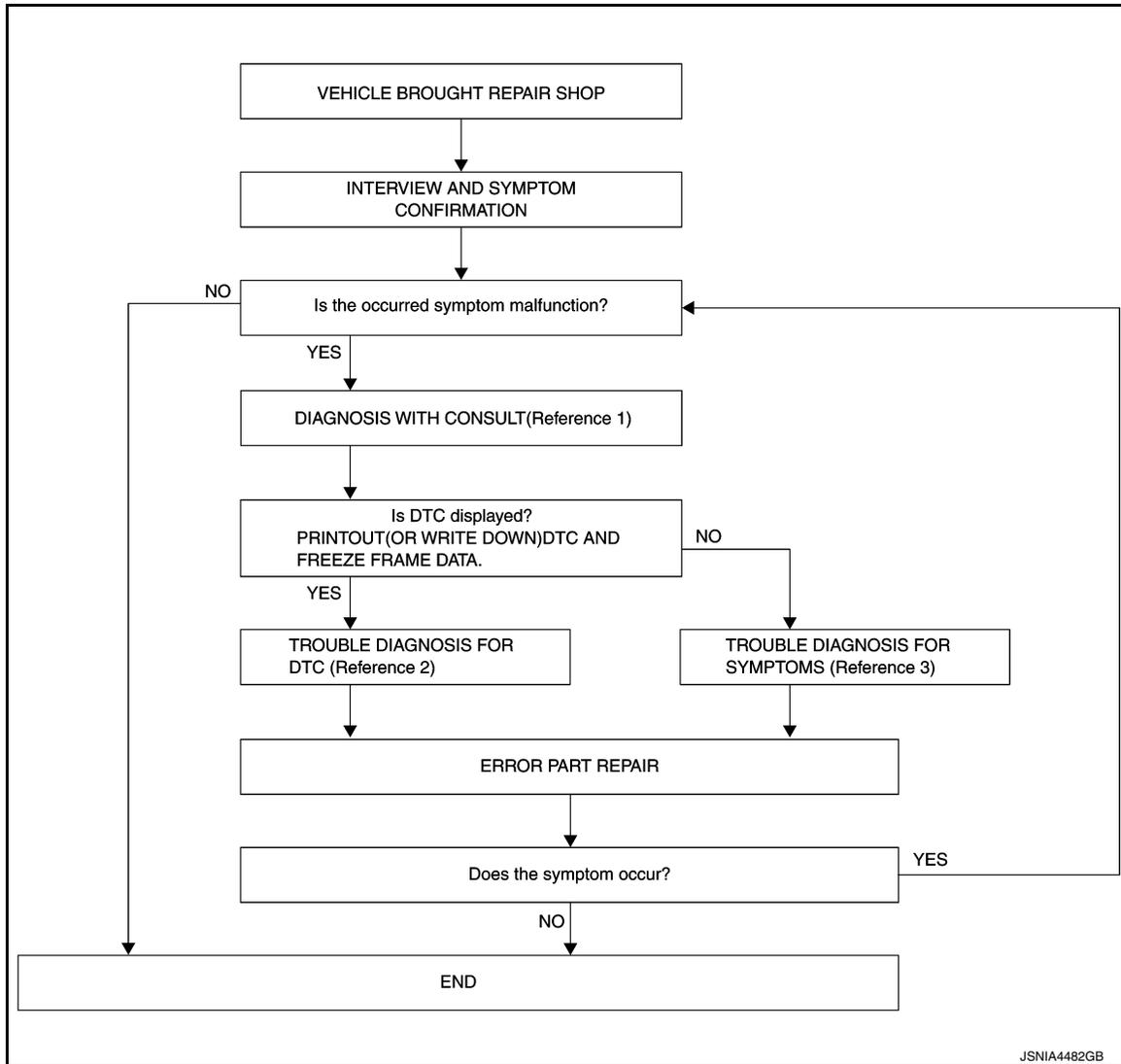
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

#### Work Flow

INFOID:000000010578418

#### OVERALL SEQUENCE



- Reference 1… Refer to [AV-27. "CONSULT Function \(MULTI AV\)".](#)
- Reference 2… Refer to [AV-39. "DTC Index".](#)
- Reference 3… Refer to [AV-123. "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

# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[WITHOUT NAVIGATION]

1. Connect CONSULT and perform a self-diagnosis for "MULTI AV". Refer to [AV-27, "CONSULT Function \(MULTI AV\)"](#).

**NOTE:**

Skip to step 4 of the diagnosis procedure if "MULTI AV" is not displayed.

2. When DTC is detected, follow the instructions below:
  - Record DTC and Freeze Frame Data.

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-39, "DTC Index"](#).

>> GO TO 5.

## 4. TROUBLE DIAGNOSIS FOR SYMPTOMS

---

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-123, "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.

**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 AV CONTROL UNIT

## ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Description

INFOID:000000010578419

## BEFORE REPLACEMENT

When replacing AV control unit, save or print current vehicle specification with CONSULT configuration before replacement. Refer to [AV-73, "ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Work Procedure"](#).

## AFTER REPLACEMENT

**CAUTION:**

When replacing AV control unit, you must perform "After Replace ECU" or "Manual Configuration" with CONSULT.

- Complete the procedure of "After Replace ECU" or "Manual Configuration" in order.
- If you set incorrect "After Replace ECU" or "Manual Configuration", incidents might occur.
- Configuration is different for each vehicle model. Confirm configuration of each vehicle model.

## ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Work Procedure

INFOID:000000010578420

## 1. SAVING VEHICLE SPECIFICATION

## ④-CONSULT Configuration

Perform "Before Replace ECU" to save or print current vehicle specification. Refer to [AV-73, "CONFIGURATION \(AV CONTROL UNIT\) : Description"](#).

**NOTE:**

If "Before Replace ECU" can not be used, use the "Manual Configuration".

>> GO TO 2.

## 2. REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to [AV-130, "Exploded View"](#).

>> GO TO 3.

## 3. WRITING VEHICLE SPECIFICATION

## ④-CONSULT Configuration

Perform "After Replace ECU" or "Manual Configuration" to write vehicle specification. Refer to [AV-73, "CONFIGURATION \(AV CONTROL UNIT\) : Description"](#).

>> 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:000000010578421

- Since vehicle specifications are not included in the AV control unit after replacement, it is required to write vehicle specifications with CONSULT. Refer to [AV-74, "CONFIGURATION \(AV CONTROL UNIT\) : Work Procedure"](#).
- The AV control unit configuration includes functions as follows.

# INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[WITHOUT NAVIGATION]

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in AV control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the AV control unit.
Manual Configuration		Allows the writing of the vehicle specification into the AV control unit by hand.

## CONFIGURATION (AV CONTROL UNIT) : Work Procedure

INFOID:000000010578422

### 1. WRITE VEHICLE SPECIFICATION

#### ⓐ CONSULT Configuration

Write vehicle specification into AV control unit.

To write vehicle specification stored in CONSULT into the AV control unit>>GO TO 2.

To write vehicle specification into the AV control unit by hand>>GO TO 3.

### 2. WRITE STORED DATA

#### ⓐ CONSULT Configuration

Select "After Replace ECU" in "Read/Write Configuration." Write data stored in CONSULT with the "Before Replace ECU" function into the AV control unit.

>> GO TO 4.

### 3. MANUALLY WRITE VEHICLE SPECIFICATION

#### ⓐ CONSULT Configuration

Perform "Manual Configuration." Refer to the Configuration List to write vehicle specification into the AV control unit. Refer to [AV-74. "CONFIGURATION \(AV CONTROL UNIT\) : Configuration List"](#).

#### NOTE:

If selection items are not displayed on the CONSULT screen, touch "NEXT".

>> 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:000000010578423

#### CAUTION:

**Grasp vehicle specifications precisely. The control of ECU may not function normally if the specifications are misread.**

#### NOTE:

- The items shown in this list depend on vehicle specifications.
- The config list may not be displayed depending on vehicle specifications. This is not a malfunction.

MANUAL SETTING ITEM	
Items	Setting value
STEERING	LHD
	RHD
SOUND SYSTEM	BASE
	BOSE

# INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[WITHOUT NAVIGATION]

MANUAL SETTING ITEM	
Items	Setting value
AUXILIARY INPUT JACKS	WITH
	WITHOUT
CAMERA SYSTEM	NONE/AVM
	REAR CAMERA
	REAR+SIDE

**NOTE:**

AVM: Around view monitor

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## DTC/CIRCUIT DIAGNOSIS

### U1000 CAN COMM CIRCUIT

#### Description

INFOID:0000000010578424

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-35, "CAN Communication Signal Chart"](#).

#### DTC Logic

INFOID:0000000010578425

#### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	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:0000000010578426

#### 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 system". Refer to [LAN-25, "Trouble Diagnosis Flow Chart"](#).
- NO >> Refer to GI section. Refer to [GI-47, "Intermittent Incident"](#).

# U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## U1010 CONTROL UNIT (CAN)

### DTC Logic

INFOID:000000010578427

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	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.

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# U1200 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## U1200 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578428

DTC	Display contents of CONSULT	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

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## U1216 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578429

DTC	Display contents of CONSULT	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.

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# U121D AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## U121D AV CONTROL UNIT

### DTC Logic

INFOID:0000000010578430

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121D	DSP CONN [U121D]	AV control unit malfunction is detected.	<ul style="list-style-type: none"><li>• If a disc can be played, then there is a possibility of the detection of a temporary malfunction.</li><li>• Replace the AV control unit if the malfunction occurs constantly.</li></ul>

### Diagnosis Procedure

INFOID:0000000010578431

#### 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-130. "Exploded View"](#).

# U121E AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## U121E AV CONTROL UNIT

### DTC Logic

INFOID:000000010578432

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121E	DSP COMM [U121E]	AV control unit malfunction is detected.	<ul style="list-style-type: none"><li>• If a disc can be played, then there is a possibility of the detection of a temporary malfunction.</li><li>• Replace the AV control unit if the malfunction occurs constantly.</li></ul>

### Diagnosis Procedure

INFOID:000000010578433

#### 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-130, "Exploded View"](#).

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# U1225 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## U1225 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578434

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	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

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## U1228 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578435

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	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.

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# U1229 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## U1229 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578436

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	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/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## U122A AV CONTROL UNIT

### DTC Logic

INFOID:000000010578437

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

### Diagnosis Procedure

INFOID:000000010578438

#### 1.PERFORM THE SELF-DIAGNOSIS

When U122A is detected, write configuration data with CONSULT.

>> Write configuration data with CONSULT. Refer to [AV-73, "CONFIGURATION \(AV CONTROL UNIT\) : Description"](#).

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# U122E AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## U122E AV CONTROL UNIT

### DTC Logic

INFOID:000000010578439

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	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/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## U1232 STEERING ANGLE SENSOR

### DTC Logic

INFOID:000000010578440

DTC	Display contents of CONSULT	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:000000010578441

#### 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-9. "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement"](#).

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# U1243 FRONT DISPLAY UNIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## U1243 FRONT DISPLAY UNIT

### DTC Logic

INFOID:000000010578442

DTC	Display contents of CONSULT	DTC Detection Condition	Possible causes
U1243	FRONT DISP CONN [U1243]	When either one of the following items is detected. <ul style="list-style-type: none"> <li>front display unit power supply and ground circuit malfunction is detected.</li> <li>malfunction is detected in communication circuits between front display unit and AV control unit.</li> </ul>	<ul style="list-style-type: none"> <li>Front display unit power supply and ground circuit.</li> <li>Communication circuits between front display unit and AV control unit.</li> </ul>

### Diagnosis Procedure

INFOID:000000010578443

#### 1. CHECK FRONT DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUITS

Check front display unit power supply and ground circuits. Refer to [AV-95. "FRONT DISPLAY UNIT : Diagnosis Procedure"](#).

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair malfunctioning parts.

#### 2. CHECK CONTINUITY COMMUNICATION CIRCUITS

- Turn ignition switch OFF.
- Disconnect front display unit connector and AV control unit connector.
- 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	
M194	11	M202	70	Existed
	22		71	

- Check continuity between front display unit harness connector and ground.

Front display unit		Ground	Continuity
Connector	Terminals		
M194	11		Not existed
	12		

Is inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

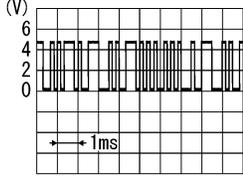
#### 3. CHECK COMMUNICATION SIGNAL

- Connect front display unit connector and AV control unit connector.
- Turn ignition switch ON.
- Check signal between front display unit harness connector and ground.

# U1243 FRONT DISPLAY UNIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

(+)		(-)	Condition	Reference value
Front display unit				
Connector	Terminal			
M194	11	Ground	When adjusting display brightness.	 <p style="text-align: right; font-size: small;">PKIB5039J</p>

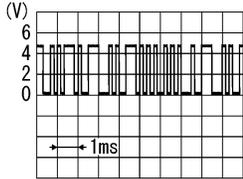
Is inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit.

## 4. CHECK COMMUNICATION SIGNAL

Check signal between front display unit harness connector and ground.

(+)		(-)	Condition	Reference value
Front display unit				
Connector	Terminal			
M194	22	Ground	When adjusting display brightness.	 <p style="text-align: right; font-size: small;">PKIB5039J</p>

Is inspection result normal?

YES >> INSPECTION END

NO >> Replace front display unit.

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# U1255 SATELLITE RADIO TUNER

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## U1255 SATELLITE RADIO TUNER

### DTC Logic

INFOID:000000010578444

DTC	Display contents of CONSULT	DTC Detection Condition	Possible causes
U1255	SAT CONN [U1255]	<p>When either one of the following items is detected:</p> <ul style="list-style-type: none"> <li>satellite radio tuner power supply and ground circuits malfunction is detected.</li> <li>malfunction is detected in communication circuits between AV control unit and satellite radio tuner.</li> <li>malfunction is detected in request signal circuit between AV control unit and satellite radio tuner.</li> </ul>	<ul style="list-style-type: none"> <li>Satellite radio tuner power supply and ground circuits.</li> <li>Communication circuits between AV control unit and satellite radio tuner.</li> <li>Request signal circuit between AV control unit and satellite radio tuner.</li> </ul>

### Diagnosis Procedure

INFOID:000000010578445

#### 1. CHECK SATELLITE RADIO TUNER POWER SUPPLY AND GROUND CIRCUIT

Check satellite radio tuner power supply and ground circuit. Refer to [AV-97, "SATELLITE RADIO TUNER : Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair malfunctioning parts.

#### 2. CHECK CONTINUITY COMMUNICATION CIRCUIT AND REQUEST SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect AV control unit connector and satellite radio tuner connector.
- Check continuity between AV control unit harness connector and satellite radio tuner harness connector.

AV control unit		Satellite radio tuner		Continuity
Connector	Terminals	Connector	Terminals	
M206	129	B236	8	Existed
	130		9	
	122		10	

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

AV control unit		Ground	Continuity
Connector	Terminals		
M206	129	Ground	Not existed
	130		
	122		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

#### 3. CHECK AV CONTROL UNIT VOLTAGE

- Connect AV control unit connector.
- Turn ignition switch ON.
- Check voltage between AV control unit harness connector and ground.

(+)		(-)	Voltage (Approx.)
AV control unit			
Connector	Terminals		

# U1255 SATELLITE RADIO TUNER

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

M206	129	Ground	7.5 V
	130		7.0 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit.

## 4. CHECK SATELLITE RADIO TUNER

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector.
3. Connect satellite radio tuner.
4. Turn ignition switch ON.
5. Check voltage between satellite radio tuner harness connector and ground.

(+)		(-)	Voltage (Approx.)
Satellite radio tuner			
Connector	Terminal		
B236	10	Ground	7.0 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace satellite radio tuner.

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## U1263 USB

### DTC Logic

INFOID:000000010578446

DTC	Display contents of CONSULT	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:000000010578447

#### 1. CHECK USB HARNESS

Visually check USB harness.

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-130, "Exploded View"](#).
- NO >> Replace USB harness.

# U1300 AV COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## U1300 AV COMM CIRCUIT

### Description

INFOID:000000010578448

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	DTC Detection Condition	Possible causes
U1300 U1240	<ul style="list-style-type: none"> <li>AV COMM CIRCUIT [U1300]</li> <li>SWITCH CONN [U1240]</li> </ul>	When either one of the following items is detected: <ul style="list-style-type: none"> <li>multifunction switch power supply and ground circuits are malfunctioning.</li> <li>AV communication circuits between AV control unit and multifunction switch are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>Multifunction switch power supply and ground circuits.</li> <li>AV communication circuits between AV control unit and multifunction switch.</li> </ul>
U1300 U1256	<ul style="list-style-type: none"> <li>AV COMM CIRCUIT [U1300]</li> <li>HAND FREE CONN [U1256]</li> </ul>	When either one of the following items is detected: <ul style="list-style-type: none"> <li>TEL adapter unit power supply and ground circuits are malfunctioning.</li> <li>AV communication circuits between AV control unit and TEL adapter unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>TEL adapter unit power supply and ground circuits.</li> <li>AV communication circuits between AV control unit and TEL adapter unit.</li> </ul>
U1300 U1240 U1256	<ul style="list-style-type: none"> <li>AV COMM CIRCUIT [U1300]</li> <li>SWITCH CONN [U1240]</li> <li>HAND FREE CONN [U1256]</li> </ul>	Malfunction is detected in AV communication circuits between AV control unit and multifunction switch.	AV communication circuits between AV control unit and multifunction switch.

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# U1310 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## U1310 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578449

DTC	Display contents of CONSULT	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

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## POWER SUPPLY AND GROUND CIRCUIT

### AV CONTROL UNIT

#### AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000010578450

#### 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 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.

## FRONT DISPLAY UNIT

#### FRONT DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000010578451

#### 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	8.8 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 front display unit and AV control unit.
3. Check continuity between front display unit harness connector and AV control unit harness connector.

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# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

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

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

Front 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.

(+) AV control unit		(-)	Ignition switch position	Voltage (Approx.)
Connector	Terminal			
M202	48	Ground	ACC	8.8 V
	36			8.8 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 front display unit connector.
3. Check continuity between front 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.

## BOSE AMP.

### BOSE AMP. : Diagnosis Procedure

INFOID:000000010578452

## 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.

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## 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.

## SATELLITE RADIO TUNER

### SATELLITE RADIO TUNER : Diagnosis Procedure

INFOID:000000010578453

#### 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 satellite radio tuner harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B236	12	OFF	Battery voltage
ACC power supply	B236	16	ACC	Battery voltage

Is the inspection result normal?

YES >> INSPECTION END

NO >> Check harness between satellite radio tuner and fuse.

## TEL ADAPTER UNIT

### TEL ADAPTER UNIT : Diagnosis Procedure

INFOID:000000010578454

#### 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34
Ignition switch ACC or ON	19

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# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

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

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## RGB (R: RED) SIGNAL CIRCUIT

### Description

INFOID:000000010578455

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

### Diagnosis Procedure

INFOID:000000010578456

#### 1. CHECK CONTINUITY RGB (R: RED) 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	Terminal	Connector	Terminal	
M194	17	M202	43	Existed

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

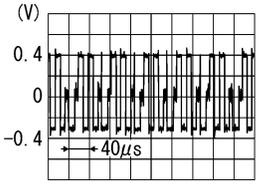
Front display unit		Ground	Continuity
Connector	Terminal		
M194	17		Not existed

Is the inspection result normal?

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

#### 2. CHECK RGB (R: RED) 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			
M194	17	Ground	Start confirmation/adjustment mode, and then display color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	 <p>SKIB2238J</p>

Is the inspection result normal?

- YES >> Replace front display unit. Refer to [AV-132, "Exploded View"](#).  
 NO >> Replace AV control unit. Refer to [AV-130, "Exploded View"](#).

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# RGB (G: GREEN) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## RGB (G: GREEN) SIGNAL CIRCUIT

### Description

INFOID:000000010578457

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

### Diagnosis Procedure

INFOID:000000010578458

#### 1. CHECK CONTINUITY RGB (G: GREEN) 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	Terminal	Connector	Terminal	
M194	6	M202	44	Existed

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

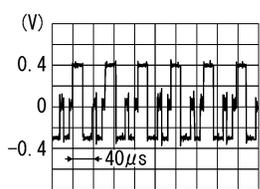
Front display unit		Ground	Continuity
Connector	Terminal		
M194	6		Not existed

Is the inspection result normal?

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

#### 2. CHECK RGB (G: GREEN) 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
Connector	Terminal			
M194	6	Ground	Start confirmation/adjustment mode, and then display color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	 <p>SKIB2236J</p>

Is the inspection result normal?

- YES >> Replace front display unit. Refer to [AV-132. "Exploded View"](#).  
 NO >> Replace AV control unit. Refer to [AV-130. "Exploded View"](#).

# RGB (B: BLUE) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## RGB (B: BLUE) SIGNAL CIRCUIT

### Description

INFOID:000000010578459

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

### Diagnosis Procedure

INFOID:000000010578460

#### 1. CHECK CONTINUITY RGB (B: BLUE) 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	Terminal	Connector	Terminal	
M194	18	M202	45	Existed

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

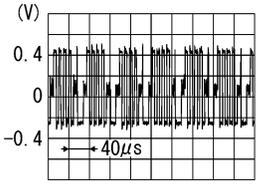
Front display unit		Ground	Continuity
Connector	Terminal		
M194	18		Not existed

Is the inspection result normal?

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

#### 2. CHECK RGB (B: BLUE) 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			
M194	18	Ground	Start confirmation/adjustment mode, and then display color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	 <p>SKIB2237J</p>

Is the inspection result normal?

- YES >> Replace front display unit. Refer to [AV-132, "Exploded View"](#).  
 NO >> Replace AV control unit. Refer to [AV-130, "Exploded View"](#).

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# RGB SYNCHRONIZING SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## RGB SYNCHRONIZING SIGNAL CIRCUIT

### Description

INFOID:000000010578461

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

### Diagnosis Procedure

INFOID:000000010578462

#### 1. CHECK CONTINUITY RGB SYNCHRONIZING 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	Terminal	Connector	Terminal	
M194	19	M202	42	Existed

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

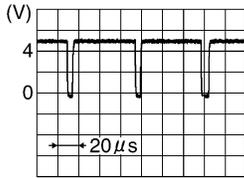
Front display unit		Ground	Continuity
Connector	Terminal		
M194	19		Not existed

Is the inspection result normal?

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

#### 2. CHECK RGB SYNCHRONIZING SIGNAL

1. Connect 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.

(+)		(-)	Reference value
Connector	Terminal		
M194	19	Ground	 <p style="text-align: center;">SKIB3603E</p>

Is the inspection result normal?

- YES >> Replace front display unit. Refer to [AV-132, "Exploded View"](#).  
 NO >> Replace AV control unit. Refer to [AV-130, "Exploded View"](#).

# RGB AREA (YS) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## RGB AREA (YS) SIGNAL CIRCUIT

### Description

INFOID:000000010578463

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

### Diagnosis Procedure

INFOID:000000010578464

#### 1. CHECK CONTINUITY RGB AREA (YS) 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	Terminal	Connector	Terminal	
M194	9	M202	40	Existed

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

Front display unit		Ground	Continuity
Connector	Terminal		
M194	9		Not existed

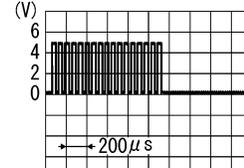
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK RGB AREA (YS) SIGNAL

1. Connect 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 (Approx.)
Front display unit				
Connector	Terminal			
M194	9	Ground	At RGB image is displayed	5.0 V
			At camera image is displayed	 <p style="text-align: right; font-size: small;">PKIB4948J</p>

Is the inspection result normal?

YES >> Replace front display unit. Refer to [AV-132, "Exploded View"](#).

NO >> Replace AV control unit. Refer to [AV-130, "Exploded View"](#).

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# HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

### Description

INFOID:000000010578465

In composite image (camera image), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from front 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:000000010578466

#### 1. CHECK CONTINUITY HORIZONTAL SYNCHRONIZING (HP) 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	Terminal	Connector	Terminal	
M194	8	M202	38	Existed

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

Front display unit		Ground	Continuity
Connector	Terminal		
M194	8		Not existed

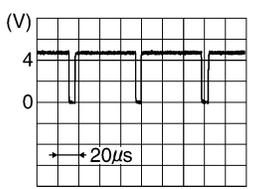
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK HORIZONTAL SYNCHRONIZING (HP) SIGNAL

1. Connect 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.

(+) Front display unit		(-)	Reference value
Connector	Terminal		
M194	8	Ground	

Is the inspection result normal?

YES >> Replace AV control unit. Refer to [AV-130, "Exploded View"](#).

NO >> Replace front display unit. Refer to [AV-132, "Removal and Installation"](#).

# VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

### Description

INFOID:000000010578467

In composite image (camera image), transmit the vertical synchronizing (VP) signal and horizontal synchronizing (HP) signal from front 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:000000010578468

#### 1. CHECK CONTINUITY VERTICAL SYNCHRONIZING (VP) 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	Terminal	Connector	Terminal	
M194	20	M202	50	Existed

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

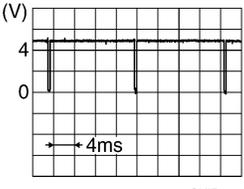
Front display unit		Ground	Continuity
Connector	Terminal		
M194	20		Not existed

Is the inspection result normal?

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

#### 2. CHECK VERTICAL SYNCHRONIZING (VP) SIGNAL

1. Connect 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.

(+)		(-)	Reference value
Front display unit			
Connector	Terminal		
M194	20	Ground	

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-130, "Removal and Installation"](#).  
 NO >> Replace front display unit. Refer to [AV-132, "Removal and Installation"](#).

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# CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## CAMERA IMAGE SIGNAL CIRCUIT

### Description

INFOID:000000010578469

- 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 front display unit.

### Diagnosis Procedure

INFOID:000000010578470

#### 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-130. "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.

# CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

AV control unit		Ground	Continuity
Connector	Terminal		
M203	62		Not existed

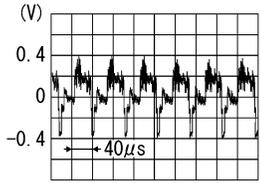
Is inspection result normal?

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.

(+) AV control unit		(-)	Condition	Reference value
Connector	Terminal			
M203	62	Ground	At rear view camera image is displayed.	 <p style="text-align: right; font-size: small;">SKIB2251J</p>

Is inspection result normal?

YES >> Replace AV control unit. Refer to [AV-130, "Exploded View"](#).

NO >> Replace rear view camera. Refer to [AV-146, "Exploded View"](#).

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# DISK EJECT SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## DISK EJECT SIGNAL CIRCUIT

### Description

INFOID:000000010578471

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

### Diagnosis Procedure

INFOID:000000010578472

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

(+)		(-)	Reference value (Approx.)
AV control unit			
Connector	Terminal		
M204	96	Ground	3.3 V

Is the inspection result normal?

- YES >> Replace preset switch. Refer to [AV-143, "Exploded View"](#).  
NO >> Replace AV control unit. Refer to [AV-130, "Exploded View"](#).

# COMPOSITE IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## COMPOSITE IMAGE SIGNAL CIRCUIT

### Description

INFOID:000000010578473

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

### Diagnosis Procedure

INFOID:000000010578474

#### 1. CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT (AV CONTROL UNIT TO FRONT DISPLAY UNIT)

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	
M202	47	M194	15	Existed

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

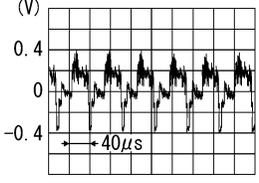
AV control unit		Ground	Continuity
Connector	Terminal		
M202	47		Not existed

Is inspection result normal?

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

#### 2. CHECK COMPOSITE IMAGE SIGNAL (AV CONTROL UNIT TO FRONT DISPLAY UNIT)

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

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

Is inspection result normal?

- YES >> Replace front display unit. Refer to [AV-132. "Exploded View"](#).  
 NO >> Replace AV control unit. Refer to [AV-130. "Exploded View"](#).

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# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## MICROPHONE SIGNAL CIRCUIT

### Description

INFOID:000000010578475

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

### Diagnosis Procedure

INFOID:000000010578476

#### 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		
B87	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.

(+) TEL adapter unit		(-) TEL adapter unit		Voltage (Approx.)
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-148, "Exploded View"](#).

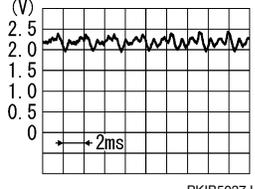
#### 3. CHECK MICROPHONE SIGNAL

1. Turn ignition switch OFF.
2. Connect microphone connector.
3. Turn ignition switch ON.
4. Check signal between TEL adapter unit harness connector.

# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

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

Is the inspection result normal?

- YES >> Replace TEL adapter unit. Refer to [AV-148, "Exploded View"](#).
- NO >> Replace microphone. Refer to [AV-145, "Exploded View"](#).

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## CONTROL SIGNAL CIRCUIT

### Description

INFOID:000000010578477

TEL adapter unit identifies the vehicle model according to the control signal and performs the control.

### Diagnosis Procedure

INFOID:000000010578478

#### 1. CHECK CONTINUITY CONTROL SIGNAL CIRCUIT

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

TEL adapter unit		Ground	Continuity
Connector	Terminals		
B87	20	Ground	Existed
	23		
	24		

#### Is the inspection result normal?

- YES >> Replace TEL adapter unit.  
NO >> Repair harness or connector.

# MODE CHANGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## MODE CHANGE SIGNAL CIRCUIT

### Description

INFOID:000000010578479

- 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:000000010578480

#### 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.

(+) BOSE amp.		(-)	Condition	Voltage (Approx.)
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-130, "Exploded View"](#).  
NO >> Replace BOSE amp. Refer to [AV-139, "Exploded View"](#).

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# COMMUNICATION SIGNAL CIRCUIT (CONT-SAT)

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## COMMUNICATION SIGNAL CIRCUIT (CONT-SAT)

### Description

INFOID:000000010578481

Satellite radio tuner and AV control unit are connected with a serial communication. They transmit the operation signal from AV control unit to satellite radio tuner, and transmit the display signal from satellite radio tuner to AV control unit.

### Diagnosis Procedure

INFOID:000000010578482

#### 1. CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

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

Satellite radio tuner		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
B236	9	M206	130	Existed
	10		122	

4. Check continuity between satellite radio tuner harness connector and ground.

Satellite radio tuner		Ground	Continuity
Connector	Terminals		
B236	9		Not existed
	10		

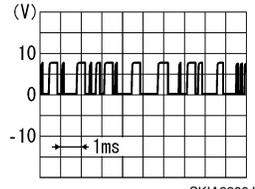
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK COMMUNICATION SIGNAL (SAT→CONT)

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

(+)		(-)	Condition	Reference value
Satellite radio tuner				
Connector	Terminal			
B236	9	Ground	When satellite radio mode is selected.	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace satellite radio tuner. Refer to [AV-140, "Exploded View"](#).

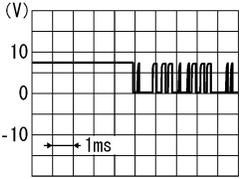
#### 3. CHECK COMMUNICATION SIGNAL (CONT→SAT)

Check signal between satellite radio tuner harness connector and ground.

# COMMUNICATION SIGNAL CIRCUIT (CONT-SAT)

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

(+)		(-)	Condition	Reference value
Satellite radio tuner				
Connector	Terminal			
B236	10	Ground	When satellite radio mode is selected.	 <p style="text-align: right; font-size: small;">SKIA9301J</p>

Is the inspection result normal?

- YES >> Replace satellite radio tuner. Refer to [AV-140, "Exploded View"](#).
- NO >> Replace AV control unit. Refer to [AV-130, "Exploded View"](#).

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AV

# REQUEST SIGNAL CIRCUIT (SAT→CONT)

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## REQUEST SIGNAL CIRCUIT (SAT→CONT)

### Description

INFOID:000000010578483

Request signal transmits the signal to recognize the connection of satellite radio tuner from satellite radio tuner to AV control unit.

### Diagnosis Procedure

INFOID:000000010578484

#### 1. CHECK CONTINUITY REQUEST SIGNAL CIRCUIT

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

Satellite radio tuner		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
B236	8	M206	129	Existed

4. Check continuity between satellite radio tuner harness connector and ground.

Satellite radio tuner		Ground	Continuity
Connector	Terminal		
B236	8		Not existed

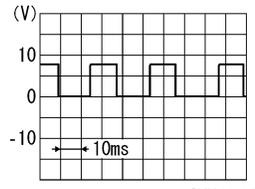
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK COMMUNICATION SIGNAL

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

(+) Satellite radio tuner		(-)	Condition	Reference value
Connector	Terminal			
B236	8	Ground	When satellite radio mode is selected.	

Is the inspection result normal?

YES >> Replace AV control unit. Refer to [AV-130, "Exploded View"](#).

NO >> Replace satellite radio tuner. Refer to [AV-140, "Exploded View"](#).

# STEERING SWITCH SIGNAL A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## STEERING SWITCH SIGNAL A CIRCUIT

### Description

INFOID:000000010578485

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:000000010578486

#### 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-14. "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-130. "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-117. "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [SR-11. "Exploded View"](#).

### Component Inspection

INFOID:000000010578487

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

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AV

# STEERING SWITCH SIGNAL A CIRCUIT

[WITHOUT NAVIGATION]

## < DTC/CIRCUIT DIAGNOSIS >

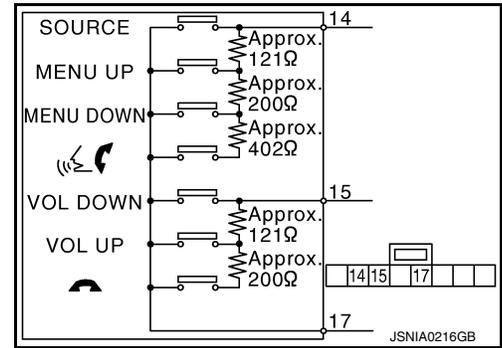
### Standard

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

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## STEERING SWITCH SIGNAL B CIRCUIT

### Description

INFOID:000000010578488

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:000000010578489

#### 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-14. "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-130. "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-119. "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [SR-11. "Exploded View"](#).

### Component Inspection

INFOID:000000010578490

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

A  
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AV

# STEERING SWITCH SIGNAL B CIRCUIT

[WITHOUT NAVIGATION]

## < DTC/CIRCUIT DIAGNOSIS >

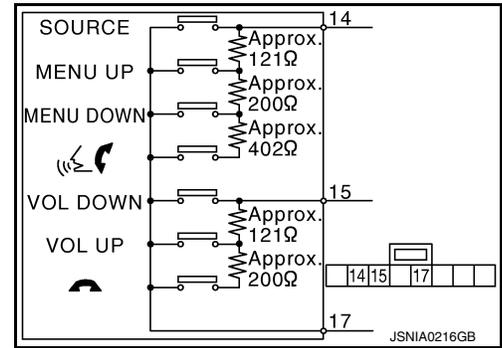
### Standard

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

< DTC/CIRCUIT DIAGNOSIS >

[WITHOUT NAVIGATION]

## STEERING SWITCH GROUND CIRCUIT

### Description

INFOID:000000010578491

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:000000010578492

#### 1. CHECK STEERING SWITCH SIGNAL GND 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-14, "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		Not existed

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace AV control unit. Refer to [AV-130, "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-121, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [SR-11, "Exploded View"](#).

### Component Inspection

INFOID:000000010578493

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

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AV

# STEERING SWITCH GROUND CIRCUIT

[WITHOUT NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

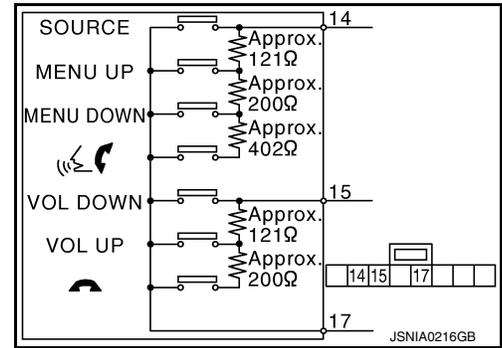
Standard

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



SYMPTOM DIAGNOSIS

MULTI AV SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000010578494

OPERATION

Symptoms	Check items	Probable malfunction location
Multifunction switch and preset switch operation does not work.	<ul style="list-style-type: none"> <li>All switches cannot be operated.</li> <li>"MULTI AV" is displayed on system selection screen when the CONSULT is started.</li> </ul>	<ul style="list-style-type: none"> <li>Multifunction switch power supply and ground circuit.</li> <li>AV communication circuit between AV control unit and multifunction switch.</li> </ul> Perform CONSULT self-diagnosis. Refer to <a href="#">AV-27, "CONSULT Function (MULTI AV)"</a> .
	<ul style="list-style-type: none"> <li>All switches cannot be operated.</li> <li>"MULTI AV" is not displayed on system selection screen when the CONSULT is initialized.</li> </ul>	AV control unit power supply and ground circuit malfunction. Refer to <a href="#">AV-95, "AV CONTROL UNIT : Diagnosis Procedure"</a> .
	Only specified switch cannot be operated.	Multifunction switch or preset switch malfunction. Perform multifunction switch and preset switch self-diagnosis function. Refer to <a href="#">AV-18, "On Board Diagnosis Function"</a> .
Fuel economy display is abnormal.	There is malfunction in the CONSULT "self-diagnosis result" of "MULTI AV". Refer to <a href="#">AV-27, "CONSULT Function (MULTI AV)"</a> .	Perform detected DTC diagnosis. Refer to <a href="#">AV-39, "DTC Index"</a> .
	There is no malfunction in the CONSULT "self-diagnosis result" of "MULTI AV". Refer to <a href="#">AV-27, "CONSULT Function (MULTI AV)"</a> .	Ignition signal circuit malfunction. (AV control unit)

RELATED TO HANDS-FREE PHONE

- Before performing diagnosis, confirm that the cellular phone being used by the customer is compatible with the vehicle.
- It is possible that a malfunction is occurring due to a version change of the phone even though the phone is a compatible type. This can be confirmed by changing the cellular phone to another compatible type, and checking that it operates normally. It is important to determine whether the cause of the malfunction is the vehicle or the cellular phone.

Check Compatibility

- Make sure the customer's Bluetooth® related concern is understood.
- Verify the customer's concern.
 

**NOTE:**  
The customer's phone may be required, depending upon their concern.
- Write down the customer's phone brand, model, and service provider.
 

**NOTE:**  
It is necessary to know the service provider. On occasion, a given phone may be on the approved list with one provider, but may not be on the approved list with other providers.
- Go to "www.infiniti.com/bluetooth/".
  - Using the website's search engine, find out if the customer's phone is on the approved list.
  - If the customer's phone is NOT on the approved list:
 

Stop diagnosis here. The customer needs to obtain a Bluetooth® phone that is on the approved list before any further action.
  - If the feature related to the customer's concern shows as "N" (not compatible):
 

Stop diagnosis here. If the customer still wants the feature to function, they will need to get an approved phone showing the feature as "Y" (compatible) in the "Basic Features" list.
  - If the feature related to the customer's concern shows as "Y" (compatible):

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## MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[WITHOUT NAVIGATION]

Perform diagnosis as per the following table.

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 <a href="#">AV-130, "Exploded View"</a> .
Hands-free phone cannot be established.	<ul style="list-style-type: none"> <li>Hands-free phone operation can be made, but the communication cannot be established.</li> <li>Hands-free phone operation can be performed, however, voice between each other cannot be heard during the conversation.</li> </ul>	AV control unit malfunction. Replace AV control unit. Refer to <a href="#">AV-130, "Exploded View"</a> .
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 <a href="#">AV-130, "Exploded View"</a> .
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 <a href="#">AV-130, "Exploded View"</a> .
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to <a href="#">AV-110, "Diagnosis Procedure"</a> .
The system cannot be operated.	<ul style="list-style-type: none"> <li>The retractable hard top is fully closed.</li> <li>"SOURCE", "MENU UP", and "MENU DOWN", but "⏪" "⏩" switches is not operated.</li> </ul>	Steering switch malfunction. Replace steering switch. Refer to <a href="#">SR-11, "Exploded View"</a> .
	<ul style="list-style-type: none"> <li>The retractable hard top is fully closed.</li> <li>"VOL DOWN", "VOL UP", and "⏪" switches of steering switch are not operated.</li> </ul>	Steering switch signal B circuit malfunction. Refer to <a href="#">AV-119, "Diagnosis Procedure"</a> .
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to <a href="#">AV-121, "Diagnosis Procedure"</a> .

### RELATED TO CAMERA

Symptoms	Check items	Probable malfunction location
Camera image is not shown. (Vehicle width and possible route line is displayed.)	—	<ul style="list-style-type: none"> <li>Camera image signal circuit. Refer to <a href="#">AV-106, "Diagnosis Procedure"</a>.</li> <li>Composite image signal circuit. Refer to <a href="#">AV-109, "Diagnosis Procedure"</a>.</li> </ul>
Camera image is not shown. (displayed in black and nothing can be displayed)	—	<ul style="list-style-type: none"> <li>Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and front display unit. Refer to <a href="#">AV-104, "Diagnosis Procedure"</a>.</li> <li>Vertical synchronizing (VP) signal circuit malfunction between AV control unit and front display unit. Refer to <a href="#">AV-105, "Diagnosis Procedure"</a>.</li> </ul>
Camera image does not switch.	"Reverse" is not turned ON on "Vehicle Signals" 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 <a href="#">AV-130, "Exploded View"</a> .

### RELATED TO RGB IMAGE

# MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[WITHOUT NAVIGATION]

Symptoms	Check items	Possible malfunction location / Action to take	
RGB image is not shown.	There is malfunction in the CONSULT "self-diagnosis result" of "MULTI AV". Refer to <a href="#">AV-27, "CONSULT Function (MULTI AV)".</a>	Perform detected DTC diagnosis. Refer to <a href="#">AV-39, "DTC Index".</a>	A
	There is no malfunction in CONSULT "self-diagnosis results" of "MULTI AV". Refer to <a href="#">AV-27, "CONSULT Function (MULTI AV)".</a>	Vertical synchronizing (VP) signal circuit. Refer to <a href="#">AV-105, "Diagnosis Procedure".</a>	B C
Color of RGB image is not proper.	Light blue (Cyan) tint.	RGB signal (R: red) circuit. Refer to <a href="#">AV-99, "Diagnosis Procedure".</a>	D
	Purple (Magenta) tint.	RGB signal (G: green) circuit. Refer to <a href="#">AV-100, "Diagnosis Procedure".</a>	E
	Screen looks yellowish.	RGB signal (B: blue) circuit. Refer to <a href="#">AV-101, "Diagnosis Procedure".</a>	F
RGB screen is rolling.	—	RGB synchronizing signal circuit. Refer to <a href="#">AV-102, "Diagnosis Procedure".</a>	G
Fuel economy display is malfunctioning.	There is malfunction in the CONSULT "self-diagnosis result" of "MULTI AV". Refer to <a href="#">AV-27, "CONSULT Function (MULTI AV)".</a>	Perform detected DTC diagnosis. Refer to <a href="#">AV-39, "DTC Index".</a>	H
	There is no malfunction in CONSULT "self-diagnosis results" of "MULTI AV". Refer to <a href="#">AV-27, "CONSULT Function (MULTI AV)".</a>	Ignition signal circuit malfunction. (AV control unit)	I

## RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location	
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to <a href="#">AV-108, "Diagnosis Procedure".</a>	J
No sound comes out or the level of the sound is low.	No sound from all speakers.	<ul style="list-style-type: none"> <li>• Amp. ON signal circuit malfunction.</li> <li>• BOSE amp. power supply and ground circuits malfunction.</li> </ul> Refer to <a href="#">AV-96, "BOSE AMP. : Diagnosis Procedure".</a>	K
	Sound is not heard from woofer.	<ul style="list-style-type: none"> <li>• Woofer power supply and ground circuit malfunction.</li> <li>• Sound signal (woofer) circuit malfunction.</li> <li>• Woofer amp. ON signal circuit malfunction.</li> </ul>	L
	Only a certain speaker (front right, front left, rear right, or rear left, etc.) does not output sound.	<ul style="list-style-type: none"> <li>• Poor connector connection of speaker.</li> <li>• Sound signal circuit malfunction between AV control unit and BOSE amp.</li> <li>• Sound signal circuit malfunction between BOSE amp. and speaker.</li> <li>• Malfunction in speaker.</li> <li>• Malfunction in AV control unit.</li> <li>• Malfunction in BOSE amp.</li> </ul>	M AV
It does not change to "Driver's Audio Stage" mode.	—	Mode change signal circuit. Refer to <a href="#">AV-113, "Diagnosis Procedure".</a>	O

## MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[WITHOUT NAVIGATION]

Symptoms	Check items	Probable malfunction location
Noise is mixed with audio.	Noise comes out from all speakers.	<ul style="list-style-type: none"> <li>• Malfunction in AV control unit.</li> <li>• Malfunction in BOSE amp.</li> </ul>
	Noise comes out only from a certain speaker (front right, front left, rear right, or rear left, etc.).	<ul style="list-style-type: none"> <li>• Poor connector connection of speaker.</li> <li>• Sound signal circuit malfunction between AV control unit and BOSE amp.</li> <li>• Sound signal circuit malfunction between BOSE amp. and speaker.</li> <li>• Malfunction in speaker.</li> <li>• Poor installation of speaker (e.g. backlash and looseness)</li> <li>• Malfunction in AV control unit.</li> <li>• Malfunction in BOSE amp.</li> </ul>
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	<ul style="list-style-type: none"> <li>• Poor connector connection of antenna or antenna feeder.</li> <li>• Loose antenna base mounting nut. Refer to <a href="#">AV-141, "Exploded View"</a>.</li> </ul>
Radio is not received or poor reception.	<ul style="list-style-type: none"> <li>• Other audio sounds are normal.</li> <li>• Any radio cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no obstacles generating external noises).</li> </ul>	<ul style="list-style-type: none"> <li>• Antenna amp. ON signal circuit malfunction.</li> <li>• Poor connector connection of antenna or antenna feeder.</li> <li>• Loose antenna base mounting nut. Refer to <a href="#">AV-141, "Exploded View"</a>.</li> </ul>
Satellite radio is not received.	There is malfunction in the CONSULT self-diagnosis result. Refer to <a href="#">AV-27, "CONSULT Function (MULTI AV)"</a> .	<ul style="list-style-type: none"> <li>• Malfunction in antenna, antenna feeder, or AV control unit. Perform DTC diagnosis. Refer to <a href="#">AV-39, "DTC Index"</a>.</li> <li>• Poor continuity in antenna feeder.</li> <li>• Poor connector connection of antenna or antenna feeder.</li> </ul>
	There is no malfunction in the CONSULT self-diagnosis result. Refer to <a href="#">AV-27, "CONSULT Function (MULTI AV)"</a> .	<ul style="list-style-type: none"> <li>• Poor continuity in antenna feeder.</li> <li>• Poor connector connection of antenna or antenna feeder.</li> <li>• Loose satellite radio antenna mounting nut.</li> </ul> <p><b>NOTE:</b> Tightening torque: 6.5 N-m (0.66 kg-m, 58 in-lb)</p>

### 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.	—	<ul style="list-style-type: none"> <li>• USB harness malfunction.</li> <li>• USB connector malfunction.</li> </ul>

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 <a href="#">AV-121, "Diagnosis Procedure"</a> .
Only specified switch cannot be operated.	Steering switch malfunction. Replace steering switch. Refer to <a href="#">SR-11, "Exploded View"</a> .
"SOURCE", "MENU UP", "MENU DOWN", " switches of steering switch are not operated.	Steering switch signal A circuit. Refer to <a href="#">AV-117, "Diagnosis Procedure"</a> .
"VOL UP", "VOL DOWN", " switches of steering switch are not operated.	Steering switch signal B circuit. Refer to <a href="#">AV-119, "Diagnosis Procedure"</a> .

# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[WITHOUT NAVIGATION]

## NORMAL OPERATING CONDITION

### Description

INFOID:000000010578495

### 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.
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). <b>NOTE:</b> 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, 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.

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[WITHOUT NAVIGATION]

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/M4A 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" or ".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 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.
Poor sound quality	Discs recorded in live file system format are not supported. (For Microsoft Windows Vista, check the settings.)
	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/M4A 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.
Poor reception only from a certain radio broadcast station.	Check incoming radio wave signal strength of applicable broadcast station.
Buzz/rattle sound from speaker	The majority of rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the rattle.

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 HANDS-FREE PHONE**

# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[WITHOUT NAVIGATION]

Symptom	Cause and Counter measure
Does not recognize cellular phone connection. (No connection is displayed on the display at the guide.)	Some Bluetooth® enabled cellular phones may not be recognized by the in-vehicle phone module. Refer to "RELATED TO HANDS-FREE PHONE (Check Compatibility)" of MULTI AV SYSTEM SYMPTOM.
Cannot use hands-free phone	Customer will not be able to use a hands-free phone under the following conditions. <ul style="list-style-type: none"> <li>• The vehicle is outside of the telephone service area.</li> <li>• The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area.</li> <li>• The cellular phone is locked to prevent it from being dialed.</li> </ul> <b>NOTE:</b> While a cellular phone is connected through the Bluetooth® wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth® Hands-Free Phone System cannot charge cellular phones.
The other party's voice cannot be heard by hands-free phone.	When the radio wave condition is not ideal or ambient sound is too loud, it may be difficult to hear the other person's voice during a call.
Poor sound quality	Do not place the cellular phone in an area surrounded by metal or far away from the in-vehicle phone module to prevent tone quality degradation and wireless connection disruption.

## RELATED TO SONAR

Symptom	Possible cause
Unstable object detection	<ul style="list-style-type: none"> <li>• The vehicle is on a rough surface, such as stone or gravel.</li> <li>• When used in poor weather conditions, such as heavy snow/rain or strong wind.</li> <li>• When subjected to an ultrasonic noise generated from exhaust muffler or brakes.</li> <li>• When left standing in the hot sun or in a cold climate.</li> <li>• When the surface of the sensor is frozen or covered with snow/dirt/moisture.</li> <li>• When a retrofitted xenon lamp, lighted license plate, or harness is close to the sensor body or sensor harness.</li> <li>• When subjected to loop coil noises generated from a vehicle detector placed at an intersection or coin parking area.</li> </ul>
Object undetectable	<ul style="list-style-type: none"> <li>• Air-containing objects, such as cloth, cotton, glass wool, dust, and snow.</li> <li>• Thin objects, such as rope, chain, and wire.</li> <li>• Smooth-faced objects placed in a slanting direction.</li> <li>• Fast-moving small animals.</li> <li>• A corner of an angular object.</li> </ul> <b>NOTE:</b> If the sensor detection part is scratched, obstacles cannot be detected.

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AV

# AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

## REMOVAL AND INSTALLATION

### AV CONTROL UNIT

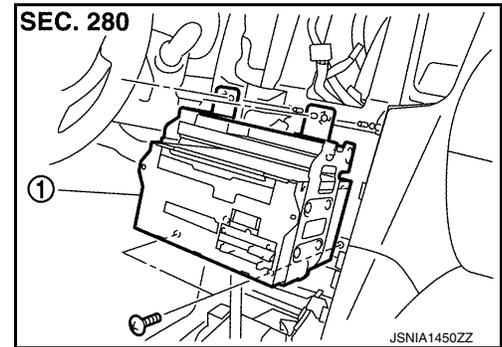
Exploded View

INFOID:0000000010578496

#### CAUTION:

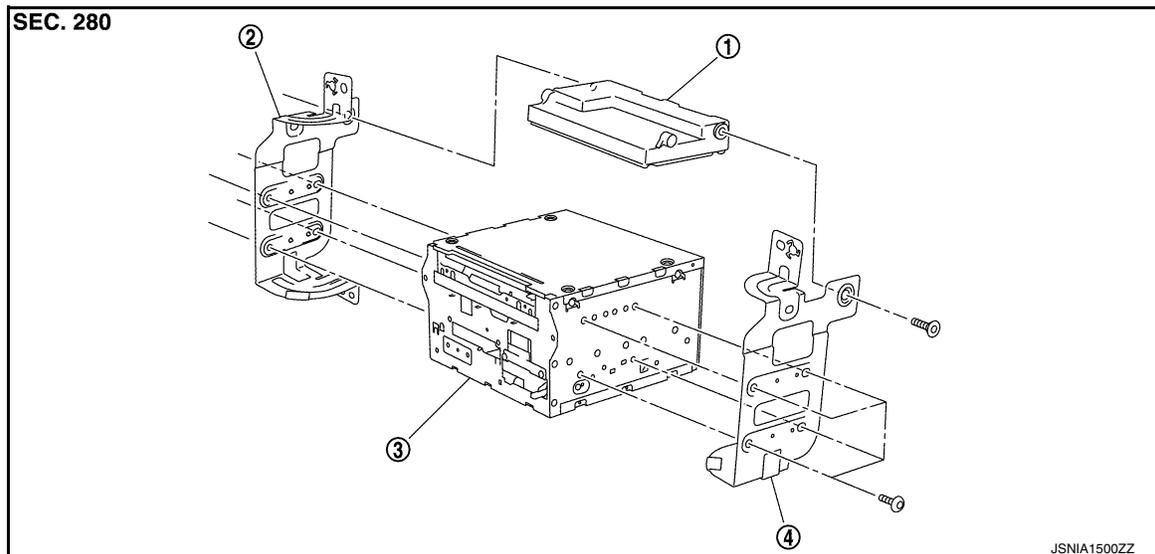
Before replacing AV control unit, perform "Read/Write Configuration" to save or print current vehicle specification. For details, refer to [AV-73. "ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Description"](#).

#### 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:0000000010578497

#### CAUTION:

- Before replacing AV control unit, perform "Read/Write Configuration" to save or print current vehicle specification. For details, refer to [AV-73. "ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Description"](#).
- Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF.

#### NOTE:

After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Therefore, data corruption may occur if battery voltage is cut off within 30 seconds.

# AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

## REMOVAL

1. Remove front display unit. Refer to [AV-132. "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:

- Since AV control unit connector and unified meter and A/C amp. connector have the same form, be careful not to insert them wrongly.
- Be sure to perform "Read/Write Configuration" when replacing AV control unit. For details, refer to [AV-73. "CONFIGURATION \(AV CONTROL UNIT\) : Description"](#).

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AV

# FRONT DISPLAY UNIT

< REMOVAL AND INSTALLATION >

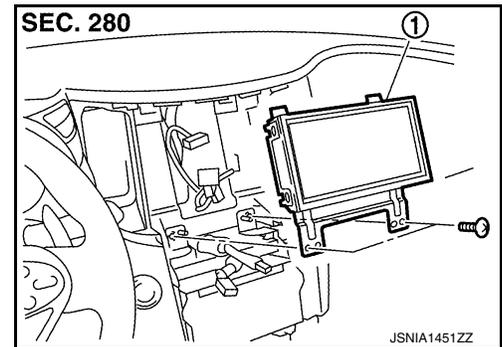
[WITHOUT NAVIGATION]

## FRONT DISPLAY UNIT

### Exploded View

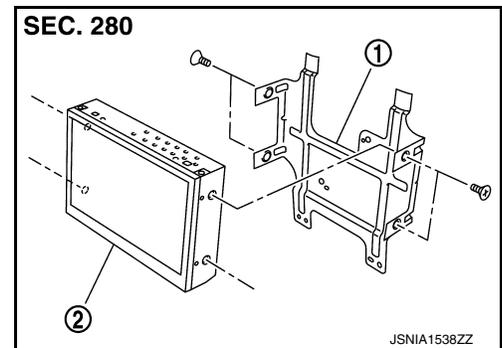
INFOID:000000010578498

### REMOVAL



1. Front display unit

### DISASSEMBLY



1. Bracket
2. Front display unit

## Removal and Installation

INFOID:000000010578499

### REMOVAL

1. Remove cluster lid D. Refer to [JP-12, "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

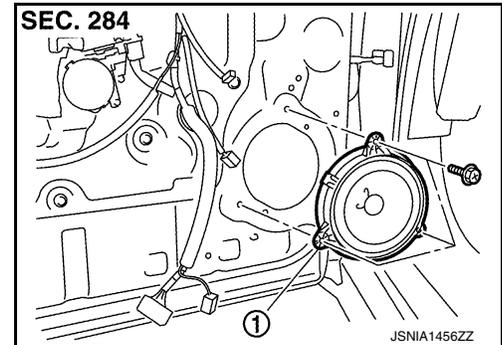
< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

## FRONT DOOR SPEAKER

### Exploded View

INFOID:0000000010578500



1. Front door speaker

### Removal and Installation

INFOID:0000000010578501

#### REMOVAL

1. Remove front door finisher. Refer to [INT-12. "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.

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AV

## REAR DOOR SPEAKER

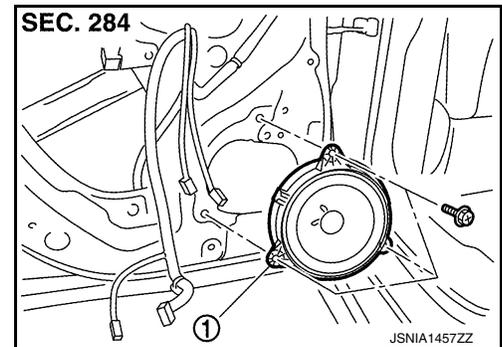
< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

### REAR DOOR SPEAKER

#### Exploded View

INFOID:0000000010578502



1. Rear door speaker

#### Removal and Installation

INFOID:0000000010578503

##### REMOVAL

1. Remove rear door finisher. Refer to [INT-15. "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

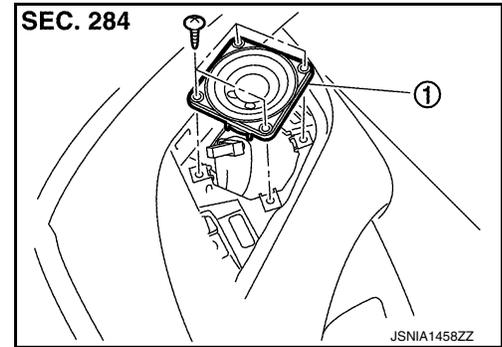
< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

## FRONT SQUAWKER

### Exploded View

INFOID:0000000010578504



1. Front squawker

### Removal and Installation

INFOID:0000000010578505

#### REMOVAL

1. Remove speaker grille. Refer to [IP-12. "Exploded View"](#).
2. Remove front squawker mounting screws.
3. Disconnect connector and remove front squawker.

#### INSTALLATION

Installation is the reverse order of removal.

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AV

# REAR SQUAWKER

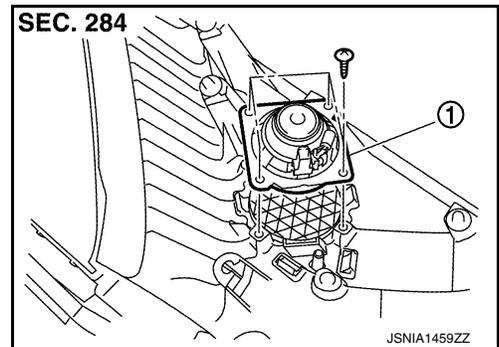
< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

## REAR SQUAWKER

Exploded View

INFOID:0000000010578506



1. Rear squawker

### Removal and Installation

INFOID:0000000010578507

#### REMOVAL

1. Remove luggage side finisher upper. Refer to [INT-30, "Exploded View"](#).
2. Remove rear squawker mounting screws.
3. Remove rear squawker.

#### INSTALLATION

Installation is the reverse order of removal.

# CENTER SPEAKER

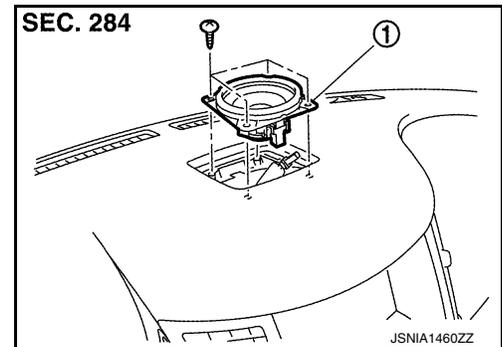
< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

## CENTER SPEAKER

### Exploded View

INFOID:0000000010578508



1. Center speaker

### Removal and Installation

INFOID:0000000010578509

#### REMOVAL

1. Remove center speaker grille. Refer to [IP-12. "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.

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AV

# WOOFER

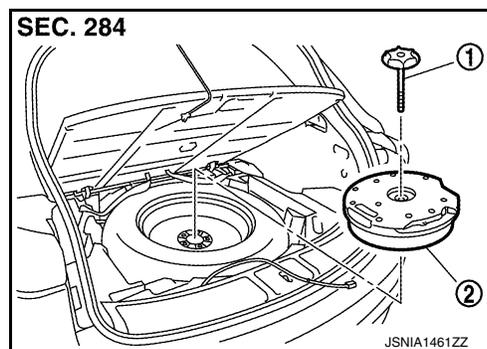
< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

## WOOFER

Exploded View

INFOID:000000010578510



1. Woofer clamp
2. Woofer

## Removal and Installation

INFOID:000000010578511

### REMOVAL

1. Pull up luggage finisher cover and hang the strap to upper body.
2. Remove woofer clamp.
3. Remove harness clip and connector.
4. Remove woofer.

### INSTALLATION

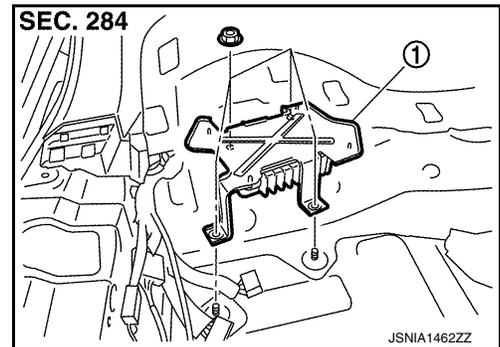
Installation is the reverse order of removal.

## BOSE AMP.

### Exploded View

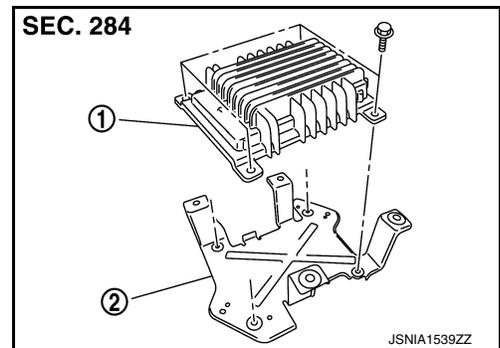
INFOID:000000010578512

### REMOVAL



1. BOSE amp.

### DISASSEMBLY



1. BOSE amp.
2. Bracket

## Removal and Installation

INFOID:000000010578513

### REMOVAL

1. Remove luggage floor spacer (LH). Refer to [INT-30, "Exploded View"](#).
2. Remove BOSE amp. mounting nuts.
3. Disconnect connector and remove BOSE amp.

### INSTALLATION

Installation is the reverse order of removal.

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# SATELLITE RADIO TUNER

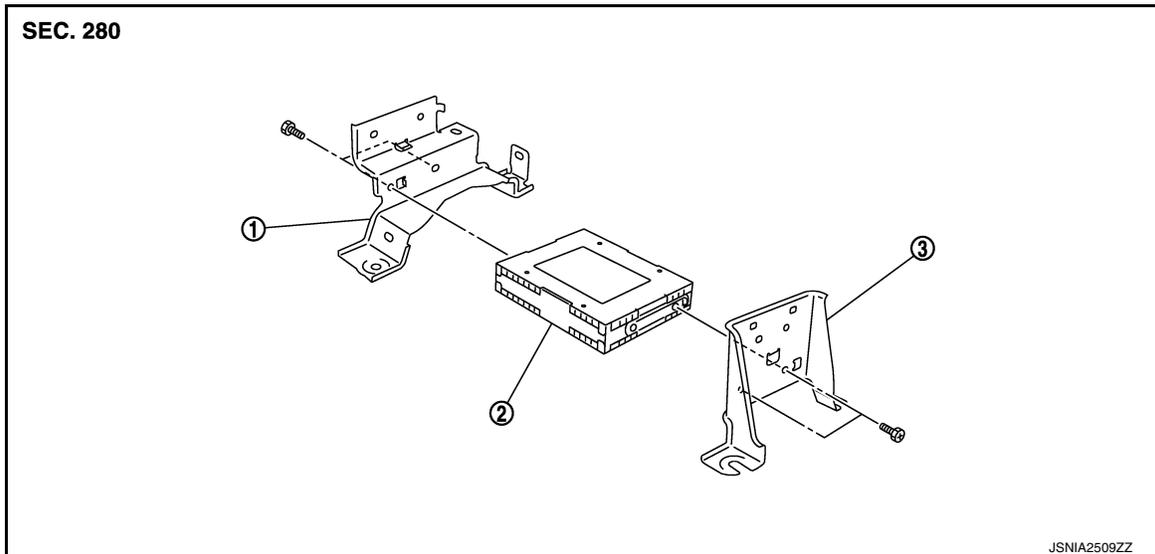
< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

## SATELLITE RADIO TUNER

Exploded View

INFOID:000000010578514



1. Bracket (front)

2. Satellite radio tuner

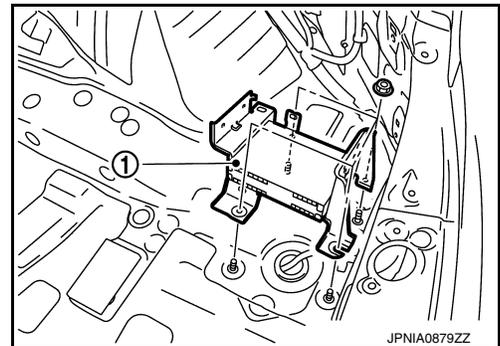
3. Bracket (rear)

## Removal and Installation

INFOID:000000010578515

### REMOVAL

1. Remove luggage floor spacer (RH). Refer to [INT-30. "Exploded View"](#).
2. Remove nuts, and then satellite radio tuner (1).



### INSTALLATION

Install in the reverse order of removal.

# ANTENNA BASE

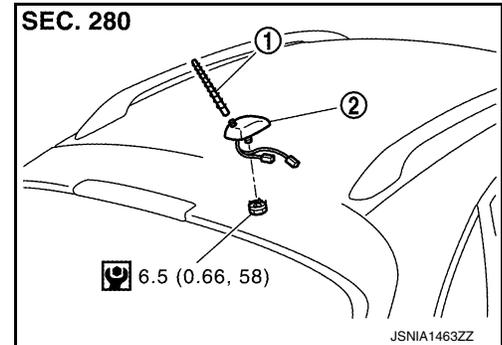
< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

## ANTENNA BASE

### Exploded View

INFOID:0000000010578516



1. Antenna rod
2. Antenna base

Refer to [GI-4, "Components"](#) for symbols in the figure.

### Removal and Installation

INFOID:0000000010578517

#### 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.**

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AV

# MULTIFUNCTION SWITCH

< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

## MULTIFUNCTION SWITCH

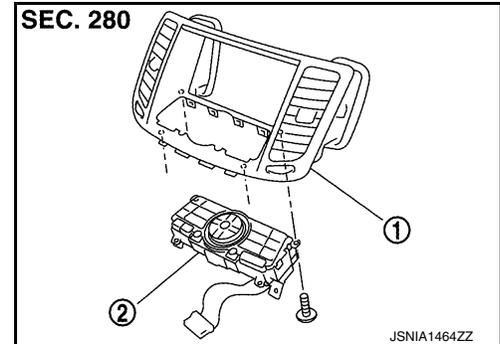
### Exploded View

INFOID:000000010578518

#### REMOVAL

Refer to [IP-12, "Exploded View"](#).

#### DISASSEMBLY



1. Cluster lid D
2. Multifunction switch

### Removal and Installation

INFOID:000000010578519

#### REMOVAL

1. Remove cluster lid D. Refer to [IP-12, "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

< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

## PRESET SWITCH

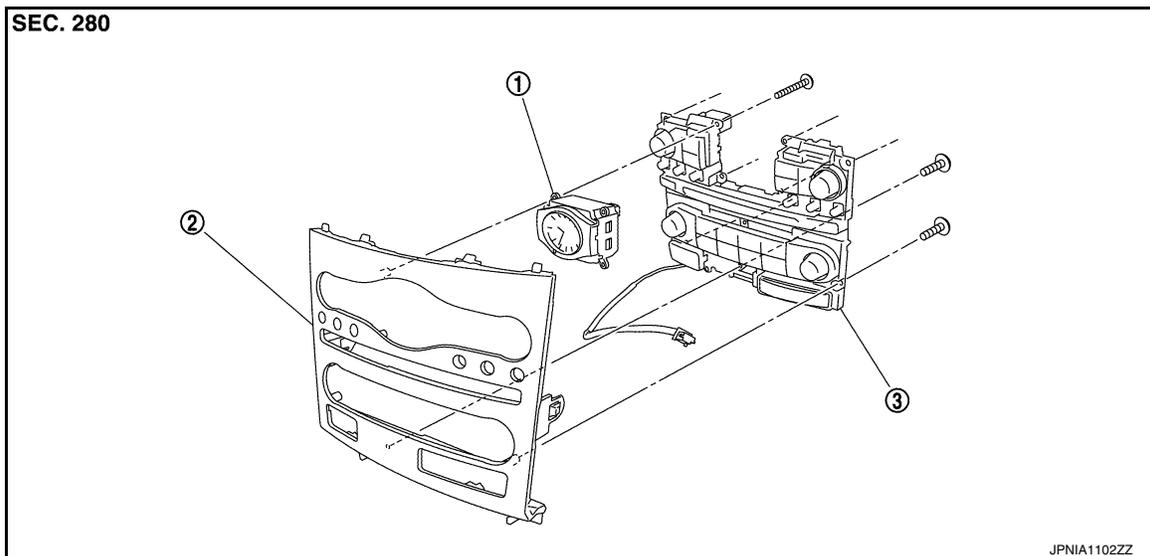
### Exploded View

INFOID:000000010578520

#### REMOVAL

Refer to [IP-12, "Exploded View"](#).

#### DISASSEMBLY



1. Clock

2. Cluster lid C

3. Preset switch

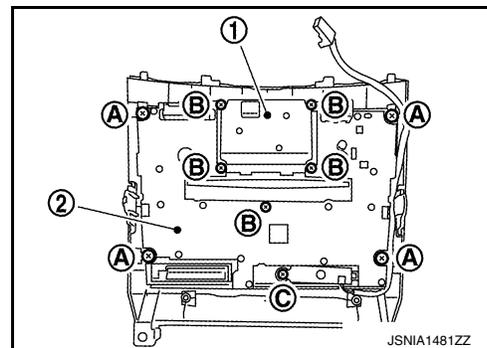
### Removal and Installation

INFOID:000000010578521

#### REMOVAL

1. Remove cluster lid C. Refer to [IP-12, "Exploded View"](#).
2. Remove preset switch mounting screws (A), (B) and (C).
3. Disconnect connector and remove preset switch (2).

1. Clock



#### 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 AV control unit and preset switch.

# USB CONNECTOR

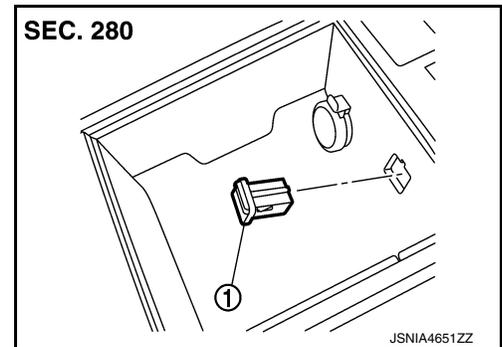
< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

## USB CONNECTOR

### Exploded View

INFOID:0000000010578522



1. USB connector

### Removal and Installation

INFOID:0000000010578523

#### REMOVAL

1. Remove console box assembly. Refer to [JP-23. "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

< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

## MICROPHONE

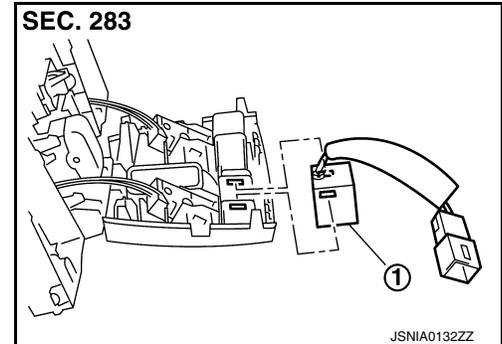
### Exploded View

INFOID:000000010578524

### REMOVAL

Refer to [INT-25, "Exploded View"](#).

### DISASSEMBLY



1. Microphone

### Removal and Installation

INFOID:000000010578525

### 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.

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AV

# REAR VIEW CAMERA

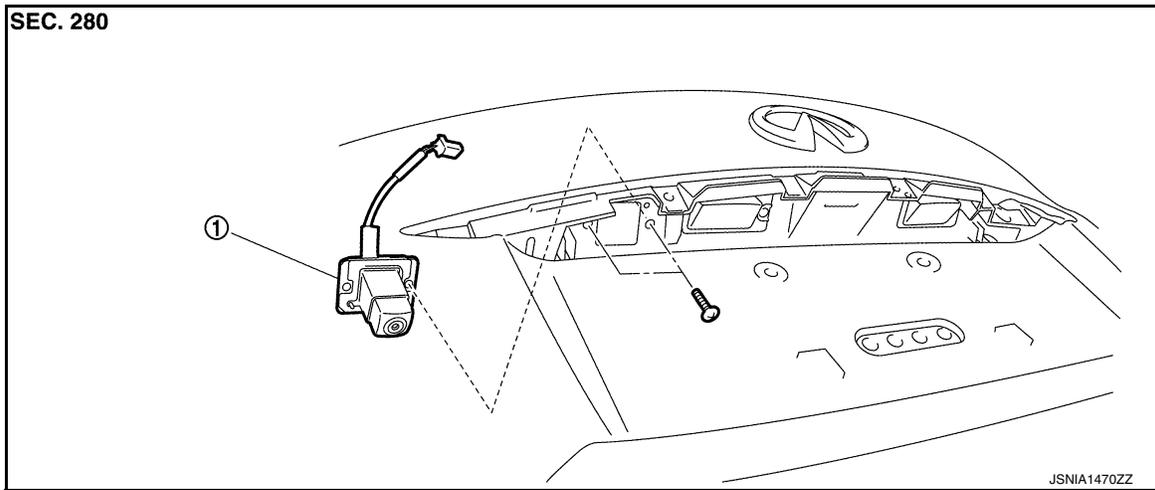
< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

## REAR VIEW CAMERA

### Exploded View

INFOID:000000010578526



1. Rear view camera

### Removal and Installation

INFOID:000000010578527

#### REMOVAL

1. Remove back door outside finisher upper. Refer to [EXT-50, "Exploded View"](#).
2. Remove door handle cover. Refer to [EXT-50, "Exploded View"](#).
3. Remove rear view camera mounting screws and rear view camera harness connector.
4. 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-147, "Adjustment"](#).

# REAR VIEW CAMERA

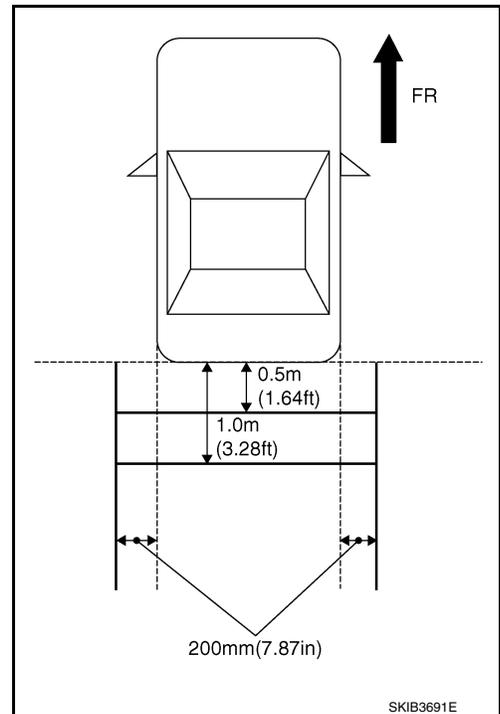
< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

INFOID:000000010578528

## Adjustment

1. Draw lines on rearward area of the vehicle passing through the following points: 200 mm (7.87 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 : 7**

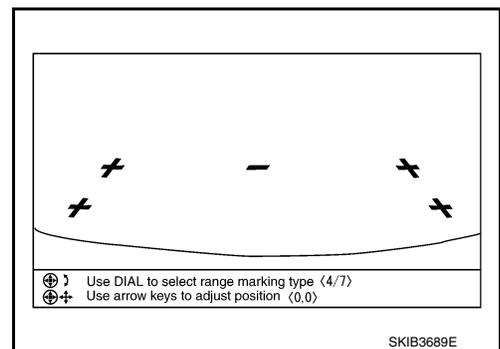
4. Fine adjust the guiding line so that its position is aligned to the correction line by pressing the up/down/left/right switches. Pressing "ENTER" enable the camera control unit to memory the adjusted guiding line position.

**Up/Down adjustment range : -20 - 20**

**Left/Right adjustment range : -20 - 20**

### CAUTION:

After the adjustment, never perform other operations for one minute.



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AV

# TEL ADAPTER UNIT

< REMOVAL AND INSTALLATION >

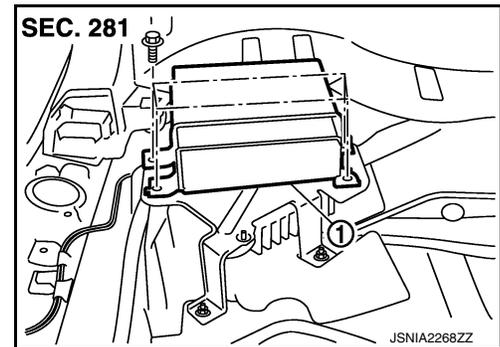
[WITHOUT NAVIGATION]

## TEL ADAPTER UNIT

### Exploded View

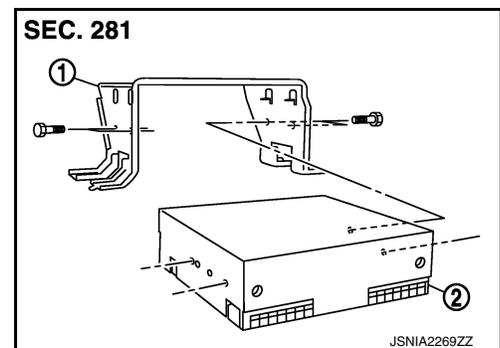
INFOID:000000010578529

### REMOVAL



1. TEL adapter unit

### DISASSEMBLY



1. Bracket
2. TEL adapter unit

### Removal and Installation

INFOID:000000010578530

### REMOVAL

1. Remove luggage floor spacer (LH). Refer to [INT-30, "Exploded View"](#).
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.

# ANTENNA FEEDER

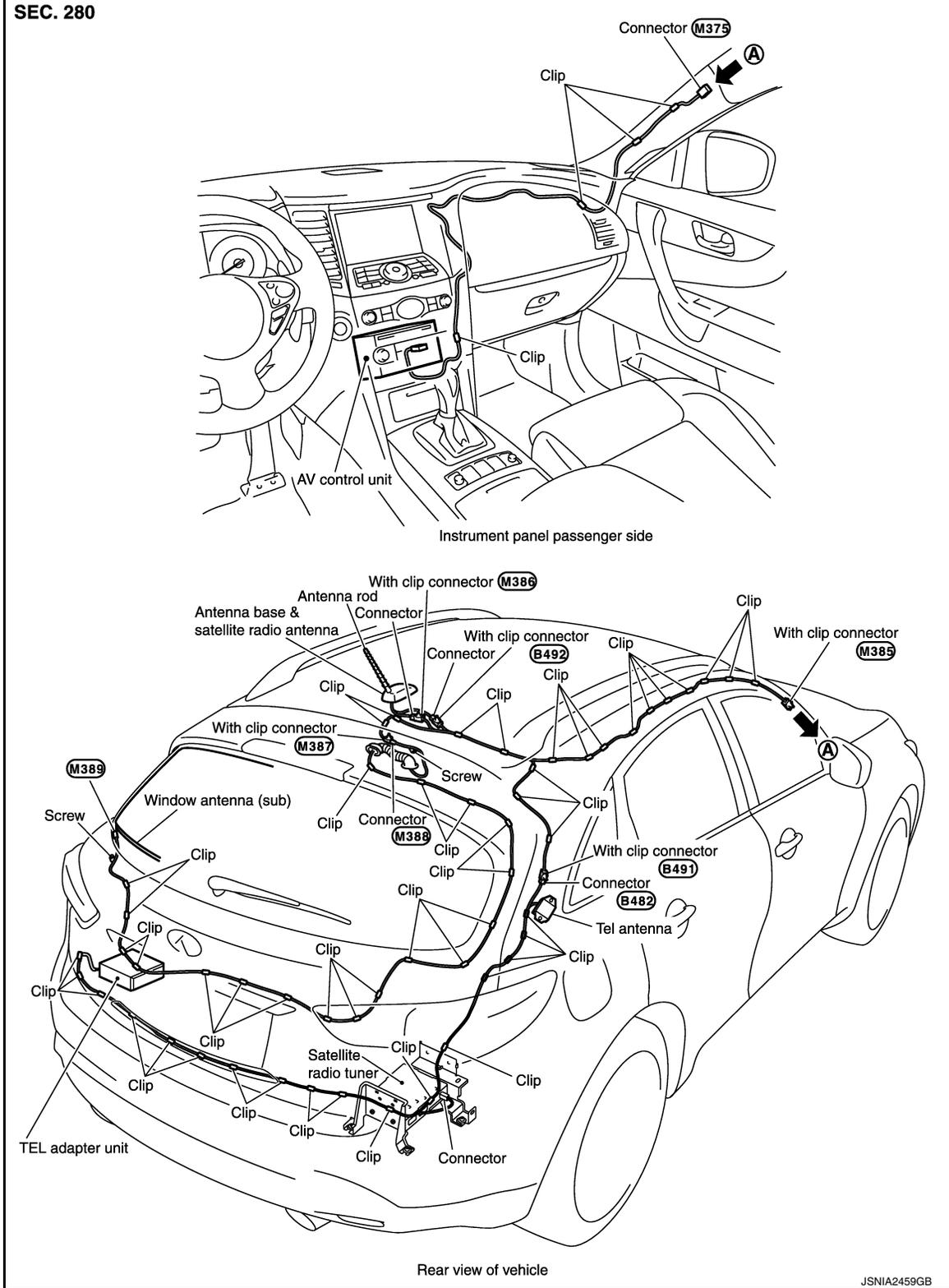
< REMOVAL AND INSTALLATION >

[WITHOUT NAVIGATION]

## ANTENNA FEEDER

### Feeder Layout

INFOID:000000010578531



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AV

# PRECAUTION

## PRECAUTIONS

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

INFOID:000000010578532

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:**

Always observe the following items for preventing accidental activation.

- 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 "SRS AIR BAG".
- Never 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:**

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never 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:000000010578534

#### AV COMMUNICATION SYSTEM

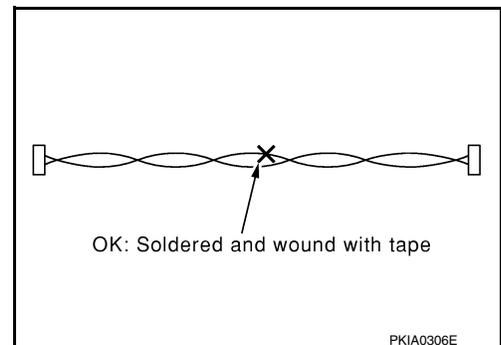
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

### Precaution for Harness Repair

INFOID:000000010578535

#### AV COMMUNICATION SYSTEM

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



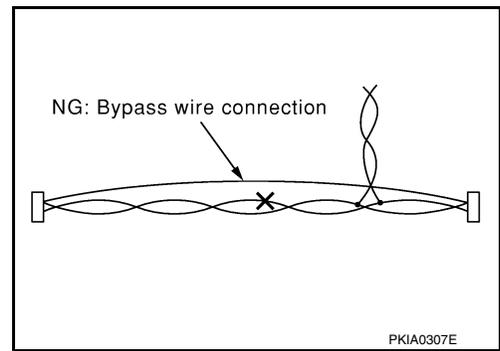
PKIA0306E

# PRECAUTIONS

< PRECAUTION >

[NAVIGATION]

- 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.)



## Precautions for Removing Battery Terminal

INFOID:000000011008571

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

**NOTE:**

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

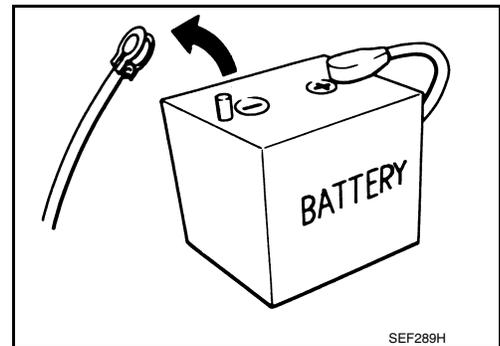
**NOTE:**

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

**NOTE:**

The removal of 12V battery may cause a DTC detection error.



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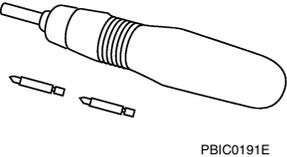
AV

PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000010578536

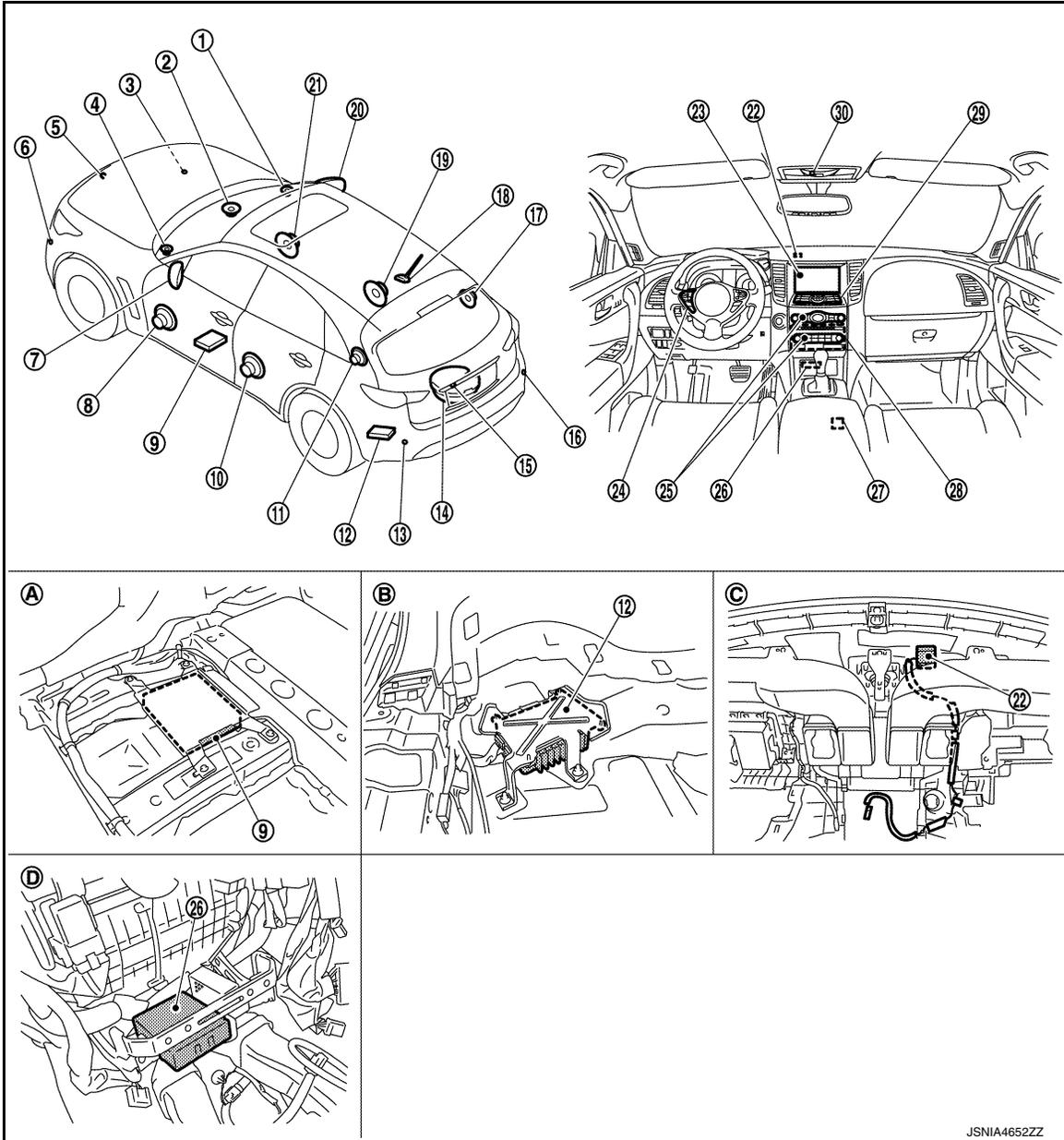
Tool name	Description
<p>Power tool</p>  <p>PBIC0191E</p>	<p>Loosening screws</p>

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:0000000010578537



- |                           |   |   |
|---------------------------|---|---|
| 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. and satellite antenna) |
| 19. Rear door speaker RH  | 20. Side camera RH                                | 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. USB connector                                     |

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AV

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[NAVIGATION]

- |  |                            |                               |
|--|----------------------------|-------------------------------|
| 28. AV control unit                          | 29. Multifunction switch   | 30. 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:000000010578538

Part name	Description
AV control unit	<ul style="list-style-type: none"> <li>Integrates hard disk drive (HDD) allowing map data and music data to be stored. (Models with music box)</li> <li>Integrates hard disk drive (HDD) allowing map data to be stored. (Models without music box)</li> <li>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.</li> <li>The AV control unit includes the audio, hands-free phone, voice control, navigation, USB connection, DVD play, satellite radio and vehicle information functions.</li> <li>It is connected to ECM and unified meter and A/C amp. via CAN communication to obtain necessary information for the vehicle information function.</li> <li>It inputs the illumination signals that are required for the display dimming control.</li> <li>It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake).</li> <li>The RGB digital image signal and composite image signal are output to front display unit.</li> <li>Amp. ON signal, sound signal and mode change signal transmitted to BOSE amp.</li> <li>Update of map data is performed with the DVD-ROM.</li> </ul>
Front display unit	<ul style="list-style-type: none"> <li>Front display image is controlled by the serial communication from AV control unit.</li> <li>RGB digital image signal is input from AV control unit.</li> <li>Composite image signal is input from AV control unit.</li> <li>Camera image signal is input from around view monitor control unit.</li> <li>Touch panel function can be operated for each system by touching a display directly.</li> </ul>
BOSE amp.	<ul style="list-style-type: none"> <li>Inputs sound signal from AV control unit, and outputs sound signal to each speaker.</li> <li>Input mode change signal from AV control unit.</li> </ul>
Front door speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
Rear door speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
Front squawker	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs mid range sounds.</li> </ul>
Rear squawker	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs mid range sounds.</li> </ul>
Center speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs high and mid range sounds.</li> </ul>
Woofer	<ul style="list-style-type: none"> <li>Inputs power (woofer amp. ON) and sound signal from BOSE amp.</li> <li>Outputs low range sounds.</li> </ul>
Multifunction switch	<ul style="list-style-type: none"> <li>Operation panel is equipped with the centralized switch where audio and navigation, etc. operations are integrated.</li> <li>Connected with preset switch via cable, and operation signal is transmitted to AV control unit via AV communication.</li> </ul>
Preset switch	<ul style="list-style-type: none"> <li>Operation panel is equipped with the centralized switch where audio and air conditioner, etc. operations are integrated.</li> <li>Connected with multifunction switch via cable, and operation signal is transmitted to AV control unit via AV communication.</li> <li>The disk ejection operating signal is performed by hardwire.</li> </ul>

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[NAVIGATION]

Part name	Description
Around view monitor control unit	<ul style="list-style-type: none"> <li>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.</li> <li>Superimpose the guiding line, predicted course line and sonar indicator to the camera image that outputs to front display unit.</li> <li>It performs the reception/transmission of communication signal with each camera.</li> <li>It transmits the sonar operation signal from sonar control unit and receives the sonar information from sonar control unit via CAN communication.</li> <li>It transmits the information received/transmitted with sonar control unit via AV communication to AV control unit.</li> </ul>
Front camera	<ul style="list-style-type: none"> <li>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.</li> <li>It performs the reception/transmission of the communication signal with around view monitor control unit.</li> </ul>
Rear camera	<ul style="list-style-type: none"> <li>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.</li> <li>It performs the reception/transmission of the communication signal with around view monitor control unit.</li> </ul>
Side camera LH	<ul style="list-style-type: none"> <li>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.</li> <li>It performs the reception/transmission of the communication signal with around view monitor control unit.</li> </ul>
Side camera RH	<ul style="list-style-type: none"> <li>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.</li> <li>It performs the reception/transmission of the communication signal with around view monitor control unit.</li> </ul>
Sonar control unit	<ul style="list-style-type: none"> <li>It is connected with around view monitor control unit via CAN communication and receives the sonar operation signal from around view monitor control unit.</li> <li>It transmits the sonar detection status to around view monitor control unit via CAN communication.</li> <li>It judges the warning level according to the signal from corner sensor.</li> </ul>
Corner sensor	The obstacle distance is detected. The signal is transmitted to sonar control unit.
Steering switch	<ul style="list-style-type: none"> <li>Operations for audio, hands-free phone, voice control and navigation, etc. are possible.</li> <li>Steering switch signal (operation signal) is output to AV control unit.</li> </ul>
Microphone	<ul style="list-style-type: none"> <li>Used for hands-free phone operation and voice recognition.</li> <li>Microphone signal is transmitted to AV control unit.</li> <li>Power (Microphone VCC) is supplied from AV control unit.</li> </ul>
GPS antenna	GPS signal is received and transmitted to AV control unit.
Antenna base	<p>A radio antenna base integrated with radio antenna amp. and satellite radio antenna is adopted.</p> <p>ANTENNA AMP.</p> <ul style="list-style-type: none"> <li>Radio signal received by rod antenna is amplified and transmitted to AV control unit.</li> <li>Power (antenna amp. ON signal) is supplied from AV control unit.</li> </ul> <p>SATELLITE RADIO ANTENNA</p> <ul style="list-style-type: none"> <li>Receives satellite radio waves and outputs it to AV control unit.</li> </ul>
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®.

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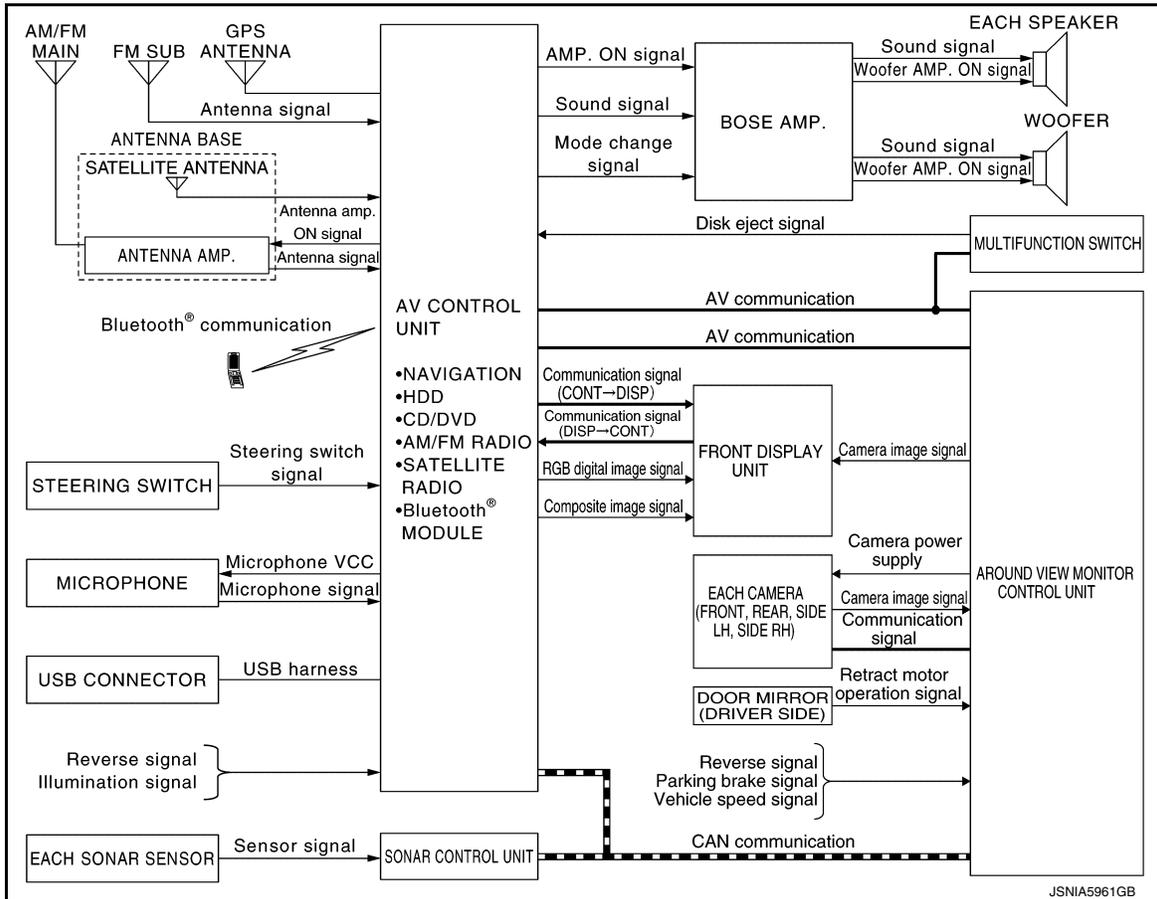
AV

SYSTEM

MULTI AV SYSTEM

MULTI AV SYSTEM : System Diagram

INFOID:000000010578539



JSNIA5961GB

NOTE:

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

MULTI AV SYSTEM : System Description

INFOID:000000010578540

Multi AV system means that the following systems are integrated.

FUNCTION NAME
Navigation system function
Audio function
DVD play function
Hands-free phone function
USB connection function
Voice recognition 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

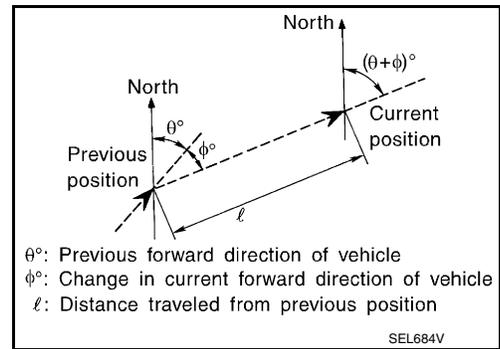
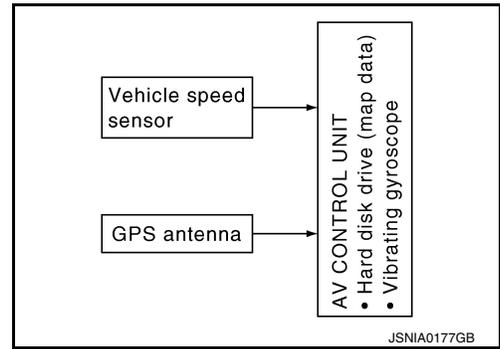
The navigation system periodically calculates the current vehicle position according to the following three types of signals.

- 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.

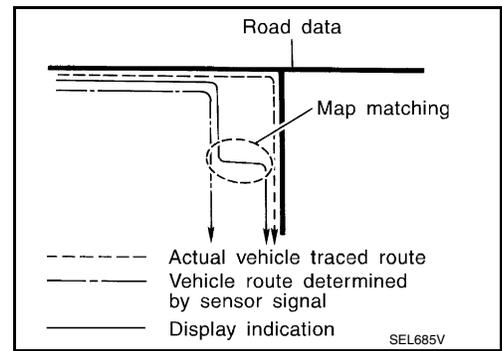
### Map-matching

# SYSTEM

## < SYSTEM DESCRIPTION >

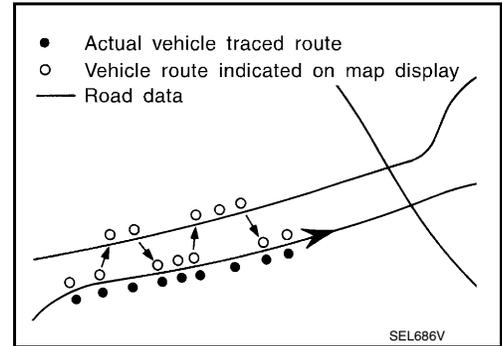
## [NAVIGATION]

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).

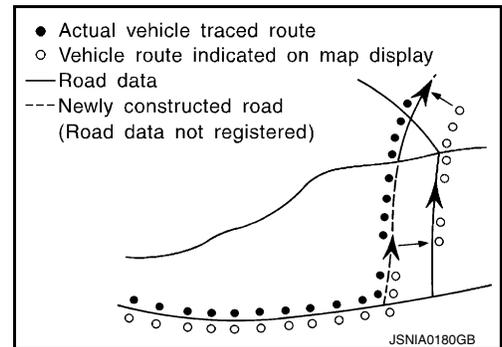


There is a possibility that the vehicle position may not be corrected in the following case, and when vehicle is driven over a certain distance or time in which GPS information is hard to receive. Correct manually the current location mark on the screen.

- 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.



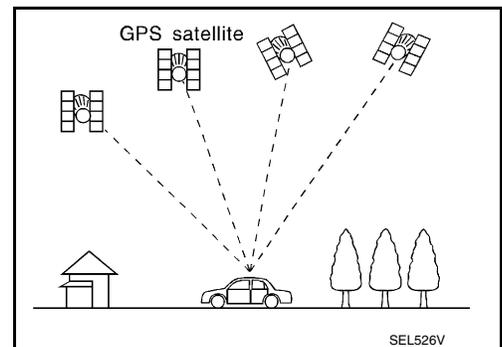
- Map-matching does not function correctly when road on which the vehicle is driving is new, etc. and not recorded in the map data. Also, map-matching does not function correctly when road pattern stored in the map data and the actual road pattern are different due to repair, etc. Therefore, the map-matching 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
Satellite radio (except for Mexico)
CD
Bluetooth® audio
Music Box (Hard Disk Drive) (Models with Music Box)
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 hardware.
- 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.

### 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.

### Satellite Radio Mode

- Satellite radio tuner is built into AV control unit.
- Audio signal (satellite radio) is received by satellite antenna, and it is input to AV control unit. AV control unit outputs audio signal to BOSE amp. The signal is also outputted from BOSE amp. to both woofer and each speaker.

### 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

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# SYSTEM

## < SYSTEM DESCRIPTION >

## [NAVIGATION]

- 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 display unit (except for Mexico) 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.

### 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.

### 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.

### TOUCH PANEL SYSTEM

Each operation of multi AV system can be performed by directly touching a 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.

# SYSTEM

## < SYSTEM DESCRIPTION >

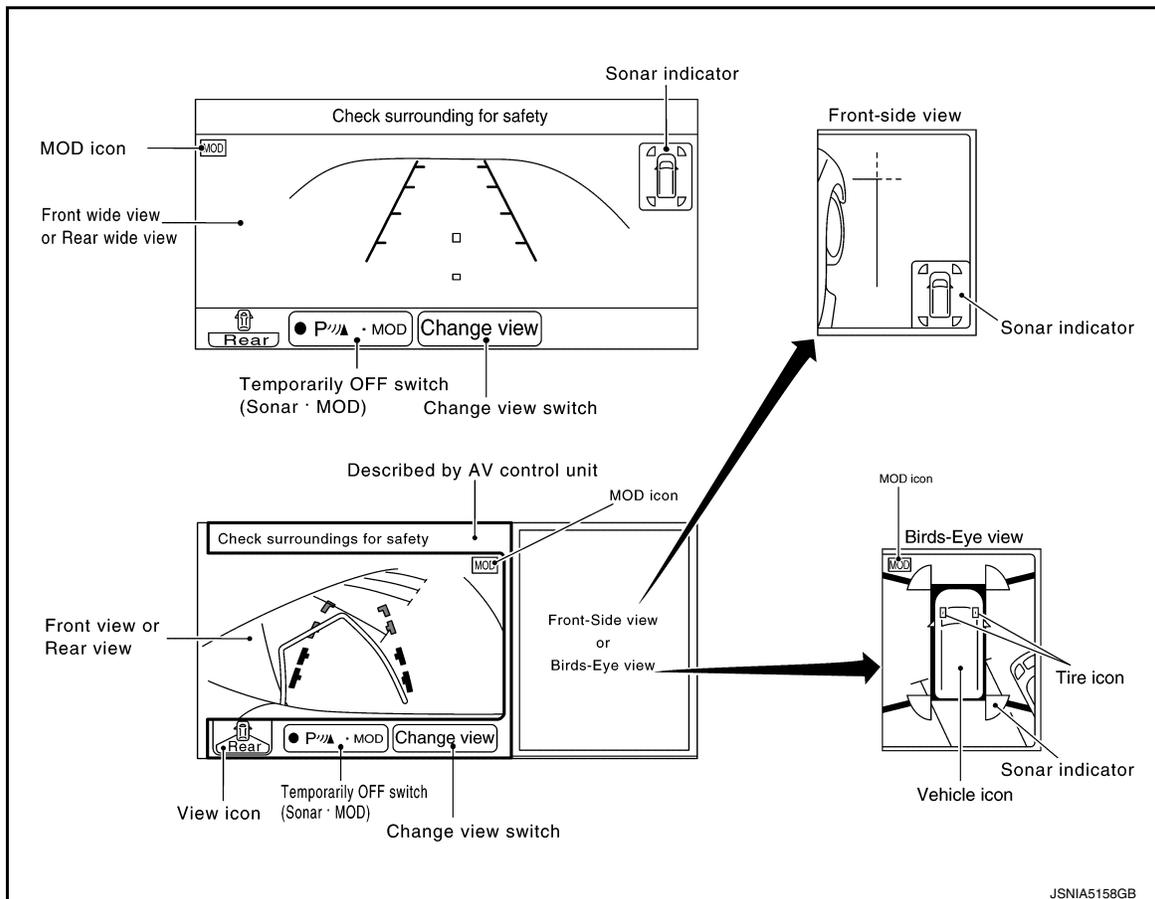
[NAVIGATION]

- 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 warn of the approach of an obstacle.
- Camera image is displayed on the display when an obstacle is detected by sonar system.
- 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.
- Moving Object Detection (MOD) is adopted that detects moving objects according to camera image and notifies the detection result to the driver.
- Tire icon is adopted for Birds-Eye view image.
- Front/rear wide view function is adopted. Visibility for the left and right that contains invisible area is improved.

### Around View Monitor Screen

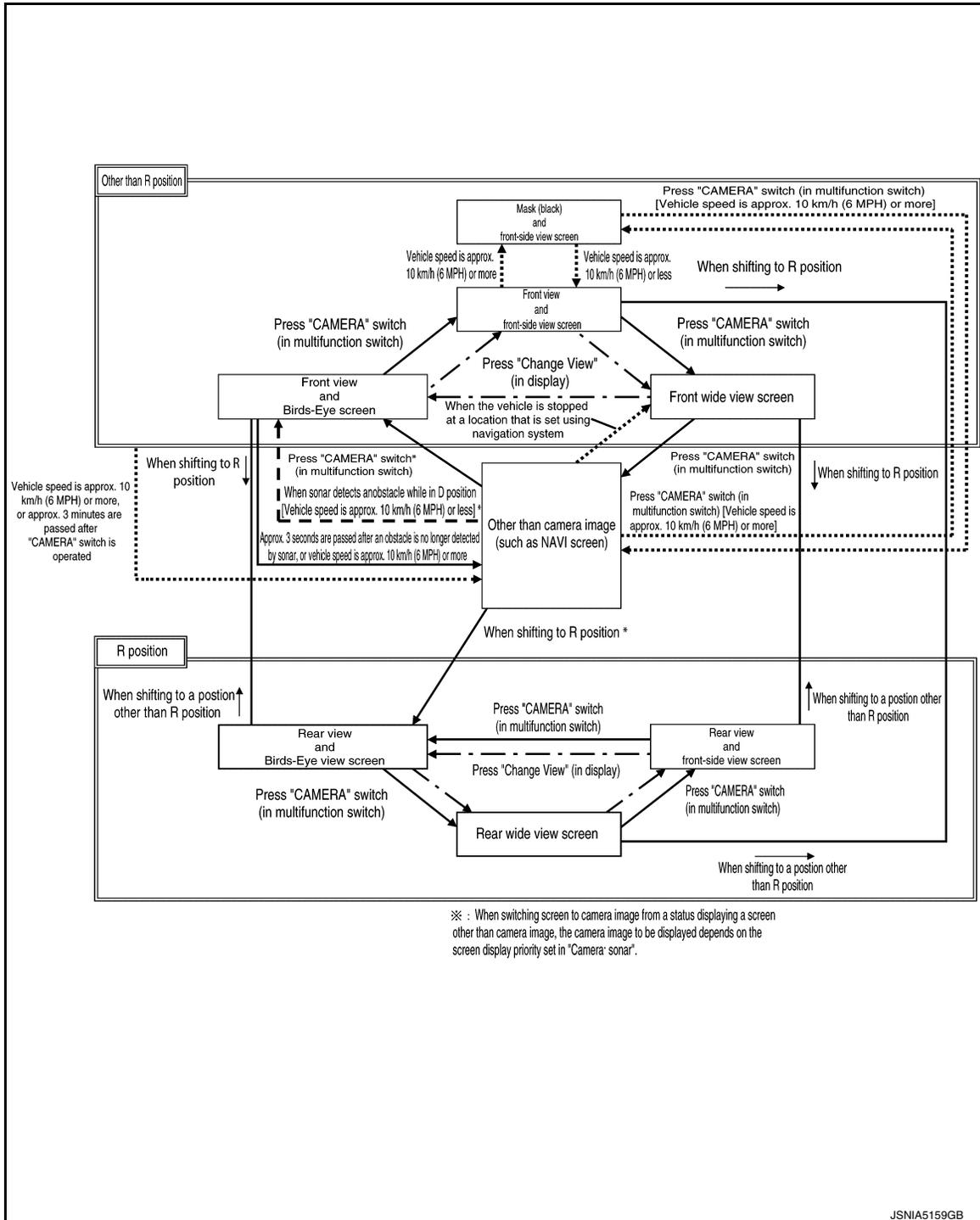
- Around view monitor combines and displays the travel direction view and “Birds-Eye view”, “Front-Side view” and then it displays the sonar indicator on the “Birds-Eye view”, “Front-Side view”, “Rear wide view”.
- AV control unit renders the “Change View” switch, view icon, warning message on display.

### Screen constitution



### Operation Description

## Around view monitor screen transition



- Around view monitor is displayed on the display when “CAMERA” switch is pressed, when shifting position is reverse, or when an obstacle is detected by sonar system.
- Birds-Eye view, Front-side view, and front/rear wide view can be switched by “Change View” switch (touch switch) or “CAMERA” switch, while around view monitor is displayed.
- Priority of view to be displayed can be set by “CAMERA-SONAR” screen.
- While shift position is other than reverse, around view monitor is cancelled when approximately 3 minutes are passed after “CAMERA” switch is pressed, or when vehicle speed is approximately 10 km/h (6 MPH) or more. The screen returns to the screen before displaying around view monitor.
- Setting of Moving Object Detection (MOD) and sonar can be switched ON/OFF by temporary OFF switch of front display. (Temporary OFF)
- In temporary OFF, around view monitor is cancelled. Temporary OFF is cancelled when around view monitor is displayed once again. Sonar and MOD are switched to operation-ready status

# SYSTEM

## < SYSTEM DESCRIPTION >

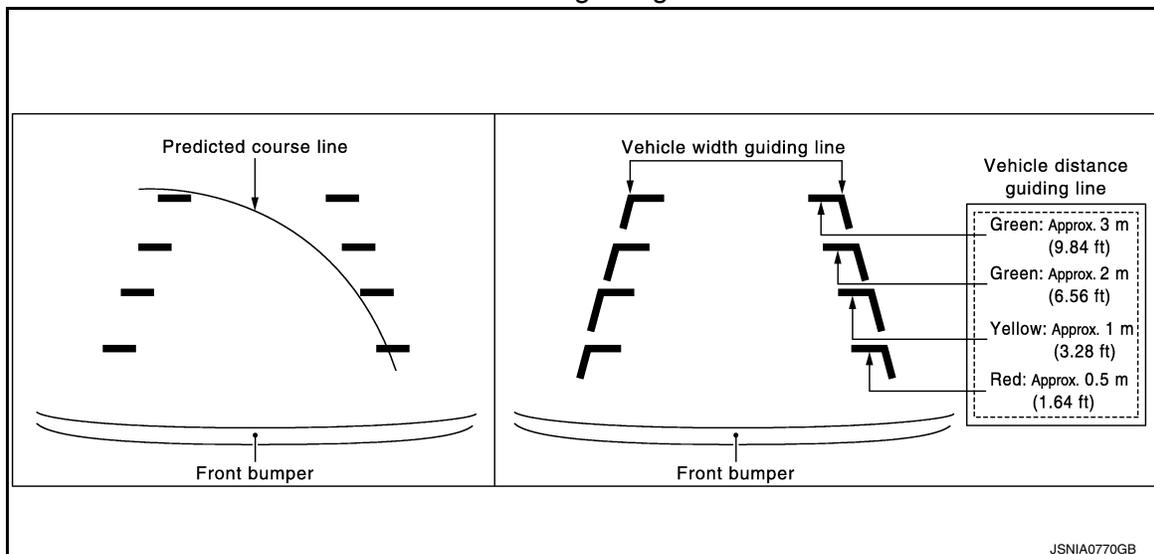
## [NAVIGATION]

- In permanent OFF, MOD and sonar are not operative until MOD and sonar are switched to ON by “CAMERA-SONAR” screen.
- In Birds-Eye view, an enhanced boundary is displayed on the image indicating the invisible area and clearly indicating the boundary of the 4 cameras. The invisible area is displayed in yellow when Birds-Eye view is displayed after the ignition switch is turned ON.
- In D position, front sonar can detect an obstacle while camera image is not displayed on front display. Screen is switched to camera image when an obstacle is detected.
- If information of camera and information written to around view monitor control unit are not the same, error indicator of applicable camera position is displayed when Birds-Eye view is displayed.
- When “CAMERA” switch of multifunction switch is pressed, it receives camera switch signal from AV control unit via AV communication.
- When around view monitor control unit receives camera switch signal, around view monitor control unit reads the image signal from each camera.
- When around view monitor control unit receives reverse signal, while shift position is R position, around view monitor control unit reads image signal from each camera.
- When around view monitor control unit reads image signal from each camera, it cuts out the required screen for each view, superimposes camera image, vehicle icon, guiding lines, predicted course line, “MOD” icon, and sonar indicator, and then outputs them to front display.

### 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. The front 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 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 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.

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AV

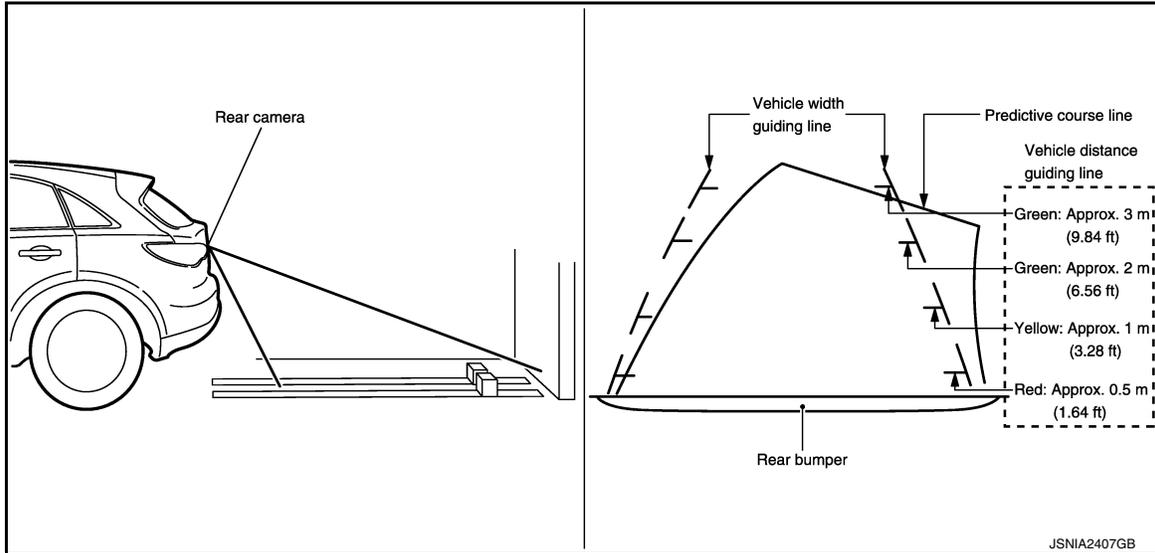
# SYSTEM

## < SYSTEM DESCRIPTION >

## [NAVIGATION]

- 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 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.

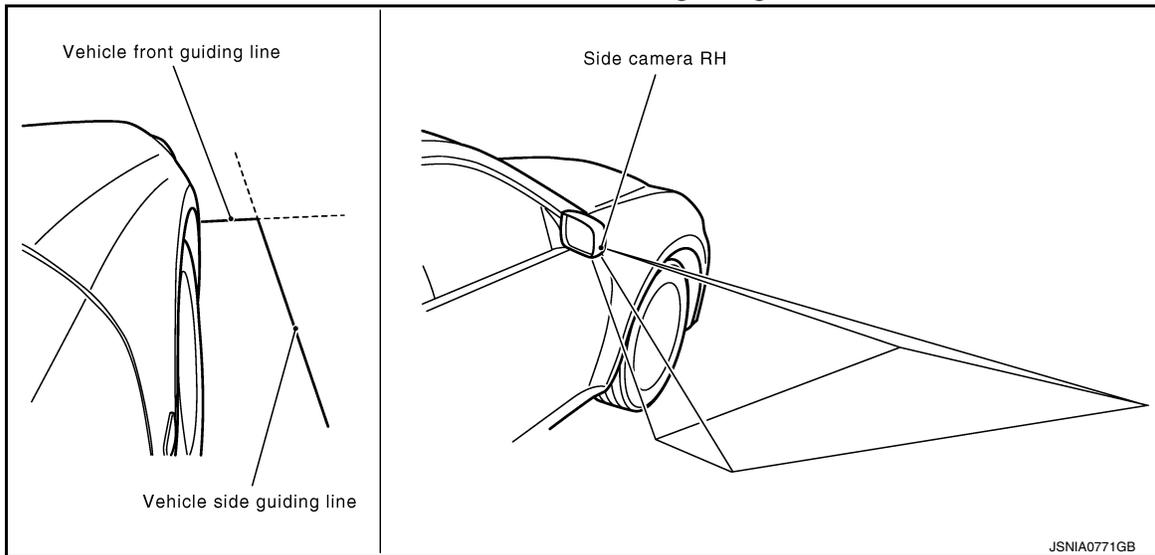
Rear view guiding lines



### 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.

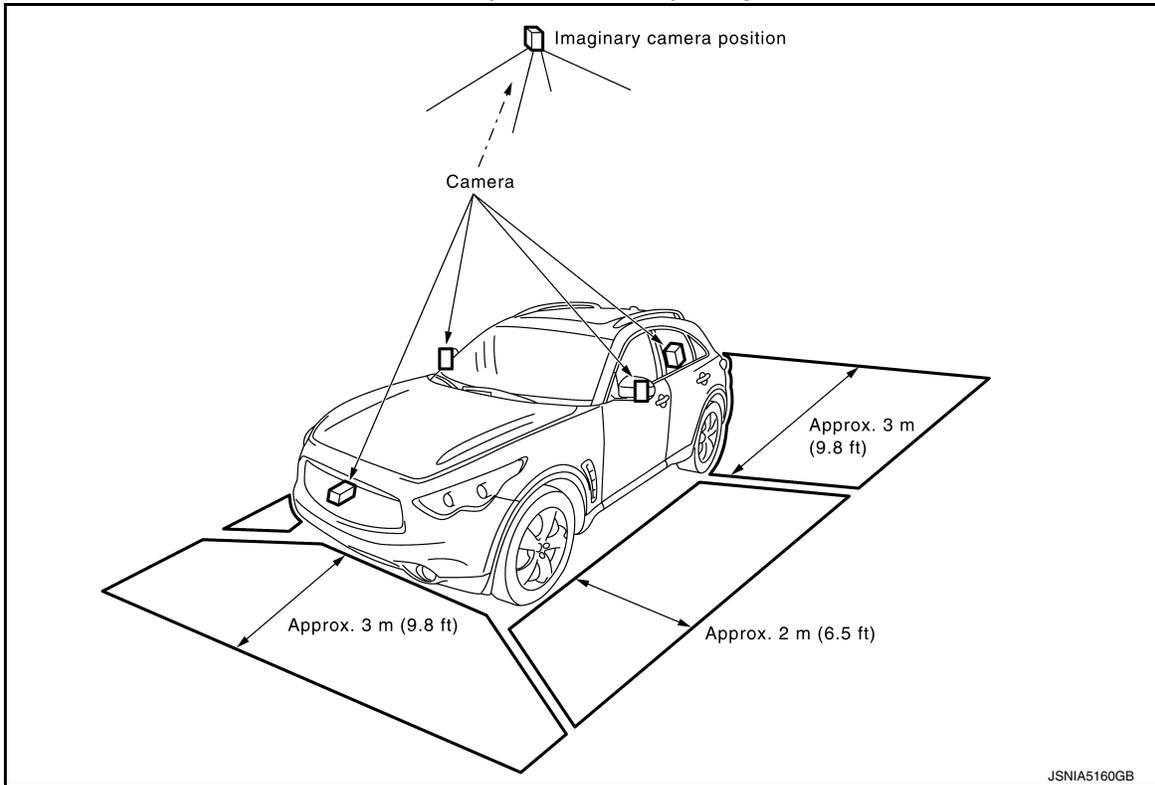
Front-side view area and guiding line



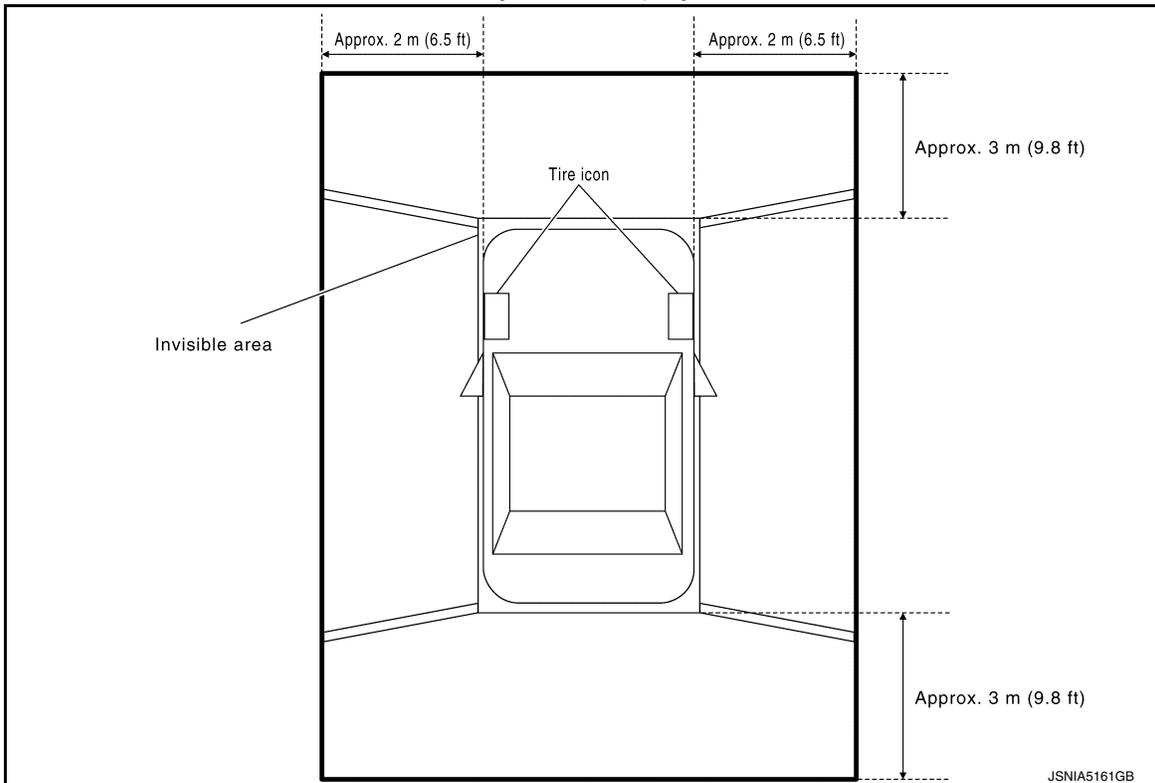
### BIRDS-EYE VIEW

- 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



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Moving Object Detection (MOD)

- Moving Object Detection (MOD) is a function that notifies the driver of the presence of moving objects in the area around the vehicle. MOD detects moving objects from camera image, illuminates frame of view in yellow whenever “MOD” icon is displayed in blue, and sounds buzzer in sonar control unit.
- MOD detects moving objects while camera image is displayed on front display.
- Around view monitor control unit performs the following process when moving objects are detected.
  - Superimposes yellow frame line on camera image signal and outputs them to front display.

# SYSTEM

## < SYSTEM DESCRIPTION >

## [NAVIGATION]

- Transmits MOD beep sound output request signal to sonar control unit via CAN communication so that buzzer in sonar control unit sounds.
- Around view monitor control unit detects moving objects from camera image according to an image recognition method called optical flow.
- MOD does not detect a background as a moving object when the vehicle moves (when whole screen moves), but detects a moving object when an actual moving object is displayed on screen.
- MOD can be set to temporary OFF or permanent OFF by the following operation.
- temporary off: mod is switched to off with a switch on the front display (touch switch) while camera image is displayed on front display.
- permanent off: mod is switched to off by “SETTING”→“CAMERA·SONAR”→“MOD”.
- color of “MOD” icon indicates whether or not MOD is operative. “MOD” icon is displayed as shown in the following table. when MOD is operative, “MOD” icon is displayed in blue. when MOD is not operative, “MOD” icon is displayed in gray. MOD icon is not displayed when MOD is off (permanent off) by “SETTING”→“CAMERA·SONAR”→“MOD”, or when MOD is off (temporary off) by switch of front display (touch switch).

View		Shift position		
		P or N position	D position	R position
		“MOD” icon display		
Birds-Eye view and rear view	Birds-Eye view	Blue	—	Gray
	Rear view	Gray		Blue
Birds-Eye view and front view	Birds-Eye view	Blue	Gray	—
	Front view	Gray	Blue	
Side view and rear view	Side view	×	—	×
	Rear view	Gray		Blue
Side view and front view	Side view	×	×	—
	Front view	Gray	Blue	
Rear wide view		Gray	—	Blue
Front wide view		Gray	Blue	—

×: icon is not displayed.

—: view is not displayed in each shift position (d position and r position).

- MOD illuminates frame of view in yellow and sounds buzzer, when any of the conditions in the following table are satisfied.

Operation Condition		View where MOD is operative
Shift position	Vehicle speed	
P or N position	0 km/h	Birds-Eye view
D position	0 km/h (0 MPH) or more - less than 8 km/h (5 MPH)	<ul style="list-style-type: none"> <li>• Front view</li> <li>• Front wide view</li> </ul>
R position	0 km/h (0 MPH) or more - less than 8 km/h (5 MPH)	<ul style="list-style-type: none"> <li>• Rear view</li> <li>• Rear wide view</li> </ul>

- MOD does not operate or stops operation when any of the conditions in the following table are satisfied.

Operation stop condition	Note
Door open	<ul style="list-style-type: none"> <li>• MOD does not stop operation for front view and front wide view.</li> <li>• Operation stops for rear view and rear wide view while back door is open.</li> <li>• Operation stops for Birds-Eye view when any door is open.</li> </ul>
Door mirror expanding/retracting	Expanding/retracting status of door mirror is judged according to operation signal of door mirror motor transmitted from door mirror LH to around view monitor control unit.

Tire icon

- Tire icon is adopted for Birds-Eye view screen.
- Tire icon is a function that notifies the steered direction of front tire to the driver and assists the driving.

# SYSTEM

## < SYSTEM DESCRIPTION >

[NAVIGATION]

- In tire icon, around view monitor control unit superimposes steering angle information to camera image and outputs camera image signal to front display.
- Around view monitor control unit judges steering angle according to steering signal received from steering angle sensor via CAN communication.

### 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, “MOD” icon, and outputs them to the display unit.

### CAMERA ASSISTANCE SONAR FUNCTION

- Corner sensors are installed on front bumper and rear bumper. When an obstacle is detected while around view monitor is displayed, a sonar indicator display and buzzer sound notify the driver of the proximity of an obstacle. When an obstacle is detected while around view monitor is not displayed, around view monitor screen is displayed automatically, and then notification is similarly as per the display and buzzer sound.
- Approaching distance between bumper and obstacle is displayed in 3 stages according to the color of the sonar indicator in display and blinking cycle of indicator.
- Warning by buzzer sound notifies distance to obstacle according to a 3-stage cycle.

### System Operation Description

- Sonar control unit receives shift position signal from TCM and vehicle speed signal from ABS actuator control unit via CAN communication, and controls ON/OFF of sonar system.
- Sonar control unit transmits detection signal and detection distance signal to around view monitor via CAN communication, according to signal from corner sensor depending on conditions as shown in the following table. Around view monitor displays the applicable sonar indicator.

Sonar system operation condition			Sonar operation	
Shift position	Vehicle speed	Obstacle	Sonar indicator	Buzzer
R position	Less than 10 km/h (6 MPH)	Yes	Detection status is displayed	Yes
D position	Less than 10 km/h (6 MPH)	Yes	Detection status is displayed	Yes
P or N position	Less than 10 km/h (6 MPH)	Yes	Detection status is displayed*	None
—	10 km/h (6 MPH) or more	Yes	Not displayed	None

\*: Only when camera image is displayed.

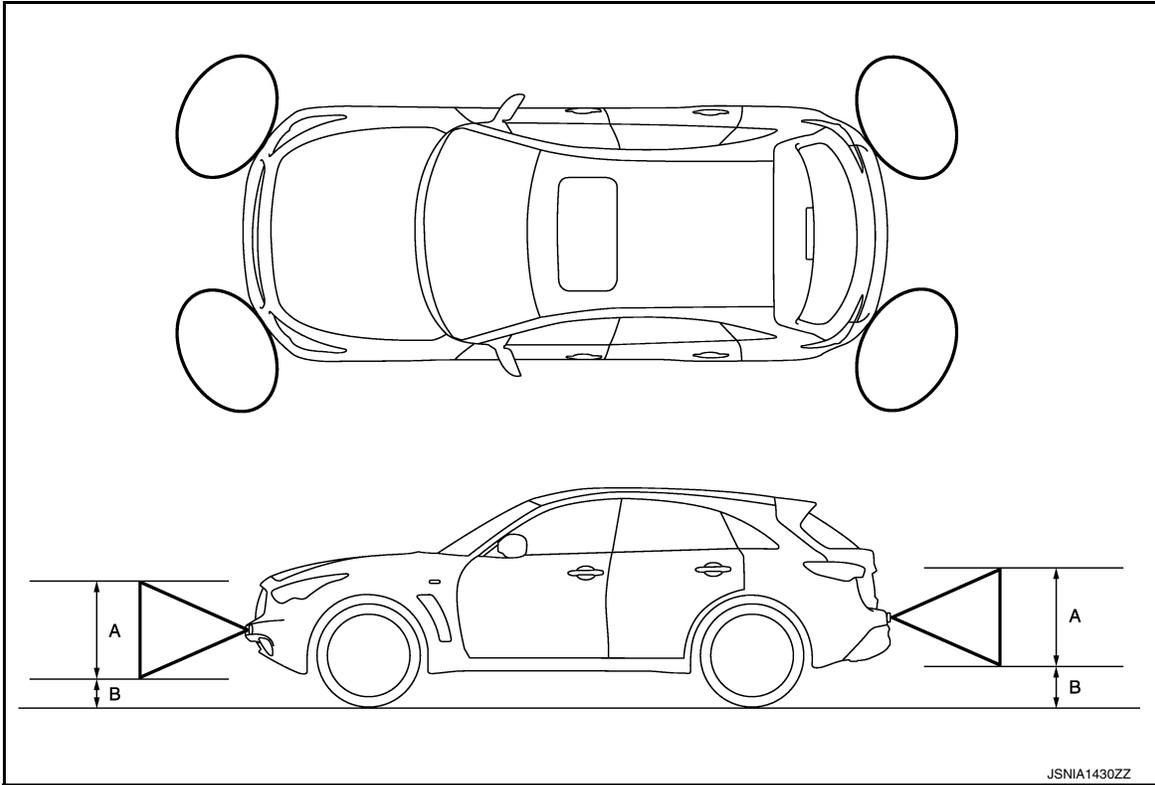
- When sonar is OFF in “CAMERA SONAR”, sonar OFF display is displayed. Sonar OFF display is a function that displays frame in orange on the 4 corners of vehicle icon on Birds-Eye view to notify user of sonar OFF status. When sonar is switched to OFF by “CAMERA SONAR”→“SONAR (FRONT ONLY)”, sonar OFF display is only displayed for rear side of vehicle icon
- Sonar control unit is equipped with diagnosis function. Corner sensor malfunction and sensor harness open circuit can be detected. Malfunction status is transmitted to around view monitor control unit. Sonar OFF status is displayed and notified to the user.

### Obstacle Detection Distance

- Sonar control unit switches output of sonar indicator and buzzer in 3 stages according to obstacle detection distance from corner sensor.
- Sonar control unit can change setting of obstacle detection distance in 3 stages.
- Sonar control unit can change setting of buzzer volume in 3 stages.

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Obstacle detection image



A. Approx. 50 cm (19.69 in)

B. Approx. 15 cm (5.91 in)

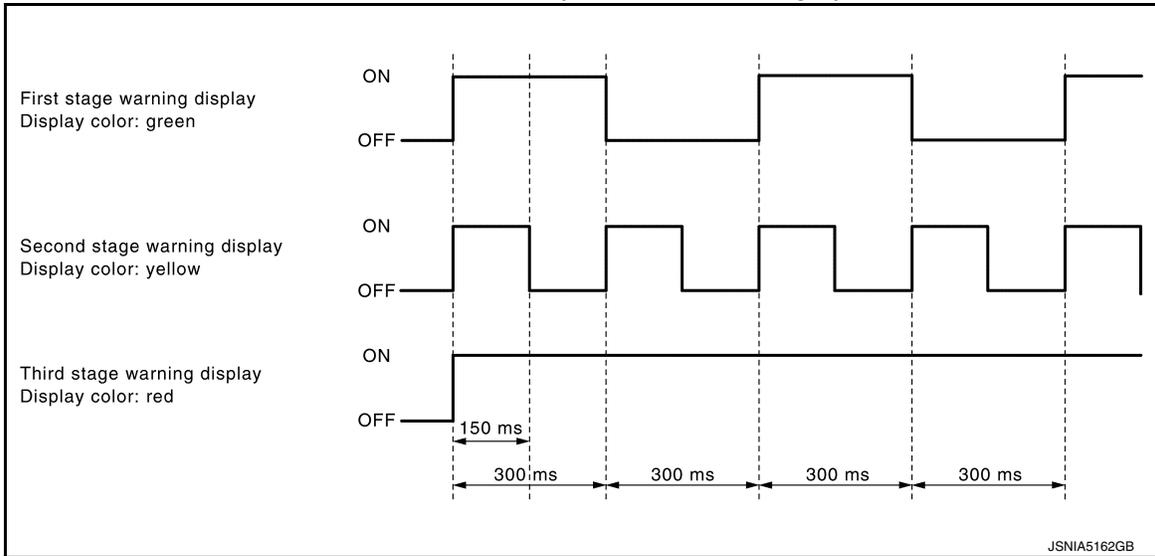
Detection distance

Warning level	Sensitivity level 1 (Faster warning)	Sensitivity level 2 (Default value)	Sensitivity level 3 (Slower warning)
First warning	Approx. 66 cm (25.98 in) – approx. 50 cm (19.69 in)	Approx. 60 cm (23.62 in) – approx. 50 cm (19.69 in)	Approx. 54 cm (21.26 in) – approx. 50 cm (19.69 in)
Second warning	Approx. 50 cm (19.69 in) – approx. 30 cm (11.81 in)	Approx. 50 cm (19.69 in) – approx. 30 cm (11.81 in)	Approx. 50 cm (19.69 in) – approx. 30 cm (11.81 in)
Third warning	Less than 30 cm (11.81 in)	Less than 30 cm (11.81 in)	Less than 30 cm (11.81 in)

Sonar Indicator Display

- When around view monitor control unit receives detection signal and detection distance signal from sonar control unit, the around view monitor control unit displays the sonar indicator on front display.
- Around view monitor control unit changes display color and indicator blinking cycle according to detection distance.

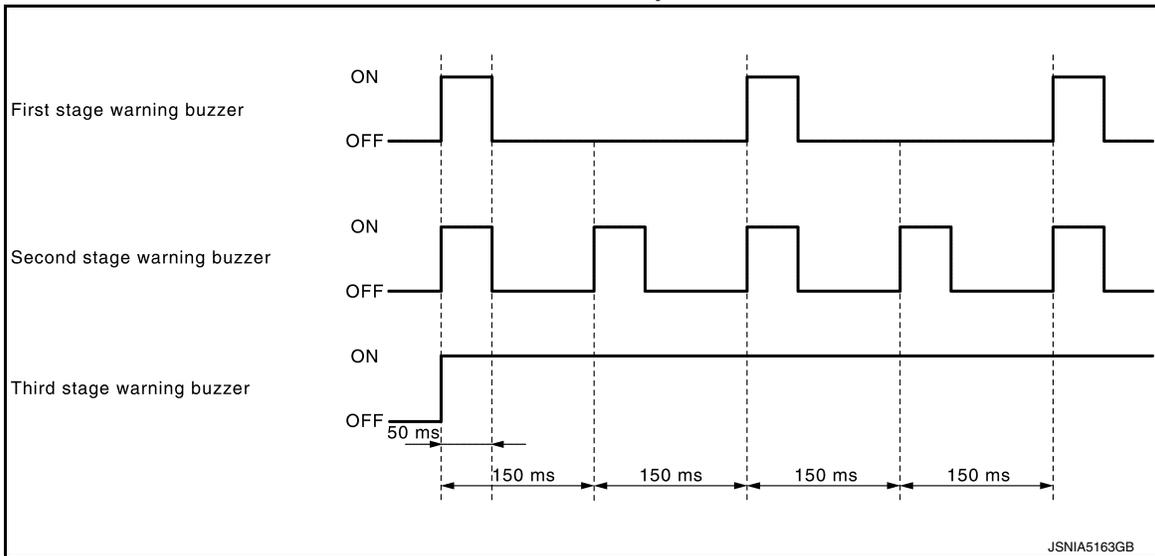
## Sonar indicator display color and blinking cycle



### Sonar Buzzer Operation

- Sonar control unit receives detection signal from corner sensor and sounds buzzer.
- Sonar tone depends on detection position. (Front is approximately 1,600 Hz and rear is approximately 2,500 Hz.)
- Sonar buzzer cycle is changed 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.

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AV

## DIAGNOSIS SYSTEM (AV CONTROL UNIT)

### On Board Diagnosis Function

INFOID:000000010578541

#### MULTIFUNCTION SWITCH AND PRESET SWITCH SELF-DIAGNOSIS FUNCTION

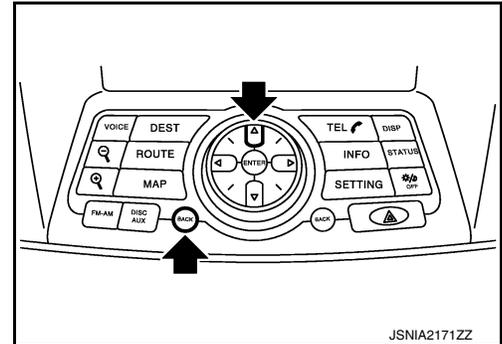
The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

##### 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 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	<ul style="list-style-type: none"> <li>• AV control unit diagnosis.</li> <li>• Diagnoses the connections across system components, between AV control unit and GPS antenna.</li> </ul>

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

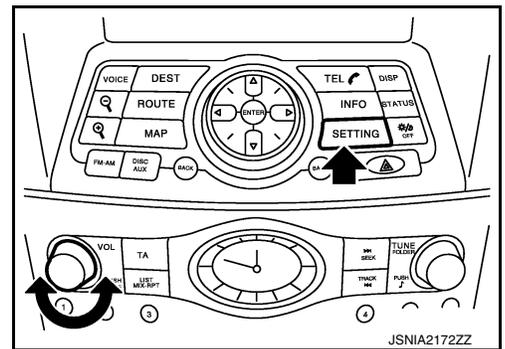
< SYSTEM DESCRIPTION >

[NAVIGATION]

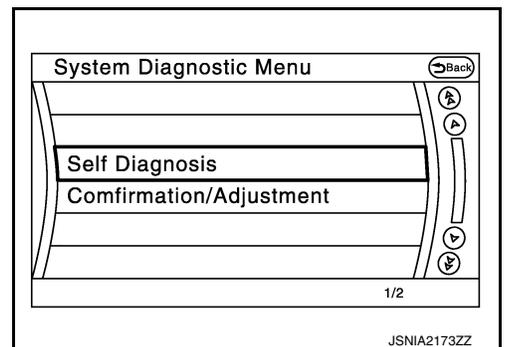
Mode		Description	
Confirmation/ Adjustment	Display Diagnosis	The following check functions are available: color tone check by color bar display and white display, light and shade check by gray scale display and touch panel calibration response check.	
	Vehicle Signals	Diagnosis of signals can be performed 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.	
	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.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[NAVIGATION]

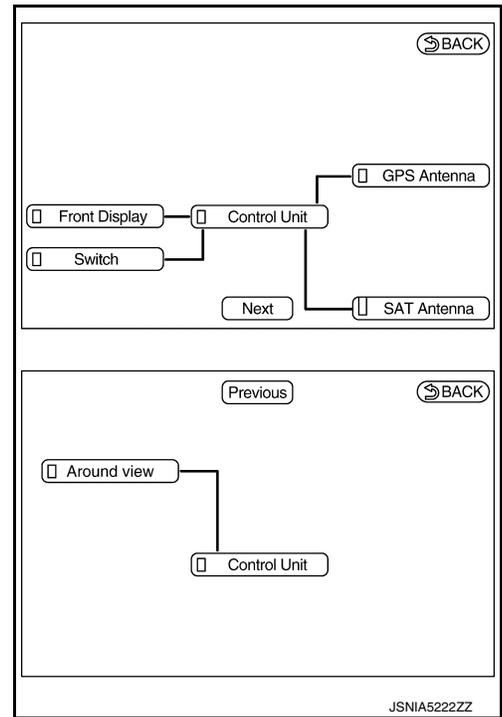
- The bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis.
- 2. Diagnosis results are displayed after the self-diagnosis is completed. The unit names and the connection lines are color-coded according to the diagnostic results.

Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction <sup>Note</sup>	Red	Green

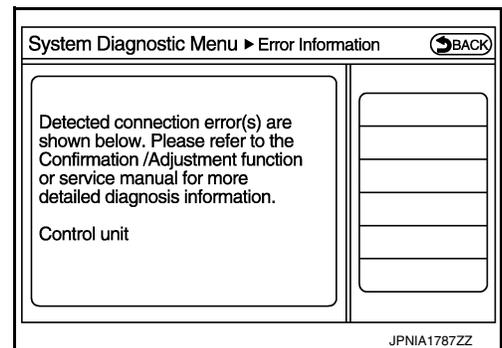
**NOTE:**

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-350. "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.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

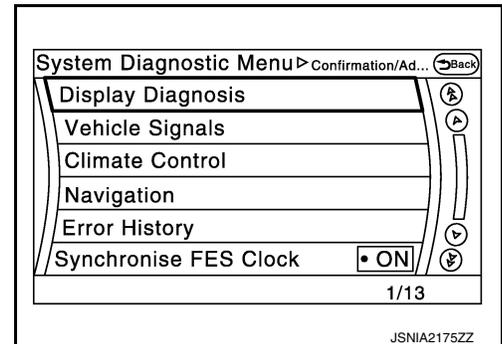
< SYSTEM DESCRIPTION >

[NAVIGATION]

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: <ul style="list-style-type: none"> <li>• Around view monitor control unit power supply and ground circuits are malfunctioning.</li> <li>• AV communication circuits between around view monitor control unit and AV control unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Around view monitor control unit power supply and ground circuits.</li> <li>• AV communication circuits between around view monitor control unit and AV control unit.</li> </ul>
Control unit ↔ SAT Antenna	Satellite radio antenna connection malfunction is detected.	Satellite radio antenna disconnection

## 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.

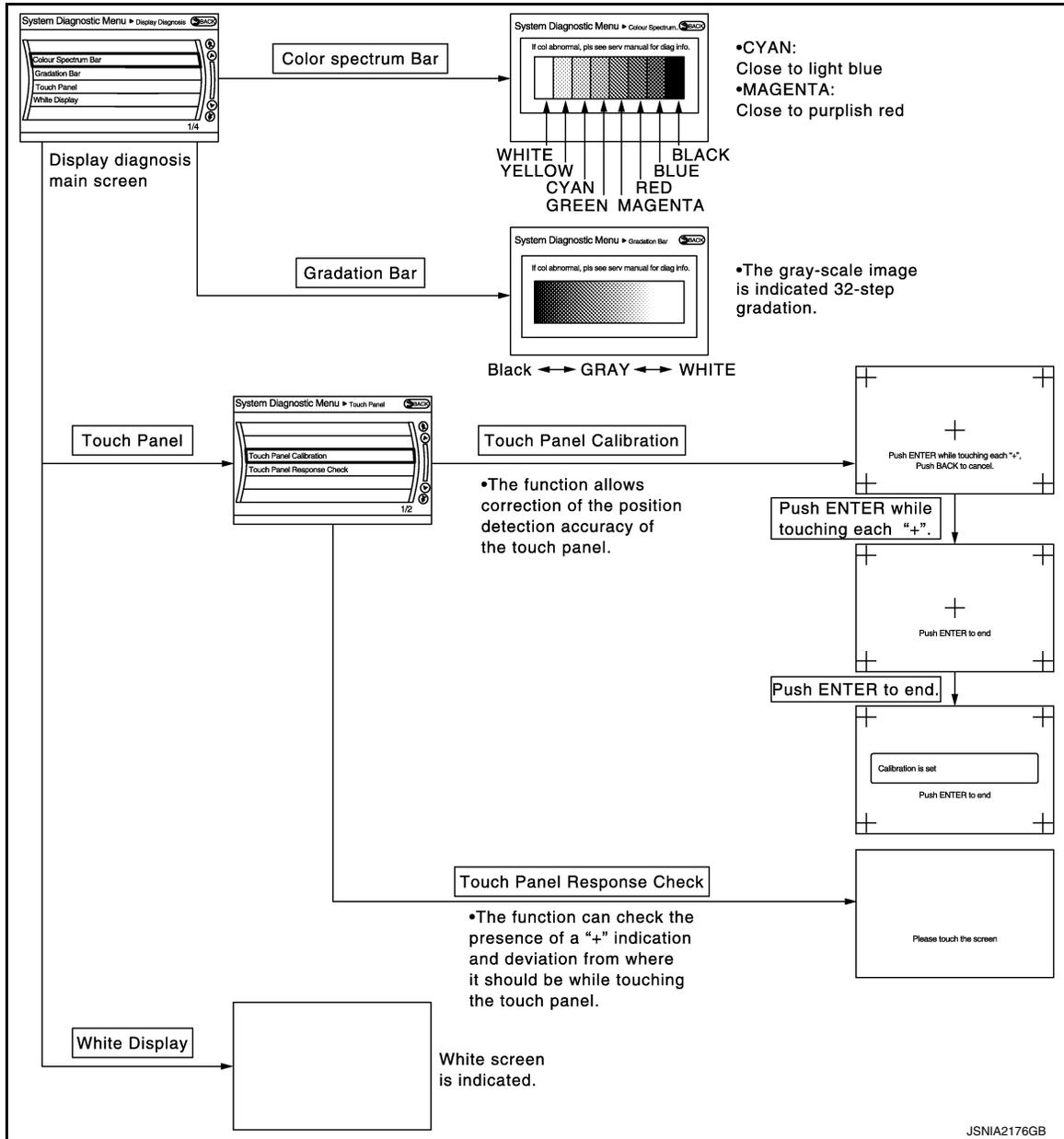


# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

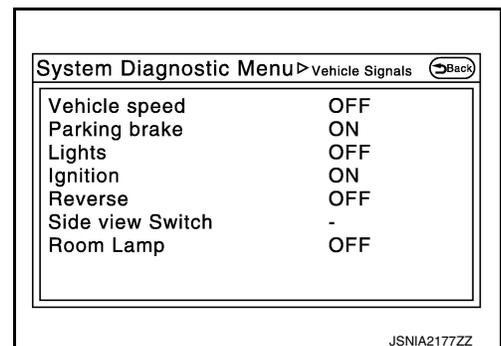
[NAVIGATION]

## Display Diagnosis



## Vehicle Signals

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



# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[NAVIGATION]

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	After opening any door; 5 seconds.	Check 10 seconds later, after closing all doors.
	OFF	Except for above.	

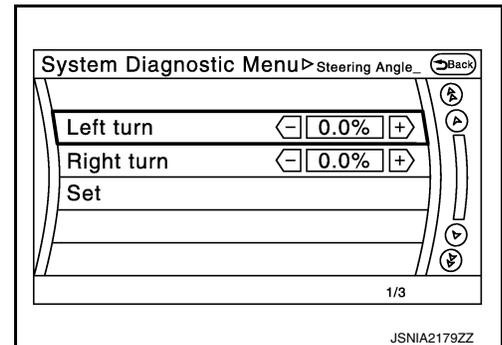
## Climate Control

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

## Navigation

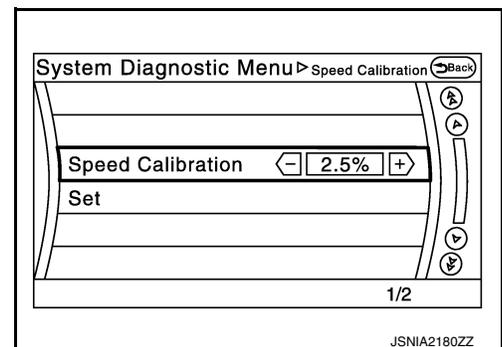
### STEERING ANGLE ADJUSTMENT

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.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

## < SYSTEM DESCRIPTION >

[NAVIGATION]

- 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.

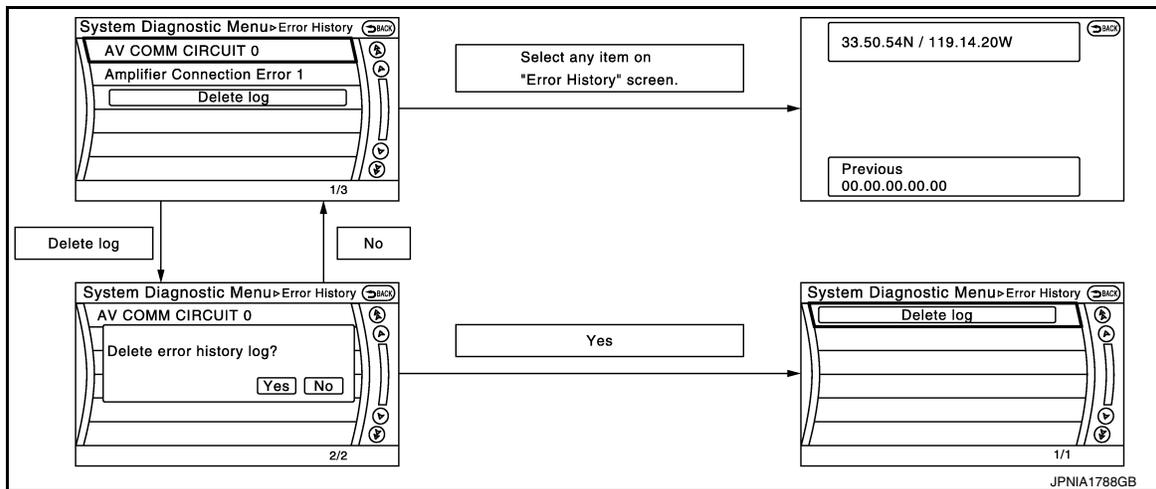
### Count up method A

- 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.

### 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.

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, and then repair the malfunctioning parts according to the diagnosis results. Refer to <a href="#">AV-180, "CONSULT Function (MULTI AV)"</a> .

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[NAVIGATION]

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.	A
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.		B
FLASH-ROM Error of Control Unit	AV control unit malfunction is detected.		C
Connection of Gyro			D
Connection of G Sensor			E
CAN Controller Memory Error			F
Bluetooth Module Connection Error			G
Sub CPU Connection Error			H
iPod authentication chip error			I
Audio connection error			J
DSP Connection Error	AV control unit malfunction is detected.	<ul style="list-style-type: none"> <li>• If a disc can be played, then there is a possibility of the detection of a temporary malfunction.</li> <li>• Replace the AV control unit if the malfunction occurs constantly.</li> </ul>	K
DSP Communication Error			L
HDD Connection Error	AV control unit malfunction is detected.	<ul style="list-style-type: none"> <li>• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction.</li> <li>• Replace the AV control unit if the malfunction occurs constantly.</li> </ul>	M
HDD Read Error			N
HDD Write Error			O
HDD Communication Error			P
HDD Access Error			Q
GPS Communication Error	GPS malfunction is detected.	<p>An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.</p> <p>Replace the AV control unit if the malfunction occurs constantly.</p>	R
GPS ROM Error			S
GPS RAM Error			T
GPS RTC Error			U
Unfinished configuration	The writing of configuration data is incomplete.	Write configuration data with CONSULT.	V
USB Controller Communication Error	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.	W
DVD Mechanism Communication Error	AV control unit malfunction is detected.	<ul style="list-style-type: none"> <li>• If DVD can be played, then there is a possibility of the detection of a temporary malfunction.</li> <li>• Replace the AV control unit if the malfunction occurs constantly.</li> </ul>	X
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.	Y
Front Display Connection Error	<p>When either one of the following items are detected:</p> <ul style="list-style-type: none"> <li>• Front display unit power supply and ground circuits malfunction is detected.</li> <li>• Malfunction is detected in communication circuits between AV control unit and front display unit.</li> </ul>	<ul style="list-style-type: none"> <li>• front display unit power supply and ground circuits.</li> <li>• Communication circuits between AV control unit and front display unit.</li> </ul>	Z
USB electric current Error	Detection of overcurrent in USB connector.	Check USB harness between the AV control unit and USB connector.	AA
GPS Antenna Error	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.	AB
XM Antenna Connection Error	Satellite radio antenna connection malfunction is detected.	Satellite radio antenna disconnection.	AC

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

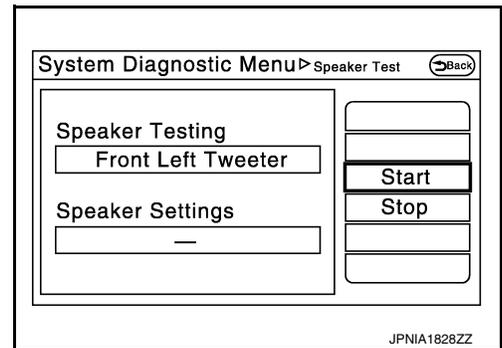
< SYSTEM DESCRIPTION >

[NAVIGATION]

Error item	Description	Possible malfunction factor/Action to take
<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT</li> <li>• Switches Connection Error</li> </ul>	When either one of the following items are detected: <ul style="list-style-type: none"> <li>• Multifunction switch power supply and ground circuits are malfunctioning.</li> <li>• AV communication circuits between AV control unit and multifunction switch are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Multifunction switch power supply and ground circuits.</li> <li>• AV communication circuits between AV control unit and multifunction switch.</li> </ul>
<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT</li> <li>• AVM Connection Error</li> </ul>	When either one of the following items are detected: <ul style="list-style-type: none"> <li>• Around view monitor control unit power supply and ground circuits are malfunctioning.</li> <li>• AV communication circuits between multifunction switch and around view monitor control unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Around view monitor control unit power supply and ground circuits.</li> <li>• AV communication circuits between multifunction switch and around view monitor control unit.</li> </ul>
<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT</li> <li>• Switches Connection Error</li> <li>• AVM Connection Error</li> </ul>	AV communication circuits between multifunction switch and AV control unit are malfunctioning.	AV communication circuits between multifunction switch and AV control unit.

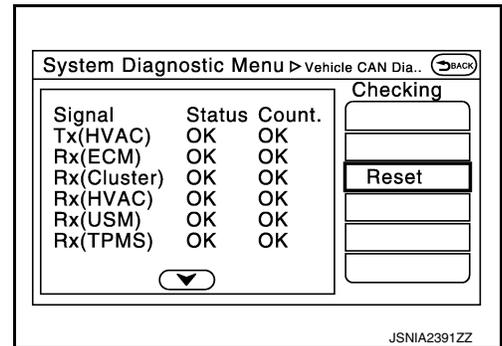
### Speaker Test

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

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

## < SYSTEM DESCRIPTION >

[NAVIGATION]

- 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.

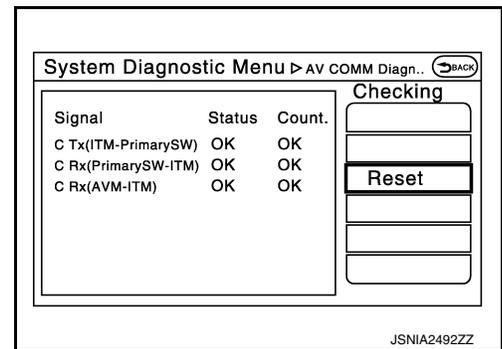
Items	Status (Current)	Counter (Past)
C Tx(ITM-PrimarySW)	OK / ???	OK / 0 – 39
C Rx(PrimarySW-ITM)	OK / ???	OK / 0 – 39
C Rx(AVM-ITM)	OK / ???	OK / 0 – 39

**NOTE:**

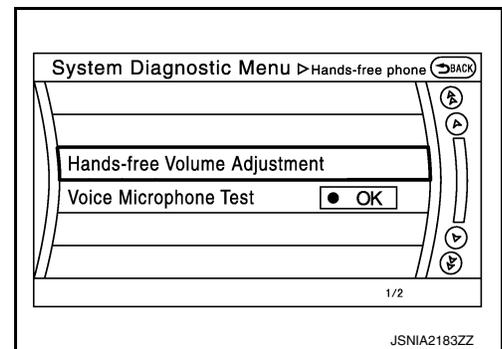
“???” indicates UNKWN

### Hands-Free Phone

The hands-free phone reception volume adjustment and microphone and speaker test functions are also available.



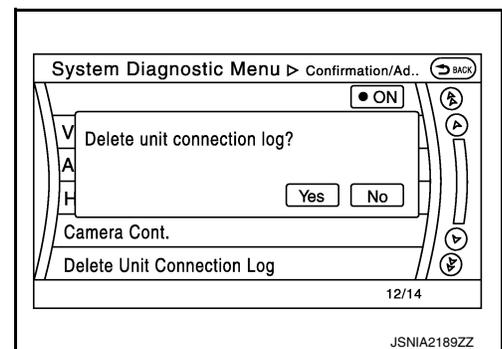
A  
B  
C  
D  
E



F  
G  
H  
I

### 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.)



J  
K  
L  
M

AV

### Initialize Settings

O  
P

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

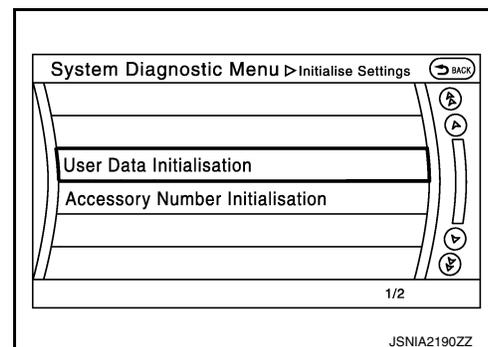
< SYSTEM DESCRIPTION >

[NAVIGATION]

“User Data Initialization” and “Accessory Number Initialization” are possible.

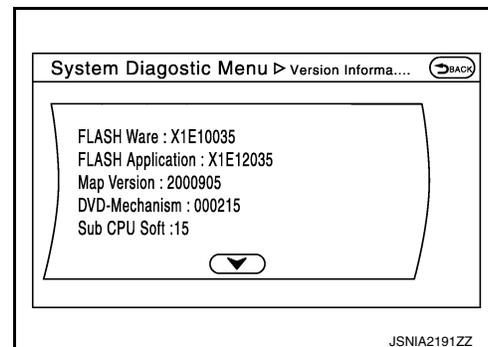
**CAUTION:**

- Never perform Accessory Number Initialization except when configuration is unsuccessful.
- Accessory Number Initialization requires configuration. For details, refer to [AV-243. "CONFIGURATION \(AV CONTROL UNIT\) : Special Repair Requirement"](#).



**Version Information**

Version information of the AV control unit is displayed.



## CONSULT Function (MULTI AV)

INFOID:0000000010578542

### CONSULT FUNCTIONS

CONSULT 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	<ul style="list-style-type: none"> <li>• Read and save the vehicle specification.</li> <li>• Write the vehicle specification when replacing AV control unit.</li> </ul>

### 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

Refer to [AV-195. "DTC Index"](#).

- In CONSULT 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.

### DATA MONITOR

**NOTE:**

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[NAVIGATION]

## 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	After opening any door; 5 seconds.	Check 10 seconds later, after closing all doors.	
	Off	Except for above.		

## 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 includes functions as follows.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[NAVIGATION]

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in AV control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the AV control unit.
Manual Configuration		Allows the writing of the vehicle specification into the AV control unit by hand.

# DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[NAVIGATION]

## DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

### CONSULT Function

INFOID:000000010578543

### CONSULT FUNCTIONS

CONSULT performs the following functions via the communication with the around view monitor control unit.

Diagnosis mode	Description
ECU Identification	Around view monitor control unit part number, software version, and hardware version can be identified.
Self Diagnostic Results	Around view monitor control unit and AV communication circuit connection diagnosis is performed. Current and previous malfunctions are displayed collectively.
Data Monitor	Diagnosis of vehicle signal that is received by around view monitor control unit can be performed.
Work Support	<ul style="list-style-type: none"> <li>• Calibration and initialization of each camera can be performed.</li> <li>• Fine tuning of Birds-Eye view can be performed.</li> <li>• Target line calibration of front wide view and rear wide view can be performed.</li> <li>• Display of predicted course line can be switched to ON/OFF.</li> <li>• Language of warning message can be selected.</li> <li>• Neutral position adjustment of steering angle sensor can be performed.</li> <li>• Camera screen activation enhancing display can be switched to ON/OFF.</li> <li>• Calibration of turning radius display can be performed.</li> <li>• Setting change can be performed depending on the vehicle specification with/without door mirror automatic retracting function.</li> <li>• "SONAR OFF" display can be switched to ON/OFF.</li> <li>• Camera zoom ratio can be changed and used for fine tuning.</li> </ul>
Configuration	<ul style="list-style-type: none"> <li>• The vehicle specification that is written in around view monitor control unit can be displayed or stored.</li> <li>• The vehicle specification can be written when around view monitor control unit is replaced.</li> </ul>

### ECU IDENTIFICATION

Around view monitor control unit part number, software version, and hardware version can be identified.

### SELF DIAGNOSIS RESULT

Refer to [AV-209, "DTC Index"](#).

- In CONSULT 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.

### Freeze Frame Data (FFD)

The following vehicle status is recorded when DTC is detected and is displayed on CONSULT.

Item name	Display content
IGN counter (0 to 39)	<p>Numerical value is displayed indicating the number of times that ignition switch is turned ON after the DTC is detected.</p> <ul style="list-style-type: none"> <li>• When "0" is displayed, it indicates that the system is presently malfunctioning.</li> <li>• When any numerical number other than "0" is displayed, it indicates that system malfunction in the past is detected, but the system is presently normal.</li> </ul> <p><b>NOTE:</b> Each time when ignition switch turns OFF→ON, numerical number increases from 1→2→3...38→39. When number of times exceeds 39, numeric display does not increase and 39 is displayed until self-diagnosis is erased.</p>

### DATA MONITOR

#### NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

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

# DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[NAVIGATION]

Display Item	Remarks
ST ANGLE SENSOR SIGNAL [ON/OFF]	Receiving status of steering angle signal received from steering angle sensor is switched to ON/OFF.
REVERSE SIGNAL [ON/OFF]	Receiving status of reverse signal received from AV control unit is displayed by ON/OFF.
VEHICLE SPEED SIGNAL [ON/OFF]	Receiving status of vehicle speed signal received from ABS actuator control unit is displayed by ON/OFF.
CAMERA SWITCH SIGNAL [ON/OFF]	Receiving status of camera switch signal received from AV control unit is displayed by ON/OFF.
CAMERA OFF SIGNAL [ON/OFF]	Receiving status of camera OFF signal received from AV control unit is displayed by ON/OFF.
ST ANGLE SENSOR TYPE [Absolute]	Input type of steering angle sensor is displayed. <b>NOTE:</b> For this vehicle, "Absolute" is displayed.
STEERING GEAR RATIO TYPE [TYPE1]	Type of steering gear ratio is displayed. <b>NOTE:</b> For this vehicle, "TYPE 1" is displayed.
STEERING POSITION [LHD]	Steering position is displayed. <b>NOTE:</b> For this vehicle, "LHD" is displayed.
REAR CAMERA IMAGE SIGNAL [OK/NG]	Input status of rear view camera image signal is displayed by OK/NG in real time.
R-CAMERA COMM STATUS [OK/NG]	Communication status with rear camera is displayed by OK/NG in real time.
R-CAMERA COMM LINE [OK/NG]	Status of communication line with rear camera is displayed by OK/NG in real time.
F-CAMERA IMAGE SIGNAL [OK/NG]	Input status of front view camera image signal is displayed by OK/NG in real time.
F-CAMERA COMM STATUS [OK/NG]	Communication status with front camera is displayed by OK/NG in real time.
F-CAMERA COMM LINE [OK/NG]	Status of communication line with front camera is displayed by OK/NG in real time.
DR-SIDE CAMERA IMAGE SIG [OK/NG]	Input status of side camera LH image signal is displayed by OK/NG in real time.
DR CAMERA COMM STATUS [OK/NG]	Communication status with side camera LH is displayed by OK/NG in real time.
DR-SIDE CAMERA COMM LINE [OK/NG]	Status of communication line with side camera LH is displayed by OK/NG in real time.
PA-SIDE CAMERA IMAGE SIG [OK/NG]	Input status of side camera RH image signal is displayed by OK/NG in real time.
PA CAMERA COMM STATUS [OK/NG]	Communication status with side camera RH is displayed by OK/NG in real time.
PA-SIDE CAMERA COMM LINE [OK/NG]	Status of communication line with side camera RH is displayed by OK/NG in real time.
ACC [OK/NG]	Input status of ACC signal input to around view monitor control unit is displayed by ON/OFF in real time.
FOLDING MOTOR VOLT 1 [ON/OFF]	Input status of retractable power door mirror LH operation signal input to around view monitor control unit is displayed by ON/OFF in real time.
FOLDING MOTOR VOLT 2 [ON/OFF]	Input status of retractable power door mirror LH operation signal input to around view monitor control unit is displayed by ON/OFF in real time.

## WORK SUPPORT

# DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[NAVIGATION]

Work support items	Description	
CALIBRATING CAMERA IMAGE (FRONT CAMERA)	Performs the calibration of front camera. <b>NOTE:</b> Calibration of camera image caused by misalignment of the camera installation position is performed.	A
CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)	Performs the calibration of side camera RH. <b>NOTE:</b> Calibration of camera image caused by misalignment of the camera installation position is performed.	B
CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)	Performs the calibration of side camera LH. <b>NOTE:</b> Calibration of camera image caused by misalignment of the camera installation position is performed.	C
CALIBRATING CAMERA IMAGE (REAR CAMERA)	Performs the calibration of rear camera. <b>NOTE:</b> Calibration of camera image caused by misalignment of the camera installation position is performed.	D
INITIALIZE CAMERA IMAGE CALIBRATION	The calibration can be initialized to factory shipment condition. <b>NOTE:</b> Calibration of camera image caused by misalignment of the camera installation position is performed.	E
FINE TUNING OF BIRDS-EYE VIEW	The confirmation and adjustment of the difference between each camera can be performed. The fine adjustment function of camera calibration can check and adjust the difference between each camera.	F
REAR WIDE-VIEW FIXED GUIDE LINE CORRECTION	The position of rear wide view guiding line can be changed.	G
SELECT LANGUAGE OF WARNING MESSAGE	Language of warning message shown during camera image display can be selected. [ENGLISH, SPANISH, FRENCH, DUTCH, GERMAN, ITALIAN, PORTUGAL, RUSSIAN, JAPANESE, CHINESE 1 (TRADITIONAL), CHINESE 2 (SIMPLIFIED), KOREAN]	H
PREDICTIVE COURSE LINE DISPLAY	ON/OFF setting of predictive course line can be performed.	I
STEERING ANGLE SENSOR ADJUSTMENT	Steering angle sensor neutral position can be adjusted and registered. <b>CAUTION:</b> <b>For vehicles with VDC, adjust the steering angle sensor neutral position on the ABS actuator control unit side. Refer to <a href="#">BRC-9, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement"</a>.</b>	J
NON-VIEWABLE AREA REMINDER	ON/OFF setting of the non-viewable area reminder can be performed.	K
TURNING RADIUS CORRECTION	Item is displayed, but it is not used.	L
CHANGE PARTS EQUIPPED WITH DOOR MIRROR AUTO FOLD FUNCTION SETTING	Item is displayed, but it is not used.	M
SONAR OFF POP-UP DISPLAY SETTING CHANGE	"SONAR OFF" display can be switched to ON/OFF.	AV
FRONT WIDE-VIEW FIXED GUIDE LINE CORRECTION	The position of front wide view guiding line can be changed.	O
ZOOM FUNCTION	Zoom ratio of each camera can be changed. <b>NOTE:</b> When the position cannot be aligned using "FINE TUNING OF BIRDS-EYE VIEW", the adjustment may be performed using this "ZOOM FUNCTION".	P

## CONFIGURATION

Configuration includes functions as follows.

# DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[NAVIGATION]

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in AV control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the AV control unit.
Manual Configuration		Allows the writing of the vehicle specification into the AV control unit by hand.

# DIAGNOSIS SYSTEM (SONAR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[NAVIGATION]

## DIAGNOSIS SYSTEM (SONAR CONTROL UNIT)

### CONSULT Function

INFOID:000000010578544

### CONSULT FUNCTIONS

CONSULT performs the following functions via communication with sonar control unit.

Diagnosis mode	Description
Ecu Identification	Displays the sonar control unit part number.
Self Diagnostic Result	The malfunctions recorded in the memory of sonar control unit are displayed.
Data Monitor	Sonar control unit input/output signal data is displayed in real time.
Active Test	Performs operation check of sonar buzzer.
Work Support	Performs volume adjustment of sonar buzzer.
Configuration	<ul style="list-style-type: none"><li>The vehicle specification that is written in sonar control unit can be displayed and stored.</li><li>The vehicle specification can be written when sonar control unit is replaced.</li></ul>

### ECU IDENTIFICATION INFORMATION

Displays sonar control unit part number.

### SELF DIAGNOSIS RESULT

Refer to [AV-212. "DTC Index"](#).

### Freeze Frame Data (FFD)

The following vehicle status is recorded when DTC is detected and is displayed on CONSULT.

Item name	Display content
ODO/TRIP METER (km)	Total driving distance (odometer value) upon DTC detection is displayed.
IGN counter (0 ~ 39)	<p>Numerical value is displayed indicating the number of times that ignition switch is turned ON after the DTC is detected.</p> <ul style="list-style-type: none"><li>When "0" is displayed, it indicates that the system is presently malfunctioning.</li><li>When any numerical number other than "0" is displayed, it indicates that system malfunction in the past is detected, but the system is presently normal.</li></ul> <p><b>NOTE:</b> Each time when ignition switch turns OFF→ON, numerical number increases from 1→2→3...38→39. When number of times exceeds 39, numeric display does not increase and 39 is displayed until self-diagnosis is erased.</p>

### DATA MONITOR

#### NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item	Description
VEHICLE SPEED [km/h]	Vehicle speed that is calculated by vehicle speed signal received from the ABS actuator control unit is displayed.
SONAR C/U POWER SUPPLY [V]	Ignition power supply voltage received by sonar control unit is displayed.
SENSOR VOLTAGE [V]	Drive voltage transmitted to each corner sensor is displayed.
DETECTION MODE [Mode 1/Mode 2]	<b>NOTE:</b> It is displayed but not used.
P N RANGE [ON/OFF]	Status of P or N position received from TCM is displayed.
TRAILER CONNECT [Not connected]	<b>NOTE:</b> It is displayed but not used.

A

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L

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AV

O

P

# DIAGNOSIS SYSTEM (SONAR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[NAVIGATION]

Monitor item	Description
LED [OFF]	<b>NOTE:</b> It is displayed but not used.
SONAR TEMPORARY OFF [OFF]	<b>NOTE:</b> It is displayed but not used.
SONAR PERMANENT OFF [OFF]	<b>NOTE:</b> It is displayed but not used.
SW OPRT AFTR IGN ON [OFF]	<b>NOTE:</b> It is displayed but not used.
REVERSE RANGE [ON/OFF]	Status of R position received from TCM is displayed.
SHRT DST FRM RR SENS [cm]	The closest approach detection distance detected by rear corner sensor is displayed.
SHRT DST FRM FR SENS [cm]	The closest approach detection distance detected by front corner sensor is displayed.
COR[RL] [cm]	Distance according to oscillation from rear corner sensor LH and detection by rear corner sensor LH is displayed.
COR[FL] [cm]	Distance according to oscillation from front corner sensor LH and detection by front corner sensor LH is displayed.
COR[RR] [cm]	Distance according to oscillation from rear corner sensor RH and detection by rear corner sensor RH is displayed.
COR[FR] [cm]	Distance according to oscillation from front corner sensor RH and detection by front corner sensor RH is displayed.
RVRB TIME COR[RL] [ms]	Reverberating time of rear corner sensor LH is displayed. <b>NOTE:</b> Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME COR[RR] [ms]	Reverberating time of rear corner sensor RH is displayed. <b>NOTE:</b> Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME COR[FL] [ms]	Reverberating time of front corner sensor LH is displayed. <b>NOTE:</b> Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME COR[FR] [ms]	Reverberating time of front corner sensor RH is displayed. <b>NOTE:</b> Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.

## ACTIVE TEST

Test item	Function
REAR BUZZER	Sonar buzzer (rear) can be operated.
FRONT BUZZER	Sonar buzzer (front) can be operated.
LED	<b>NOTE:</b> Displayed, but not used

## Work Support

Work support items	Description
VOLUME SETTING	Volume of sonar buzzer can be adjusted in 3 stages.
TRAILER HITCH DETECTION RANGE ADJUSTMENT	<b>NOTE:</b> Displayed, but not used

## CONFIGURATION

# DIAGNOSIS SYSTEM (SONAR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[NAVIGATION]

Configuration includes functions as follows.

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in sonar control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the sonar control unit.
Manual Configuration		Allows the writing of the vehicle specification into the sonar control unit by hand.

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# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

## ECU DIAGNOSIS INFORMATION

### AV CONTROL UNIT

#### Reference Value

INFOID:0000000010578545

#### VALUES ON THE DIAGNOSIS TOOL

**NOTE:**

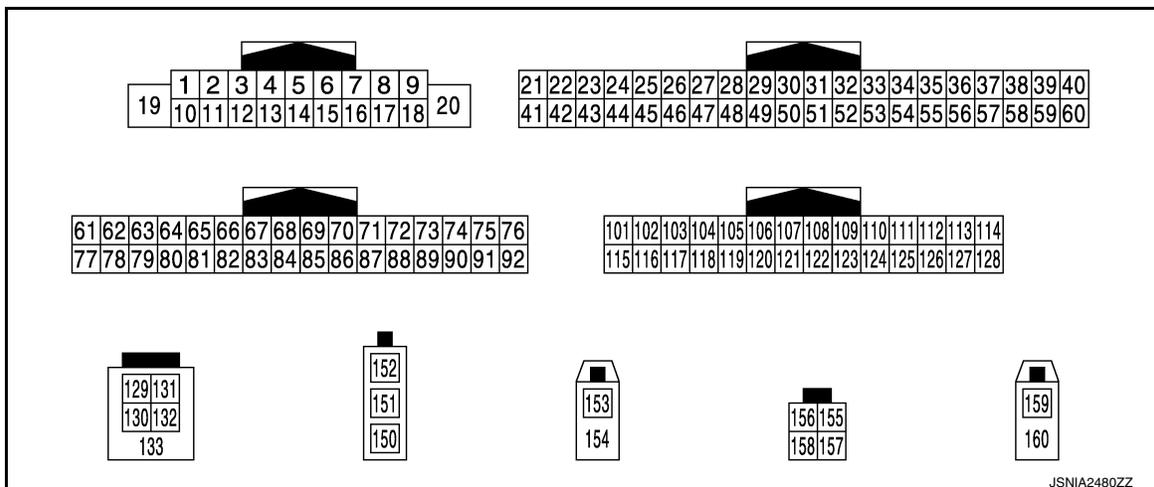
The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

CONSULT 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*	Ignition switch ON	After opening any door; 5 seconds	On
		Except for above.	Off

\*: Check 10 seconds later, after closing all doors.

#### TERMINAL LAYOUT



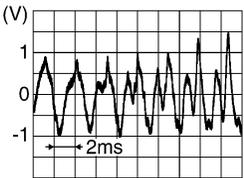
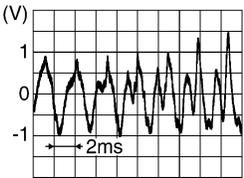
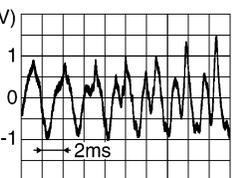
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#### PHYSICAL VALUES

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

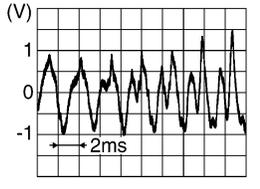
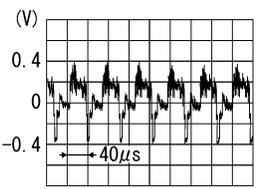
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (V)	Ground	AMP. ON signal	Input	Ignition switch ON	—	12.0 V
2 (P)	3 (L)	Sound signal front LH	Output	Ignition switch ON	Sound output	 <small>SKIB3609E</small>
4 (V)	5 (LG)	Sound signal rear LH	Output	Ignition switch ON	Sound output	 <small>SKIB3609E</small>
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 (BG)	Ground	ACC power supply	Input	Ignition switch ACC or ON	—	Battery voltage
				Ignition switch OFF	—	0 V
10 (B)	—	Shield	—	—	—	—
11 (R)	12 (G)	Sound signal front RH	Output	Ignition switch ON	Sound output	 <small>SKIB3609E</small>

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# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

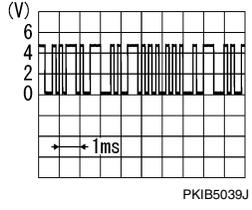
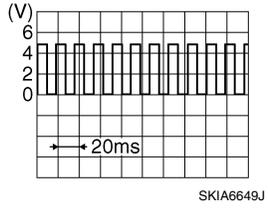
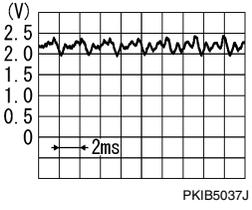
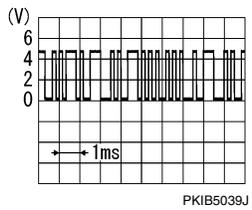
[NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
13 (BR)	14 (Y)	Sound signal rear RH	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
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
29 (SB)	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
49 (BR)	Ground	Switch ground	—	Ignition switch ON	—	0 V
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)	Ground	Composite image ground	—	Ignition switch ON	—	0 V
68 (R)	Ground	Composite image signal	Output	Ignition switch ON	At DVD image is displayed.	 <p style="text-align: right; font-size: small;">SKIB2251J</p>
71	—	Microphone shield	—	—	—	—
72 (G)	Ground	Microphone VCC	Output	Ignition switch ON	—	5.0 V

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
73 (R)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	
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 (BG)	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 ap- prox. 40 km/h (25 MPH)	<p><b>NOTE:</b> Maximum voltage may be 12.0 V due to specifications (connected units).</p> 
87 (R)	71	Microphone signal	Input	Ignition switch ON	Give a voice	
88 (B)	—	Shield	—	—	—	—
89 (G)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	
90 (L)	—	CAN-H	Input/ Output	—	—	—

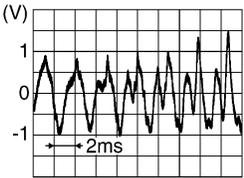
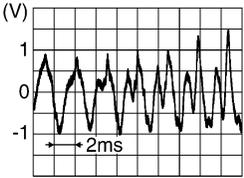
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# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	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 select- ed.	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
117	—	Shield	—	—	—	—
118 (R)	119 (B)	AUX sound signal RH	Input	Ignition switch ON	When AUX mode is select- ed.	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
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	—	FM sub	Input	—	—	—
151	—	AM-FM main	Input	—	—	—
152	Ground	Antenna amp. ON signal	Input	Ignition switch ON	—	12.0 V
153	Ground	GPS antenna signal	Input	Ignition switch ACC	Not connected GPS anten- na 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
159	Ground	Satellite antenna signal	Input	Ignition switch ACC	Not connected to satellite antenna connector.	4.0 V

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

## Fail-Safe

INFOID:000000010578546

When the ambient 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 ambient temperature is  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) or lower, or when it is  $70^{\circ}\text{C}$  ( $158^{\circ}\text{F}$ ) 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 <ul style="list-style-type: none"> <li>LED of multifunction switch (preset switch) illuminates.</li> <li>Aimed temperature, blow angle, and flow rate are displayed in simplified mode.</li> </ul>
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 diagnosis	Cannot be operated.

### Ability Operation Mode

There is an ability operation mode for Fail-safes due to low or high ambient 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:000000010578547

### SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	<a href="#">AV-267, "AV CONTROL UNIT : Diagnosis Procedure"</a>
U1010	CONTROL UNIT (CAN) [1010]	<a href="#">AV-269, "AV CONTROL UNIT : DTC Logic"</a>
U1200	Cont Unit [U1200]	<a href="#">AV-278, "DTC Logic"</a>
U1201	GYRO NO CONN [U1201]	<a href="#">AV-279, "DTC Logic"</a>
U1202	G-SENSOR NO CONN [U1202]	<a href="#">AV-280, "DTC Logic"</a>
U1204	GPS COMM [U1204]	<a href="#">AV-281, "Diagnosis Procedure"</a>
U1205	GPS ROM [U1205]	<a href="#">AV-282, "Diagnosis Procedure"</a>

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# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

DTC	Display item	Refer to
U1206	GPS RAM [U1206]	<a href="#">AV-283, "Diagnosis Procedure"</a>
U1207	GPS RTC [U1207]	<a href="#">AV-284, "Diagnosis Procedure"</a>
U1216	CAN CONT [U1216]	<a href="#">AV-285, "DTC Logic"</a>
U1217	BLUETOOTH MODULE [U1217]	<a href="#">AV-286, "DTC Logic"</a>
U1218	HDD CONN [U1218]	<a href="#">AV-287, "Diagnosis Procedure"</a>
U1219	HDD READ [U1219]	<a href="#">AV-288, "Diagnosis Procedure"</a>
U121A	HDD WRITE [U121A]	<a href="#">AV-289, "Diagnosis Procedure"</a>
U121B	HDD COMM [U121B]	<a href="#">AV-290, "Diagnosis Procedure"</a>
U121C	HDD ACCESS [U121C]	<a href="#">AV-291, "Diagnosis Procedure"</a>
U121D	DSP CONN [U121D]	<a href="#">AV-292, "Diagnosis Procedure"</a>
U121E	DSP COMM [U121E]	<a href="#">AV-293, "Diagnosis Procedure"</a>
U1225	USB CONTROLLER [U1225]	<a href="#">AV-294, "DTC Logic"</a>
U1227	DVD COMM [U1227]	<a href="#">AV-295, "Diagnosis Procedure"</a>
U1228	SUB CPU CONN [U1228]	<a href="#">AV-296, "DTC Logic"</a>
U1229	iPod CERTIFICATION [U1229]	<a href="#">AV-297, "DTC Logic"</a>
U122A	CONFIG UNFINISH [U122A]	<a href="#">AV-298, "Diagnosis Procedure"</a>
U122E	Built-in AUDIO CONN [U122E]	<a href="#">AV-299, "DTC Logic"</a>
U1232	ST ANGLE SEN CALIB [1232]	<a href="#">AV-300, "AV CONTROL UNIT : Diagnosis Procedure"</a>
U1243	FRONT DISP CONN [U1243]	<a href="#">AV-301, "Diagnosis Procedure"</a>
U1244	GPS ANTENNA CONN [U1244]	<a href="#">AV-303, "Diagnosis Procedure"</a>
U1258	XM ANTENNA CONN [U1258]	<a href="#">AV-304, "Diagnosis Procedure"</a>
U1263	USB OVERCURRENT [U1263]	<a href="#">AV-305, "Diagnosis Procedure"</a>
U1310	CONTROL UNIT (AV) [U1310]	<a href="#">AV-314, "DTC Logic"</a>
U1300 U1240	<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• SWITCH CONN [U1240]</li> </ul>	<a href="#">AV-306, "Description"</a>
U1300 U125B	<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• AROUND CAMERA CONN [U125B]</li> </ul>	<a href="#">AV-306, "Description"</a>
U1300 U125C	<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• SONAR CONN [U125C]</li> </ul>	<a href="#">AV-306, "Description"</a>
U1300 U1240 U125B	<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• SWITCH CONN [U1240]</li> <li>• AROUND CAMERA CONN [U125B]</li> </ul>	<a href="#">AV-306, "Description"</a>

# FRONT DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

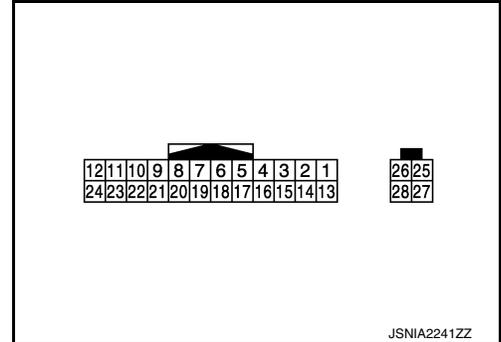
[NAVIGATION]

## FRONT DISPLAY UNIT

Reference Value

INFOID:000000010578548

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
7	—	Shield	—	—	—	—
8 (W)	Ground	Camera image signal	Input	Ignition switch ON	At camera image is displayed.	<p>SKIB2251J</p>
9 (G)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	<p>PKIB5039J</p>
10 (R)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.	<p>PKIB5039J</p>
11 (P)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

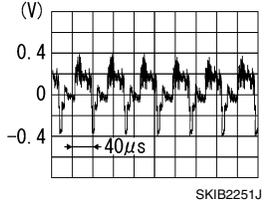
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# FRONT DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
18 (R)	Ground	Composite image signal	Input	Ignition switch ON	At DVD image is displayed.	
19 (B)	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
22 (B)	—	Shield	—	—	—	—
23 (BG)	Ground	ACC power supply	Input	Ignition switch ACC or ON	—	Battery voltage
				Ignition switch OFF	—	0 V
27	—	RGB digital image signal (-)	Input	—	—	—
28	—	RGB digital image signal (+)	Input	—	—	—

# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

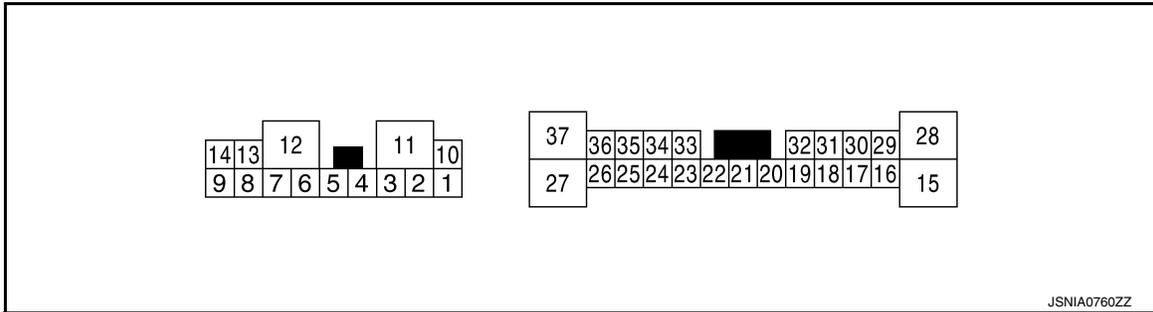
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## BOSE AMP.

### Reference Value

INFOID:000000010578549

### TERMINAL LAYOUT



### PHYSICAL VALUES

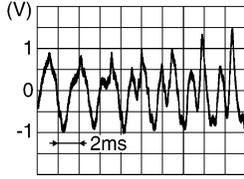
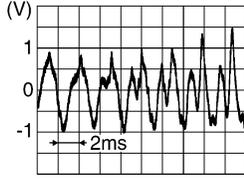
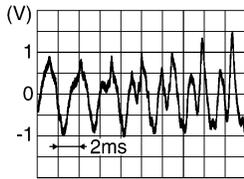
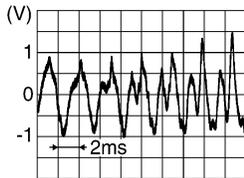
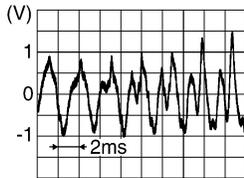
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (Y)	10 (G)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output	<p>SKIB3609E</p>
2 (SB)	3 (V)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	<p>SKIB3609E</p>
4 (L)	5 (P)	Sound signal front door speaker LH	Output	Ignition switch ON	Sound output	<p>SKIB3609E</p>
6 (BG)	7 (W)	Sound signal front squawk- er LH	Output	Ignition switch ON	Sound output	<p>SKIB3609E</p>

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# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

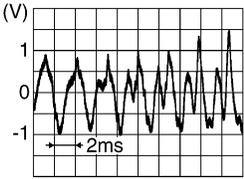
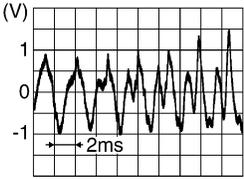
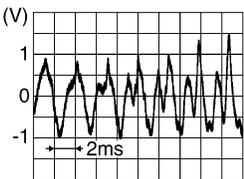
[NAVIGATION]

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	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
9 (G)	14 (R)	Sound signal woofer and rear squawker	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
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	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
17 (BG)	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)	32 (L)	Sound signal front LH	Input	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
19 (R)	20 (G)	Sound signal front RH	Input	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>

# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
21 (V)	22 (SB)	Sound signal rear LH	Input	Ignition switch ON	Sound output	 <small>SKIB3609E</small>
23 (BR)	33 (Y)	Sound signal rear RH	Input	Ignition switch ON	Sound output	 <small>SKIB3609E</small>
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 squawk- er RH	Output	Ignition switch ON	Sound output	 <small>SKIB3609E</small>

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AV

# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

## AROUND VIEW MONITOR CONTROL UNIT

### Reference Value

INFOID:000000010578550

### VALUES ON THE DIAGNOSIS TOOL

**NOTE:**

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

CONSULT MONITOR ITEM

Monitor Item	Condition		Value/Status
ST ANGLE SENSOR SIGNAL [ON/OFF]	Ignition switch ON	When steering angle sensor signal is input	ON
		Other than the above	OFF
REVERSE SIGNAL [ON/OFF]	Ignition switch ON	R position	ON
		Other than R position	OFF
VEHICLE SPEED SIGNAL [ON/OFF]	Ignition switch ON	When vehicle speed is input	ON
		Other than the above	OFF
CAMERA SWITCH SIGNAL [ON/OFF]	Ignition switch ON	When camera switch signal is input	ON
		Other than the above	OFF
CAMERA OFF SIGNAL [ON/OFF]	Ignition switch ON	When camera OFF signal is input	ON
		Other than the above	OFF
ST ANGLE SENSOR TYPE [Absolute]	Ignition switch ON	—	Absolute
STEERING GEAR RATIO TYPE [TYPE1]	Ignition switch ON	—	TYPE1
STEERING POSITION [LHD]	Ignition switch ON	—	LHD
REAR CAMERA IMAGE SIGNAL [OK/NG]	Ignition switch ON	When rear camera image signal input status is normal	OK
		When rear view camera image signal input status is not normal	NG
R-CAMERA COMM STATUS [OK/NG]	Ignition switch ON	When communication status with rear camera is normal	OK
		When communication status with rear camera is not normal	NG
R-CAMERA COMM LINE [OK/NG]	Ignition switch ON	When communication line with rear camera is normal	OK
		When communication line with rear camera is not normal	NG
F-CAMERA IMAGE SIGNAL [OK/NG]	Ignition switch ON	When front camera image signal input status is normal	OK
		When front camera image signal input status is not normal	NG
F-CAMERA COMM STATUS [OK/NG]	Ignition switch ON	When communication status with front camera is normal	OK
		When communication status with front camera is not normal	NG
F-CAMERA COMM LINE [OK/NG]	Ignition switch ON	When communication line with front camera is normal	OK
		When communication line with front camera is not normal	NG
DR-SIDE CAMERA IMAGE SIG [OK/NG]	Ignition switch ON	When side camera LH image signal input status is normal	OK
		When side camera LH image signal input status is not normal	NG

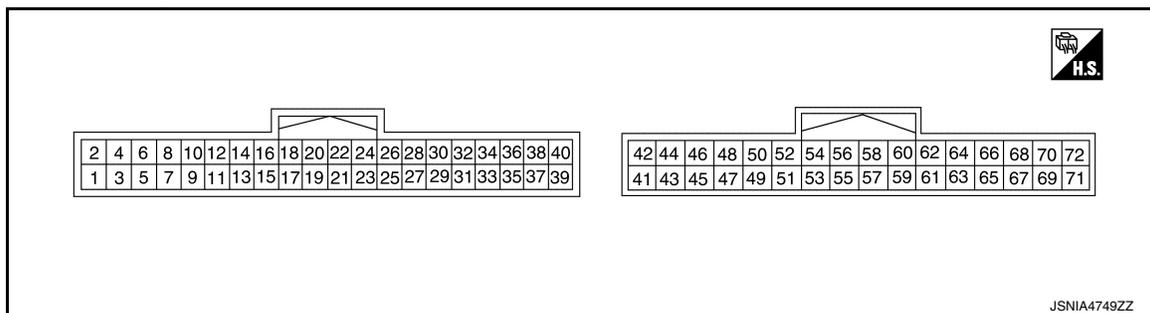
# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

Monitor Item	Condition		Value/Status
DR CAMERA COMM STATUS [OK/NG]	Ignition switch ON	When communication status with side camera LH is normal	OK
		When communication status with side camera LH is not normal	NG
DR-SIDE CAMERA COMM LINE [OK/NG]	Ignition switch ON	When communication line with side camera LH is normal	OK
		When communication line with side camera LH is not normal	NG
PA-SIDE CAMERA IMAGE SIG [OK/NG]	Ignition switch ON	When side camera RH image signal input status is normal	OK
		When side camera RH image signal input status is not normal	NG
PA CAMERA COMM STATUS [OK/NG]	Ignition switch ON	When communication status with side camera RH is normal	OK
		When communication status with side camera RH is not normal	NG
PA-SIDE CAMERA COMM LINE [OK/NG]	Ignition switch ON	When communication line with side camera RH is normal	OK
		When communication line with side camera RH is not normal	NG
ACC	Ignition switch ACC		ON
	Ignition switch OFF		OFF
FOLDING MOTOR VOLT 1 [ON/OFF]	Ignition switch ON	Driver side door mirror is in expanded status	ON
		Driver side door mirror is in retracted status	OFF
FOLDING MOTOR VOLT 2 [ON/OFF]	Ignition switch ON	Driver side door mirror is in expanded status	OFF
		Driver side door mirror is in retracted status	ON

## TERMINAL LAYOUT



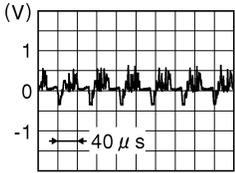
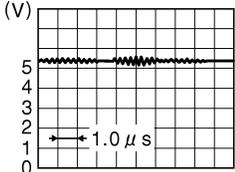
## PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y)	1 (B)	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
3 (G)	1 (B)	Ignition signal	Input	Ignition switch ON	—	Battery voltage

# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

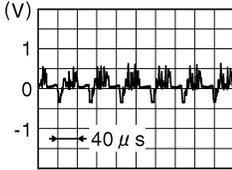
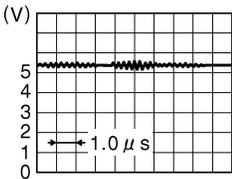
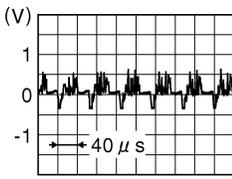
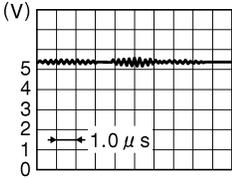
[NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
4 (LG)	1 (B)	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
5* (LG)	—	—	—	—	—	—
6* (G)	—	—	—	—	—	—
19 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
20 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
21 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
22 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
25 (BG)	1 (B)	Reverse signal	Input	Ignition switch ON	R position	12.0 V
					Other than R position	0 V
27 (L)	—	CAN-H	Input/ Output	—	—	—
28 (P)	—	CAN-L	Input/ Output	—	—	—
30 (SB)	1 (B)	Retract motor opera- tion signal (open)	Input	Ignition switch ON	Driver side door mirror is in retracted status	0 V
					Driver side door mirror is in expanded status	12.0 V
32 (R)	1 (B)	Retract motor opera- tion signal (close)	Input	Ignition switch ON	Driver side door mirror is in retracted status	12.0 V
					Driver side door mirror is in expanded status	0 V
47 (W)	48	Camera image signal	Output	Ignition switch ON	—	
48	Ground	Camera image signal ground	—	Ignition switch ON	—	0 V
49 (W)	52 (L)	Rear camera commu- nication signal	Input/ Output	Ignition switch ON	—	
50 (G)	52 (L)	Rear camera power supply	Output	Ignition switch ON	—	6.0 V

# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

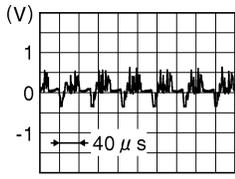
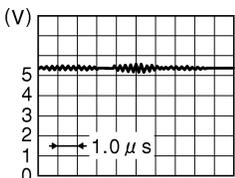
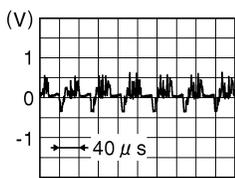
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
52 (L)	Ground	Rear camera ground	—	Ignition switch ON	—	0 V
53 (R)	54	Rear camera image signal (+)	Input	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>
54	Ground	Rear camera image signal (-)	—	Ignition switch ON	—	0 V
55 (G)	58 (W)	Side camera driver side communication signal	Input/ Output	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">JSNIA0836GB</p>
56 (L)	58 (W)	Side camera driver side power supply	Output	Ignition switch ON	—	6.0 V
58 (W)	Ground	Side camera driver side ground	—	Ignition switch ON	—	0 V
59 (R)	60	Side camera driver side image signal (+)	Input	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>
60	Ground	Side camera driver side image signal (-)	—	Ignition switch ON	—	0 V
61 (G)	64 (W)	Side camera passen- ger side communica- tion signal	Input/ Output	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">JSNIA0836GB</p>
62 (L)	64 (W)	Side camera passen- ger side power supply	Output	Ignition switch ON	—	6.0 V
64 (W)	Ground	Side camera passen- ger side ground	—	Ignition switch ON	—	0 V

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# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
65 (R)	66	Side camera passenger side image signal (+)	Input	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>
66	Ground	Side camera passenger side image signal (-)	—	Ignition switch ON	—	0 V
67 (W)	70 (R)	Front camera communication signal	Input/ Output	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">JSNIA0836GB</p>
68 (G)	70 (R)	Front camera power supply	Output	Ignition switch ON	—	6.0 V
70 (R)	Ground	Front camera ground	—	Ignition switch ON	—	0 V
71 (L)	72	Front camera image signal (+)	Input	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>
72	Ground	Front camera image signal (-)	—	Ignition switch ON	—	0 V

\*: This harness is not used.

# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

## Fail-Safe

INFOID:0000000110578551

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U0428 ST ANGLE SENSOR CALIBRATION	Neutral position adjustment of steering angle sensor is not complete.	<ul style="list-style-type: none"> <li>• Predicted course line is not displayed.</li> <li>• MOD (Moving Object Detection) function is stopped.</li> <li>• Front tire angle display is stopped.</li> <li>• Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed.</li> </ul>
U1000 CAN COMM CIRCUIT	When around view monitor control unit cannot transmit/receive CAN communication signal continuously for 2 seconds or more.	<p>The following functions are stopped</p> <ul style="list-style-type: none"> <li>• When communication of steering angle sensor signal is not normal                             <ul style="list-style-type: none"> <li>- Predicted course line is not displayed.</li> <li>- MOD (Moving Object Detection) function is stopped.</li> <li>- Front tire angle display is stopped.</li> <li>- Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed.</li> </ul> </li> <li>• When communication of vehicle signal, wheel speed sensor signal, and shift signal is not normal                             <ul style="list-style-type: none"> <li>- Predicted course line is not displayed.</li> <li>- MOD (Moving Object Detection) function is stopped.</li> <li>- Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed</li> </ul> </li> <li>• When communication of sonar signal is not normal                             <ul style="list-style-type: none"> <li>- Predicted course line is not displayed.</li> </ul> </li> </ul>

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# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U111A REAR CAMERA IMAGE SIGNAL	No-signal status of rear camera image signal is continued for 500 ms or more while ignition switch is ON. <b>NOTE:</b> Current malfunction is displayed only and is not saved.	Camera image is not displayed (Gray screen display).
U111B SIDE CAMERA RH IMAGE SIGNAL	No-signal status of side camera RH image signal is continued for 500 ms or more while ignition switch is ON. <b>NOTE:</b> Current malfunction is displayed only and is not saved.	
U111C FRONT CAMERA IMAGE SIGNAL	No-signal status of rear camera image signal is continued for 500 ms or more while ignition switch is ON. <b>NOTE:</b> Current malfunction is displayed only and is not saved.	
U111D SIDE CAMERA LH IMAGE SIGNAL	No-signal status of side camera LH image signal is continued for 500 ms or more while ignition switch is ON. <b>NOTE:</b> Current malfunction is displayed only and is not saved.	
U1232 ST ANGLE SEN CALIB	Neutral position adjustment of steering angle sensor is performed. NG signal from steering angle sensor is received.	<ul style="list-style-type: none"> <li>• Predicted course line is not displayed.</li> <li>• MOD (Moving Object Detection) function is stopped.</li> <li>• Tire icon is stopped.</li> <li>• Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed.</li> </ul>
U1302 CAMERA POWER VOLT	Camera power supply voltage does not satisfy the following conditions for 2 seconds or more when ignition switch is turned ON. <ul style="list-style-type: none"> <li>• When supplemental lighting power supply output is ON: 5.9 – 6.5 V.</li> <li>• When OFF: 0 V by camera power supply measurement.</li> </ul>	Camera power output is stopped.
U1304 CAMERA IMAGE CALIB	<ul style="list-style-type: none"> <li>• When camera calibration is incomplete.</li> <li>• When camera information in around view control unit and information read from camera are not the same.</li> </ul> <b>NOTE:</b> Current malfunction is displayed only and is not saved.	Unmatched icon  display (red) is displayed (applicable for unmatched camera only).
U1305 CONFIG UNFINISH	The vehicle setting of around view monitor control unit is incomplete. <b>NOTE:</b> Current malfunction is displayed only and is not saved.	Operation is according to the vehicle setting value as default value.

# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
Other	When around view monitor control unit is not normal.	Switch to camera screen is not allowed.
	When communication between around view monitor control unit and each camera is not normal.	On applicable camera screen "!" marking (Red) is displayed.
	When communication line between around view monitor control unit and each camera image line are affected by electromagnetic noises.	On applicable camera image screen, ☒ display (Blue) is displayed.

## DTC Index

INFOID:000000010578552

DTC	CONSULT display	Refer to
U0428	ST ANGLE SENSOR CALIBRATION	<a href="#">AV-266. "Diagnosis Procedure"</a>
U1000	CAN COMM CIRCUIT	<a href="#">AV-267. "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"</a>
U1010	CONTROL UNIT (CAN)	<a href="#">AV-269. "AROUND VIEW MONITOR CONTROL UNIT : DTC Logic"</a>
U111A	REAR CAMERA IMAGE SIGNAL	<a href="#">AV-270. "Diagnosis Procedure"</a>
U111B	SIDE CAMERA RH IMAGE SIGNAL	<a href="#">AV-272. "Diagnosis Procedure"</a>
U111C	FRONT CAMERA IMAGE SIGNAL	<a href="#">AV-274. "Diagnosis Procedure"</a>
U111D	SIDE CAMERA LH IMAGE SIGNAL	<a href="#">AV-276. "Diagnosis Procedure"</a>
U1232	ST ANGLE SEN CALIB	<a href="#">AV-300. "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"</a>
U1302	CAMERA POWER VOLT	<a href="#">AV-307. "Diagnosis Procedure"</a>
U1303	LED POWER SUPPLY VOLT	<a href="#">AV-311. "Diagnosis Procedure"</a>
U1304	CAMERA IMAGE CALIB	<a href="#">AV-312. "Diagnosis Procedure"</a>
U1305	CONFIG UNFINISH	<a href="#">AV-313. "Diagnosis Procedure"</a>

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AV

# SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

## SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

### Reference Value

INFOID:000000010578553

#### VALUES ON THE DIAGNOSIS TOOL

**NOTE:**

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

CONSULT MONITOR ITEM

Monitor item	Condition		Value/Status
VEHICLE SPEED	While driving		Input value of vehicle speed signal
SONAR C/U POWER SUPPLY	Ignition switch ON		Battery voltage
SENSOR VOLTAGE	Ignition switch ON		Approx. 8 V
DETECTION MODE	<b>NOTE:</b> This item is displayed, but cannot be monitored.		
P N RANGE	Ignition switch ON	Selector lever P or N position	ON
		Other than the above	OFF
TRAILER CONNECT	<b>NOTE:</b> This item is displayed, but cannot be monitored.		
LED	<b>NOTE:</b> This item is displayed, but cannot be monitored.		
SONAR TEMPORARY OFF	<b>NOTE:</b> This item is displayed, but cannot be monitored.		
SONAR PERMANENT OFF	<b>NOTE:</b> This item is displayed, but cannot be monitored.		
SW OPRT AFTR IGN ON	<b>NOTE:</b> This item is displayed, but cannot be monitored.		
REVERSE RANGE	Ignition switch ON	Selector lever R position	ON
		Other than the above	OFF
SHRT DST FRM RR SENS	Ignition switch ON	An obstacle exists in the vicinity of rear corner sensor. (Applox. 27 cm - 70 cm)	Almost agree with the distance from the closest obstacle to rear bumper. (27 cm ~ 70 cm)
		No obstacle exists in the vicinity of rear corner sensor.	255 cm
SHRT DST FRM FR SENS	Ignition switch ON	An obstacle exists in the vicinity of front corner sensor. (Applox. 27 cm - 70 cm)	Almost agree with the distance from the closest obstacle to front bumper. (27 cm ~ 70 cm)
		No obstacle exists in the vicinity of front corner sensor.	255 cm
COR[RL]	Ignition switch ON	An obstacle exists in the vicinity of rear corner sensor LH. (Applox. 27 cm - 70 cm)	Almost agree with the distance from an obstacle to rear corner sensor LH. (27 cm ~ 70 cm)
		No obstacle exists in the vicinity of rear corner sensor LH.	255 cm
COR[FL]	Ignition switch ON	An obstacle exists in the vicinity of front corner sensor LH. (Applox. 27 cm - 70 cm)	Almost agree with the distance from an obstacle to front corner sensor LH. (27 cm ~ 70 cm)
		No obstacle exists in the vicinity of front corner sensor LH.	255 cm

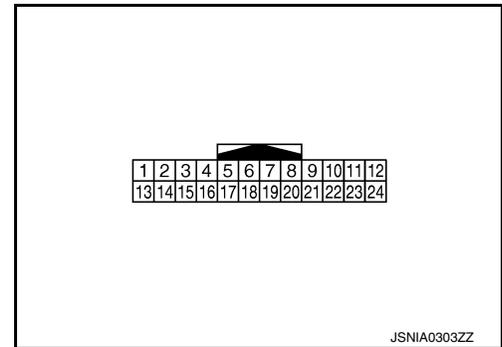
# SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

Monitor item	Condition		Value/Status
COR[RR]	Ignition switch ON	An obstacle exists in the vicinity of rear corner sensor RH. (Applox. 27 cm - 70 cm)	Almost agree with the distance from an obstacle to rear corner sensor RH. (27 cm ~ 70 cm)
		No obstacle exists in the vicinity of rear corner sensor RH.	255 cm
COR[FR]	Ignition switch ON	An obstacle exists in the vicinity of front corner sensor RH. (Applox. 27 cm - 70 cm)	Almost agree with the distance from an obstacle to front corner sensor RH. (27 cm ~ 70 cm)
		No obstacle exists in the vicinity of front corner sensor RH.	255 cm
RVRB TIME COR[RL]	Ignition switch ON		Approx. 1.60 ms
RVRB TIME COR[RR]	Ignition switch ON		Approx. 1.60 ms
RVRB TIME COR[FL]	Ignition switch ON		Approx. 1.60 ms
RVRB TIME COR[FR]	Ignition switch ON		Approx. 1.60 ms

## TERMINAL LAYOUT



## PHYSICAL VALUES

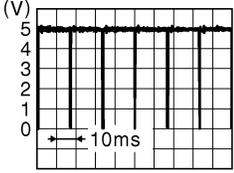
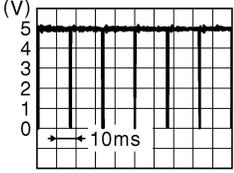
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
3 (W)	12 (B)	Corner sensor signal front LH	Input	Ignition switch ON	—	<p style="text-align: right; font-size: small;">JSNIA0837GB</p>
4 (R)	12 (B)	Corner sensor signal front RH	Input	Ignition switch ON	—	<p style="text-align: right; font-size: small;">JSNIA0837GB</p>

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# SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

< ECU DIAGNOSIS INFORMATION >

[NAVIGATION]

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
5 (W)	12 (B)	Corner sensor signal rear LH	Input	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">JSNIA0837GB</p>
6 (R)	12 (B)	Corner sensor signal rear RH	Input	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">JSNIA0837GB</p>
13 (R)	24 (B)	Ignition power supply	Input	Ignition switch ON	—	Battery voltage
19 (L)	—	CAN-H	Input/ Output	—	—	—
20 (P)	—	CAN-L	Input/ Output	—	—	—
24 (B)	Ground	Ground	—	—	—	0 V

## DTC Index

INFOID:000000010578554

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT	<a href="#">AV-268. "SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : Diagnosis Procedure"</a>
U1010	CONTROL UNIT (CAN)	<a href="#">AV-269. "SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : DTC Logic"</a>
B2720	CORNER SENSOR [RL]	<a href="#">AV-253. "DTC Logic"</a>
B2723	CORNER SENSOR [RR]	<a href="#">AV-256. "DTC Logic"</a>
B2724	SONAR CONTROL UNIT	<a href="#">AV-259. "DTC Logic"</a>
B2729	CORNER SENSOR [FL]	<a href="#">AV-260. "DTC Logic"</a>
B272C	CORNER SENSOR [FR]	<a href="#">AV-263. "DTC Logic"</a>

# WIRING DIAGRAM

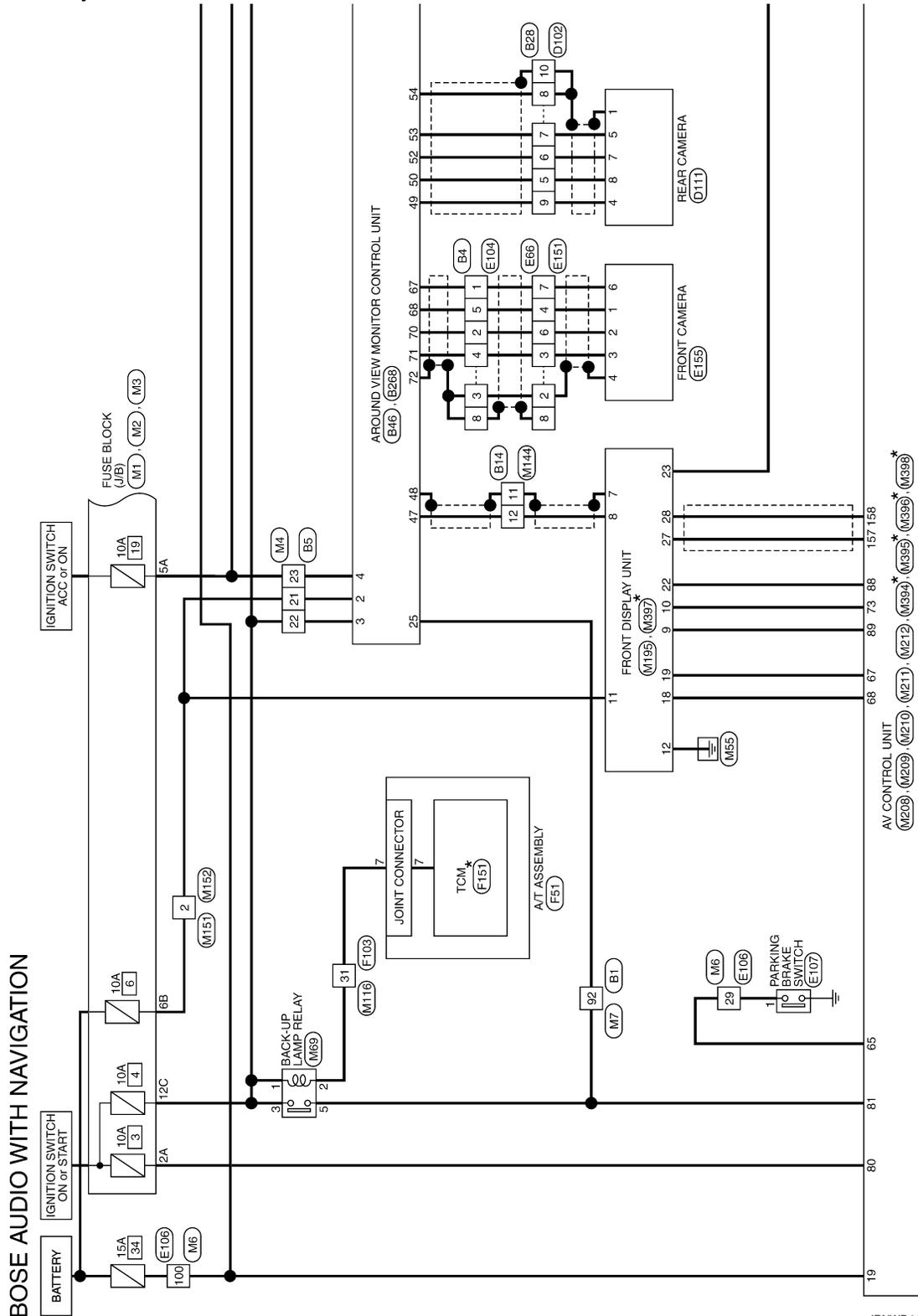
## BOSE AUDIO WITH NAVIGATION

### Wiring Diagram

INFOID:0000000010578555

**NOTE:**

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



\*: This connector is not shown in "Harness Layout".

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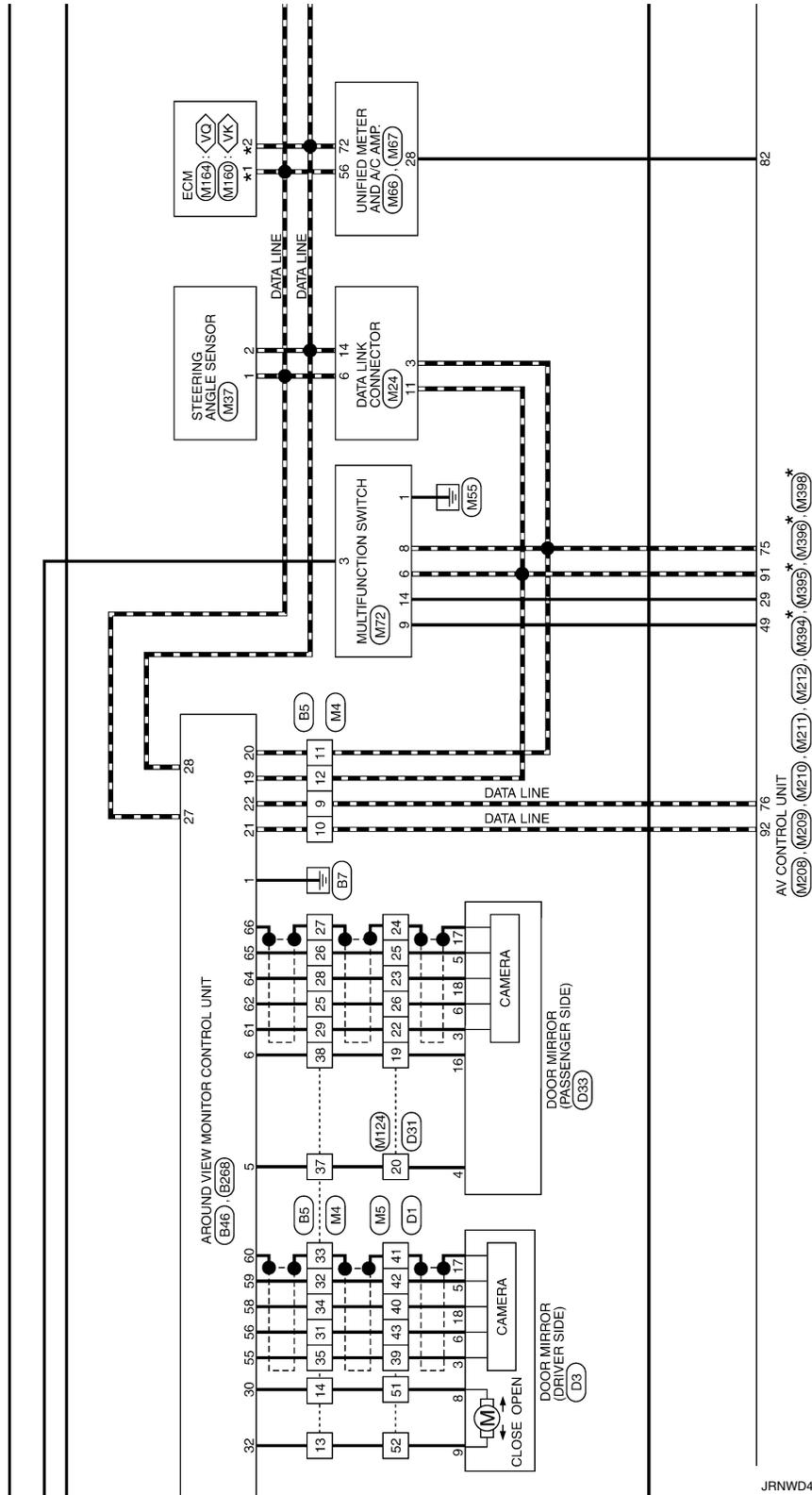
AV

# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]

- \*1 114 : <VQ> : With VQ engine
- 105 : <VK> : With VK engine
- \*2 113 : <VQ>
- 101 : <VK>



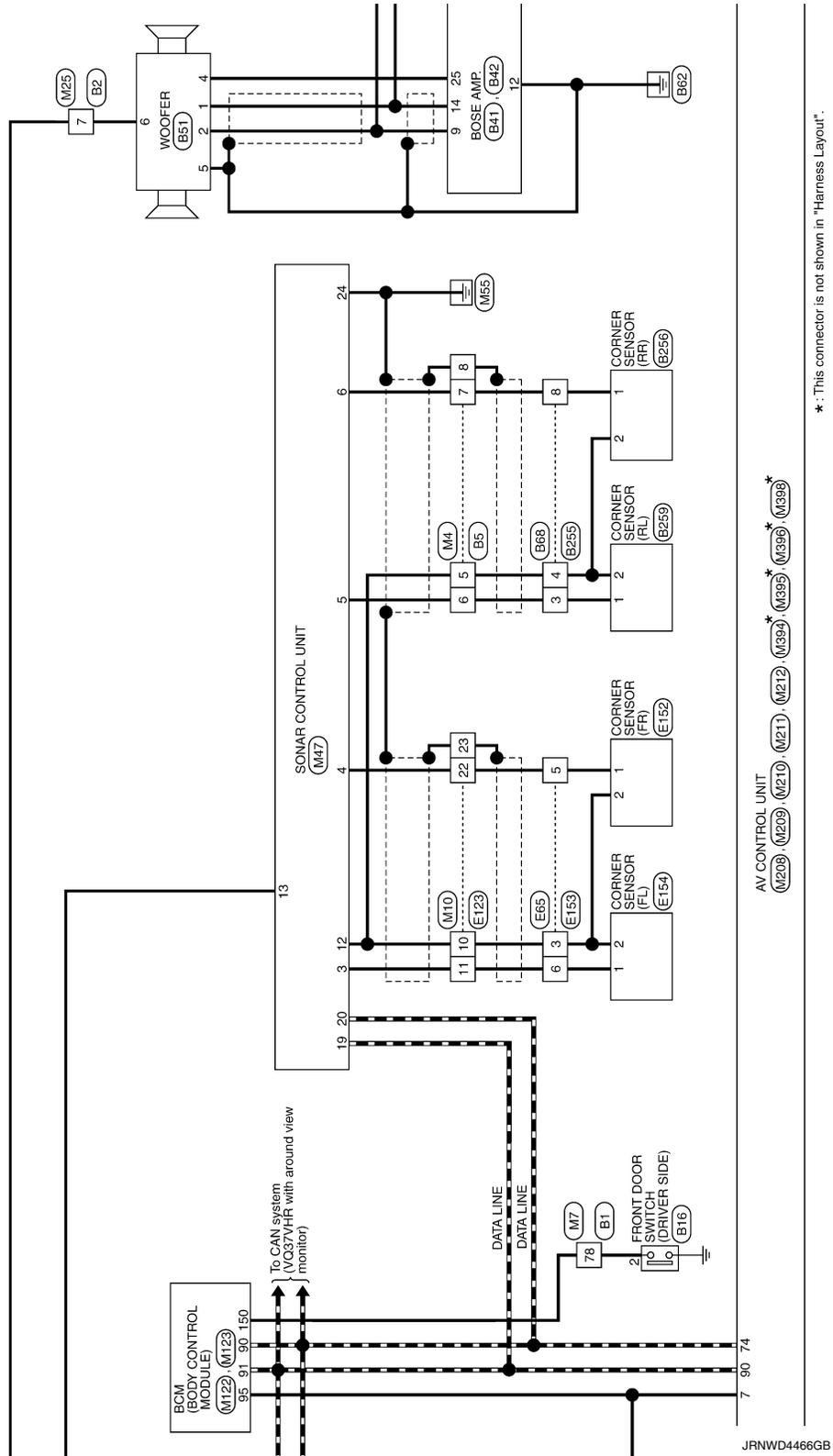
\* : This connector is not shown in "Harness Layout".

JRNWD4465GB

# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]



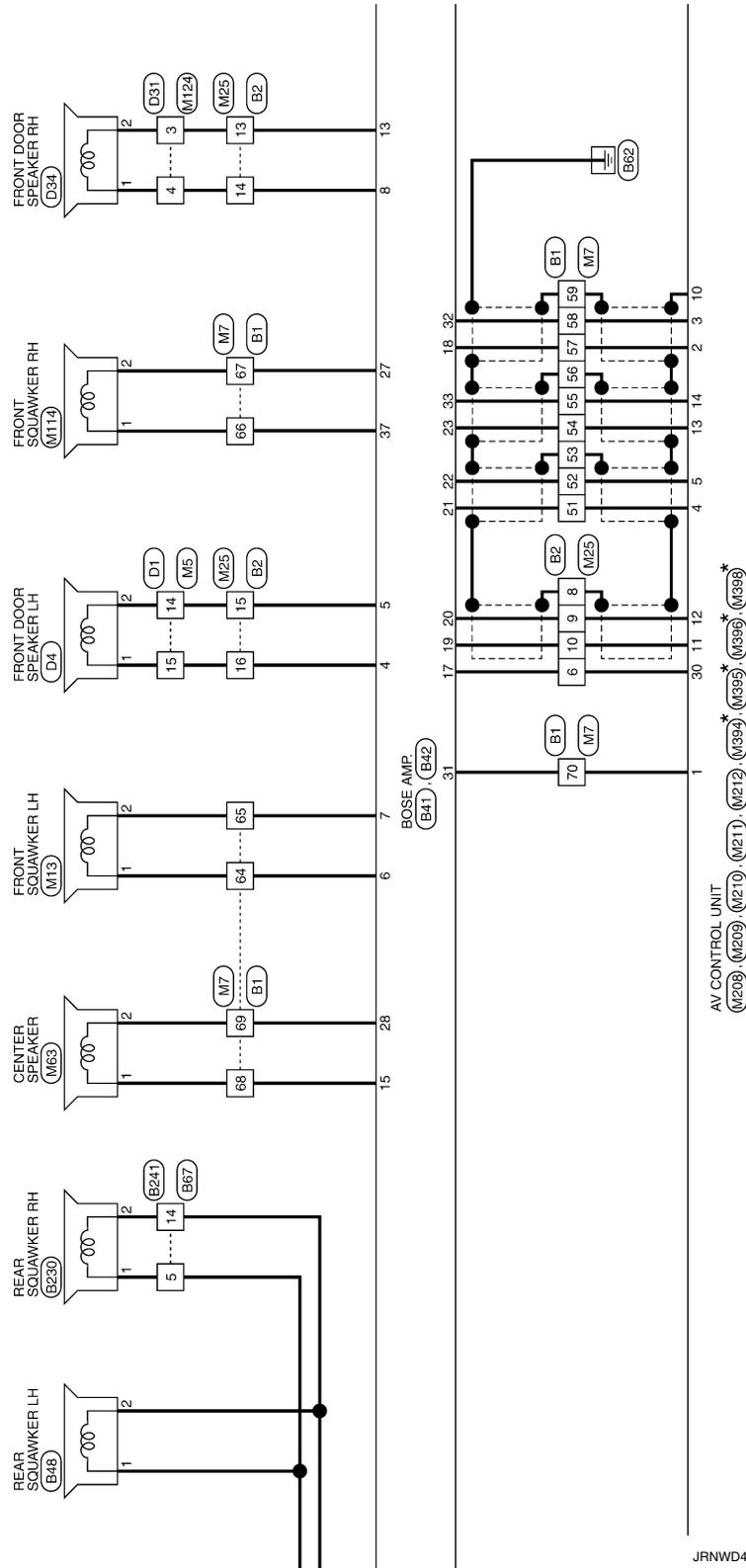
\*: This connector is not shown in "Harness Layout".

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# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]



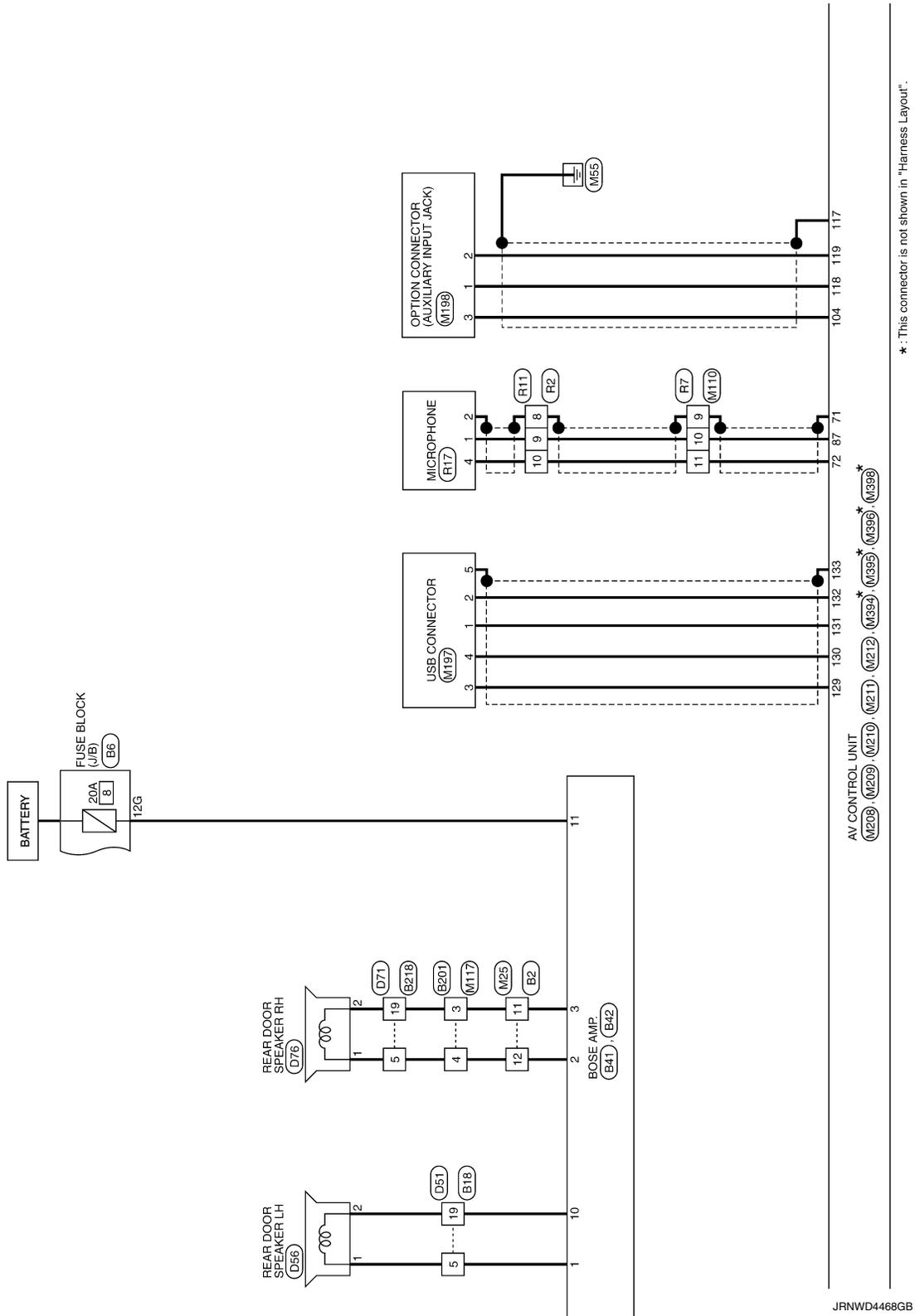
\*: This connector is not shown in "Harness Layout".

JRNWD4467GB

# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]



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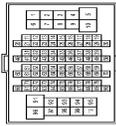
# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]

## BOSE AUDIO WITH NAVIGATION

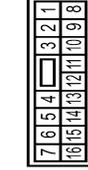
Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80FM-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	W	-
3	W	-
4	P	-
5	G	-
6	B	-
7	P	-
8	BG	-
9	W	-
10	SB	-
11	SB	-
12	B	-
13	G	-
14	R	-
15	W	-
16	SHIELD	-
17	L	-
18	P	-
19	G	-
20	Y	-
21	W	-
23	V	-
24	P	-
25	BR	-
26	GR	-
27	BG	-
28	W	-
38	B	-
39	B	-
43	SB	-
44	V	-
45	GR	-
51	V	-
52	SB	-
53	SHIELD	-
54	BR	-
55	Y	-
56	SHIELD	-

57	P	-
58	L	-
59	SHIELD	-
60	L	-
61	P	-
62	GR	-
63	G	-
64	BG	-
65	W	-
66	V	-
67	LG	-
68	Y	-
69	G	-
70	GR	-
71	G	-
72	B	-
73	W	-
74	V	-
75	BG	-
76	LG	-
77	L	-
78	GR	-
79	W	-
80	L	-
81	P	-
82	L	-
83	P	-
84	SB	-
85	R	-
86	Y	-
87	B	-
88	G	-
89	BR	-
91	R	-
92	BG	-
93	BR	-
94	V	-
96	BG	-
97	W	-
98	GR	-
99	W	-

Connector No.	B2
Connector Name	WIRE TO WIRE
Connector Type	NS16FM-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
2	LG	-
3	SB	-
4	LG	-
5	SB	-
6	BG	-
7	BG	-
8	SHIELD	-
9	G	-
10	R	-
11	V	-
12	SB	-
13	Y	-
14	LG	-
15	P	-
16	L	-

Connector No.	B4
Connector Name	WIRE TO WIRE
Connector Type	NS12FM-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	R	-
3	SHIELD	-
4	L	-

5	G	-
6	R	-
7	R	-
8	B	-
9	LG	-
10	BR	-
11	BG	-
12	GR	-

Connector No.	B5
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
5	B	-
6	W	-
7	R	-
8	SHIELD	-
9	LG	-
10	SB	-
11	LG	-
12	SB	-
13	R	-
14	SB	-
21	Y	-
22	G	-
23	LG	-
25	L	-
26	R	-
27	SHIELD	-
28	W	-
29	G	-
31	L	-
32	R	-
33	SHIELD	-
34	W	-
35	G	-
37	LG	-
38	G	-

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# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]

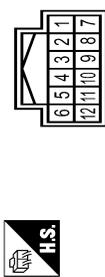
## BOSE AUDIO WITH NAVIGATION

Connector No.	B6
Connector Name	FUSE BLOCK (UB)
Connector Type	NS12FBR-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10G	W	-
11G	W	-
12G	GR	-
5G	LG	-
7G	BG	-

Connector No.	B14
Connector Name	WIRE TO WIRE
Connector Type	TH12FW-NH



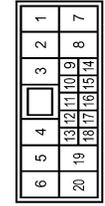
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	LG	-
3	R	-
5	W	-
6	R	-
7	Y	-
11	SHIELD	-
12	B	- [Without around view monitor]
12	W	- [With around view monitor]

Connector No.	B16
Connector Name	FRONT DOOR SWITCH (DRIVER SIDE)
Connector Type	A03FW



Terminal No.	Color Of Wire	Signal Name [Specification]
2	GR	-

Connector No.	B18
Connector Name	WIRE TO WIRE
Connector Type	NH10FM-CS10



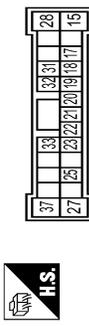
Terminal No.	Color Of Wire	Signal Name [Specification]
2	V	-
3	W	-
4	GR	-
5	Y	-
6	B	-
8	BR	-
12	LG	-
13	P	-
17	L	-
18	BG	-
19	G	-
20	W	-

Connector No.	B28
Connector Name	WIRE TO WIRE
Connector Type	TH32MV-AH



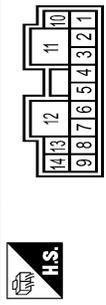
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	W	-
4	SHIELD	-
5	G	-
6	L	-
7	R	-
8	SHIELD	-
9	W	-
10	B	-
11	G	-
12	L	-
13	W	-
14	LG	-
15	BG	-
16	G	-
17	BG	-
18	V	-
19	W	-
20	B	-
21	G	-
22	LG	-
23	R	-
24	BG	-
25	BR	-
26	GR	-
27	L	-
32	BG	-

Connector No.	B41
Connector Name	BOSE AMP.
Connector Type	SCA19FBR-SGA4



Terminal No.	Color Of Wire	Signal Name [Specification]
15	Y	SOUND SIGNAL CENTER SPEAKER (+)
17	BG	MODE CHANGE SIGNAL
18	P	SOUND SIGNAL FRONT LH (+)
19	R	SOUND SIGNAL FRONT FH (+)
20	G	SOUND SIGNAL FRONT RH (-)
21	V	SOUND SIGNAL REAR LH (-)
22	SB	SOUND SIGNAL REAR RH (-)
23	BR	SOUND SIGNAL REAR RH (+)
25	GR	WOOFER AMP. ON SIGNAL
27	LG	SOUND SIGNAL FRONT SQUAWKER RH (-)
28	G	SOUND SIGNAL CENTER SPEAKER (-)
31	GR	AMP. ON SIGNAL
32	L	SOUND SIGNAL FRONT LH (-)
33	Y	SOUND SIGNAL REAR RH (-)
37	V	SOUND SIGNAL FRONT SQUAWKER RH (+)

Connector No.	B42
Connector Name	BOSE AMP.
Connector Type	SGA12FBR-SJA2



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	SOUND SIGNAL REAR DOOR SPEAKER LH (+)
2	SB	SOUND SIGNAL REAR DOOR SPEAKER RH (-)
3	V	SOUND SIGNAL REAR DOOR SPEAKER RH (+)
4	L	SOUND SIGNAL FRONT DOOR SPEAKER LH (-)
5	P	SOUND SIGNAL FRONT DOOR SPEAKER LH (+)

# BOSE AUDIO WITH NAVIGATION

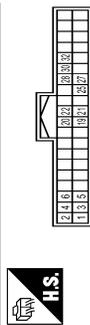
< WIRING DIAGRAM >

[NAVIGATION]

## BOSE AUDIO WITH NAVIGATION

6	BG	SOUND SIGNAL FRONT SQUAWKER LH (-)
7	W	SOUND SIGNAL FRONT SQUAWKER LH (+)
8	LG	SOUND SIGNAL FRONT DOOR SPEAKER RH (+)
9	G	SOUND SIGNAL WOOFER AND REAR SQUAWKER (+)
10	G	SOUND SIGNAL REAR DOOR SPEAKER LH (-)
11	GR	BATTERY
12	B	GROUND
13	Y	SOUND SIGNAL FRONT DOOR SPEAKER RH (+)
14	R	SOUND SIGNAL WOOFER AND REAR SQUAWKER (+)

Connector No.	B46
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FT4-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
2	Y	BATTERY
3	G	IGNITION SIGNAL
4	LG	ACC
5	LG	-
6	G	-
19	SB	AV COMM (H)
20	LG	AV COMM (L)
21	SB	AV COMM (H)
22	LG	AV COMM (L)
25	BG	REVERSE SIGNAL
27	L	CAN-H
28	P	CAN-L
30	SB	RETRACT MOTOR/OPERATION SIGNAL (OPEN)
32	R	RETRACT MOTOR/OPERATION SIGNAL (CLOSE)

Connector No.	B48
Connector Name	REAR SQUAWKER LH
Connector Type	TK02FBR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	R	-

Connector No.	B51
Connector Name	WOOFER
Connector Type	RS08FGY-PR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	SOUND SIGNAL WOOFER (-)
2	G	SOUND SIGNAL WOOFER (+)
4	GR	WOOFER AMP-ON SIGNAL
5	B	GROUND
6	W	BATTERY

Connector No.	B67
Connector Name	WIRE TO WIRE
Connector Type	NS16MBRC-CS



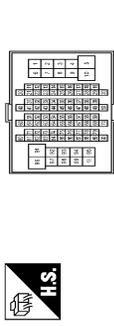
Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	G	-
3	SHIELD	-
6	G	-
8	BR	-
9	G	-
10	SHIELD	-
11	L	-
12	GR	-
13	R	-
14	R	-

Connector No.	B68
Connector Name	WIRE TO WIRE
Connector Type	RS08MGY



Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	-
4	B	-
8	R	-

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80FT4-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	R	-
3	BR	-
4	SB	-
6	BG	-
7	GR	-
8	W	-
10	G	-
11	SHIELD	-
20	L	-
21	P	-
22	GR	-
23	LG	-
24	W	-
25	V	-
26	G	-
27	Y	-
28	SHIELD	-
31	W	-
32	GR	-
33	SB	-
36	L	-
37	P	-
38	L	-
39	P	-
40	LG	- [With ICC]
40	V	- [Without ICC]
41	SB	- [With ICC]
41	Y	- [Without ICC]
42	V	- [With ICC]
42	W	- [Without ICC]
43	B	- [With ICC]
43	BR	- [Without ICC]
44	R	-
45	G	-
46	BG	- [With ICC]

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# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]

**BOSE AUDIO WITH NAVIGATION**

46	SHIELD	- [Without ICC]
47	B	- [Without ICC]
47	L	- [With ICC]
48	P	- [With ICC]
48	R	- [Without ICC]
49	G	- [With ICC]
49	W	- [Without ICC]
50	SHIELD	-
51	W	-
52	R	-
53	G	-
54	L	-
55	SB	-
60	GR	-
61	LG	-
62	SB	-
63	P	-
64	BR	-
65	BC	-
66	Y	-
67	W	-
69	G	-
71	SB	-
72	V	-
73	LG	-
74	W	-
75	BR	-
76	V	-
77	LG	-
80	BG	-
82	P	-
83	Y	-
84	R	-
85	SB	-
86	GR	-
87	L	-
91	V	-
92	W	-
93	R	-
94	LG	-
95	GR	-
96	W	-
97	G	-
98	BG	-
99	L	-

Connector No.	B218
Connector Name	WIRE TO WIRE
Connector Type	NH10FW-CS10



Terminal No.	Color Of Wire	Signal Name [Specification]
2	GR	-
3	W	-
4	R	-
5	SB	-
6	B	-
8	G	-
12	LG	-
13	P	-
17	SB	-
18	BR	-
19	BR	-
20	LG	-

Connector No.	B230
Connector Name	REAR SOLAWKER RH
Connector Type	TK02FBR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	R	-

Connector No.	B241
Connector Name	WIRE TO WIRE
Connector Type	NS16FBR-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	G	-
3	SHIELD	-
5	CS	-
8	LY	-
9	LB	-
10	SHIELD	-
11	L	-
12	W	-
13	P	-
14	R	-

Connector No.	B255
Connector Name	WIRE TO WIRE
Connector Type	RS08FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	-
4	B	-
8	R	-

Connector No.	B256
Connector Name	CORNER SENSOR (RR)
Connector Type	YDX02FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-

Connector No.	B259
Connector Name	CORNER SENSOR (RL)
Connector Type	YDX02FB



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	B	-

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# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]

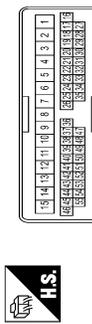
## BOSE AUDIO WITH NAVIGATION

Connector No.	B268
Connector Name	ROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH32FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
47	W	CAMERA IMAGE SIGNAL (+)
48	SHIELD	CAMERA IMAGE GND
49	W	REAR CAMERA COMMUNICATION SIGNAL
50	G	REAR CAMERA POWER SUPPLY
52	L	REAR CAMERA GND
53	R	REAR CAMERA IMAGE SIGNAL (+)
54	SHIELD	REAR CAMERA IMAGE SIGNAL (-)
55	G	SIDE CAMERA UNDER SIDE COMMUNICATION SIGNAL
56	L	SIDE CAMERA DRIVER SIDE POWER SUPPLY
58	W	SIDE CAMERA DRIVER SIDE GND
59	R	SIDE CAMERA DRIVER SIDE IMAGE SIGNAL (+)
60	SHIELD	SIDE CAMERA DRIVER SIDE IMAGE SIGNAL (-)
61	G	SIDE CAMERA PASSENGER SIDE COMMUNICATION SIGNAL
62	L	SIDE CAMERA PASSENGER SIDE POWER SUPPLY
64	W	SIDE CAMERA PASSENGER SIDE GND
65	R	SIDE CAMERA PASSENGER SIDE IMAGE SIGNAL (+)
66	SHIELD	SIDE CAMERA PASSENGER SIDE IMAGE SIGNAL (-)
67	W	FRONT CAMERA COMMUNICATION SIGNAL
68	G	FRONT CAMERA POWER SUPPLY
70	R	FRONT CAMERA GND
71	L	FRONT CAMERA IMAGE SIGNAL (+)
72	SHIELD	FRONT CAMERA IMAGE SIGNAL (-)

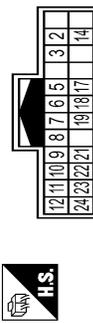
Connector No.	D1
Connector Name	WIPE TO WIRE
Connector Type	TH40FM-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
3	G	-
6	GR	-
7	W	-
8	SB	-
9	BR	-
10	O	-
11	R	-
12	LG	-
13	Y	-
14	P	-
15	L	-
20	V	-
21	Y	-
22	GR	-
23	SB	-
24	LG	-
26	G	-
27	V	-
28	P	-
29	Y	-
30	LG	-
31	O	-
32	BR	-
33	L	-
34	GR	-
35	B	-
36	R	-
37	G	-
38	SHIELD	-
39	W	-
40	B	-
41	SHIELD	-
42	G	-
43	R	-
44	BR	-

45	V	-
46	P	-
47	W	-
48	GR	-
49	R	-
50	B	-
51	SB	-
52	L	-
53	G	-
54	O	-
55	GR	-

Connector No.	D3
Connector Name	DOOR MIRROR (DRIVER SIDE)
Connector Type	TH24NH-NH



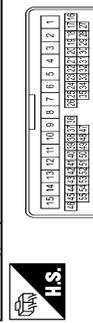
Terminal No.	Color Of Wire	Signal Name [Specification]
2	R	-
3	W	-
5	G	-
6	R	-
7	GR	-
8	SB	-
9	L	-
10	G	-
11	GR	-
12	O	-
14	B	-
17	SHIELD	-
18	B	-
19	B	-
21	P	-
22	BR	-
23	W	-
24	V	-

Connector No.	D4
Connector Name	FRONT DOOR SPEAKER LH
Connector Type	NS02FBR-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	P	-

Connector No.	D31
Connector Name	WIPE TO WIRE
Connector Type	TH40FM-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
3	P	-
4	L	-
5	W	-
6	P	-
7	G	-
8	R	-
9	LG	-
13	B	-
14	V	-
15	Y	-
19	G	-
20	LG	-
22	W	-
23	B	-
24	SHIELD	-
25	G	-
26	R	-
31	LG	-

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# BOSE AUDIO WITH NAVIGATION

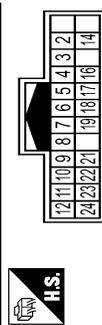
< WIRING DIAGRAM >

[NAVIGATION]

## BOSE AUDIO WITH NAVIGATION

32	R	-
33	SB	-
34	Y	-
35	GR	-
36	O	-
37	GR	-
38	G	-
39	O	-
40	Y	-
41	L	-
42	O	-
43	BR	-
44	V	-
45	P	-
46	W	-
47	R	-
48	G	-
49	SHIELD	-

Connector No.	D33
Connector Name	DOOR MIRROR (PASSENGER SIDE)
Connector Type	TH24MW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
2	Y	-
3	W	-
4	LG	-
5	G	-
6	R	-
7	LG	-
8	O	-
9	L	-
10	G	-
11	GR	-
12	O	-
14	O	-
16	G	-
17	O	-
18	SHIELD	-
19	B	-

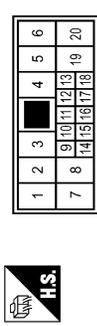
21	P	-
22	BR	-
23	W	-
24	V	-

Connector No.	D34
Connector Name	FRONT DOOR SPEAKER RH
Connector Type	NS02FBR-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	P	-

Connector No.	D51
Connector Name	WIRE TO WIRE
Connector Type	NH10MW-CS10



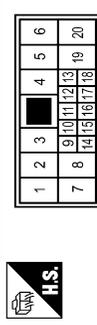
Terminal No.	Color Of Wire	Signal Name [Specification]
2	V	-
3	L	-
4	R	-
5	SB	-
6	B	-
8	G	-
12	L	-
13	Y	-
17	O	-
18	BR	-
19	V	-
20	W	-

Connector No.	D56
Connector Name	REAR DOOR SPEAKER LH
Connector Type	NS02FBR-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	V	-

Connector No.	D71
Connector Name	WIRE TO WIRE
Connector Type	NH10MW-CS10



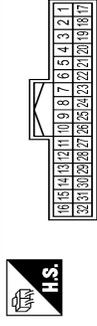
Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	P	-
4	R	-
5	SB	-
6	B	-
8	G	-
12	L	-
13	Y	-
17	O	-
18	BR	-
19	V	-
20	W	-

Connector No.	D76
Connector Name	REAR DOOR SPEAKER RH
Connector Type	NS02FBR-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	V	-

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Type	TH32FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	L	-
3	Y	-
4	SHIELD	-
5	R	-
6	G	-
7	Y	-
8	L	-
9	W	-
10	SHIELD	-
11	G	-
12	L	-
13	W	-
14	LG	-
15	BG	-
16	G	-
17	W	-
18	LG	-

# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]

## BOSE AUDIO WITH NAVIGATION

19	BR	-
20	R	-
21	V	-
22	LG	-
23	P	-
24	BG	-
25	BG	-
26	GR	-
27	L	-
32	BG	-

Connector No.	D111
Connector Name	REAR CAMERA
Connector Type	TH38MW-1N1



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	REAR CAMERA IMAGE GND
4	W	REAR CAMERA COMM
5	Y	REAR CAMERA IMAGE SIGNAL
7	G	REAR CAMERA GND
8	R	REAR CAMERA POWER SUPPLY

Connector No.	E65
Connector Name	WIRE TO WIRE
Connector Type	RS08FB-FR



Terminal No.	Color Of Wire	Signal Name [Specification]
3	BR	-
5	R	-
6	P	-

Connector No.	E66
Connector Name	WIRE TO WIRE
Connector Type	RS08FB-FR



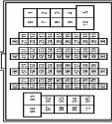
Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	-
2	V	-
3	Y	-
4	R	-
5	BW	-
6	BR	-
7	W	-
8	SHIELD	-

Connector No.	E104
Connector Name	WIRE TO WIRE
Connector Type	NS12MW-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	BR	-
3	L	-
4	Y	-
5	R	-
6	P	-
7	R	-
8	SHIELD	-
9	LG	-
10	BR	-
11	BG	-
12	GR	-

Connector No.	E106
Connector Name	WIRE TO WIRE
Connector Type	TH80FM-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	BG	-
3	SB	-
4	LG	-
5	Y	-
6	W	-
7	G	-
8	V	-
9	R	-
10	BR	-
11	B	-
12	G	-
13	R	-
14	W	-
15	SHIELD	-
16	SB	-
17	L	-
18	P	-
19	G	-
20	W	- [With ICC]
20	Y	- [Without ICC]
21	BR	- [With ICC]
22	R	- [Without ICC]
23	G	- [With ICC]
24	L	- [Without ICC]
24	P	- [Without ICC]
25	L	- [Without ICC]
25	Y	- [With ICC]
26	SHIELD	-
28	LG	-
29	GR	-
30	BG	-
32	W	-
33	Y	-
34	BG	-

37	Y	-
38	GR	-
39	LG	-
41	LG	-
42	V	-
43	R	-
44	G	-
45	GR	-
46	W	-
47	L	-
48	P	-
49	SB	-
50	BR	-
51	B	-
52	Y	-
53	BG	-
54	R	-
55	SB	-
59	P	-
60	SB	-
61	V	-
62	P	-
63	LG	-
64	L	-
65	BG	-
69	L	-
70	SHIELD	-
71	G	-
72	G	-
73	R	-
74	BR	-
76	L	-
77	W	-
78	Y	-
80	SB	-
81	L	-
82	W	-
83	LG	-
84	GR	-
85	G	-
86	P	-
87	W	-
88	BG	-
89	LG	-
90	BR	-
91	GR	-
92	BR	-
93	SB	-
95	Y	-
96	W	-

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# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]

## BOSE AUDIO WITH NAVIGATION

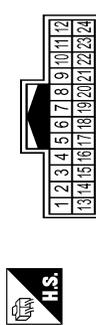
97	W	-
98	SHIELD	-
100	Y	-

Connector No.	E107
Connector Name	PARKING BRAKE SWITCH
Connector Type	TB01FW



Terminal No.	1	LG
Color Of Wire	-	-
Signal Name [Specification]	-	-

Connector No.	E123
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH



Terminal No.	1	SB	-
Color Of Wire	2	G	-
Signal Name [Specification]	3	B	-
4	W	-	-
5	R	-	-
6	SHIELD	-	-
7	Y	-	-
8	GR	-	-
9	LG	-	-
10	BR	-	-
11	W	-	-
13	BG	-	-
14	R	-	-
15	W	-	-

16	G	-
17	B	-
18	SHIELD	-
19	V	-
20	BG	-
21	BR	-
22	R	-
23	SHIELD	-

Connector No.	E151
Connector Name	WIRE TO WIRE
Connector Type	RS08MB-PR



Terminal No.	1	L	-
Color Of Wire	2	SHIELD	-
Signal Name [Specification]	3	L	-
4	R	-	-
5	GR	-	-
6	G	-	-
7	W	-	-

Connector No.	E152
Connector Name	CORNER SENSOR (FR)
Connector Type	YDX02FB



Terminal No.	1	R	-
Color Of Wire	2	B	-
Signal Name [Specification]	-	-	-

Connector No.	E153
Connector Name	WIRE TO WIRE
Connector Type	RS08MB



Terminal No.	3	B	-
Color Of Wire	5	R	-
Signal Name [Specification]	6	W	-

Connector No.	E154
Connector Name	CORNER SENSOR (FL)
Connector Type	YDX02FB



Terminal No.	1	W	-
Color Of Wire	2	B	-
Signal Name [Specification]	-	-	-

Connector No.	E155
Connector Name	FRONT CAMERA
Connector Type	RH06FB



Terminal No.	1	R	-
Color Of Wire	2	G	-
Signal Name [Specification]	3	L	-
4	SHIELD	-	-
6	W	-	-

Connector No.	F51
Connector Name	A/T ASSEMBLY
Connector Type	IRK10FG-5GY



Terminal No.	1	Y	-
Color Of Wire	2	R	-
Signal Name [Specification]	3	L	-
4	V	-	-
5	B	-	-
6	Y	-	-
7	R	-	-
8	P	-	-
9	GR	-	-
10	B	-	-

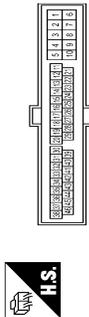
# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]

## BOSE AUDIO WITH NAVIGATION

Connector No.	F103
Connector Name	WIRE TO WIRE
Connector Type	TK38FM-NS10



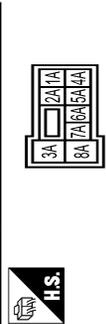
Terminal No.	Color Of Wire	Signal Name [Specification]
2	G	-
3	W	-
4	GR	- [With VK engine]
5	B	- [With VG engine]
6	R	- [With VK engine]
7	B	-
8	W	- [With VK engine]
9	Y	- [With VG engine]
10	GR	- [With VK engine]
19	O	-
20	Y	-
27	L	-
28	B	-
29	LG	-
31	R	-
34	LG	-
35	BR	-
36	W	-
37	Y	-
38	Y	-
43	P	-
44	L	-
45	Y	-
46	V	-

Connector No.	F151
Connector Name	TCM
Connector Type	SP10FG



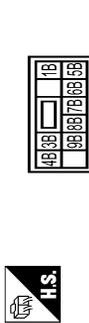
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	IGNITION POWER SUPPLY
2	B	BATTERY POWER SUPPLY (NECOST BACKUP)
3	R	CANLH
4	O	K-LINE
5	G	GROUND
6	GR	IGNITION POWER SUPPLY
7	L	BACK-UP LAMP RELAY
8	BR	CANL
9	Y	STARTER RELAY
10	WB	GROUND

Connector No.	M1
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS08FM-M2



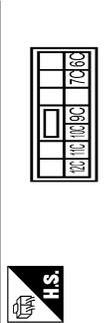
Terminal No.	Color Of Wire	Signal Name [Specification]
1A	BG	-
2A	G	-
3A	L	-
4A	R	-
5A	V	-
6A	Y	-
7A	R	-
8A	L	-

Connector No.	M2
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FM-CS



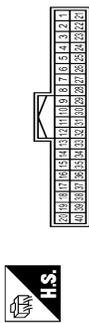
Terminal No.	Color Of Wire	Signal Name [Specification]
1B	LG	-
3B	P	-
4B	G	-
5B	BG	-
6B	Y	-
7B	L	-
8B	R	-
9B	BR	-

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS12FM-CS



Terminal No.	Color Of Wire	Signal Name [Specification]
10C	L	-
11C	LG	-
12C	R	-
7C	B	-
9C	BG	-

Connector No.	M4
Connector Name	WIRE TO WIRE
Connector Type	TH40FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
5	B	-
6	W	-
7	R	-
8	SHIELD	-
9	LG	-
10	SB	-
11	LG	-
12	SB	-
13	R	-
14	SB	-
21	Y	-
22	R	-
23	V	-
25	R	-
26	G	-
27	SHIELD	-
28	B	-
29	W	-
31	R	-
32	G	-
33	SHIELD	-
34	B	-
35	W	-
37	LG	-
38	G	-

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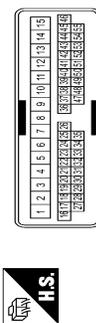
# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]

## BOSE AUDIO WITH NAVIGATION

Connector No.	M5
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	SB	-
3	R	-
4	W	-
5	G	-
6	L	-
7	LG	-
8	Y	-
9	P	-
10	BG	-
11	G	-
12	V	-
13	Y	-
14	P	-
15	L	-
16	BG	-
17	LG	-
18	Y	-
19	P	-
20	BG	-
21	LG	-
22	V	-
23	Y	-
24	P	-
25	SB	-
26	SB	-
27	V	-
28	LG	-
29	R	-
30	P	-
31	BG	-
32	SB	-
33	L	-
34	R	-
35	B	-
36	R	-
37	G	-
38	SHIELD	-
39	W	-
40	B	-
41	SHIELD	-
42	G	-
43	R	-
44	G	-

45	Y	-
46	GR	-
47	W	-
48	L	-
49	R	-
50	BG	-
51	SB	-
52	R	-
53	Y	-
54	LG	-
55	L	-

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	BG	-
3	LG	-
4	SB	-
5	LG	-
6	W	-
7	G	-
8	W	-
9	P	-
10	BR	-
11	B	-
12	G	-
13	R	-
14	W	-
15	SHIELD	-
16	BR	-
17	L	-
18	P	-
19	G	-
20	GR	-
21	BR	-

21	R	-
22	L	-
23	G	-
24	L	-
25	P	-
26	SHIELD	-
27	GR	-
28	V	-
29	V	-
30	BG	-
31	W	-
32	Y	-
33	L	-
34	G	-
35	R	-
36	G	-
37	G	-
38	R	-
39	G	-
40	L	-
41	W	-
42	W	-
43	R	-
44	LG	-
45	GR	-
46	W	-
47	L	-
48	P	-
49	BG	-
50	LG	-
51	SB	-
52	Y	-
53	BG	-
54	BR	-
55	SB	-
56	SB	-
57	SB	-
58	SB	-
59	SB	-
60	SB	-
61	V	-
62	P	-
63	R	-
64	L	-
65	BG	-
66	V	-
67	V	-
68	BG	-
69	V	-
70	SHIELD	-
71	BG	-
72	GR	-
73	W	-
74	SB	-
75	V	-
76	V	-
77	V	-
78	W	-
79	L	-
80	BG	-

81	L	-
82	W	-
83	Y	-
84	L	-
85	P	-
86	BR	-
87	P	-
88	V	-
89	G	-
90	P	-
91	R	-
92	R	-
93	GR	-
94	G	-
95	W	-
96	W	-
97	W	-
98	SHIELD	-
99	Y	-
100	Y	-

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
1	Y	-
2	B	-
3	W	-
6	P	-
7	V	-
8	BG	-
10	W	-
11	BG	-
12	B	-
13	G	-
14	R	-
15	W	-
16	SHIELD	-
17	L	-
18	P	-

# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]

BOSE AUDIO WITH NAVIGATION

19	G	-	-	-	-
20	R	-	-	-	-
21	LG	-	-	-	-
23	V	-	-	-	-
24	P	-	-	-	-
25	BR	-	-	-	-
26	GR	-	-	-	-
27	BG	-	-	-	-
28	W	-	-	-	-
38	B	-	-	-	-
39	B	-	-	-	-
43	SB	-	-	-	-
44	W	-	-	-	-
45	B	-	-	-	-
51	V	-	-	-	-
52	LG	-	-	-	-
53	SHIELD	-	-	-	-
54	BR	-	-	-	-
55	Y	-	-	-	-
56	SHIELD	-	-	-	-
57	P	-	-	-	-
58	L	-	-	-	-
59	SHIELD	-	-	-	-
60	L	-	-	-	-
61	BR	-	-	-	-
62	R	-	-	-	-
63	Y	-	-	-	-
64	L	-	-	-	-
65	W	-	-	-	-
66	V	-	-	-	-
67	LG	-	-	-	-
68	Y	-	-	-	-
69	G	-	-	-	-
70	V	-	-	-	-
71	W	-	-	-	-
72	B	-	-	-	-
73	W	-	-	-	-
74	LG	-	-	-	-
75	P	-	-	-	-
76	LG	-	-	-	-
77	SB	-	-	-	-
78	GR	-	-	-	-
79	R	-	-	-	-
80	L	-	-	-	-
81	P	-	-	-	-
82	L	-	-	-	-
83	B	-	-	-	-
84	SB	-	-	-	-
85	W	-	-	-	-
86	Y	-	-	-	-

87	B	-	-	-	-
88	G	-	-	-	-
89	BG	-	-	-	-
91	R	-	-	-	-
92	BG	-	-	-	-
93	BR	-	-	-	-
94	V	-	-	-	-
96	BG	-	-	-	-
97	W	-	-	-	-
98	R	-	-	-	-
99	BG	-	-	-	-

Connector No.	M10
Connector Name	WIRE TO WIRE
Connector Type	TR24FM-NH

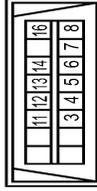


Connector No.	M13
Connector Name	FRONT SQUAWKER LH
Connector Type	TK02FBR



Terminal No.	1	2
Color	L	W
Wire	-	-
Signal Name	[Specification]	[Specification]

Connector No.	M24
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW



Terminal No.	3	4	5	6	7	8	11	12	13	14	16
Color	LG	B	L	GR	G	SB	L	P	L	P	BG
Wire	-	-	-	-	-	-	-	-	-	-	-
Signal Name	[Specification]										

Connector No.	M25
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS



Terminal No.	2	3	4	6	9	11	13	14	15	16
Color	LG	SB	LG	SB	G	V	Y	LG	P	L
Wire	-	-	-	-	-	-	-	-	-	-
Signal Name	[Specification]									

Connector No.	M36
Connector Name	COMBINATION SWITCH (SPEAK CABLE)
Connector Type	TK08FGY-1V



Terminal No.	24	25	26	31	32	33	34
Color	P	SB	B	L	L	L	V
Wire	-	-	-	-	-	-	-
Signal Name	[Specification]						

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# BOSE AUDIO WITH NAVIGATION

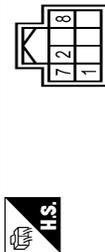
< WIRING DIAGRAM >

[NAVIGATION]

## BOSE AUDIO WITH NAVIGATION

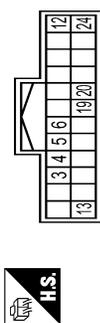
33	B	-
34	G	-

Connector No.	M37
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH08FM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	CANLH
2	P	CANLH
7	B	GROUND
8	GR	IGN

Connector No.	M47
Connector Name	SOMAR CONTROL UNIT
Connector Type	TH24FMV-NH



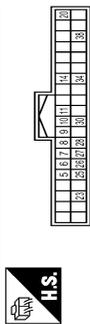
Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	CORNER SENSOR FRONT LH
4	R	CORNER SENSOR FRONT RH
5	W	CORNER SENSOR REAR LH
6	R	CORNER SENSOR REAR RH
12	B	SENSOR GND
13	R	IGN
19	L	CANLH
20	P	CANLH
24	B	GROUND

Connector No.	M63
Connector Name	CENTER SPEAKER
Connector Type	TK02FBR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	G	-

Connector No.	M66
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH06FM-NH



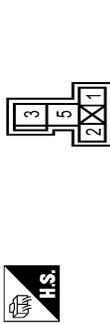
Terminal No.	Color Of Wire	Signal Name [Specification]
5	L	MANUAL MODE SHIFT UP SIGNAL
6	BG	PADDLE SHIFTER UP SIGNAL
7	GR	COMMUNICATION SIGNAL (AMP->METER)
8	L	VEHICLE SPEED SIGNAL (2-PULSE)
9	SB	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
10	W	MANUAL MODE SIGNAL
11	G	NON-MANUAL MODE SIGNAL
14	BR	COMMUNICATION SIGNAL (LGD->AMP.)
20	L	ION SENSOR SIGNAL
23	Y	AT SNOW SWITCH SIGNAL
25	V	MANUAL MODE SHIFT DOWN SIGNAL
26	G	PADDLE SHIFTER DOWN SIGNAL
27	LG	COMMUNICATION SIGNAL (METER->AMP.)
28	R	VEHICLE SPEED SIGNAL (8-PULSE)
30	V	PARKING BRAKE SWITCH SIGNAL
34	Y	COMMUNICATION SIGNAL (AMP->LCD)
38	L	BLOWER MOTOR CONTROL SIGNAL

Connector No.	M67
Connector Name	UNIFIED METER AND A/C AMP.
Connector Type	TH32FMV-NH



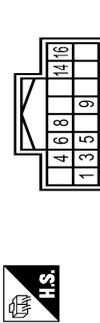
Terminal No.	Color Of Wire	Signal Name [Specification]
41	V	ACC POWER SUPPLY
42	Y	FUEL LEVEL SENSOR SIGNAL
43	R	INTAKE SENSOR SIGNAL
44	LG	IN-VEHICLE SENSOR SIGNAL
45	P	AMBIENT SENSOR SIGNAL
46	BG	SUNLOAD SENSOR SIGNAL
47	V	ONS SENSOR SIGNAL
53	G	IGNITION POWER SUPPLY
54	BG	BATTERY POWER SUPPLY
55	B	GROUND
56	L	CANLH
57	W	BRAKE FLUID LEVEL SWITCH SIGNAL
58	B	FUEL LEVEL SENSOR GROUND
59	GR	INTAKE SENSOR GROUND
60	L	IN-VEHICLE SENSOR GROUND
61	BR	AMBIENT SENSOR GROUND
62	SB	SUNLOAD SENSOR GROUND
63	R	ION MODE SIGNAL
65	BG	ECV SIGNAL
69	L	AC LAN SIGNAL
70	R	EACH DOOR MOTOR POWER SUPPLY
71	B	GROUND
72	P	CANL

Connector No.	M69
Connector Name	BACK-UP LAMP RELAY
Connector Type	MS02FL-M2-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	W	-
3	R	-
5	BG	-

Connector No.	M72
Connector Name	MULTIFUNCTION SWITCH
Connector Type	TH16FMV-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
3	V	ACC
4	R	ILL
5	R	ILL CONT
6	SB	AV COMM (H)
8	LG	AV COMM (L)
9	BR	SW GND
14	SB	DISK EJECT SIGNAL
16	G	HAZARD ON

# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]

## BOSE AUDIO WITH NAVIGATION

Connector No.	M110
Connector Name	WIPE TO WIRE
Connector Type	TH16/MW-AH



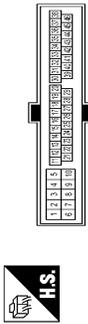
Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	P	-
4	B	-
5	W	-
6	GR	-
7	SB	-
8	LG	-
9	SHIELD	-
10	R	-
11	G	-
15	R	-
16	V	-

Connector No.	M114
Connector Name	FRONT SQUAWKER RH
Connector Type	TK02FBR



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	LG	-

Connector No.	M116
Connector Name	WIPE TO WIRE
Connector Type	TK36/MW-NS10



Terminal No.	Color Of Wire	Signal Name [Specification]
2	W	-
3	L	-
4	B	-
5	B	-
6	R	-
7	R	-
8	B	-
9	L	-
10	R	-
19	BG	-
20	Y	-
27	L	-
28	B	-
29	LG	-
31	W	-
34	LG	-
35	BR	-
36	W	-
37	Y	-
38	BG	-
43	P	-
44	L	-
45	G	-
46	Y	-

Connector No.	M117
Connector Name	WIPE TO WIRE
Connector Type	TH80/MW-CS16-TM4



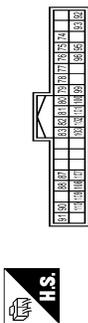
Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR	-
2	BR	-
3	V	-
4	SB	-
6	Y	-
7	B	-
8	W	-
10	W	-
11	SHIELD	-
20	R	-
21	G	-
22	GR	-
23	V	-
24	W	-
25	R	-
26	P	-
27	L	-
28	SHIELD	-
31	W	-
32	W	-
33	SB	-
36	L	-
37	P	-
38	L	-
39	P	-
40	V	-
41	SB	-
41	Y	-
42	V	-
42	W	-
43	B	-
43	P	-
44	R	-
44	G	-
45	L	-
46	BG	-

Terminal No.	Color Of Wire	Signal Name [Specification]
46	SHIELD	-
47	B	-
47	L	-
48	P	-
48	R	-
49	G	-
49	W	-
50	SHIELD	-
51	BG	-
52	GR	-
53	G	-
54	L	-
55	P	-
60	LG	-
61	R	-
62	SB	-
62	V	-
64	Y	-
66	BR	-
66	BG	-
67	W	-
69	G	-
71	SB	-
72	V	-
73	V	-
74	LG	-
75	BR	-
76	V	-
77	LG	-
80	R	-
82	Y	-
83	BG	-
84	W	-
85	SB	-
86	B	-
87	P	-
91	L	-
92	L	-
93	G	-
94	BG	-
95	V	-
96	G	-
97	G	-
98	L	-
99	LG	-

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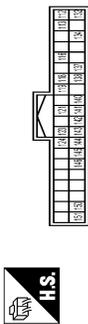
### BOSE AUDIO WITH NAVIGATION

Connector No.	M122
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH



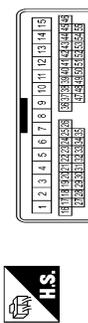
Terminal No.	Color Of Wire	Signal Name [Specification]
74	SB	PASSENGER DOOR ANT-
75	BR	PASSENGER DOOR ANT+
76	V	DRIVER DOOR ANT-
77	LG	DRIVER DOOR ANT+
78	Y	ROOM ANTI-
79	BR	ROOM ANTI+
80	GR	WATS ANT AMP.
81	W	WATS ANT AMP.
82	P	IGN RELAY (P/B) CONT
83	GR	KEYLESS ENTRY RECEIVER SIGNAL
87	BR	COMBI SW INPUT 5
88	V	COMBI SW INPUT 3
90	P	CANL
91	L	CANH
92	LG	KEY SLOT ILL
93	V	ON IND
95	BG	ACC RELAY CONT
96	GR	ANT SELECTOR POWER SUPPLY
99	R	SHIFT P
100	G	PASSENGER DOOR REQUEST SW
101	SB	DRIVER DOOR REQUEST SW
102	BG	BLOWER FAN MOTOR RELAY CONT
103	BR	KEYLESS ENTRY RECEIVER POWER SUPPLY
107	LG	COMBI SW INPUT 1
108	R	COMBI SW INPUT 4
109	Y	COMBI SW INPUT 2
110	G	HAZARD SW

Connector No.	M123
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
112	GR	RAIN SENSOR SERIAL LINK
113	P	OPTICAL SENSOR
116	BR	STOP LAMP SW 1
118	P	STOP LAMP SW 2
119	SB	DR DOOR UNLOCK SENSOR
121	BR	KEY SLOT SW
123	W	IGN P/B
124	LG	PASSENGER DOOR SW
132	BG	POWER WINDOW SW COM1
134	GR	LOCK IND
137	B	RECEIVER SENSOR GND
138	Y	SENSOR POWER SUPPLY
140	R	SHIFT N/P
141	G	SECURITY INDICATOR OUTPUT
142	BG	COMBI SW OUTPUT 5
143	P	COMBI SW OUTPUT 1
144	G	COMBI SW OUTPUT 2
145	L	COMBI SW OUTPUT 3
146	SB	COMBI SW OUTPUT 4
150	GR	DRIVER DOOR SW
151	G	REAR WINDOW DEFROGGER RELAY CONT

Connector No.	M124
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15



Terminal No.	Color Of Wire	Signal Name [Specification]
3	Y	-
4	LG	-
5	SB	-
6	BR	-
7	G	-
8	V	-
9	LG	-
13	B	-
14	BG	-
15	W	-
19	G	-
20	LG	-
22	W	-
23	B	-
24	SHIELD	-
25	G	-
26	R	-
31	BG	-
32	Y	-
33	LG	-
34	SB	-
35	V	-
36	BG	-
37	GR	-
38	G	- [Without automatic drive positioner]
38	R	- [With automatic drive positioner]
39	B	-
40	R	-
41	P	-
42	LG	-
43	L	-
44	Y	-
45	R	-
46	W	-
47	V	-
48	BR	-

Connector No.	M144
Connector Name	WIRE TO WIRE
Connector Type	TH12KM-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	Y	-
3	R	-
6	W	-
8	R	-
9	Y	-
11	SHIELD	-
12	B	- [Without around view monitor]
12	W	- [With around view monitor]

Connector No.	M151
Connector Name	WIRE TO WIRE
Connector Type	M03FW-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	Y	-
3	R	-

# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]

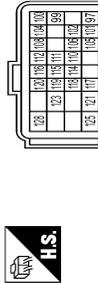
## BOSE AUDIO WITH NAVIGATION

Connector No.	M152
Connector Name	WIRES TO WIRE
Connector Type	M03MW-LC



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	Y	-
3	R	-

Connector No.	M160
Connector Name	ECM
Connector Type	RH24FGY-R28-R-LH-Z



Terminal No.	Color Of Wire	Signal Name [Specification]
97	R	ENGINE SPEED SIGNAL OUTPUT
99	G	SENSOR POWER SUPPLY
100	L	SENSOR POWER SUPPLY
101	P	CAN COMMUNICATION LINE
102	SB	ASC/DI/C C STEERING SWITCH
104	R	ACCELERATOR PEDAL POSITION SENSOR 1
105	L	CAN COMMUNICATION LINE
106	L	IGNITION SWITCH
108	P	ACCELERATOR PEDAL POSITION SENSOR 2
110	P	STOP LAMP SWITCH
111	V	SENSOR GROUND
112	LG	FUEL PUMP CONTROL MODULE PERFORM CHECK
114	GR	DATA LINK CONNECTOR
115	G	SENSOR GROUND
116	BR	TRANSMISSION RANGE SWITCH
117	BR	ASC/DI/C C BRAKE SWITCH
118	R	POWER SUPPLY FOR ECM (BACK-UP)

119	W	SENSOR GROUND
120	W	FUEL TANK TEMPERATURE SENSOR
121	GR	POWER SUPPLY FOR ECM
123	B	ECM GROUND
125	R	FUEL PUMP CONTROL MODULE (FFCM)
128	B	ECM GROUND

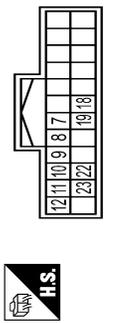
Connector No.	M164
Connector Name	ECM
Connector Type	RH24FGY-R28-R-LH-Z



Terminal No.	Color Of Wire	Signal Name [Specification]
97	R	ACCELERATOR PEDAL POSITION SENSOR 1
98	P	ACCELERATOR PEDAL POSITION SENSOR 2 (With NAVI)
99	Y	ACCELERATOR PEDAL POSITION SENSOR 2 (With NAVI)
99	G	SENSOR POWER SUPPLY (With NAVI)
99	L	SENSOR POWER SUPPLY (Without NAVI)
100	W	SENSOR GROUND
101	SB	ASC/DI/C C STEERING SWITCH
102	LG	EVAP CONTROL SYSTEM PRESSURE SENSOR
103	G	SENSOR POWER SUPPLY (Without NAVI)
104	BR	SENSOR POWER SUPPLY (With NAVI)
104	GR	SENSOR GROUND (Without NAVI)
105	L	REFRIGERANT PRESSURE SENSOR
106	W	FUEL TANK TEMPERATURE SENSOR
107	BG	SENSOR POWER SUPPLY
108	V	SENSOR GROUND
109	G	PNP SIGNAL
110	R	ENGINE SPEED OUTPUT SIGNAL
112	V	SENSOR GROUND (FOR CONTROL SYSTEM PRESSURE SENSOR)
113	P	CAN COMMUNICATION LINE
114	L	CAN COMMUNICATION LINE
117	GR	DATA LINK CONNECTOR
121	LG	EVAP CANISTER VENT CONTROL VALVE
122	P	STOP LAMP SWITCH
123	B	ECM GROUND
124	B	ECM GROUND
125	GR	POWER SUPPLY FOR ECM

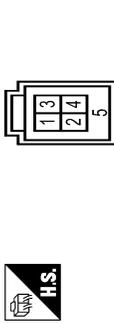
126	BR	ASC/DI/C C BRAKE SWITCH
127	B	ECM GROUND
128	B	ECM GROUND

Connector No.	M185
Connector Name	FRONT DISPLAY UNIT
Connector Type	TH24FW-AH



Terminal No.	Color Of Wire	Signal Name [Specification]
7	SHIELD	SHIELD
8	W	CAMERA IMAGE SIGNAL
9	G	COMM (DISP->CONT)
10	R	COMM (CONT->DISP)
11	P	BATTERY
12	B	GROUND
18	R	COMPOSITE IMAGE SIGNAL
19	B	COMPOSITE IMAGE SIGNAL GND
22	B	SHIELD
23	BG	ACC

Connector No.	M187
Connector Name	USB CONNECTOR
Connector Type	HA04HF-G



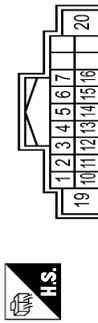
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	L	-
3	G	-
4	R	-
5	SHIELD	-

Connector No.	M188
Connector Name	OPTION CONNECTOR (AUXILIARY INPUT JACK)
Connector Type	TH04MW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	W	-

Connector No.	M208
Connector Name	AV CONTROL UNIT
Connector Type	TH18FW-CS2



Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	AMP. ON SIGNAL
2	P	SOUND SIGNAL FRONT LH (+)
3	L	SOUND SIGNAL FRONT LH (-)
4	V	SOUND SIGNAL REAR LH (+)
5	LG	SOUND SIGNAL REAR LH (-)
6	P	STRG SW A
7	BG	ACC RELAY CONT
10	B	SHIELD
11	R	SOUND SIGNAL FRONT RH (+)
12	G	SOUND SIGNAL FRONT RH (-)
13	BR	SOUND SIGNAL REAR RH (+)
14	Y	SOUND SIGNAL REAR RH (-)
15	B	STRG SW GND
16	L	STRG SW/B
19	Y	BATTERY
20	B	GROUND

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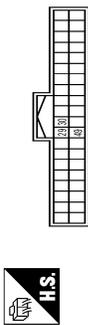
# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]

## BOSE AUDIO WITH NAVIGATION

Connector No.	M209
Connector Name	AV CONTROL UNIT
Connector Type	TH40FV-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
29	SB	DISK/EJECT SIGNAL
30	SB	MODE CHANGE SIGNAL
49	BR	SW GND

Connector No.	M210
Connector Name	AV CONTROL UNIT
Connector Type	TH2FV-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
65	V	PARKING BRAKE SIGNAL
67	B	COMPOSITE IMAGE SIGNAL GND
68	R	COMPOSITE IMAGE SIGNAL
71	SHIELD	MICROPHONE SHIELD
72	G	MICROPHONE VCC
73	R	COMM (CONT->DISP)
74	P	CANL
75	LG	AV COMM (L)
76	LG	AV COMM (L)
79	R	ILLUMINATION
80	G	IGNITION SIGNAL
81	BG	REVERSE SIGNAL
82	R	VEHICLE SPEED SIGNAL (6-PULSE)
87	R	MICROPHONE SIGNAL
88	B	SHIELD
89	G	COMM (DISP->CONT)
90	L	CANH

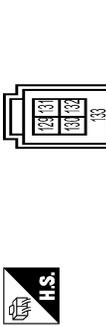
91	SB	AV COMM (H)
92	SB	AV COMM (H)

Connector No.	M211
Connector Name	AV CONTROL UNIT
Connector Type	TH28FW



Terminal No.	Color Of Wire	Signal Name [Specification]
104	W	AUX SOUND SIGNAL LH
117	SHIELD	SHIELD
118	R	AUX SOUND SIGNAL RH
119	B	AUX GND

Connector No.	M212
Connector Name	AV CONTROL UNIT
Connector Type	HA004FL



Terminal No.	Color Of Wire	Signal Name [Specification]
129	G	USB GND
130	R	USB D- SIGNAL
131	W	V BUS SIGNAL
132	L	USB D+ SIGNAL
133	SHIELD	SHIELD

Connector No.	M303
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Type	TK08FGY



Terminal No.	Color Of Wire	Signal Name [Specification]
13	R	-
14	W	-
15	L	-
16	B	-
17	BR	-
18	G	-
19	P	-
20	Y	-

Connector No.	M374
Connector Name	WIRES TO WIRE
Connector Type	GT16C-IS-HU



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-

Connector No.	M375
Connector Name	WIRES TO WIRE
Connector Type	GT13SC-Z-1S-HU



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-
3	-	-

Connector No.	M377
Connector Name	WIRES TO WIRE
Connector Type	GT16C-1PP-HU



Terminal No.	Color Of Wire	Signal Name [Specification]
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JRNWD4485GB

# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]

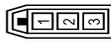
## BOSE AUDIO WITH NAVIGATION

Connector No.	M383
Connector Name	ANTENNA BASE
Connector Type	GT16C-1PP-HU



Terminal Color Of No.	Signal Name (Specification)
3	SATELLITE ANTENNA

Connector No.	M385
Connector Name	WIRE TO WIRE
Connector Type	GT10SCN2-1PP-HU



Terminal Color Of No.	Signal Name (Specification)
1	-
2	-
3	-

Connector No.	M386
Connector Name	ANTENNA BASE
Connector Type	GT13SSN-1-1PP-HU



Terminal Color Of No.	Signal Name (Specification)
1	ANTENNA AMP_ON SIGNAL
2	AM-FM MAIN

Connector No.	M387
Connector Name	WIRE TO WIRE
Connector Type	JASO JACK



Terminal Color Of No.	Signal Name (Specification)
1	-

Connector No.	M388
Connector Name	WIRE TO WIRE
Connector Type	JASO PLUG



Terminal Color Of No.	Signal Name (Specification)
1	-

Connector No.	M389
Connector Name	GLASS ANTENNA (FM SUB)
Connector Type	P01FB-A



Terminal Color Of No.	Signal Name (Specification)
1	-

Connector No.	M384
Connector Name	AV CONTROL UNIT
Connector Type	GT13SH-2-1S-HU



Terminal Color Of No.	Signal Name (Specification)
150	FM SUB
151	AM-FM MAIN
152	ANTENNA AMP_ON SIGNAL

Connector No.	M385
Connector Name	AV CONTROL UNIT
Connector Type	GT1-1S-HU



Terminal Color Of No.	Signal Name (Specification)
153	GPS ANTENNA SIGNAL
154	SHIELD

Connector No.	M386
Connector Name	AV CONTROL UNIT
Connector Type	GT17HNN-4DS-HU



Terminal Color Of No.	Signal Name (Specification)
157	RGB DIGITAL IMAGE SIGNAL (-)
158	RGB DIGITAL IMAGE SIGNAL (+)

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# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[NAVIGATION]

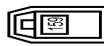
## BOSE AUDIO WITH NAVIGATION

Connector No.	M357
Connector Name	FRONT DISPLAY UNIT
Connector Type	GT17HN2-4DS-HU



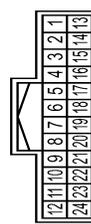
Terminal Color Of No.	Wire	Signal Name (Specification)
27	-	RGB DIGITAL IMAGE SIGNAL (-)
28	-	RGB DIGITAL IMAGE SIGNAL (+)

Connector No.	M358
Connector Name	AV CONTROL UNIT
Connector Type	FAKRA JACK



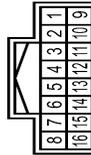
Terminal Color Of No.	159	Wire	-	Signal Name (Specification)	SATELLITE ANTENNA
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Connector No.	R2
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH



Terminal Color Of No.	Wire	Signal Name (Specification)
1	P	-
2	GR	-
8	SHIELD	-
9	R	-
10	G	-
11	B	-
12	V	-
17	Y	-
18	G	-
19	R	-
20	L	-
21	P	-
22	R	-
23	BR	-
24	B	-

Connector No.	R7
Connector Name	WIRE TO WIRE
Connector Type	TH16FM-NH



Terminal Color Of No.	Wire	Signal Name (Specification)
1	L	-
2	P	-
4	B	-
5	BR	-
6	GR	-
7	SB	-
8	Y	-
9	SHIELD	-
10	R	-
11	G	-
15	R	-
16	V	-

Connector No.	R11
Connector Name	WIRE TO WIRE
Connector Type	TH24MV-NH



Terminal Color Of No.	Wire	Signal Name (Specification)
1	LG	-
2	GR	-
8	SHIELD	-
9	S	-
10	R	-
11	B	-
12	V	-
17	Y	-
18	G	-
19	SB	-
20	P	-
21	L	-
22	R	-
23	BR	-
24	O	-

Connector No.	R17
Connector Name	MICROPHONE
Connector Type	TK04FW



Terminal Color Of No.	Wire	Signal Name (Specification)
1	R	MICROPHONE SIGNAL
2	SHIELD	MICROPHONE GND
4	L	MICROPHONE VCC

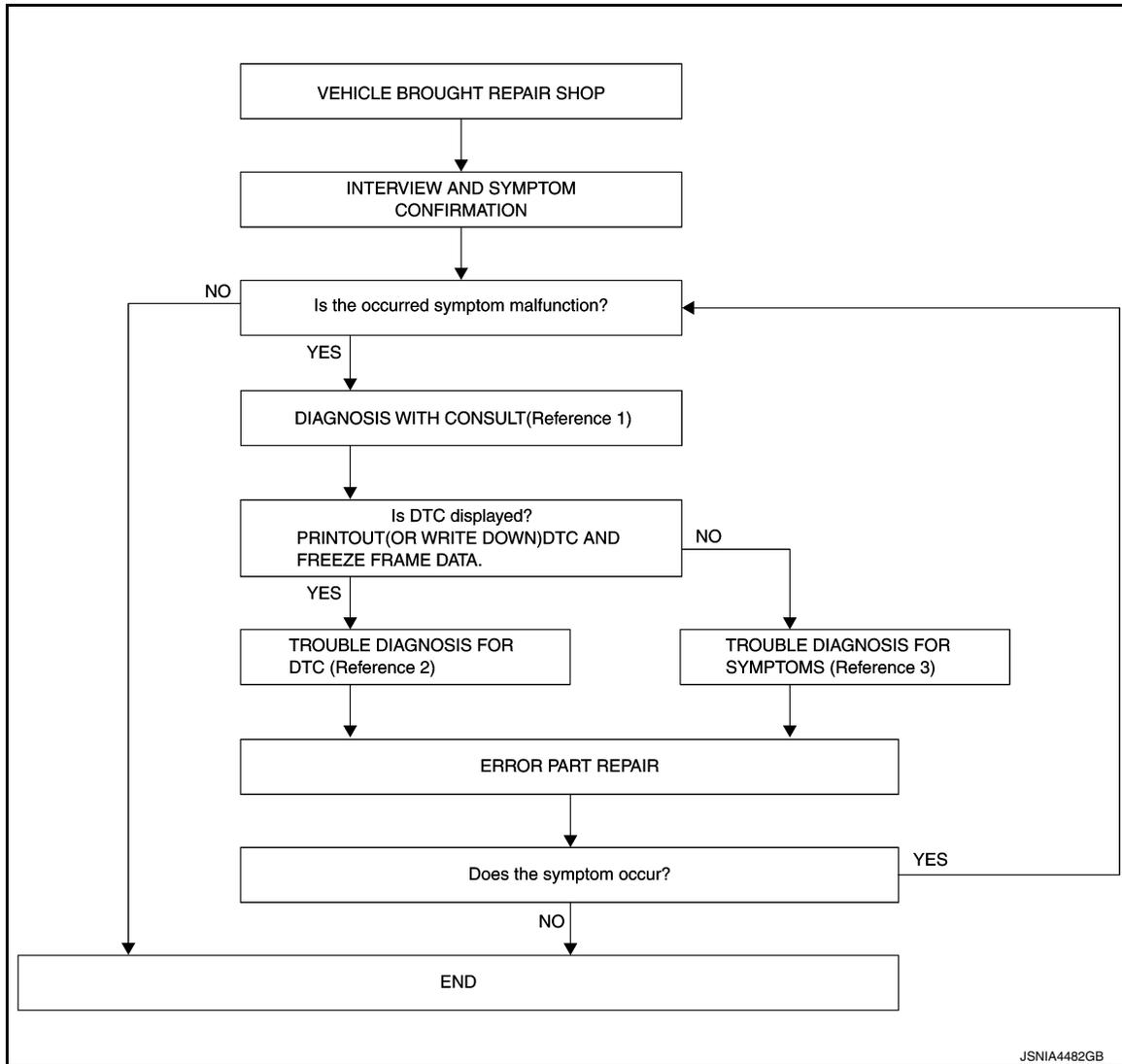
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORK FLOW

Work Flow (Multi AV)

INFOID:0000000010578556

#### OVERALL SEQUENCE



- Reference 1… Refer to [AV-180. "CONSULT Function \(MULTI AV\)".](#)
- Reference 2… Refer to [AV-195. "DTC Index".](#)
- Reference 3… Refer to [AV-337. "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

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B  
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D  
E  
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G  
H  
I  
J  
K  
L  
M

AV

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P

# DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[NAVIGATION]

1. Connect CONSULT and perform a self-diagnosis for "MULTI AV". Refer to [AV-180. "CONSULT Function \(MULTI AV\)"](#).

**NOTE:**

Skip to step 4 of the diagnosis procedure if "MULTI AV" is not displayed.

2. When DTC is detected, follow the instructions below:
  - Record DTC and Freeze Frame Data.

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-195. "DTC Index"](#).

>> GO TO 5.

## 4. TROUBLE DIAGNOSIS FOR SYMPTOMS

---

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-337. "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.

**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

# DIAGNOSIS AND REPAIR WORK FLOW

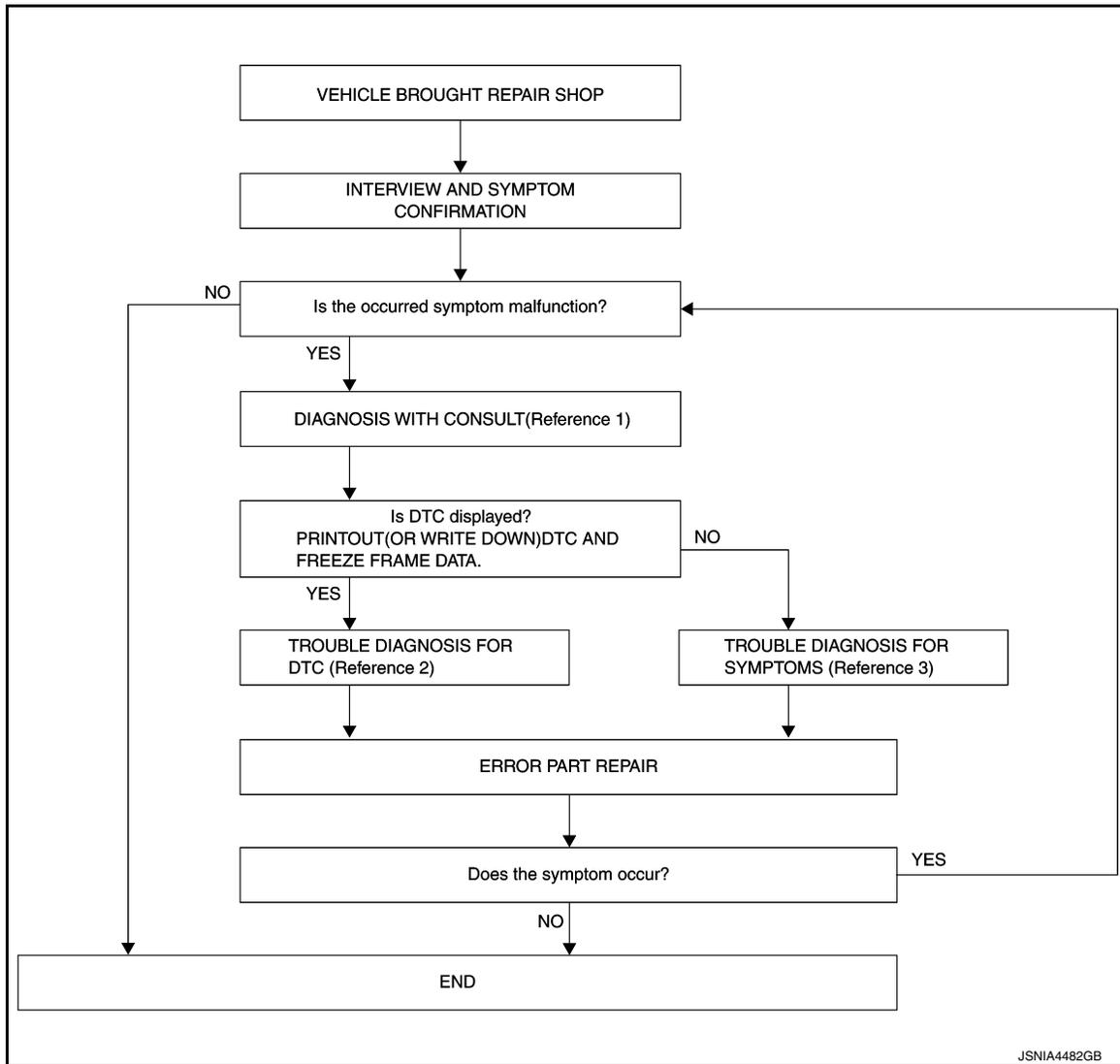
< BASIC INSPECTION >

[NAVIGATION]

## Work Flow (Around View Monitor)

INFOID:0000000110578557

### OVERALL SEQUENCE



- Reference 1… Refer to [AV-183. "CONSULT Function"](#).
- Reference 2… Refer to [AV-209. "DTC Index"](#).
- Reference 3… Refer to [AV-337. "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

1. Connect CONSULT and perform a self-diagnosis for "AVM". Refer to [AV-183. "CONSULT Function"](#).

**NOTE:**

Skip to step 4 of the diagnosis procedure if "AVM" is not displayed.

2. When DTC is detected, follow the instructions below:

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B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L

M

AV

O

P

# DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[NAVIGATION]

---

- Record DTC and Freeze Frame Data.

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-209. "DTC Index"](#).

>> GO TO 5.

## 4. TROUBLE DIAGNOSIS FOR SYMPTOMS

---

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-337. "Symptom Table"](#).

>> GO TO 5.

## 5. ERROR PART REPAIR

---

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for "AVM" with CONSULT.

**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

# DIAGNOSIS AND REPAIR WORK FLOW

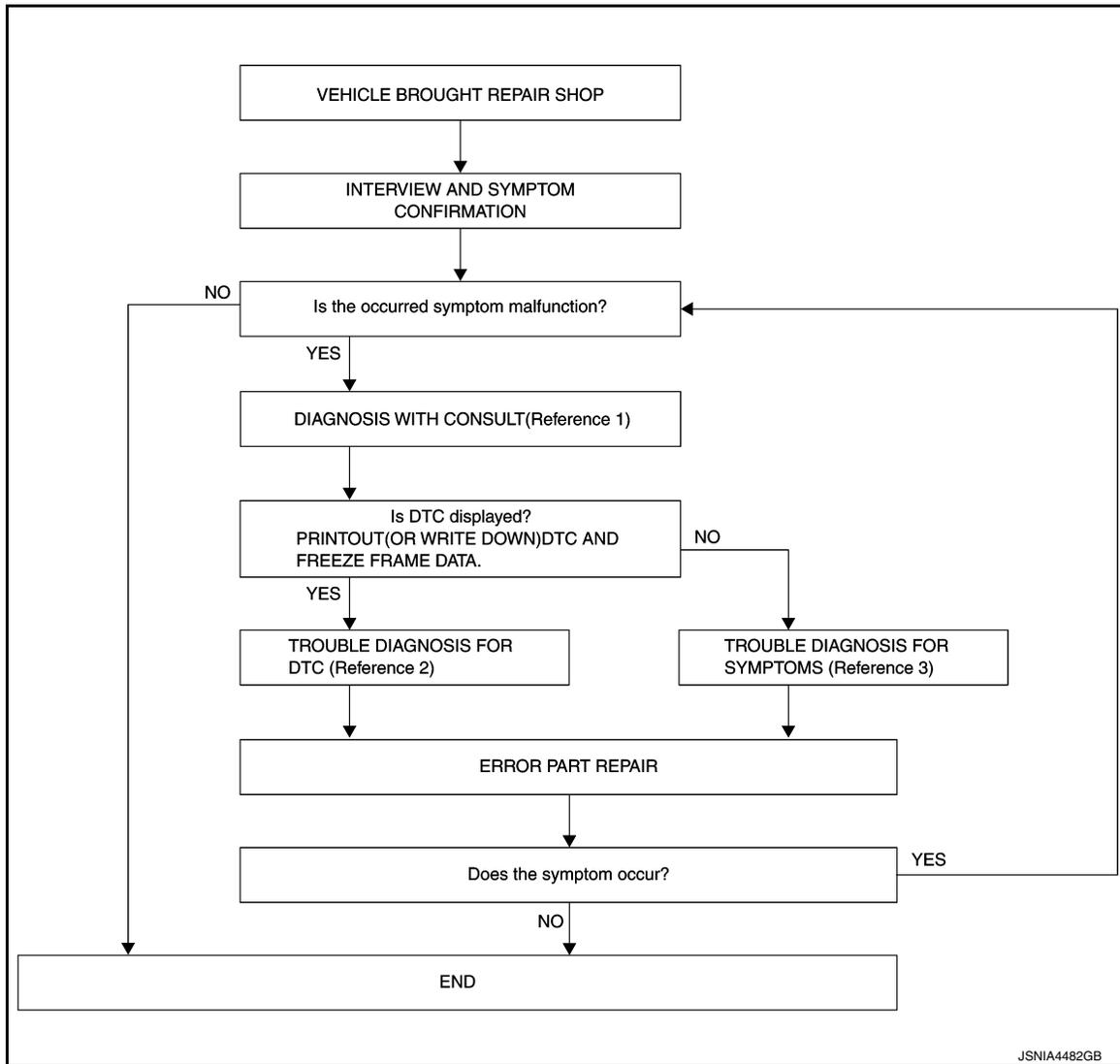
< BASIC INSPECTION >

[NAVIGATION]

## Work Flow (Camera Assistance Sonar)

INFOID:0000000110578558

### OVERALL SEQUENCE



- Reference 1… Refer to [AV-187, "CONSULT Function"](#).
- Reference 2… Refer to [AV-212, "DTC Index"](#).
- Reference 3… Refer to [AV-337, "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

1. Connect CONSULT and perform a self-diagnosis for "SONAR". Refer to [AV-187, "CONSULT Function"](#).

##### NOTE:

Skip to step 4 of the diagnosis procedure if "SONAR" is not displayed.

2. When DTC is detected, follow the instructions below:

A  
B  
C  
D  
E  
F  
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AV

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P

# DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[NAVIGATION]

---

- Record DTC and Freeze Frame Data.

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-212. "DTC Index"](#).

>> GO TO 5.

## 4. TROUBLE DIAGNOSIS FOR SYMPTOMS

---

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-337. "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.

**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 AV CONTROL UNIT

A

#### ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Description

INFOID:000000010578559

B

Perform the following operations when replacing AV control unit.

Configuration, refer to [AV-243, "CONFIGURATION \(AV CONTROL UNIT\) : Special Repair Requirement"](#).

C

### ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT

D

#### ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Description

INFOID:000000010578560

E

Perform the following operations when replacing around view monitor control unit.

1. Configuration, refer to [AV-245, "CONFIGURATION \(AROUND VIEW MONITOR CONTROL UNIT\) : Special Repair Requirement"](#).

F

2. Calibrating camera image, refer to [AV-247, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).

### ADDITIONAL SERVICE WHEN REPLACING SONAR CONTROL UNIT

G

#### ADDITIONAL SERVICE WHEN REPLACING SONAR CONTROL UNIT : Description

INFOID:000000010578561

Perform the following operations when replacing sonar control unit.

Configuration, refer to [AV-246, "CONFIGURATION \(SONAR CONTROL UNIT\) : Special Repair Requirement"](#).

H

### CONFIGURATION (AV CONTROL UNIT)

#### CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement

INFOID:000000010578562

I

## 1.SAVING VEHICLE SPECIFICATION

J

-CONSULT Configuration

Perform "Before Replace ECU", and save the current vehicle specification in CONSULT.

Is the vehicle specification saved normally?

K

YES >> GO TO 2.

NO >> GO TO 4.

## 2.REPLACE AV CONTROL UNIT

L

Replace AV control unit. Refer to [AV-350, "Removal and Installation"](#).

>> GO TO 3.

M

## 3.WRITING VEHICLE SPECIFICATION

-CONSULT Configuration

Select "Configuration" or "After Replace ECU", and write the vehicle specification saved in CONSULT to AV control unit.

O

>> GO TO 6.

## 4.REPLACE AV CONTROL UNIT

P

Replace AV control unit. Refer to [AV-350, "Removal and Installation"](#).

>> GO TO 5.

## 5.WRITE VEHICLE SPECIFICATION

CONSULT Configuration

# INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[NAVIGATION]

Select "Manual Configuration", and write the setting value as shown in the following table to AV control unit according to the vehicle specification.

**CAUTION:**

**Grasp vehicle specifications precisely. The control of ECU may not function normally if the specifications are misread.**

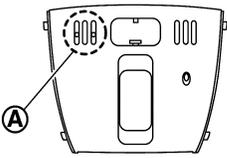
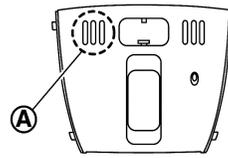
**NOTE:**

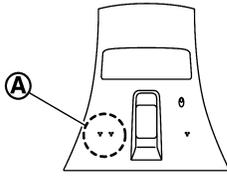
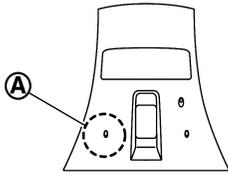
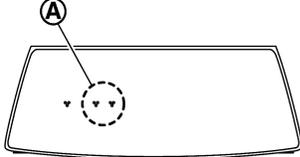
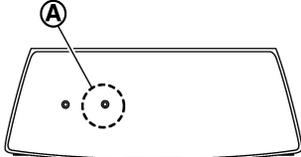
- The items shown in this list depend on vehicle specifications.
- The config list may not be displayed depending on vehicle specifications. This is not a malfunction.
- If selection items are not displayed on the CONSULT screen, touch "NEXT".

MANUAL SETTING ITEM		Detail
Items	Setting value	
STEERING	LHD	LHD models
	RHD	RHD models
CAMERA SYSTEM	NONE/AVM	Without camera system or with around view monitor system
	REAR CAMERA	With rear view monitor system
	REAR+SIDE	With rear view monitor system and front-side view monitor function
SOUND SYSTEM	BASE	Without BOSE system
	BOSE	With BOSE system
TPMS	WITHOUT	Without tire pressure monitoring system
	WITH	With tire pressure monitoring system
	WITH (EUR SPEC)	This item not used
AUXILIARY INPUT JACKS	WITH	With auxiliary input jacks
	WITHOUT	Without auxiliary input jacks
MICROPHONE	DIRECTIONAL MIC	With directional microphone*
	NON-DIRECTIONAL MIC	With non-directional microphone*

**NOTE:**

- AVM: Around view monitor
- \*: In the following table, find an illustration that the (A) part matches the vehicle and select microphone type.

Directional microphone	Non-directional microphone
 <p style="text-align: center; font-size: small;">JSNIA5541ZZ</p> <p>(A): Microphone installation position</p>	 <p style="text-align: center; font-size: small;">JSNIA5542ZZ</p> <p>(A): Microphone installation position</p>

Directional microphone	Non-directional microphone
 <p style="text-align: center;">JSNIA5543ZZ</p> <p>Ⓐ: Microphone installation position</p>	 <p style="text-align: center;">JSNIA5544ZZ</p> <p>Ⓐ: Microphone installation position</p>
 <p style="text-align: center;">JSNIA5545ZZ</p> <p>Ⓐ: Microphone installation position</p>	 <p style="text-align: center;">JSNIA5546ZZ</p> <p>Ⓐ: Microphone installation position</p>

>> GO TO 6.

## 6. PERFORM SELF-DIAGNOSIS

### Ⓜ-CONSULT Self Diagnostic Result

Perform self-diagnosis of CONSULT, and check whether or not DTC U122A is detected.

Is DTC U122A detected?

>> GO TO 5.

>> GO TO 7.

## 7. 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 (AROUND VIEW MONITOR CONTROL UNIT)

### CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Special Repair Requirement

INFOID:000000010578563

## 1. SAVING VEHICLE SPECIFICATION

### Ⓜ-CONSULT Configuration

Perform "Before Replace ECU", and save the current vehicle specification in CONSULT.

Is the vehicle specification saved normally?

YES >> GO TO 2.

NO >> GO TO 4.

## 2. REPLACE AROUND VIEW MONITOR CONTROL UNIT

Replace around view monitor control unit. Refer to [AV-367, "Removal and Installation"](#).

>> GO TO 3.

## 3. WRITING VEHICLE SPECIFICATION

### Ⓜ-CONSULT Configuration

Select "Configuration" or "After Replace ECU", and write the vehicle specification saved in CONSULT to around view monitor control unit.

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&lt; BASIC INSPECTION &gt;

&gt;&gt; GO TO 6.

**4. REPLACE AROUND VIEW MONITOR CONTROL UNIT**

Replace around view monitor control unit. Refer to [AV-367, "Removal and Installation"](#).

&gt;&gt; GO TO 5.

**5. WRITE VEHICLE SPECIFICATION****ⓅCONSULT Configuration**

Select "Manual Configuration", and write the vehicle specification to around view monitor control unit.

**NOTE:**

Around view monitor control unit does not have any setting items. Selection of items on "Manual Configuration" screen is not required.

&gt;&gt; GO TO 6.

**6. PERFORM SELF-DIAGNOSIS****ⓅCONSULT Self Diagnostic Result**

Perform self-diagnosis of CONSULT, and check whether or not DTC U1305 is detected.

**Is DTC U1305 detected?**

&gt;&gt; GO TO 5.

&gt;&gt; GO TO 7.

**7. OPERATION CHECK**

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

&gt;&gt; WORK END

**CONFIGURATION (SONAR CONTROL UNIT)****CONFIGURATION (SONAR CONTROL UNIT) : Special Repair Requirement**

INFOID:0000000010578564

**1. SAVING VEHICLE SPECIFICATION****Ⓟ-CONSULT Configuration**

Perform "Before Replace ECU", and save the current vehicle specification in CONSULT.

**Is the vehicle specification saved normally?**

YES &gt;&gt; GO TO 2.

NO &gt;&gt; GO TO 4.

**2. REPLACE SONAR CONTROL UNIT**

Replace sonar control unit. Refer to [AV-374, "Removal and Installation"](#).

&gt;&gt; GO TO 3.

**3. WRITING VEHICLE SPECIFICATION****Ⓟ-CONSULT Configuration**

Select "Configuration" or "After Replace ECU", and write the vehicle specification saved in CONSULT to sonar control unit.

&gt;&gt; GO TO 6.

**4. REPLACE SONAR CONTROL UNIT**

Replace sonar control unit. Refer to [AV-374, "Removal and Installation"](#).

&gt;&gt; GO TO 5.

## 5. WRITE VEHICLE SPECIFICATION

### CONSULT Configuration

Select "Manual Configuration", and write the vehicle specification to sonar control unit.

**NOTE:**

Sonar monitor control unit does not have any setting items. Selection of items on "Manual Configuration" screen is not required.

>> GO TO 6.

## 6. PERFORM SELF-DIAGNOSIS

### CONSULT Self Diagnostic Result

Perform self-diagnosis of CONSULT, and check whether or not DTC B2724 is detected.

Is DTC B2724 detected?

>> GO TO 5.

>> GO TO 7.

## 7. OPERATION CHECK

Check that the operation of the sonar control unit is normal.

>> WORK END

## PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT

### PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Description

INFOID:000000010578565

Adjust the center position of the predictive course line of the rear view monitor if it is shifted. Refer to [AV-247](#), "[PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Special Repair Requirement](#)".

### PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Special Repair Requirement

INFOID:000000010578566

## 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:000000010578567

- Perform camera calibration and perform writing to the around view monitor control unit, after removal/installation or replacement of each camera or camera mounting parts (front grille, door mirror, or others), or replacement of around view monitor control unit.
- By performing this camera calibration procedure, the boundary of each camera image is aligned to the white lines on the road near the vehicle. The boundary of each camera image may not be aligned to the white lines far from the vehicle. The farther the line, the greater the difference is.

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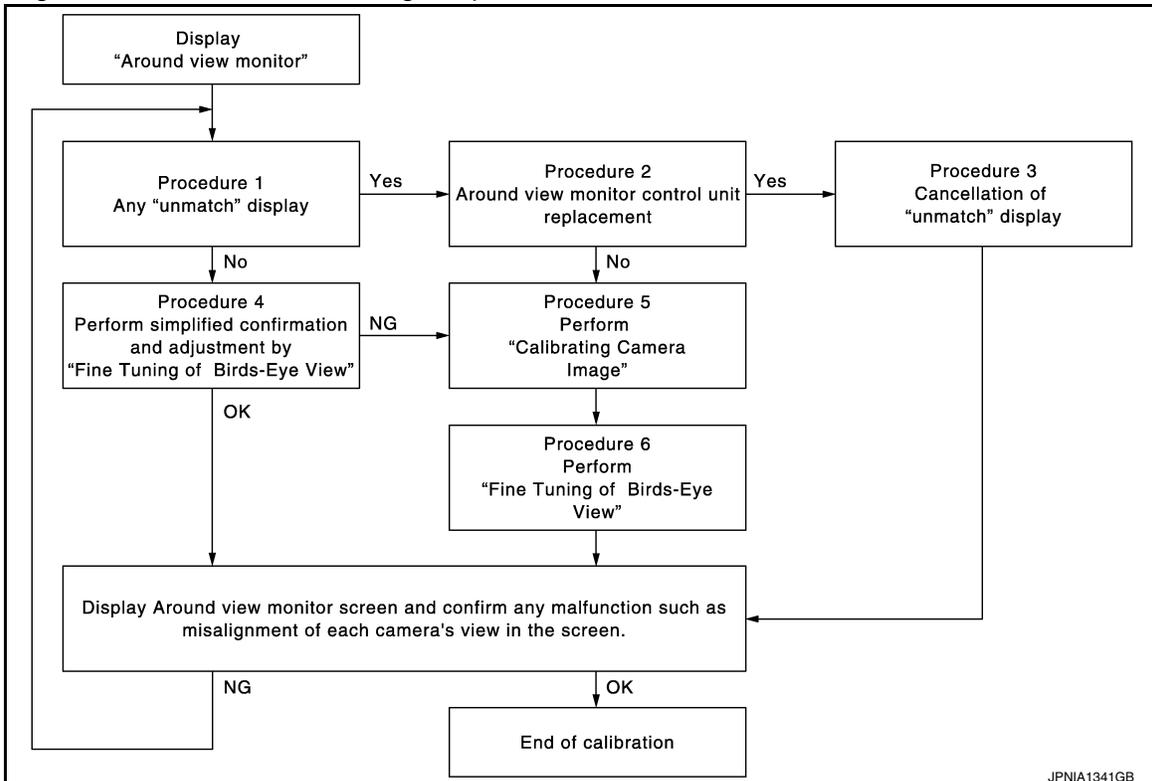
AV

# INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[NAVIGATION]

- Following the flowchart shown in the figure, perform calibration.



- For details of calibration operation, refer to [AV-248, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Special Repair Requirement"](#).

## CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement

INFOID:000000010578568

### CAUTION:

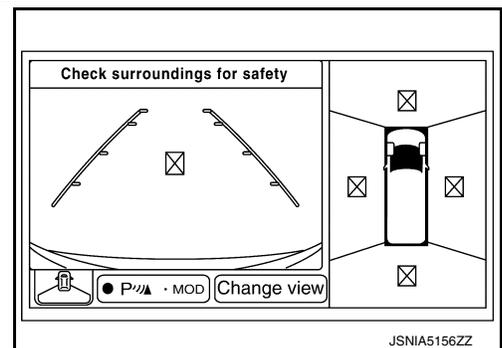
When around view monitor control unit is replaced, perform the control unit setting before performing this calibration. Refer to [AV-247, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).

### 1. CHECK AROUND VIEW MONITOR SCREEN

Check whether or not un-match display "⊠" is on screen.

Is un-match display on screen?

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



### 2. CHECK WHETHER OR NOT AROUND VIEW MONITOR CONTROL UNIT IS REPLACED

Check whether or not around view monitor control unit is replaced.

Is around view monitor control unit replaced?

- YES >> GO TO 3.  
NO >> GO TO 5.

### 3. RELEASE UN-MATCH DISPLAY (PERFORM ONLY WHEN AROUND VIEW MONITOR CONTROL UNIT IS REPLACED)

CONSULT work support

# INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[NAVIGATION]

1. Select "CALIBRATING CAMERA IMAGE".

**NOTE:**

In random order, perform the operation for all cameras for which un-match display  appears.

- Front camera: "CALIBRATING CAMERA IMAGE (FRONT CAMERA)"
- Passenger side camera: "CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)"
- Driver side camera: "CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)"
- Rear camera: "CALIBRATING CAMERA IMAGE (REAR CAMERA)"

2. On each camera calibration screen, press "APPLY" button, and then press "OK" button.

**CAUTION:**

- Never perform any operation other than selecting "APPLY" button.
- Never perform "INITIALIZE CAMERA IMAGE CALIBRATION".

3. Display the around view monitor screen. Check that images are displayed normally without any difference between images for each camera.

Is there a malfunction such as a difference between camera images?

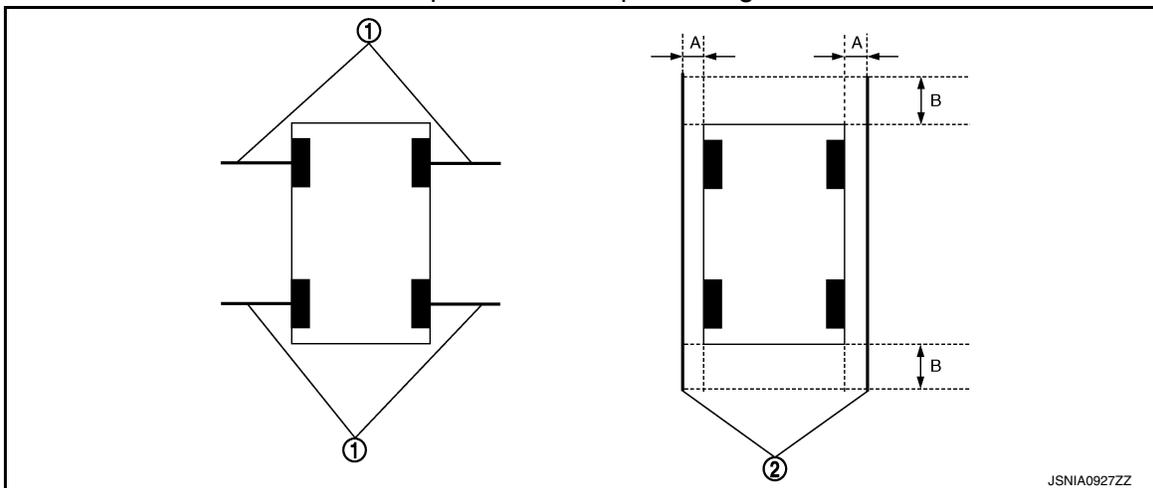
YES >> Calibration end

NO >> GO TO 1.

## 4. PERFORM SIMPLIFIED CONFIRMATION/ADJUSTMENT BY "FINE TUNING OF BIRDS-EYE VIEW"

1. Put target line 1 beside each axle using packing tape, etc.
2. Put target line 2 at a position approximately 30 cm (11.81 in) away from each side of the vehicle (the left and right). Check that the target line is a length equivalent to the vehicle length, plus an additional approximate length of 1.0 m (39.37 in) (in parallel with the vehicle as much as possible).

Preparation of simplified target line



1. Target lines 1
  2. Target lines 2
- A. Approx. 30 cm (11.81 in)      B. Approx. 1.0 m (39.37 in)

3.  CONSULT work support  
Select "FINE TUNING OF BIRDS-EYE VIEW".
4. Select the left and right cameras on CONSULT screen. Perform the following calibration.
  - Check that target line 1 and marker are aligned normally on screen. If difference is detected, align marker using "+" and "-" of "AXIS X" and "AXIS Y" on CONSULT screen.
  - Check that target line 2 is aligned normally on screen without difference between images of each camera. If difference is detected, align images so that line 2 is displayed in a straight line using "+" and "-" of "AXIS X", "AXIS Y", and "ROTATE" on CONSULT screen.

AV

O

P

**NOTE:**

Press "SELECT" button on CONSULT screen and select camera position for adjustment.

**CAUTION:**

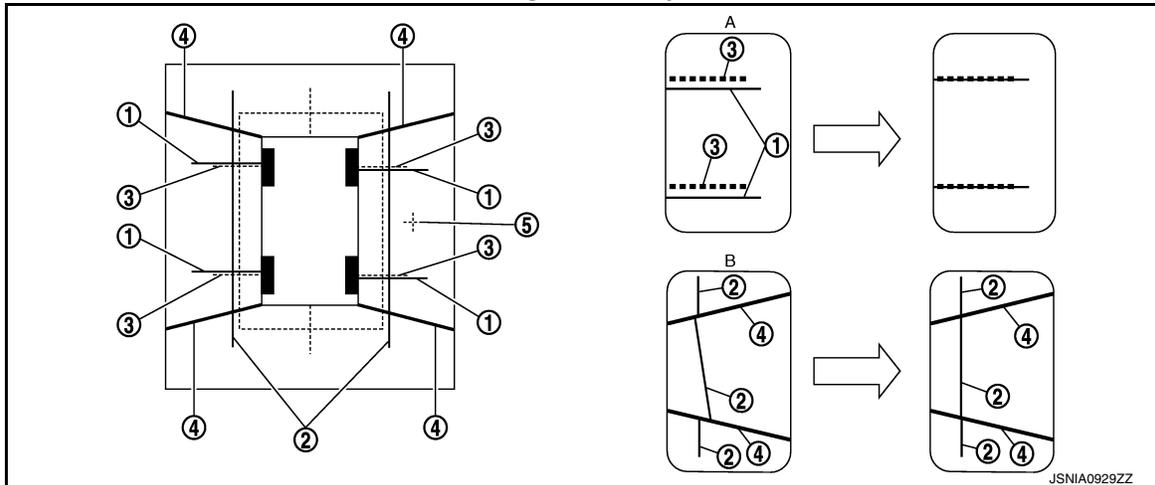
- Never adjust the front camera and rear camera. Only adjust the side cameras LH/RH.
- Perform adjustment operation slowly because approximately 1 second is required for changing image on screen.

# INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[NAVIGATION]

## Simplified target line adjustment method



- |   |  |                             |
|---|--|-----------------------------|
| 1. Target lines 1                               | 2. Target lines 2  | 3. Marker for target line 1 |
| 4. Boundary between cameras                     | 5. Crosshair cursor (mark indicated the selected camera) |                             |
| A. Adjustment method for target lines 1 (right) | B. Adjustment method for target lines 2 (right)          |                             |

5. Adjust the left and right cameras. Check that difference of images on screen between target line 1 and marker, and between target lines 2 are solved. Press "APPLY".

**NOTE:**

- The setting can be initialized to factory default condition using "CALIBRATING CAMERA IMAGE" of work support.
- The adjustment value on this mode is cancelled when "INITIALIZE CAMERA IMAGE CALIBRATION" is performed.

Is the difference corrected?

YES >> • Select "OK" to end calibration.

**CAUTION:**

**After selecting "OK", never perform any operation other than "BACK" on CONSULT.**

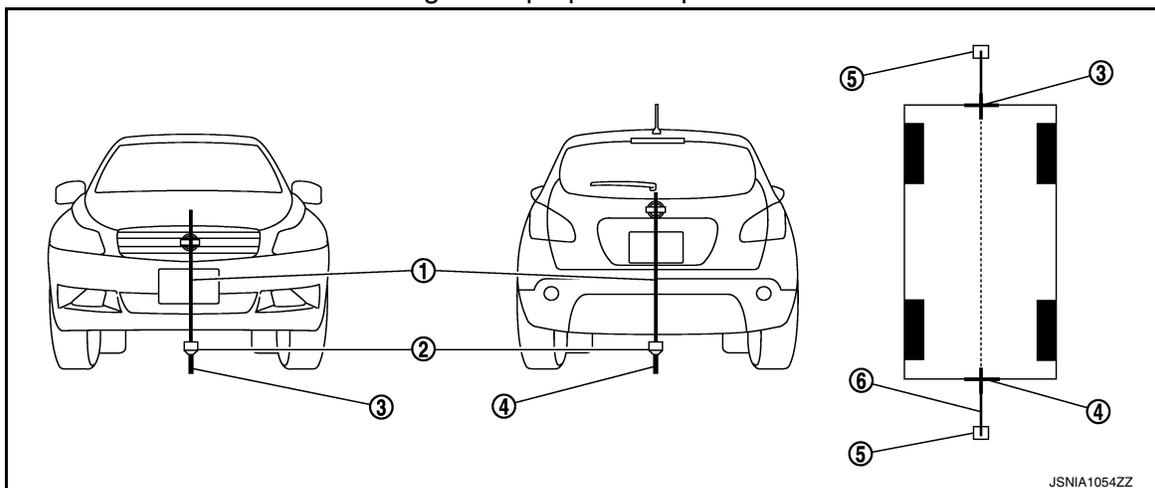
NO >> GO TO 5.

## 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 using white packing tape or a pen.
2. Route the vinyl string under the vehicle, and then pull and fix the vinyl string at a point approximately 1.0 m (39.37 in) at the front and rear of the vehicle through points FM0 and RM0 using packing tape.

Target line preparation procedure 1



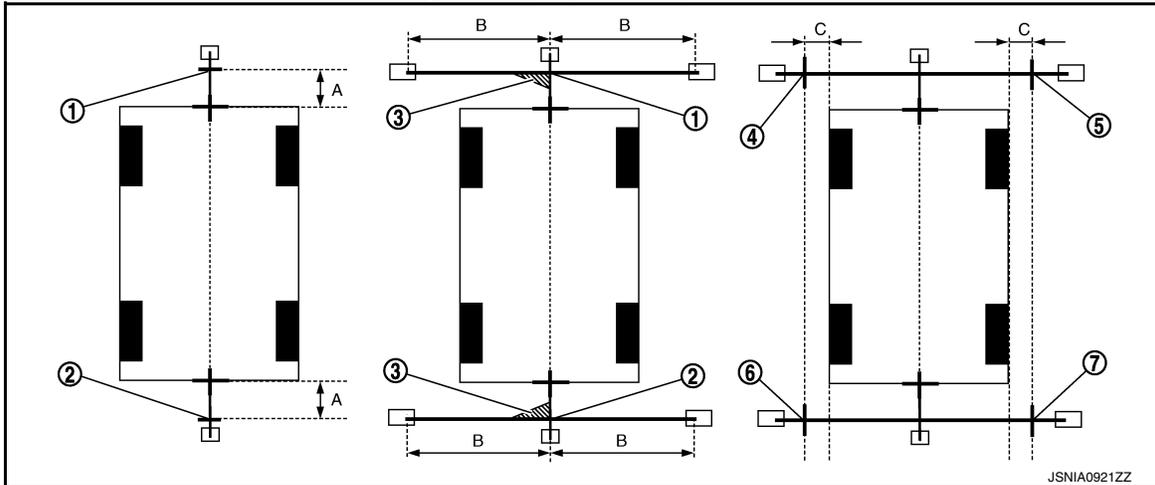
# INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[NAVIGATION]

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 points FM and RM (mark) 75 cm (29.53 in) from the points FM0 and RM0 individually.
  4. Route the vinyl string through points FM and RM using a triangle scale, and then fix it at approximately 1.5 m (59.06 in) on both sides with packing tape.
  5. Put points FL, FR, RL, and RR (mark) at distance of a half the vehicle width, plus 30 cm (11.81 in) to the left and right from points FM and RM.

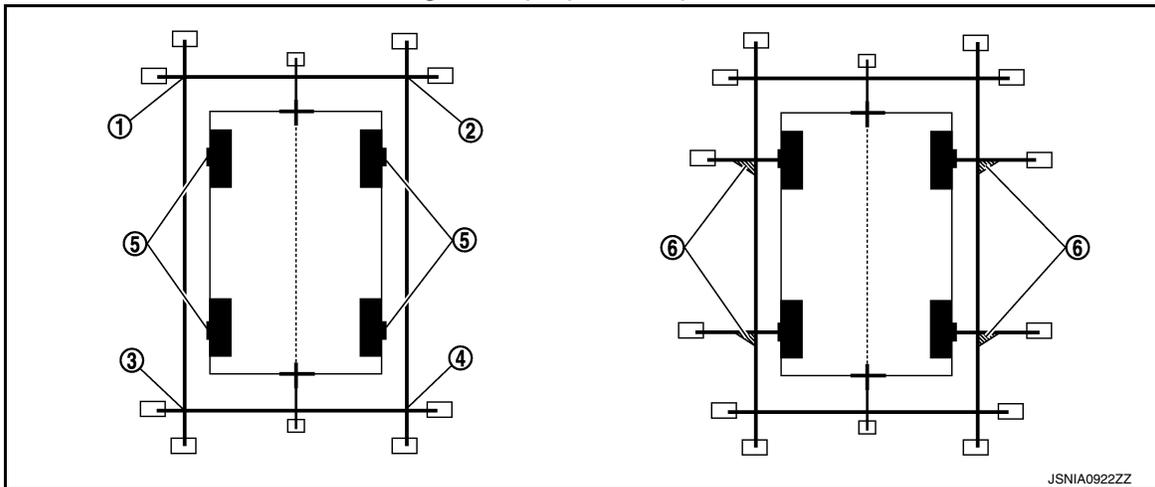
Target line preparation procedure 2



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 (29.53 in)      B. Approximately 1.5 m (59.06 in)      C: [A half of the vehicle width plus 30 cm (11.81 in) from the points FM and RM]

6. Draw the lines of the points FL – RL and FR – RR with the 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 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"

CONSULT work support

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1. Select "CALIBRATING CAMERA IMAGE".

**NOTE:**

In random order, perform the operation for all cameras.

- Front camera: "CALIBRATING CAMERA IMAGE (FRONT CAMERA)"
  - Passenger side camera: "CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)"
  - Driver side camera: "CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)"
  - Rear camera: "CALIBRATING CAMERA IMAGE (REAR CAMERA)"
2. On each calibration screen of "REAR CAMERA", "FRONT CAMERA", "DR-SIDE CAMERA", and "PASS-SIDE CAMERA", operate "+" and "-" of "AXIS X", "AXIS Y", and "ROTATE", so that images on screen of target line and calibration maker are aligned.
  3. Press "APPLY" button on CONSULT screen. "Writing..." is displayed, and then the adjustment result is displayed on the display.

**CAUTION:**

**Check that "Writing..." is displayed. Never perform other operations while "Writing..." is displayed.**

4. Press "APPLY" button on CONSULT screen. "Writing..." is displayed, and then the adjustment result is written to around view monitor control unit.

**CAUTION:**

**Check that "Writing..." is displayed. 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 cannot be aligned in the "CALIBRATING CAMERA IMAGE" mode.

ⓑ CONSULT work support

1. Select "FINE TUNING OF BIRDS-EYE VIEW".
2. Operate "+" and "-" of "AXIS X", "AXIS Y", and "ROTATE", so that images on screen of target line on the ground and marker are aligned between each camera.

**CAUTION:**

**Perform adjustment operation slowly because approximately 1 second is required for changing image on screen.**

**NOTE:**

Press "SELECT" button on CONSULT screen and select camera position for adjustment.

3. Press "APPLY" button on CONSULT screen. "Writing..." is displayed, and then the adjustment result is displayed on the display.

**CAUTION:**

**Check that "Writing..." is displayed. Never perform other operations while "Writing..." is displayed.**

4. Press "APPLY" button on CONSULT screen. "Writing..." is displayed, and then the adjustment result is written to around view monitor control unit.

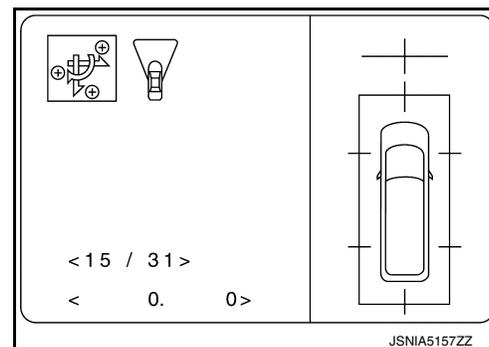
**CAUTION:**

- Check that "Writing..." is displayed. Never perform other operations while "Writing..." is displayed.
- After selecting "OK", never perform any operation other than "BACK" on CONSULT.

**NOTE:**

- The setting can be initialized to the factory default setting using "CALIBRATING CAMERA IMAGE" of work support.
- The adjustment value on this mode is cancelled when "INITIALIZE CAMERA IMAGE CALIBRATION" is performed.

>> Calibration end



DTC/CIRCUIT DIAGNOSIS

B2720 CORNER SENSOR [RL]

DTC Logic

INFOID:0000000010578569

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
B2720	CORNER SENSOR [RL] SHORT-BAT	Short circuit to power supply is detected in harness between sonar control unit and rear corner sensor LH when ignition switch is turned ON.	Check harness between sonar control unit and rear corner sensor LH.
	CORNER SENSOR [RL] OPEN/SHORT-GND	Short circuit to ground or open circuit is detected in harness between sonar control unit and rear corner sensor LH when ignition switch is turned ON.	Check harness between sonar control unit and rear corner sensor LH.
	CORNER SENSOR [RL] SENSOR	Rear corner sensor LH malfunction is detected when ignition switch is turned ON.	Replace corner sensor.
	CORNER SENSOR [RL] CONFIG ERROR	Control unit setting of sonar control unit is incomplete or is not set normally.	Perform control unit setting of sonar control unit.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

Turn ignition switch OFF, and wait for 10 seconds or more.

>> GO TO 2.

2.DETECT DTC

ⓂCONSULT SELF-DIAGNOSIS

1. Turn ignition switch ON.
2. Perform "SONAR" self-diagnosis.

Is DTC "B2720" detected?

YES ("CORNER SENSOR [RL] SHORT-BAT" is detected.)>>Refer to [AV-253, "SHORT-BAT : Diagnosis Procedure"](#).

YES ("CORNER SENSOR [RL] OPEN/SHORT-GND" is detected.)>>Refer to [AV-254, "OPEN/SHORT-GND : Diagnosis Procedure"](#).

YES ("CORNER SENSOR [RL] SENSOR" is detected.)>>Refer to [AV-254, "SENSOR : Diagnosis Procedure"](#).

YES ("CORNER SENSOR [RL] CONFIG ERROR" is detected.)>>Refer to [AV-255, "CONFIG ERROR : Diagnosis Procedure"](#).

NO >> INSPECTION END

SHORT-BAT

SHORT-BAT : Diagnosis Procedure

INFOID:0000000010578570

1.CHECK REAR CORNER SENSOR LH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 1

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and rear corner sensor LH connector.
3. Turn ignition switch ON.
4. Check voltage between sonar control unit connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M47	5		0 V

# B2720 CORNER SENSOR [RL]

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

Is the check result normal?

YES >> GO TO 2.

NO >> Repair the harnesses or connectors (short circuit to power supply harness).

## 2.CHECK REAR CORNER SENSOR LH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 2

Check continuity between sonar control unit connector and rear corner sensor LH connector.

Rear corner sensor LH		Ground	Continuity
Connector	Terminal		
B259	1		Not existed

Is the check result normal?

YES >> Replace rear corner sensor LH. Refer to [AV-370. "Removal and Installation"](#).

NO >> Repair the harnesses or connectors (short circuit to power supply harness).

## OPEN/SHORT-GND

### OPEN/SHORT-GND : Diagnosis Procedure

INFOID:000000010578571

## 1.CHECK REAR CORNER SENSOR LH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and rear corner sensor LH connector.
3. Check continuity between sonar control unit connector and rear corner sensor LH connector.

Sonar control unit		Rear corner sensor LH		Continuity
Connector	Terminal	Connector	Terminal	
M47	5	B259	1	Existed

4. Check for continuity between sonar control unit and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	5		Not existed

Is the check result normal?

YES >> GO TO 2.

NO >> Repair the harnesses or connectors.

## 2.CHECK REAR CORNER SENSOR LH GROUND CIRCUIT.

Check continuity between sonar control unit connector and rear corner sensor LH connector.

Sonar control unit		Rear corner sensor LH		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	B259	2	Existed

Is the check result normal?

YES >> Replace rear corner sensor LH. Refer to [AV-370. "Removal and Installation"](#).

NO >> Repair the harnesses or connectors.

## SENSOR

### SENSOR : Diagnosis Procedure

INFOID:000000010578572

## 1.PERFORM CONFIRMATION PROCEDURES

1. Perform DTC confirmation procedure. Refer to [AV-253. "DTC Logic"](#).
2. Perform self-diagnosis. Check whether or not DTC "B2720 CORNER SENSOR [RL] SENSOR" is detected.

Is DTC "B2720 CORNER SENSOR [RL] SENSOR" detected?

# B2720 CORNER SENSOR [RL]

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

- YES >> Replace rear corner sensor LH. Refer to [AV-370. "Removal and Installation"](#).
- NO >> Malfunction may be detected temporarily. Wait for constant malfunction if malfunction symptom is not confirmed.

## CONFIG ERROR

### CONFIG ERROR : Diagnosis Procedure

INFOID:000000010578573

#### 1. PERFORM CONFIGURATION OF SONAR CONTROL UNIT

1. Perform configuration of sonar control unit. Refer to [AV-246. "CONFIGURATION \(SONAR CONTROL UNIT\) : Special Repair Requirement"](#).
2. Perform DTC confirmation procedure. Refer to [AV-253. "DTC Logic"](#).

Is DTC "B2720 CORNER SENSOR [RL] CONFIG ERROR" detected?

- YES >> Replace rear corner sensor LH. Refer to [AV-370. "Removal and Installation"](#).
- NO >> Check is complete.

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## B2723 CORNER SENSOR [RR]

### DTC Logic

INFOID:000000010578574

#### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
B2723	CORNER SENSOR [RR] SHORT-BAT	Short circuit to power supply is detected in harness between sonar control unit and rear corner sensor RH when ignition switch is turned ON.	Check harness between sonar control unit and rear corner sensor RH.
	CORNER SENSOR [RR] OPEN/SHORT-GND	Short circuit to ground or open circuit is detected in harness between sonar control unit and rear corner sensor RH when ignition switch is turned ON.	Check harness between sonar control unit and rear corner sensor RH.
	CORNER SENSOR [RR] SENSOR	Rear corner sensor RH malfunction is detected when ignition switch is turned ON.	Replace corner sensor.
	CORNER SENSOR [RR] CONFIG ERROR	Control unit setting of sonar control unit is incomplete or is not set normally.	Perform control unit setting of sonar control unit.

#### DTC CONFIRMATION PROCEDURE

##### 1.PERFORM DTC CONFIRMATION PROCEDURE

Turn ignition switch OFF, and wait for 10 seconds or more.

>> GO TO 2.

##### 2.DETECT DTC

###### ⓅCONSULT SELF-DIAGNOSIS

1. Turn ignition switch ON.
2. Perform "SONAR" self-diagnosis.

Is DTC "B2723" detected?

YES ("CORNER SENSOR [RR] SHORT-BAT" is detected.)>>Refer to [AV-256, "SHORT-BAT : Diagnosis Procedure"](#).

YES ("CORNER SENSOR [RR] OPEN/SHORT-GND" is detected.)>>Refer to [AV-257, "OPEN/SHORT-GND : Diagnosis Procedure"](#).

YES ("CORNER SENSOR [RR] SENSOR" is detected.)>>Refer to [AV-257, "SENSOR : Diagnosis Procedure"](#).

YES ("CORNER SENSOR [RR] CONFIG ERROR" is detected.)>>Refer to [AV-258, "CONFIG ERROR : Diagnosis Procedure"](#).

NO >> INSPECTION END

#### SHORT-BAT

##### SHORT-BAT : Diagnosis Procedure

INFOID:000000010578575

##### 1.CHECK REAR CORNER SENSOR RH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 1

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and rear corner sensor RH connector.
3. Turn ignition switch ON.
4. Check voltage between sonar control unit connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M47	6		0 V

Is the check result normal?

# B2723 CORNER SENSOR [RR]

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

YES >> GO TO 2.

NO >> Repair the harnesses or connectors (short circuit to power supply harness).

## 2.CHECK REAR CORNER SENSOR RH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 2

1. Turn ignition switch OFF.
2. Check continuity between sonar control unit connector and rear corner sensor RH connector.

Rear corner sensor RH		Ground	Continuity
Connector	Terminal		
B256	1		Not existed

Is the check result normal?

YES >> Replace rear corner sensor RH. Refer to [AV-376. "REAR : Removal and Installation"](#).

NO >> Repair the harnesses or connectors (short circuit to power supply harness).

## OPEN/SHORT-GND

### OPEN/SHORT-GND : Diagnosis Procedure

INFOID:000000010578576

## 1.CHECK REAR CORNER SENSOR RH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and rear corner sensor RH connector.
3. Check continuity between sonar control unit connector and rear corner sensor RH connector.

Sonar control unit		Rear corner sensor RH		Continuity.
Connector	Terminal	Connector	Terminal	
M47	6	B256	1	Existed

4. Check for continuity between sonar control unit and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	6		Not existed

Is the check result normal?

YES >> GO TO 2.

NO >> Repair the harnesses or connectors.

## 2.CHECK REAR CORNER SENSOR RH GROUND CIRCUIT

Check continuity between sonar control unit connector and rear corner sensor RH connector.

Sonar control unit		Rear corner sensor RH		Continuity.
Connector	Terminal	Connector	Terminal	
M47	12	B256	2	Existed

Is the check result normal?

YES >> Replace rear corner sensor RH. Refer to [AV-376. "REAR : Removal and Installation"](#).

NO >> Repair the harnesses or connectors.

## SENSOR

### SENSOR : Diagnosis Procedure

INFOID:000000010578577

## 1.PERFORM CONFIRMATION PROCEDURES

1. Perform DTC confirmation procedure. [AV-256. "DTC Logic"](#).
2. Perform self-diagnosis. Check whether or not DTC "B2723 CORNER SENSOR [RR] SENSOR" is detected.

Is DTC "B2723 CORNER SENSOR [RR] SENSOR" detected?

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## B2723 CORNER SENSOR [RR]

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

- YES >> Replace rear corner sensor RH. Refer to [AV-376. "REAR : Removal and Installation"](#).  
NO >> Malfunction may be detected temporarily. Wait for constant malfunction if malfunction symptom is not confirmed.

### CONFIG ERROR

#### CONFIG ERROR : Diagnosis Procedure

INFOID:0000000010578578

#### 1. PERFORM CONFIGURATION OF SONAR CONTROL UNIT

1. Perform configuration of sonar control unit. Refer to [AV-246. "CONFIGURATION \(SONAR CONTROL UNIT\) : Special Repair Requirement"](#).
2. Perform DTC confirmation procedure. Refer to [AV-256. "DTC Logic"](#).

#### Is DTC "B2723 CORNER SENSOR [RR] CONFIG ERROR" detected?

- YES >> Replace rear corner sensor RH. Refer to [AV-376. "REAR : Removal and Installation"](#).  
NO >> Check is complete.

# B2724 SONAR CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## B2724 SONAR CONTROL UNIT

### DTC Logic

INFOID:000000010578579

### DTC DETECTION LOGIC

DTC No.	CONSULT indication	DTC detection condition	Troubleshooting
B2724	SONAR CONTROL UNIT CONFIG ERROR	Control unit setting of sonar control unit is incomplete or is not set normally.	Perform control unit setting of sonar control unit.

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

Turn ignition switch OFF, and wait for 10 seconds or more.

>> GO TO 2.

#### 2. DETECT DTC

##### CONSULT SELF-DIAGNOSIS

1. Turn ignition switch ON.
2. Perform "SONAR" self-diagnosis.

##### Is DTC "B2724" detected?

- YES >> Refer to [AV-259. "Diagnosis Procedure"](#).  
NO >> INSPECTION END

### Diagnosis Procedure

INFOID:000000010578580

#### 1. PERFORM CONFIGURATION OF SONAR CONTROL UNIT

1. Perform configuration of sonar control unit. Refer to [AV-246. "CONFIGURATION \(SONAR CONTROL UNIT\) : Special Repair Requirement"](#).
2. Perform DTC confirmation procedure. Refer to [AV-259. "DTC Logic"](#).

##### Is DTS DTC "B2724 SONAR CONTROL UNIT CONFIG ERROR" detected?

- YES >> Replace the sonar control unit. Refer to [AV-374. "Removal and Installation"](#).  
NO >> Check is complete.

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# B2729 CORNER SENSOR [FL]

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## B2729 CORNER SENSOR [FL]

### DTC Logic

INFOID:0000000010578581

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
B2729	CORNER SENSOR [FL] SHORT-BAT	Short circuit to power supply is detected in harness between sonar control unit and front corner sensor LH when ignition switch is turned ON.	Check harness between sonar control unit and front corner sensor LH.
	CORNER SENSOR [FL] OPEN/SHORT-GND	Short circuit to ground or open circuit is detected in harness between sonar control unit and front corner sensor LH when ignition switch is turned ON.	Check harness between sonar control unit and front corner sensor LH.
	CORNER SENSOR [FL] SENSOR	Front corner sensor LH malfunction is detected when ignition switch is turned ON.	Replace corner sensor.
	CORNER SENSOR [FL] CONFIG ERROR	Control unit setting of sonar control unit is incomplete or is not set normally.	Perform control unit setting of sonar control unit.

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

Turn ignition switch OFF, and wait for 10 seconds or more.

>> GO TO 2.

#### 2. DETECT DTC

##### CONSULT SELF-DIAGNOSIS

- Turn ignition switch ON.
- Perform "SONAR" self-diagnosis.

##### Is DTC "B2729" detected?

YES ("CORNER SENSOR [FL] SHORT-BAT" is detected.)>>Refer to [AV-260, "SHORT-BAT : Diagnosis Procedure"](#).

YES ("CORNER SENSOR [FL] OPEN/SHORT-GND" is detected.)>>Refer to [AV-261, "OPEN/SHORT-GND : Diagnosis Procedure"](#).

YES ("CORNER SENSOR [FL] SENSOR" is detected.)>>Refer to [AV-261, "SENSOR : Diagnosis Procedure"](#).

YES ("CORNER SENSOR [FL] CONFIG ERROR" is detected.)>>Refer to [AV-262, "CONFIG ERROR : Diagnosis Procedure"](#).

NO >> INSPECTION END

#### SHORT-BAT

#### SHORT-BAT : Diagnosis Procedure

INFOID:0000000010578582

#### 1. CHECK FRONT CORNER SENSOR RH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 1

- Turn ignition switch OFF.
- Disconnect sonar control unit connector and front corner sensor LH connector.
- Turn ignition switch ON.
- Check voltage between sonar control unit connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M47	3		0 V

##### Is the check result normal?

YES >> GO TO 2.

NO >> Repair the harnesses or connectors (short circuit to power supply harness).

# B2729 CORNER SENSOR [FL]

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## 2. CHECK FRONT CORNER SENSOR RH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 2

Check continuity between sonar control unit connector and front corner sensor LH connector.

Front corner sensor LH		Ground	Continuity
Connector	Terminal		
E154	1		Not existed

Is the check result normal?

YES >> Replace front corner sensor LH. Refer to [AV-375. "FRONT : Removal and Installation"](#).

NO >> Repair the harnesses or connectors (short circuit to power supply harness).

## OPEN/SHORT-GND

### OPEN/SHORT-GND : Diagnosis Procedure

INFOID:000000010578583

## 1. CHECK FRONT CORNER SENSOR LH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and front corner sensor LH connector.
3. Check continuity between sonar control unit connector and front corner sensor LH connector.

Sonar control unit		Front corner sensor LH		Continuity
Connector	Terminal	Connector	Terminal	
M47	3	E154	1	Existed

4. Check for continuity between sonar control unit and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	3		Not existed

Is the check result normal?

YES >> GO TO 2.

NO >> Repair the harnesses or connectors.

## 2. CHECK FRONT CORNER SENSOR LH GROUND CIRCUIT

Check continuity between sonar control unit connector and front corner sensor LH connector.

Sonar control unit		Front corner sensor LH		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	E154	2	Existed

Is the check result normal?

YES >> Replace front corner sensor LH. Refer to [AV-375. "FRONT : Removal and Installation"](#).

NO >> Repair the harnesses or connectors.

## SENSOR

### SENSOR : Diagnosis Procedure

INFOID:000000010578584

## 1. PERFORM CONFIRMATION PROCEDURES

1. Perform DTC confirmation procedure. Refer to [AV-260. "DTC Logic"](#).
2. Perform self-diagnosis. Check whether or not DTC "B2729 CORNER SENSOR [FL] SENSOR" is detected.

Is DTC "B2729 CORNER SENSOR [FL] SENSOR" detected?

YES >> Replace front corner sensor LH. Refer to [AV-375. "FRONT : Removal and Installation"](#).

NO >> Malfunction may be detected temporarily. Wait for constant malfunction if malfunction symptom is not confirmed.

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## CONFIG ERROR

### CONFIG ERROR : Diagnosis Procedure

INFOID:0000000010578585

#### 1. PERFORM CONTROL UNIT SETTING OF SONAR CONTROL UNIT

1. Perform control unit setting of sonar control unit. Refer to [AV-246, "CONFIGURATION \(SONAR CONTROL UNIT\) : Special Repair Requirement"](#).
2. Perform DTC confirmation procedure. Refer to [AV-260, "DTC Logic"](#).

Is DTC "B2729 CORNER SENSOR [RL] CONFIG ERROR" detected?

- YES >> Replace front corner sensor LH. Refer to [AV-375, "FRONT : Removal and Installation"](#).
- NO >> Check is complete.

# B272C CORNER SENSOR [FR]

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## B272C CORNER SENSOR [FR]

### DTC Logic

INFOID:000000010578586

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
B272C	CORNER SENSOR [FR] SHORT-BAT	Short circuit to power supply is detected in harness between sonar control unit and front corner sensor RH when ignition switch is turned ON.	Check harness between sonar control unit and front corner sensor RH.
	CORNER SENSOR [FR] OPEN/SHORT-GND	Short circuit to ground or open circuit is detected in harness between sonar control unit and front corner sensor RH when ignition switch is turned ON.	Check harness between sonar control unit and front corner sensor RH.
	CORNER SENSOR [FR] SENSOR	Front corner sensor RH malfunction is detected when ignition switch is turned ON.	Replace corner sensor.
	CORNER SENSOR [FR] CONFIG ERROR	Control unit setting of sonar control unit is incomplete or is not set normally.	Perform control unit setting of sonar control unit.

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

Turn ignition switch OFF, and wait for 10 seconds or more.

>> GO TO 2.

#### 2.DETECT DTC

##### ⓂCONSULT SELF-DIAGNOSIS

1. Turn ignition switch ON.
2. Perform "SONAR" self-diagnosis.

Is DTC "B272C" detected?

YES ("CORNER SENSOR [FR] SHORT-BAT" is detected.)>>Refer to [AV-263, "SHORT-BAT : Diagnosis Procedure"](#).

YES ("CORNER SENSOR [FR] OPEN/SHORT-GND" is detected.)>>Refer to [AV-264, "OPEN/SHORT-GND : Diagnosis Procedure"](#).

YES ("CORNER SENSOR [FR] SENSOR" is detected.)>>Refer to [AV-264, "SENSOR : Diagnosis Procedure"](#).

YES ("CORNER SENSOR [FR] CONFIG ERROR" is detected.)>>Refer to [AV-265, "CONFIG ERROR : Diagnosis Procedure"](#).

NO >> INSPECTION END

### SHORT-BAT

#### SHORT-BAT : Diagnosis Procedure

INFOID:000000010578587

#### 1.CHECK FRONT CORNER SENSOR RH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 1

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and front corner sensor RH connector.
3. Turn ignition switch ON.
4. Check voltage between sonar control unit connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M47	4		0 V

Is the check result normal?

# B272C CORNER SENSOR [FR]

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

- YES >> GO TO 2.  
 NO >> Repair the harnesses or connectors (short circuit to power supply harness).

## 2.CHECK FRONT CORNER SENSOR RH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 2

Check continuity between sonar control unit connector and front corner sensor RH connector.

Front corner sensor RH		Ground	Continuity
Connector	Terminal		
E152	1		Not existed

Is the check result normal?

- YES >> Replace front corner sensor RH. Refer to [AV-375, "FRONT : Removal and Installation"](#).  
 NO >> Repair the harnesses or connectors (short circuit to power supply harness).

## OPEN/SHORT-GND

### OPEN/SHORT-GND : Diagnosis Procedure

INFOID:0000000010578588

## 1.CHECK FRONT CORNER SENSOR RH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and front corner sensor RH connector.
3. Check continuity between sonar control unit connector and front corner sensor RH connector.

Sonar control unit		Front corner sensor RH		Continuity
Connector	Terminal	Connector	Terminal	
M47	4	E152	1	Existed

4. Check for continuity between sonar control unit and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	4		Not existed

Is the check result normal?

- YES >> GO TO 2.  
 NO >> Repair the harnesses or connectors.

## 2.CHECK FRONT CORNER SENSOR RH GROUND CIRCUIT

Check continuity between sonar control unit connector and front corner sensor RH connector.

Sonar control unit		Front corner sensor RH		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	E152	2	Synchronization is applied.

Is the check result normal?

- YES >> Replace front corner sensor RH. Refer to [AV-375, "FRONT : Removal and Installation"](#).  
 NO >> Repair the harnesses or connectors.

## SENSOR

### SENSOR : Diagnosis Procedure

INFOID:0000000010578589

## 1.PERFORM CONFIRMATION PROCEDURES

1. Perform DTC confirmation procedure. [AV-263, "DTC Logic"](#).
2. Perform self-diagnosis. Check whether or not DTC "B272C CORNER SENSOR [FR] SENSOR" is detected.

Is DTC "B272C CORNER SENSOR [FR] SENSOR" detected?

# B272C CORNER SENSOR [FR]

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

- YES >> Replace front corner sensor RH. Refer to [AV-375. "FRONT : Removal and Installation"](#).  
NO >> Malfunction may be detected temporarily. Wait for constant malfunction if malfunction symptom is not confirmed.

## CONFIG ERROR

### CONFIG ERROR : Diagnosis Procedure

INFOID:000000010578590

#### 1.PERFORM CONTROL UNIT SETTING OF SONAR CONTROL UNIT

1. Perform control unit setting of sonar control unit. Refer to [AV-246. "CONFIGURATION \(SONAR CONTROL UNIT\) : Special Repair Requirement"](#).
2. Perform DTC confirmation procedure.Refer to [AV-263. "DTC Logic"](#).

Is DTC "B272C CORNER SENSOR [FR] CONFIG ERROR" detected?

- YES >> Replace front corner sensor RH. Refer to [AV-375. "FRONT : Removal and Installation"](#).  
NO >> Check is complete.

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# U0428 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U0428 STEERING ANGLE SENSOR

### DTC Logic

INFOID:000000010578591

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U0428	ST ANGLE SENSOR CALIBRATION [U0428]	The neutral position adjustment of the steering angle sensor is incomplete.	Adjust neutral position of the steering angle sensor.

### Diagnosis Procedure

INFOID:000000010578592

#### 1. ADJUST THE NEUTRAL POSITION OF THE STEERING ANGLE SENSOR

When U1232 is detected, adjust the neutral position of the steering angle sensor.

>> Perform adjustment of the neutral position of the steering angle sensor. Refer to [AV-180, "CONSULT Function \(MULTI AV\)"](#).

#### **CAUTION:**

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

# U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1000 CAN COMM CIRCUIT

### AV CONTROL UNIT

#### AV CONTROL UNIT : Description

INFOID:0000000010578593

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-35, "CAN Communication Signal Chart"](#).

#### AV CONTROL UNIT : DTC Logic

INFOID:0000000010578594

#### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	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.

#### AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000010578595

##### 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 system". Refer to [LAN-25, "Trouble Diagnosis Flow Chart"](#).

NO >> Refer to GI section. Refer to [GI-47, "Intermittent Incident"](#).

### AROUND VIEW MONITOR CONTROL UNIT

#### AROUND VIEW MONITOR CONTROL UNIT : Description

INFOID:0000000010578596

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-35, "CAN Communication Signal Chart"](#).

#### AROUND VIEW MONITOR CONTROL UNIT : DTC Logic

INFOID:0000000010578597

#### DTC DETECTION LOGIC

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

#### AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:0000000010578598

##### 1.PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check "Self Diagnostic Result" of "AVM".

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# U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

Is "CAN COMM CIRCUIT" displayed?

YES >> Refer to [LAN-25, "Trouble Diagnosis Procedure"](#).

NO >> Refer to [GI-47, "Intermittent Incident"](#).

## SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

### SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : Description

INFOID:0000000010578599

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-35, "CAN Communication Signal Chart"](#).

### SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : DTC Logic

INFOID:0000000010578600

#### DTC DETECTION LOGIC

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

### SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : Diagnosis Procedure

INFOID:0000000010578601

#### 1. PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check "Self Diagnostic Result" of "SONAR".

Is "CAN COMM CIRCUIT" displayed?

YES >> Refer to [LAN-25, "Trouble Diagnosis Procedure"](#).

NO >> Refer to [GI-47, "Intermittent Incident"](#).

# U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1010 CONTROL UNIT (CAN)

### AV CONTROL UNIT

#### AV CONTROL UNIT : DTC Logic

INFOID:0000000010578602

#### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	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.

## AROUND VIEW MONITOR CONTROL UNIT

#### AROUND VIEW MONITOR CONTROL UNIT : DTC Logic

INFOID:0000000010578603

#### DTC DETECTION LOGIC

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

## SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

#### SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : DTC Logic

INFOID:0000000010578604

#### DTC DETECTION LOGIC

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

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# U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

### DTC Logic

INFOID:000000010578605

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U111A	REAR CAMERA IMAGE SIGNAL	Rear camera image signal circuit is open or shorted.	Check rear camera image signal circuit between rear camera and around view monitor control unit.

### Diagnosis Procedure

INFOID:000000010578606

#### 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	
B268	50	D111	8	Existed
	52		7	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B268	50		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.

Around view monitor control unit		(-)	Condition	Voltage (Approx.)
Connector	Terminal			
B268	50	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-367, "Removal and Installation"](#).

#### 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.

# U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

Around view monitor control unit		Rear camera		Continuity
Connector	Terminals	Connector	Terminals	
B268	53	D111	5	Existed
	54		1	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B268	53, 54		Not existed

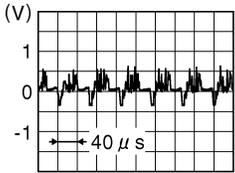
Is inspection result normal?

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					
Connector	Terminal	Connector	Terminal		
B268	53	B268	54	"CAMERA" switch is ON or shift position is "R".	 <p>(V)</p> <p>40 µs</p> <p>JSNIA0834GB</p>

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to [AV-367, "Removal and Installation"](#).

NO >> Replace rear camera. Refer to [AV-369, "Removal and Installation"](#).

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# U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

### DTC Logic

INFOID:000000010578607

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U111B	SIDE CAMERA RH IMAGE SIGNAL	Side camera RH image signal circuit is open or shorted.	Check side camera RH image signal circuit between side camera RH and around view monitor control unit.

### Diagnosis Procedure

INFOID:000000010578608

#### 1. CHECK CONTINUITY SIDE CAMERA RH POWER SUPPLY AND GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
- 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	
B268	62	D33	6	Existed
	64		18	

- Check continuity between door mirror (passenger side) connector harness connector and ground.

Door mirror (passenger side)		Ground	Continuity
Connector	Terminals		
D33	62		Not existed
	64		

#### Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK VOLTAGE SIDE CAMERA RH POWER SUPPLY

- Connect around view monitor control unit connector and door mirror (passenger side) connector.
- Turn ignition switch ON.
- Check voltage between around view monitor control unit harness connector and ground.

(+)		(-)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
B268	62	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-367, "Removal and Installation"](#).

#### 3. CHECK CONTINUITY SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect around view monitor control unit connector and door mirror (passenger side) connector.

# U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

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	
B268	65	D33	5	Existed
	66		17	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B268	65		Not existed
	66		

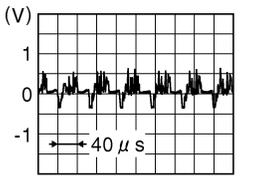
Is inspection result normal?

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					
Connector	Terminal	Connector	Terminal		
B268	65	B268	66	"CAMERA" switch is ON or shift position is "R".	

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to [AV-367, "Removal and Installation"](#).

NO >> Replace side camera RH. Refer to [AV-372, "Removal and Installation"](#).

AV

# U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

### DTC Logic

INFOID:000000010578609

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U111C	REAR CAMERA IMAGE SIGNAL	Front camera image signal circuit is open or shorted.	Check front camera image signal circuit between front camera and around view monitor control unit.

### Diagnosis Procedure

INFOID:000000010578610

#### 1. CHECK CONTINUITY FRONT CAMERA POWER SUPPLY AND GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect around view monitor control unit connector and front camera connector.
- Check continuity between around view monitor control unit harness connector and front camera harness connector.

Front camera		Around view monitor control unit		Continuity
Connector	Terminals	Connector	Terminals	
E155	1	B268	68	Existed
	2		70	

- Check continuity between front camera harness connector and ground.

Front camera		Ground	Continuity
Connector	Terminals		
E155	1		Not existed
	2		

#### Is inspection result normal?

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

#### 2. CHECK VOLTAGE FRONT CAMERA POWER SUPPLY

- Connect around view monitor control unit connector and front camera connector.
- Turn ignition switch ON.
- Check voltage between around view monitor control unit harness connector.

Probe				Condition	Voltage (Approx.)
(+)		(-)			
Around view monitor control unit					
Connector	Terminal	Connector	Terminal		
M112	68	M112	70	"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-367. "Removal and Installation"](#).

#### 3. CHECK CONTINUITY FRONT CAMERA IMAGE SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect around view monitor control unit connector and front camera connector.
- Check continuity between around view monitor control unit harness connector and front camera harness connector.

# U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

Around view monitor control unit		Front camera		Continuity
Connector	Terminals	Connector	Terminals	
B268	71	E155	3	Existed
	72		4	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminals		
B268	71		Not existed
	72		

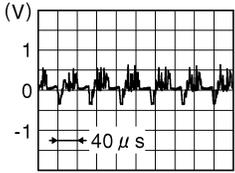
Is inspection result normal?

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.

(+) Around view monitor control unit		(-)		Condition	Reference value
Connector	Terminal	Connector	Terminal		
B268	71	B268	72	"CAMERA" switch is ON or shift position is "R".	 <p>(V)</p> <p>40 μs</p> <p>JSNIA0834GB</p>

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to [AV-367, "Removal and Installation"](#).

NO >> Replace front camera. Refer to [AV-368, "Removal and Installation"](#).

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# U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

### DTC Logic

INFOID:000000010578611

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U111D	SIDE CAMERA LH IMAGE SIGNAL	Side camera LH image signal circuit is open or shorted.	Check side camera LH image signal circuit between side camera LH and around view monitor control unit.

### Diagnosis Procedure

INFOID:000000010578612

#### 1. CHECK CONTINUITY SIDE CAMERA LH POWER SUPPLY AND GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect around view monitor control unit connector and door mirror (driver side) connector.
- Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Door mirror (driver side)		Around view monitor control unit		Continuity
Connector	Terminals	Connector	Terminals	
D3	6	B268	56	Existed
	18		58	

- Check continuity between around view monitor control unit harness connector and ground.

Door mirror (driver side)		Ground	Continuity
Connector	Terminals		
D3	6		Not existed
	18		

#### Is inspection result normal?

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

#### 2. CHECK VOLTAGE SIDE CAMERA LH POWER SUPPLY

- Connect around view monitor control unit connector and door mirror (driver side) connector.
- Turn ignition switch ON.
- Check voltage between around view monitor control unit harness connector and ground.

Probe				Condition	Voltage (Approx.)
(+)		(-)			
Around view monitor control unit					
Connector	Terminal	Connector	Terminal		
B268	56	B268	58	"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-367. "Removal and Installation"](#).

#### 3. CHECK CONTINUITY SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect around view monitor control unit connector and door mirror (driver side) connector.
- Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

# U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminals	Connector	Terminals	
B268	59	D3	5	Existed
	60		17	

4. Check continuity between around view monitor control unit harness connector and ground.

Door mirror (driver side)		Ground	Continuity
Connector	Terminals		
D3	5		Not existed
	17		

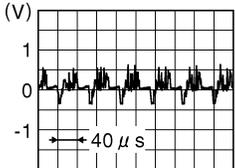
Is inspection result normal?

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					
Connector	Terminal	Connector	Terminal		
B268	59	B268	60	"CAMERA" switch is ON or shift position is "R".	 <p>JSNIA0834GB</p>

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to [AV-367, "Removal and Installation"](#).

NO >> Replace side camera LH. Refer to [AV-370, "Removal and Installation"](#).

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# U1200 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1200 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578613

DTC	Display contents of CONSULT	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/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1201 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578614

DTC	Display contents of CONSULT	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.

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# U1202 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1202 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578615

DTC	Display contents of CONSULT	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

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1204 AV CONTROL UNIT

### Description

INFOID:000000010578616

An intermittent error caused by strong radio interference may be detected unless any symptoms (GPS reception error, etc.) occur. Replace the AV control unit if the malfunction occurs constantly. Refer to [AV-350. "Exploded View"](#).

### DTC Logic

INFOID:000000010578617

DTC	Display contents of CONSULT	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:000000010578618

#### 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-350. "Exploded View"](#).
- NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

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## U1205 AV CONTROL UNIT

### Description

INFOID:000000010578619

An intermittent error caused by strong radio interference may be detected unless any symptoms (GPS reception error, etc.) occur. Replace the AV control unit if the malfunction occurs constantly. Refer to [AV-350, "Exploded View"](#).

### DTC Logic

INFOID:000000010578620

DTC	Display contents of CONSULT	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:000000010578621

#### 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-350, "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:0000000110578622

An intermittent error caused by strong radio interference may be detected unless any symptoms (GPS reception error, etc.) occur. Replace the AV control unit if the malfunction occurs constantly. Refer to [AV-350. "Exploded View"](#).

**DTC Logic**

INFOID:0000000110578623

DTC	Display contents of CONSULT	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:0000000110578624

**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-350. "Exploded View"](#).
- NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.



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# U1207 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1207 AV CONTROL UNIT

### Description

INFOID:000000010578625

An intermittent error caused by strong radio interference may be detected unless any symptoms (GPS reception error, etc.) occur. Replace the AV control unit if the malfunction occurs constantly. Refer to [AV-350. "Exploded View"](#).

### DTC Logic

INFOID:000000010578626

DTC	Display contents of CONSULT	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:000000010578627

#### 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-350. "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/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1216 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578628

DTC	Display contents of CONSULT	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.

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# U1217 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1217 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578629

DTC	Display contents of CONSULT	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/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1218 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578630

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1218	HDD CONN [U1218]	AV control unit malfunction is detected.	<ul style="list-style-type: none"><li>• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction.</li><li>• Replace the AV control unit if the malfunction occurs constantly.</li></ul>

### Diagnosis Procedure

INFOID:000000010578631

#### 1. CHECK MUSIC BOX FUNCTION

##### Is music box function normal?

- YES >> Malfunction may be detected transitory.  
NO >> Replace AV control unit. Refer to [AV-350. "Exploded View"](#).

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# U1219 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1219 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578632

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1219	HDD READ [U1219]	AV control unit malfunction is detected.	<ul style="list-style-type: none"><li>• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction.</li><li>• Replace the AV control unit if the malfunction occurs constantly.</li></ul>

### Diagnosis Procedure

INFOID:000000010578633

#### 1. CHECK MUSIC BOX FUNCTION

##### Is music box function normal?

YES >> Malfunction may be detected transitory.

NO >> Replace AV control unit. Refer to [AV-350. "Exploded View"](#).

# U121A AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U121A AV CONTROL UNIT

### DTC Logic

INFOID:000000010578634

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121A	HDD WRITE [U121A]	AV control unit malfunction is detected.	<ul style="list-style-type: none"><li>• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction.</li><li>• Replace the AV control unit if the malfunction occurs constantly.</li></ul>

### Diagnosis Procedure

INFOID:000000010578635

#### 1. CHECK MUSIC BOX FUNCTION

##### Is music box function normal?

- YES >> Malfunction may be detected transitory.  
NO >> Replace AV control unit. Refer to [AV-350. "Exploded View"](#).

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AV

# U121B AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U121B AV CONTROL UNIT

### DTC Logic

INFOID:000000010578636

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121B	HDD COMM [U121B]	AV control unit malfunction is detected.	<ul style="list-style-type: none"><li>• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction.</li><li>• Replace the AV control unit if the malfunction occurs constantly.</li></ul>

### Diagnosis Procedure

INFOID:000000010578637

#### 1. CHECK MUSIC BOX FUNCTION

##### Is music box function normal?

YES >> Malfunction may be detected transitory.

NO >> Replace AV control unit. Refer to [AV-350. "Exploded View"](#).

# U121C AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U121C AV CONTROL UNIT

### DTC Logic

INFOID:000000010578638

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121C	HDD ACCESS [U121C]	AV control unit malfunction is detected.	<ul style="list-style-type: none"><li>• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction.</li><li>• Replace the AV control unit if the malfunction occurs constantly.</li></ul>

### Diagnosis Procedure

INFOID:000000010578639

#### 1. CHECK MUSIC BOX FUNCTION

##### Is music box function normal?

- YES >> Malfunction may be detected transitory.  
NO >> Replace AV control unit. Refer to [AV-350. "Exploded View"](#).

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AV

# U121D AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U121D AV CONTROL UNIT

### DTC Logic

INFOID:0000000010578640

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121D	DSP CONN [U121D]	AV control unit malfunction is detected.	<ul style="list-style-type: none"><li>• If a disc can be played, then there is a possibility of the detection of a temporary malfunction.</li><li>• Replace the AV control unit if the malfunction occurs constantly.</li></ul>

### Diagnosis Procedure

INFOID:0000000010578641

#### 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-350. "Exploded View"](#).

# U121E AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U121E AV CONTROL UNIT

### DTC Logic

INFOID:000000010578642

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121E	DSP COMM [U121E]	AV control unit malfunction is detected.	<ul style="list-style-type: none"><li>• If a disc can be played, then there is a possibility of the detection of a temporary malfunction.</li><li>• Replace the AV control unit if the malfunction occurs constantly.</li></ul>

### Diagnosis Procedure

INFOID:000000010578643

#### 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-350, "Exploded View"](#).

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AV

# U1225 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1225 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578644

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	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/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1227 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578645

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1227	DVD COMM [U1227]	AV control unit malfunction is detected.	<ul style="list-style-type: none"><li>• If DVD can be played, then there is a possibility of the detection of a temporary malfunction.</li><li>• Replace the AV control unit if the malfunction occurs constantly.</li></ul>

### Diagnosis Procedure

INFOID:000000010578646

#### 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-350. "Exploded View"](#).

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AV

# U1228 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1228 AV CONTROL UNIT

### DTC Logic

INFOID:0000000010578647

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	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/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1229 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578648

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	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.

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# U122A AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U122A AV CONTROL UNIT

### DTC Logic

INFOID:000000010578649

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

### Diagnosis Procedure

INFOID:000000010578650

#### 1.PERFORM THE SELF-DIAGNOSIS

When U122A is detected, write configuration data with CONSULT.

>> Write configuration data with CONSULT. Refer to [AV-243, "CONFIGURATION \(AV CONTROL UNIT\) : Special Repair Requirement"](#).

# U122E AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U122E AV CONTROL UNIT

### DTC Logic

INFOID:000000010578651

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	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.

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# U1232 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1232 STEERING ANGLE SENSOR AV CONTROL UNIT

### AV CONTROL UNIT : Description

INFOID:0000000010578652

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

### AV CONTROL UNIT : DTC Logic

INFOID:0000000010578653

DTC	Display contents of CONSULT	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.

### AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000010578654

#### 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-9, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement"](#).

## AROUND VIEW MONITOR CONTROL UNIT

### AROUND VIEW MONITOR CONTROL UNIT : Description

INFOID:0000000010578655

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

### AROUND VIEW MONITOR CONTROL UNIT : DTC Logic

INFOID:0000000010578656

DTC	Display contents of CONSULT	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.

### AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:0000000010578657

#### 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-9, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement"](#).

# U1243 FRONT DISPLAY UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1243 FRONT DISPLAY UNIT

### DTC Logic

INFOID:000000010578658

DTC	Display contents of CONSULT	DTC Detection Condition	Possible causes
U1243	FRONT DISP CONN [U1243]	When either one of the following items is detected. <ul style="list-style-type: none"> <li>front display unit power supply and ground circuit malfunction is detected.</li> <li>malfunction is detected in communication circuits between front display unit and AV control unit.</li> </ul>	<ul style="list-style-type: none"> <li>Front display unit power supply and ground circuit.</li> <li>Communication circuits between front display unit and AV control unit.</li> </ul>

### Diagnosis Procedure

INFOID:000000010578659

#### 1. CHECK FRONT DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUITS

Check front display unit power supply and ground circuits. Refer to [AV-315. "FRONT DISPLAY UNIT : Diagnosis Procedure"](#).

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair malfunctioning parts.

#### 2. CHECK CONTINUITY COMMUNICATION CIRCUITS

- Turn ignition switch OFF.
- Disconnect front display unit connector and AV control unit connector.
- 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	

- Check continuity between front display unit harness connector and ground.

Front display unit		Ground	Continuity
Connector	Terminals		
M195	9		Not existed
	10		

Is inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

#### 3. CHECK COMMUNICATION SIGNAL

- Connect front display unit connector and AV control unit connector.
- Turn ignition switch ON.
- Check signal between front display unit harness connector and ground.

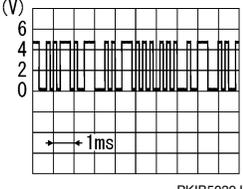
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AV

# U1243 FRONT DISPLAY UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

(+)		(-)	Condition	Reference value
Front display unit				
Connector	Terminal			
M195	9	Ground	When adjusting display brightness.	

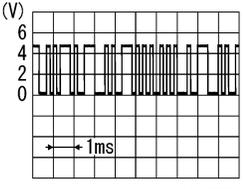
Is inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit.

## 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.	

Is inspection result normal?

YES >> INSPECTION END

NO >> Replace front display unit.

# U1244 GPS ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1244 GPS ANTENNA

### DTC Logic

INFOID:000000010578660

DTC	Display contents of CONSULT	DTC Detection Condition	Possible causes
U1244	GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	GPS antenna disconnection

### Diagnosis Procedure

INFOID:000000010578661

#### 1. GPS ANTENNA CHECK

Visually check GPS antenna and antenna feeder.

Is 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 terminal and ground.

(+)	(-)	Voltage (Approx.)
AV control unit Terminal	Ground	5.0 V
153		

Is inspection result normal?

YES >> INSPECTION END

NO >> Replace AV control unit.

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# U1258 SATELLITE RADIO ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1258 SATELLITE RADIO ANTENNA

### DTC Logic

INFOID:000000010578662

DTC	Display contents of CONSULT	DTC Detection Condition	Possible causes
U1258	XM ANTENNA CONN [U1258]	Satellite radio antenna connection malfunction is detected.	Satellite radio antenna disconnection

### Diagnosis Procedure

INFOID:000000010578663

#### 1. SATELLITE RADIO ANTENNA CHECK

Visually check satellite radio antenna and antenna feeder.

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair malfunctioning parts.

#### 2. CHECK AV CONTROL UNIT VOLTAGE

1. Disconnect satellite radio antenna connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit terminal and ground.

(+)	(-)	Voltage (Approx.)
AV control unit Terminal		
159	Ground	4.0 V

Is inspection result normal?

YES >> INSPECTION END

NO >> Replace AV control unit.

U1263 USB

DTC Logic

INFOID:000000010578664

DTC	Display contents of CONSULT	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:000000010578665

1.CHECK USB HARNESS

Visually check USB harness.

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-350, "Exploded View"](#).
- NO >> Replace USB harness.

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# U1300 AV COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1300 AV COMM CIRCUIT

### Description

INFOID:000000010578666

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	DTC detection condition	Possible malfunction factor
U1300 U1240	<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• SWITCH CONN [U1240]</li> </ul>	When either one of the following items are detected: <ul style="list-style-type: none"> <li>• multifunction switch power supply and ground circuits are malfunctioning.</li> <li>• AV communication circuits between AV control unit and multifunction switch are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Multifunction switch power supply and ground circuits.</li> <li>• AV communication circuits between AV control unit and multifunction switch.</li> </ul>
U1300 U125B	<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• AROUND CAMERA CONN [U125B]</li> </ul>	When either one of the following items are detected: <ul style="list-style-type: none"> <li>• Around view monitor control unit power supply and ground circuits are malfunctioning.</li> <li>• AV communication circuits between AV control unit and around view monitor control unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Around view monitor control unit power supply and ground circuits.</li> <li>• AV communication circuits between AV control unit and around view monitor control unit.</li> </ul>
U1300 U125C	<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• SONAR CONN [U125C]</li> </ul>	When either one of the following items are detected: <ul style="list-style-type: none"> <li>• Sonar control unit power supply and ground circuits are malfunctioning.</li> <li>• Around view monitor control unit CAN communication circuits are malfunctioning.</li> <li>• Sonar control unit CAN communication circuits are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Sonar control unit power supply and ground circuits.</li> <li>• Around view monitor control unit CAN communication circuit.</li> <li>• Sonar control unit CAN communication circuit.</li> </ul>
U1300 U1240 U125B	<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• SWITCH CONN [U1240]</li> <li>• AROUND CAMERA CONN [U125B]</li> </ul>	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

# U1302 CAMERA POWER VOLT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1302 CAMERA POWER VOLT

### DTC Logic

INFOID:000000010578667

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1302	CAMERA POWER VOLT [U1302]	<p>Camera power supply voltage does not satisfy the following conditions for 2 seconds or more when ignition switch is turned ON.</p> <ul style="list-style-type: none"> <li>When supplemental lighting power supply output is ON: 5.9 – 6.5 V.</li> <li>When OFF: 0 V by camera power supply measurement.</li> </ul>	<ul style="list-style-type: none"> <li>Short circuit to battery or short circuit to ground of camera power supply output circuit.</li> <li>Around view monitor control unit</li> </ul>

### Diagnosis Procedure

INFOID:000000010578668

#### 1. CHECK AROUND VIEW MONITOR CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check around view monitor control unit power supply and ground circuit. Refer to [AV-316, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

Is the check result normal?

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

#### 2. CHECK REAR CAMERA POWER SUPPLY OUTPUT CIRCUIT (CHECK FOR SHORT CIRCUIT)

- Disconnect around view monitor control unit connector and rear camera connector.
- Check whether or not continuity between around view monitor control unit harness connector and ground is normal.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B268	50		Not existed

Is the check result normal?

- YES >> GO TO 3.
- NO >> Repair the harnesses or connectors.

#### 3. CHECK REAR CAMERA POWER SUPPLY 1

- Connect around view monitor control unit connector.
- Turn ignition switch ON.
- Check whether or not voltage between around view monitor control unit harness connectors is normal.

Probe				Reference value
(+)		(-)		
Around view monitor control unit				
Connector	Terminal	Connector	Terminal	Approx. 6.0 V
B268	50	B268	52	

Is the check result normal?

- YES >> GO TO 4.
- NO >> Replace around view monitor control unit. Refer to [AV-367, "Removal and Installation"](#).

#### 4. CHECK REAR CAMERA POWER SUPPLY 2

- Turn ignition switch OFF.
- Connect rear camera connector.
- Turn ignition switch ON.
- Check whether or not voltage between around view monitor control unit harness connectors is normal.

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AV

# U1302 CAMERA POWER VOLT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

Probe				Reference value
(+)		(-)		
Around view monitor control unit				
Connector	Terminal	Connector	Terminal	
B268	50	B268	52	Approx. 6.0 V

Is the check result normal?

YES >> GO TO 5.

NO >> Replace rear camera. Refer to [AV-369. "Removal and Installation"](#).

## 5. CHECK FRONT CAMERA POWER SUPPLY OUTPUT CIRCUIT (CHECK FOR SHORT CIRCUIT)

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and front camera connector.
3. Check whether or not continuity between around view monitor control unit harness connector and ground is normal.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B268	68		Not existed

Is the check result normal?

YES >> GO TO 6.

NO >> Repair the harnesses or connectors.

## 6. CHECK FRONT CAMERA POWER SUPPLY 1

1. Connect around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check whether or not voltage between around view monitor control unit harness connectors is normal.

Probe				Reference value
(+)		(-)		
Around view monitor control unit				
Connector	Terminal	Connector	Terminal	
B268	68	B268	70	Approx. 6.0 V

Is the check result normal?

YES >> GO TO 7.

NO >> Replace around view monitor control unit. Refer to [AV-367. "Removal and Installation"](#).

## 7. CHECK FRONT CAMERA POWER SUPPLY 2.

1. Turn ignition switch OFF.
2. Connect front camera connector.
3. Turn ignition switch ON.
4. Check whether or not voltage between around view monitor control unit harness connectors is normal.

Probe				Reference value
(+)		(-)		
Around view monitor control unit				
Connector	Terminal	Connector	Terminal	
B268	68	B268	70	Approx. 6.0 V

Is the check result normal?

YES >> GO TO 8.

NO >> Replace front camera. Refer to [AV-368. "Removal and Installation"](#).

# U1302 CAMERA POWER VOLT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## 8. CHECK SIDE CAMERA RH POWER SUPPLY OUTPUT CIRCUIT (CHECK FOR SHORT CIRCUIT)

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check whether or not continuity between around view monitor control unit harness connector and ground is normal.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B268	62		Not existed

Is the check result normal?

YES >> GO TO 9.

NO >> Repair the harnesses or connectors.

## 9. CHECK SIDE CAMERA RH POWER SUPPLY 1

1. Connect around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check whether or not voltage between around view monitor control unit harness connectors is normal.

Probe				Reference value
(+)		(-)		
Around view monitor control unit				
Connector	Terminal	Connector	Terminal	
B268	62	B268	64	Approx. 6.0 V

Is the check result normal?

YES >> GO TO 10.

NO >> Replace around view monitor control unit. Refer to [AV-367. "Removal and Installation"](#).

## 10. CHECK SIDE CAMERA RH POWER SUPPLY 2

1. Turn ignition switch OFF.
2. Connect door mirror (driver side) connector.
3. Turn ignition switch ON.
4. Check whether or not voltage between around view monitor control unit harness connectors is normal.

Probe				Reference value
(+)		(-)		
Around view monitor control unit				
Connector	Terminal	Connector	Terminal	
B268	62	B268	64	Approx. 6.0 V

Is the check result normal?

YES >> GO TO 11.

NO >> Replace side camera RH. Refer to [AV-372. "Removal and Installation"](#).

## 11. CHECK SIDE CAMERA LH POWER SUPPLY OUTPUT CIRCUIT (CHECK FOR SHORT CIRCUIT)

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
3. Check whether or not continuity between around view monitor control unit harness connector and ground is normal.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B268	56		Not existed

Is the check result normal?

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# U1302 CAMERA POWER VOLT

[NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 12.  
NO >> Repair the harnesses or connectors.

## 12.CHECK SIDE CAMERA LH POWER SUPPLY 1

1. Connect around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check whether or not voltage between around view monitor control unit harness connectors is normal.

Probe				Reference value
(+)		(-)		
Around view monitor control unit				
Connector	Terminal	Connector	Terminal	
B268	56	B268	58	Approx. 6.0 V

Is the check result normal?

- YES >> GO TO 13.  
NO >> Replace around view monitor control unit. Refer to [AV-367. "Removal and Installation"](#).

## 13.CHECK SIDE CAMERA LH POWER SUPPLY 2

1. Turn ignition switch OFF.
2. Connect door mirror (passenger side) connector.
3. Turn ignition switch ON.
4. Check whether or not voltage between around view monitor control unit harness connectors is normal.

Probe				Reference value
(+)		(-)		
Around view monitor control unit				
Connector	Terminal	Connector	Terminal	
B268	56	B268	58	Approx. 6.0 V

Is the check result normal?

- YES >> Replace around view monitor control unit. Refer to [AV-367. "Removal and Installation"](#).  
NO >> Replace side camera LH. Refer to [AV-370. "Removal and Installation"](#).

# U1303 LED POWER SUPPLY VOLT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1303 LED POWER SUPPLY VOLT

### DTC Logic

INFOID:000000010578669

DTC	Display contents of CONSULT	DTC detection condition	Action to take
U1303	LED POWER SUPPLY VOLT [U1303]	The following condition of the supplemental lighting supply voltage is not satisfied for continuously 2 seconds or more when turning the ignition switch ON. • Supplemental lighting supply output ON: 5.2 - 5.8 V	<ul style="list-style-type: none"> <li>• Short circuit to battery or short circuit to ground of supplemental lighting output circuit.</li> <li>• Replace the around view monitor.</li> </ul>

#### NOTE:

This vehicle is equipped with a supplemental lighting supply output circuit (harness) but not a supplemental light.

### Diagnosis Procedure

INFOID:000000010578670

#### 1. CHECK INFRARED LED POWER SUPPLY 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	5	D33	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	5		Not existed

#### Is inspection result normal?

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

#### 2. CHECK INFRARED LED GROUND CIRCUIT

Check continuity between door mirror (passenger side) harness connector and ground.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminal	Connector	Terminals	
B46	6	D33	16	Existed

#### Is inspection result normal?

- YES >> Replace around view monitor control unit. Refer to [AV-367, "Removal and Installation"](#).  
NO >> Repair harness or connector.

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# U1304 CAMERA IMAGE CALIBRATION

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1304 CAMERA IMAGE CALIBRATION

### DTC Logic

INFOID:000000010578671

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1304	CAMERA IMAGE CAL-IB	Camera calibration is incomplete. <b>NOTE:</b> Current malfunction is displayed only and is not saved.	Perform camera calibration.

### Diagnosis Procedure

INFOID:000000010578672

#### 1.PERFORM CALIBRATING CAMERA IMAGE

Perform camera calibration when DTC U1304 is detected.

>> Perform camera calibration. Refer to [AV-247, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).

# U1305 CONFIG UNFINISH

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1305 CONFIG UNFINISH

### DTC Logic

INFOID:000000010578673

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1305	CONFIG UNFINISH [U1305]	The vehicle setting of around view monitor control unit is incomplete. <b>NOTE:</b> Current malfunction is displayed only and is not saved.	Perform the vehicle setting of around view monitor control unit.

### Diagnosis Procedure

INFOID:000000010578674

#### 1. PERFORM CONFIGURATION OF AROUND VIEW MONITOR CONTROL UNIT

Perform configuration of around view monitor control unit when DTC U1305 is detected.

>> Perform configuration of around view monitor control unit. Refer to [AV-245. "CONFIGURATION \(AROUND VIEW MONITOR CONTROL UNIT\) : Special Repair Requirement"](#).

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# U1310 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## U1310 AV CONTROL UNIT

### DTC Logic

INFOID:000000010578675

DTC	Display contents of CONSULT	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

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## POWER SUPPLY AND GROUND CIRCUIT

### AV CONTROL UNIT

#### AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000010578676

#### 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34

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 >> Repair harness or connector.

#### 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:0000000010578677

#### 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34

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 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

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AV

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

Is the inspection result normal?

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

## 3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector.
3. Check continuity between 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.

## BOSE AMP.

### BOSE AMP. : Diagnosis Procedure

INFOID:000000010578678

## 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:000000010578679

## 1.CHECK FUSE

Check for blown fuses.

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

Power source	Fuse No.
Battery	6
Ignition switch ACC	19
Ignition switch ON or START	4

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
Ignition signal	B46	3	ON	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:000000010578680

## 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Ignition switch ON or START	4

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		Battery voltage
M47	13		

Is the inspection result normal?

YES >> GO TO 3.

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## POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

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

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## RGB DIGITAL IMAGE SIGNAL CIRCUIT

### Description

INFOID:000000010578681

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

### Diagnosis Procedure

INFOID:000000010578682

#### 1. CHECK CONTINUITY RGB DIGITAL IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect 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.

(+) Front display unit		(-)	Condition	Voltage (Approx.)
Connector	Terminal			
M397	27	Ground	—	3.0 V
	28			

Is the inspection result normal?

- YES >> Replace front display unit. Refer to [AV-352, "Exploded View"](#).  
 NO >> Replace AV control unit. Refer to [AV-350, "Exploded View"](#).

AV

# COMPOSITE IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## COMPOSITE IMAGE SIGNAL CIRCUIT

### Description

INFOID:000000010578683

- DVD is played by inserting DVD into the AV control unit.
- DVD image signals are transmitted to the front display unit.
- AV control unit receives the image signal from the USB (video data) and then transmits it to the front display unit.

### Diagnosis Procedure

INFOID:000000010578684

#### 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

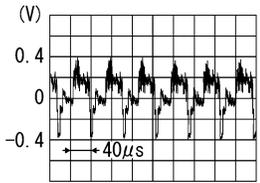
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK COMPOSITE SIGNAL

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

(+)		(-)	Condition	Reference value
AV control unit				
Connector	Terminal			
M210	68	Ground	At DVD image is displayed.	 <p>SKIB2251J</p>

Is the inspection result normal?

YES >> Replace front display unit. Refer to [AV-352, "Exploded View"](#).

NO >> Replace AV control unit. Refer to [AV-350, "Exploded View"](#).

# DISK EJECT SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## DISK EJECT SIGNAL CIRCUIT

### Description

INFOID:000000010578685

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

### Diagnosis Procedure

INFOID:000000010578686

#### 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-362, "Exploded View"](#).  
NO >> Replace AV control unit. Refer to [AV-350, "Exploded View"](#).

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# MODE CHANGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## MODE CHANGE SIGNAL CIRCUIT

### Description

INFOID:000000010578687

- 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:000000010578688

#### 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.

(+) BOSE amp.		(-)	Condition	Voltage (Approx.)
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-350, "Exploded View"](#).  
NO >> Replace BOSE amp. Refer to [AV-359, "Exploded View"](#).

# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## MICROPHONE SIGNAL CIRCUIT

### Description

INFOID:000000010578689

Supply power from AV control unit to microphone. The microphone transmits the sound/voice to the AV control unit.

### Diagnosis Procedure

INFOID:000000010578690

#### 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.)
Connector	Terminal	Ground		
M210	72			5.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace AV control unit. Refer to [AV-350, "Exploded View"](#).

#### 3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.
2. Check signal between AV control unit harness connector.

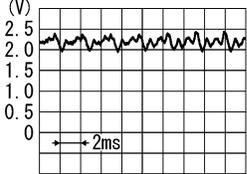
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# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

(+)		(-)		Condition	Reference value
AV control unit		AV control unit			
Connector	Terminal	Connector	Terminal		
M210	87	M210	71	Give a voice.	 <p style="text-align: right; font-size: small;">PKIB5037J</p>

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-350. "Exploded View"](#).  
 NO >> Replace microphone. Refer to [AV-364. "Exploded View"](#).

# CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## CAMERA IMAGE SIGNAL CIRCUIT

### Description

INFOID:0000000110578691

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:0000000110578692

#### 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	B268	47	Existed

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

Front display unit		Ground	Continuity
Connector	Terminal		
M195	8		Not existed

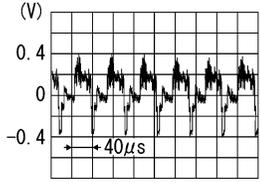
Is inspection result normal?

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.	

Is inspection result normal?

YES >> Replace front display unit. Refer to [AV-352, "Removal and Installation"](#).

NO >> Replace around view monitor control unit. Refer to [AV-367, "Removal and Installation"](#).

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# FRONT CAMERA COMMUNICATION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## FRONT CAMERA COMMUNICATION SIGNAL CIRCUIT

### Description

INFOID:000000010578693

- 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:000000010578694

#### 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	
B268	67	E155	6	Existed
	70		2	

4. Check continuity between around view monitor control unit harness connector and ground.

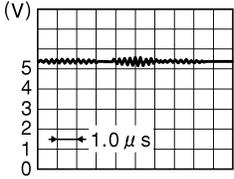
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B268	67		Not existed

#### 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.

(+)		(-)	Condition	Reference value
Connector	Terminal			
B268	67	Ground	"CAMERA" switch is ON or shift position is "R".	 <p>(V)</p> <p>5 4 3 2 1 0</p> <p>← 1.0 μs</p> <p>JSNIA0836GB</p>

#### Is inspection result normal?

- YES >> Replace around view monitor control unit. Refer to [AV-367, "Removal and Installation"](#).  
NO >> Replace front camera. Refer to [AV-368, "Removal and Installation"](#).

# REAR CAMERA COMMUNICATION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## REAR CAMERA COMMUNICATION SIGNAL CIRCUIT

### Description

INFOID:000000010578695

- 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:000000010578696

#### 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	
B268	49	D111	4	Existed
	52		7	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B268	49		Not existed

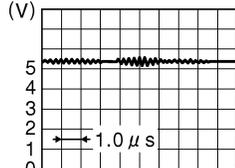
Is inspection result normal?

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.

(+)		(-)		Condition	Reference value
Around view monitor control unit		Around view monitor control unit			
Connector	Terminal	Connector	Terminal		
B268	49	B268	4	"CAMERA" switch is ON or shift position is "R".	 <p>(V)</p> <p>5 4 3 2 1 0</p> <p>1.0 μs</p> <p>JSNIA0836GB</p>

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to [AV-367, "Removal and Installation"](#).

NO >> Replace rear camera. Refer to [AV-369, "Removal and Installation"](#).

# SIDE CAMERA LH COMMUNICATION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## SIDE CAMERA LH COMMUNICATION SIGNAL CIRCUIT

### Description

INFOID:000000010578697

- 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:000000010578698

#### 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	
B268	55	D3	3	Existed
	58		18	

4. Check continuity between around view monitor control unit harness connector and ground.

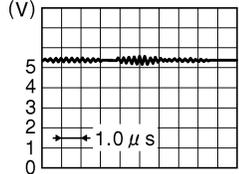
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B268	55		Not existed

#### 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.

Probe				Condition	Reference value
(+)		(-)			
Around view monitor control unit Connector	Terminal	Around view monitor control unit Connector	Terminal		
B268	55	B268	58	"CAMERA" switch is ON or shift position is "R".	 <p>(V)</p> <p>5 4 3 2 1 0</p> <p>← 1.0 μs</p> <p>JSNIA0836GB</p>

#### Is inspection result normal?

- YES >> Replace around view monitor control unit. Refer to [AV-367, "Removal and Installation"](#).  
NO >> Replace side camera LH. Refer to [AV-370, "Removal and Installation"](#).

# SIDE CAMERA RH COMMUNICATION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## SIDE CAMERA RH COMMUNICATION SIGNAL CIRCUIT

### Description

INFOID:000000010578699

- 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:000000010578700

#### 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	
B268	61	D33	3	Existed
	64		18	

4. Check continuity between around view monitor control unit harness connector and ground.

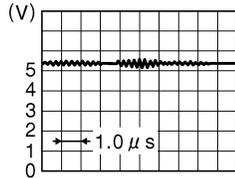
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B268	61		Not existed

#### 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.

Probe				Condition	Reference value
(+)		(-)			
Around view monitor control unit					
Connector	Terminal	Connector	Terminal		
B268	61	B268	64	"CAMERA" switch is ON or shift position is "R".	 <p style="text-align: right; font-size: small;">JSNIA0836GB</p>

#### Is inspection result normal?

- YES >> Replace around view monitor control unit. Refer to [AV-367, "Removal and Installation"](#).  
 NO >> Replace side camera RH. Refer to [AV-372, "Removal and Installation"](#).

# RETRACT MOTOR OPERATION SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## RETRACT MOTOR OPERATION SIGNAL CIRCUIT

### Diagnosis Procedure

INFOID:000000010578701

#### 1. CHECK RETRACT MOTOR OPERATION SIGNAL CIRCUIT [BETWEEN AROUND VIEW MONITOR CONTROL UNIT AND DOOR MIRROR (DRIVER SIDE)]

1. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
2. Check whether or not continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector is normal.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
B268	30	D3	8	Existed
	32		9	

3. Check whether or not continuity between around view monitor control unit harness connector and ground is normal.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
B268	30		Not existed
	32		

#### Is the check result normal?

- YES >> Perform diagnosis of door mirror (driver side) retract motor operation signal circuit.  
NO >> Repair the harnesses or connectors.

# STEERING SWITCH SIGNAL A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## STEERING SWITCH SIGNAL A CIRCUIT

### Description

INFOID:0000000110578702

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:0000000110578703

#### 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-14. "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-350. "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-331. "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [SR-11. "Exploded View"](#).

### Component Inspection

INFOID:0000000110578704

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

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

# STEERING SWITCH SIGNAL A CIRCUIT

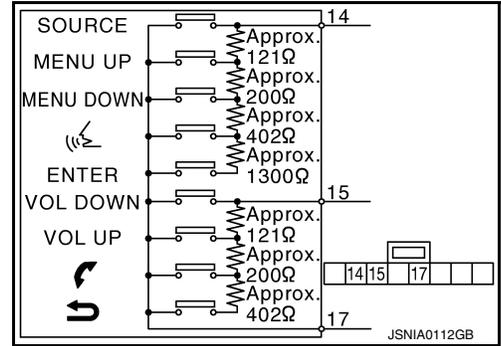
< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

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

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## STEERING SWITCH SIGNAL B CIRCUIT

### Description

INFOID:0000000110578705

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:0000000110578706

#### 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-14. "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-350. "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-333. "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [SR-11. "Exploded View"](#).

### Component Inspection

INFOID:0000000110578707

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

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

# STEERING SWITCH SIGNAL B CIRCUIT

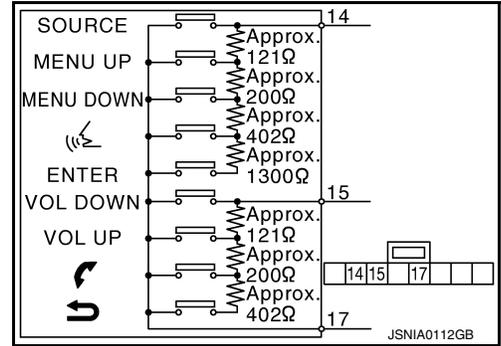
< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

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

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

## STEERING SWITCH GROUND CIRCUIT

### Description

INFOID:000000010578708

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:000000010578709

#### 1. CHECK STEERING SWITCH SIGNAL GND 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-14, "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		Not existed

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace AV control unit. Refer to [AV-350, "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-335, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [SR-11, "Exploded View"](#).

### Component Inspection

INFOID:000000010578710

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

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
O  
P

AV

# STEERING SWITCH GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[NAVIGATION]

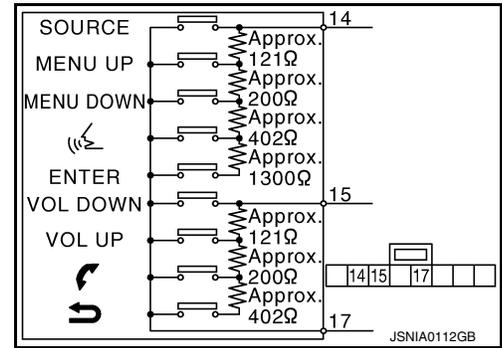
Standard

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:0000000010578711

#### RELATED TO NAVIGATION

Symptoms	Check items	Probable malfunction location
Multifunction switch and preset switch operation does not work.	<ul style="list-style-type: none"> <li>All switches cannot be operated.</li> <li>"MULTI AV" is displayed on system selection screen when the CONSULT is started.</li> </ul>	<ul style="list-style-type: none"> <li>Multifunction switch power supply and ground circuit malfunction.</li> <li>AV communication circuit between AV control unit and multifunction switch. Perform CONSULT self-diagnosis. Refer to <a href="#">AV-180, "CONSULT Function (MULTI AV)"</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>All switches cannot be operated.</li> <li>"MULTI AV" is not displayed on system selection screen when the CONSULT is initialized.</li> </ul>	AV control unit power supply and ground circuit malfunction. Refer to <a href="#">AV-315, "AV CONTROL UNIT : Diagnosis Procedure"</a> .
	Only specified switch cannot be operated.	Multifunction switch or preset switch malfunction. Perform multifunction switch and preset switch self-diagnosis function. Refer to <a href="#">AV-170, "On Board Diagnosis Function"</a> .
Fuel economy display is abnormal.	There is malfunction in the CONSULT "self-diagnosis result" of "MULTI AV". Refer to <a href="#">AV-180, "CONSULT Function (MULTI AV)"</a> .	Perform detected DTC diagnosis. Refer to <a href="#">AV-195, "DTC Index"</a> .
	There is no malfunction in the CONSULT "self-diagnosis results" of "MULTI AV". Refer to <a href="#">AV-180, "CONSULT Function (MULTI AV)"</a> .	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 <a href="#">AV-350, "Exploded View"</a> .

#### RELATED TO HANDS-FREE PHONE (EXCEPT FOR MEXICO)

- Before performing diagnosis, confirm that the cellular phone being used by the customer is compatible with the vehicle.
- It is possible that a malfunction is occurring due to a version change of the phone even though the phone is a compatible type. This can be confirmed by changing the cellular phone to another compatible type, and checking that it operates normally. It is important to determine whether the cause of the malfunction is the vehicle or the cellular phone.

#### Check Compatibility

- Make sure the customer's Bluetooth® related concern is understood.
- Verify the customer's concern.
 

**NOTE:**  
The customer's phone may be required, depending upon their concern.
- Write down the customer's phone brand, model, and service provider.
 

**NOTE:**  
It is necessary to know the service provider. On occasion, a given phone may be on the approved list with one provider, but may not be on the approved list with other providers.
- Go to "www.infinitiusa.com/bluetooth/".
  - Using the website's search engine, find out if the customer's phone is on the approved list.
  - If the customer's phone is NOT on the approved list:

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
AV  
O  
P

## MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[NAVIGATION]

Stop diagnosis here. The customer needs to obtain a Bluetooth® phone that is on the approved list before any further action.

- c. If the feature related to the customer's concern shows as “N” (not compatible):  
Stop diagnosis here. If the customer still wants the feature to function, they will need to get an approved phone showing the feature as “Y” (compatible) in the “Basic Features” list.
- d. If the feature related to the customer's concern shows as “Y” (compatible):  
Perform diagnosis as per the following table.

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 <a href="#">AV-350. "Exploded View"</a> .
Hands-free phone cannot be established.	<ul style="list-style-type: none"> <li>• Hands-free phone operation can be made, but the communication cannot be established.</li> <li>• Hands-free phone operation can be performed, however, voice between each other cannot be heard during the conversation.</li> </ul>	AV control unit malfunction. Replace AV control unit. Refer to <a href="#">AV-350. "Exploded View"</a> .
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 <a href="#">AV-350. "Exploded View"</a> .
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 <a href="#">AV-350. "Exploded View"</a> .
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to <a href="#">AV-323. "Diagnosis Procedure"</a> .
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 <a href="#">SR-11. "Exploded View"</a> .
	Steering switch's "↷", "VOL UP", "VOL DOWN", "↶" switches do not work.	Steering switch signal B circuit malfunction. Refer to <a href="#">AV-333. "Diagnosis Procedure"</a> .
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to <a href="#">AV-335. "Diagnosis Procedure"</a> .

### RELATED TO HANDS-FREE PHONE (FOR MEXICO)

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 <a href="#">AV-350. "Exploded View"</a> .
Hands-free phone cannot be established.	<ul style="list-style-type: none"> <li>• Hands-free phone operation can be made, but the communication cannot be established.</li> <li>• Hands-free phone operation can be performed, however, voice between each other cannot be heard during the conversation.</li> </ul>	AV control unit malfunction. Replace AV control unit. Refer to <a href="#">AV-350. "Exploded View"</a> .
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 <a href="#">AV-350. "Exploded View"</a> .
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 <a href="#">AV-350. "Exploded View"</a> .
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to <a href="#">AV-323. "Diagnosis Procedure"</a> .

# MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[NAVIGATION]

Symptoms	Check items	Probable malfunction location
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 <a href="#">SR-11, "Exploded View"</a> .
	Steering switch's "↷", "VOL UP", "VOL DOWN", "↶" switches do not work.	Steering switch signal B circuit malfunction. Refer to <a href="#">AV-333, "Diagnosis Procedure"</a> .
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to <a href="#">AV-335, "Diagnosis Procedure"</a> .

## RELATED TO AROUND VIEW MONITOR

Symptoms	Check items	Probable malfunction location				
Screen is not switched to camera image, when camera switch is pressed and when shift position is shifted to the reverse position.	"AVM" is not displayed on the system selection screen of CONSULT.	Around view monitor control unit power supply circuit <ul style="list-style-type: none"> <li>BAT power supply circuit</li> <li>Ignition power supply circuit</li> <li>ACC power supply circuit</li> </ul>				
	Check that the following data monitor items operate normally using CONSULT <ul style="list-style-type: none"> <li>Camera switch signal</li> <li>Reverse signal</li> </ul>	<table border="1"> <tr> <td>Camera switch signal and reverse signal are normal</td> <td>Around view monitor control unit</td> </tr> <tr> <td>Camera switch signal or reverse signal is not normal</td> <td>AV communication circuit</td> </tr> </table>	Camera switch signal and reverse signal are normal	Around view monitor control unit	Camera switch signal or reverse signal is not normal	AV communication circuit
Camera switch signal and reverse signal are normal	Around view monitor control unit					
Camera switch signal or reverse signal is not normal	AV communication circuit					
Screen is switched when pressing camera switch or shifting selector lever to the reverse position, however, all views are not displayed.	Only superimposing is displayed (only images that AV control unit plots are displayed).	Camera image signal circuit (between around view monitor control unit and front display) Refer to <a href="#">AV-325, "Diagnosis Procedure"</a> .				
	Superimposing is not displayed.	Communication circuit between AV control unit and front display Refer to <a href="#">AV-180, "CONSULT Function (MULTI AV)"</a>				
The screen is not switched to the rear view image even if the selector is shifted to the reverse position.	The front view is displayed normally.	CAN communication circuit (TCM)				
<ul style="list-style-type: none"> <li>Front view screen is not displayed.</li> <li>Front of top view screen is displayed.</li> </ul>	Check the following data monitor items using CONSULT. <ul style="list-style-type: none"> <li>Front camera image signal</li> <li>Front view camera communication status</li> <li>Front camera communication line</li> </ul>	<table border="1"> <tr> <td> <ul style="list-style-type: none"> <li>Image signal: NG</li> <li>Communication status: NG</li> <li>Communication line: NG</li> </ul> </td> <td>Front camera power supply circuit and image signal circuit Refer to <a href="#">AV-274, "Diagnosis Procedure"</a>.</td> </tr> <tr> <td> <ul style="list-style-type: none"> <li>Image signal: OK</li> <li>Communication status: NG</li> <li>Communication line: NG</li> </ul> </td> <td>Front camera communication circuit Refer to <a href="#">AV-326, "Diagnosis Procedure"</a>.</td> </tr> </table>	<ul style="list-style-type: none"> <li>Image signal: NG</li> <li>Communication status: NG</li> <li>Communication line: NG</li> </ul>	Front camera power supply circuit and image signal circuit Refer to <a href="#">AV-274, "Diagnosis Procedure"</a> .	<ul style="list-style-type: none"> <li>Image signal: OK</li> <li>Communication status: NG</li> <li>Communication line: NG</li> </ul>	Front camera communication circuit Refer to <a href="#">AV-326, "Diagnosis Procedure"</a> .
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<ul style="list-style-type: none"> <li>Image signal: OK</li> <li>Communication status: NG</li> <li>Communication line: NG</li> </ul>	Front camera communication circuit Refer to <a href="#">AV-326, "Diagnosis Procedure"</a> .					
<ul style="list-style-type: none"> <li>The rear view screen is not displayed.</li> <li>Rear of top view screen is not displayed.</li> </ul>	Check the following data monitor items using CONSULT. <ul style="list-style-type: none"> <li>Rear camera image signal</li> <li>Rear camera communication status</li> <li>Rear camera communication line</li> </ul>	<table border="1"> <tr> <td> <ul style="list-style-type: none"> <li>Image signal: NG</li> <li>Communication status: NG</li> <li>Communication line: NG</li> </ul> </td> <td>Rear camera power supply circuit and image signal circuit Refer to <a href="#">AV-270, "Diagnosis Procedure"</a>.</td> </tr> <tr> <td> <ul style="list-style-type: none"> <li>Image signal: OK</li> <li>Communication status: NG</li> <li>Communication line: NG</li> </ul> </td> <td>Rear camera communication signal circuit Refer to <a href="#">AV-327, "Diagnosis Procedure"</a>.</td> </tr> </table>	<ul style="list-style-type: none"> <li>Image signal: NG</li> <li>Communication status: NG</li> <li>Communication line: NG</li> </ul>	Rear camera power supply circuit and image signal circuit Refer to <a href="#">AV-270, "Diagnosis Procedure"</a> .	<ul style="list-style-type: none"> <li>Image signal: OK</li> <li>Communication status: NG</li> <li>Communication line: NG</li> </ul>	Rear camera communication signal circuit Refer to <a href="#">AV-327, "Diagnosis Procedure"</a> .
	<ul style="list-style-type: none"> <li>Image signal: NG</li> <li>Communication status: NG</li> <li>Communication line: NG</li> </ul>	Rear camera power supply circuit and image signal circuit Refer to <a href="#">AV-270, "Diagnosis Procedure"</a> .				
<ul style="list-style-type: none"> <li>Image signal: OK</li> <li>Communication status: NG</li> <li>Communication line: NG</li> </ul>	Rear camera communication signal circuit Refer to <a href="#">AV-327, "Diagnosis Procedure"</a> .					

## MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[NAVIGATION]

Symptoms	Check items	Probable malfunction location
<ul style="list-style-type: none"> <li>• The side view screen is not displayed.</li> <li>• Left side of top view screen is not displayed.</li> </ul>	Check the following data monitor items using CONSULT. <ul style="list-style-type: none"> <li>• Side camera LH image signal</li> <li>• Side camera LH communication status</li> <li>• Side camera LH communication line</li> </ul>	<ul style="list-style-type: none"> <li>• Image signal: NG</li> <li>• Communication status: NG</li> <li>• Communication line: NG</li> </ul> Side camera LH power supply circuit and image signal circuit Refer to <a href="#">AV-276, "Diagnosis Procedure"</a> .
	<ul style="list-style-type: none"> <li>• Image signal: OK</li> <li>• Communication status: NG</li> <li>• Communication line: NG</li> </ul> Side camera LH communication circuit Refer to <a href="#">AV-328, "Diagnosis Procedure"</a> .	
Right side of top view image is not displayed.	Check the following data monitor items using CONSULT. <ul style="list-style-type: none"> <li>• Side camera RH image signal</li> <li>• Side camera RH communication status</li> <li>• Side camera RH communication line</li> </ul>	<ul style="list-style-type: none"> <li>• Image signal: NG</li> <li>• Communication status: NG</li> <li>• Communication line: NG</li> </ul> Side camera RH power supply circuit and image signal circuit Refer to <a href="#">AV-272, "Diagnosis Procedure"</a> .
	<ul style="list-style-type: none"> <li>• Image signal: OK</li> <li>• Communication status: NG</li> <li>• Communication line: NG</li> </ul> Side camera RH communication circuit Refer to <a href="#">AV-329, "Diagnosis Procedure"</a> .	
MOD warning operates while door mirror is in retracting operation.	—	Retract motor operation signal circuit

### RELATED TO CAMERA ASSISTANCE SONAR

Symptoms	Check items	Possible malfunction location/Action to take
Sonar indicator is not displayed normally (always displayed in red).	Only 1 indicator is not displayed normally (always displayed in red).	<ul style="list-style-type: none"> <li>• Corner sensor of applicable position is not normal.</li> <li>• Corner sensor harness circuit of applicable position</li> </ul> Perform self-diagnosis of sonar system. Refer to <a href="#">AV-187, "CONSULT Function"</a> .
	Display of all 4 indicators is not normal (always displayed in red).	<ul style="list-style-type: none"> <li>• Corner sensor ground circuit</li> <li>• Sonar control unit power supply and ground circuit</li> <li>• AV communication circuit.</li> </ul> Perform self-diagnosis of multi AV system using CONSULT. Refer to <a href="#">AV-187, "CONSULT Function"</a> .

### RELATED TO RGB IMAGE

Symptoms	Check items	Probable malfunction location
RGB image is not shown.	—	RGB digital image signal circuit malfunction. Refer to <a href="#">AV-319, "Diagnosis Procedure"</a> .

### 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 <a href="#">AV-350, "Removal and Installation"</a> .
	Voice does not sound at "Voice Microphone Test" of Confirmation/Adjustment mode.	Microphone circuit malfunction. Refer to <a href="#">AV-323, "Diagnosis Procedure"</a> .

# MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[NAVIGATION]

Symptoms	Check items	Probable malfunction location
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 <a href="#">SR-11, "Exploded View"</a> .
	Steering switch's "SOURCE", "MENU UP", "MENU DOWN", "↶", "ENTER" switches do not work.	Steering switch signal A circuit malfunction. Refer to <a href="#">AV-331, "Diagnosis Procedure"</a> .
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to <a href="#">AV-335, "Diagnosis Procedure"</a> .

## RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to <a href="#">AV-321, "Diagnosis Procedure"</a> .
No sound comes out or the level of the sound is low.	No sound from all speakers.	<ul style="list-style-type: none"> <li>• BOSE amp. ON signal circuit malfunction.</li> <li>• BOSE amp. power supply and ground circuits malfunction.</li> </ul> Refer to <a href="#">AV-316, "BOSE AMP. : Diagnosis Procedure"</a> .
	Sound is not heard from woofer.	<ul style="list-style-type: none"> <li>• Woofer power supply and ground circuit malfunction.</li> <li>• Sound signal (woofer) circuit malfunction.</li> <li>• Woofer amp. ON signal circuit malfunction.</li> </ul>
	Only a certain speaker (front right, front left, rear right, or rear left, etc.) does not output sound.	<ul style="list-style-type: none"> <li>• Poor connector connection of speaker.</li> <li>• Sound signal circuit malfunction between AV control unit and BOSE amp.</li> <li>• Sound signal circuit malfunction between BOSE amp. and speaker.</li> <li>• Malfunction in speaker.</li> <li>• Malfunction in AV control unit.</li> <li>• Malfunction in BOSE amp.</li> </ul>
It does not change to "Driver's Audio Stage" mode.	—	Mode change signal circuit malfunction. Refer to <a href="#">AV-322, "Diagnosis Procedure"</a> .
Noise is mixed with audio.	Noise comes out from all speakers.	<ul style="list-style-type: none"> <li>• Malfunction in AV control unit.</li> <li>• Malfunction in BOSE amp.</li> </ul>
	Noise comes out only from a certain speaker (front right, front left, rear right, or rear left, etc.).	<ul style="list-style-type: none"> <li>• Poor connector connection of speaker.</li> <li>• Sound signal circuit malfunction between AV control unit and BOSE amp.</li> <li>• Sound signal circuit malfunction between BOSE amp. and speaker.</li> <li>• Malfunction in speaker.</li> <li>• Poor installation of speaker (e.g. backlash and looseness)</li> <li>• Malfunction in AV control unit.</li> <li>• Malfunction in BOSE amp.</li> </ul>
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	<ul style="list-style-type: none"> <li>• Poor connector connection of antenna or antenna feeder.</li> <li>• Loose antenna base mounting nut. Refer to <a href="#">AV-360, "Exploded View"</a>.</li> </ul>
Radio is not received or poor reception.	<ul style="list-style-type: none"> <li>• Other audio sounds are normal.</li> <li>• Any radio cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no obstacles generating external noises).</li> </ul>	<ul style="list-style-type: none"> <li>• Antenna amp. ON signal circuit malfunction.</li> <li>• Poor connector connection of antenna or antenna feeder.</li> <li>• Loose antenna base mounting nut. Refer to <a href="#">AV-360, "Exploded View"</a>.</li> </ul>

# MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[NAVIGATION]

Symptoms	Check items	Probable malfunction location
Satellite radio is not received.	There is malfunction in the CONSULT self-diagnosis result. Refer to <a href="#">AV-180, "CONSULT Function (MULTI AV)"</a> .	<ul style="list-style-type: none"> <li>Malfunction in antenna, antenna feeder, or AV control unit. Perform DTC diagnosis. Refer to <a href="#">AV-195, "DTC Index"</a>.</li> <li>Poor continuity in antenna feeder.</li> <li>Poor connector connection of antenna or antenna feeder.</li> </ul>
	There is no malfunction in the CONSULT self-diagnosis result. Refer to <a href="#">AV-180, "CONSULT Function (MULTI AV)"</a> .	<ul style="list-style-type: none"> <li>Poor continuity in antenna feeder.</li> <li>Poor connector connection of antenna or antenna feeder.</li> <li>Loose satellite radio antenna mounting nut. Refer to <a href="#">AV-360, "Exploded View"</a>.</li> </ul> <p><b>NOTE:</b> Tightening torque: 6.5 N·m (0.66 kg·m, 58 in·lb)</p>

## RELATED TO STEERING SWITCH

Symptoms	Probable malfunction location
None of the steering switch operations work.	Steering switch ground circuit malfunction. Refer to <a href="#">AV-335, "Diagnosis Procedure"</a> .
Only specified switch cannot be operated.	Steering switch malfunction. Replace steering switch. Refer to <a href="#">SR-11, "Exploded View"</a> .
Steering switch's "SOURCE", "MENU UP", "MENU DOWN", "⏪", "ENTER" switches do not work.	Steering switch signal A circuit malfunction. Refer to <a href="#">AV-331, "Diagnosis Procedure"</a> .
Steering switch's "⏩", "VOL UP", "VOL DOWN", "⏸" switches do not work.	Steering switch signal B circuit malfunction. Refer to <a href="#">AV-333, "Diagnosis Procedure"</a> .

## 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.	—	<ul style="list-style-type: none"> <li>USB harness malfunction.</li> <li>USB connector malfunction.</li> </ul>

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 <a href="#">AV-321, "Diagnosis Procedure"</a> .
DVD image is not displayed.	—	Perform CONSULT self-diagnosis. Refer to <a href="#">AV-180, "CONSULT Function (MULTI AV)"</a> . When detecting no malfunction in those components, the following items are a possible cause. <ul style="list-style-type: none"> <li>Composite image signal circuits malfunction. Refer to <a href="#">AV-320, "Diagnosis Procedure"</a>.</li> </ul>
DVD sound is not heard.	No sound from all speakers.	<ul style="list-style-type: none"> <li>Amp. ON signal circuit malfunction.</li> <li>BOSE amp. power supply and ground circuits malfunction. Refer to <a href="#">AV-316, "BOSE AMP.: Diagnosis Procedure"</a>.</li> </ul>
	Sound is not heard from woofer.	<ul style="list-style-type: none"> <li>Woofer power supply and ground circuit malfunction.</li> <li>Sound signal (woofer) circuit malfunction.</li> <li>Woofer amp. ON signal circuit malfunction.</li> </ul>
	Sound is heard only from specific places.	Sound signals circuit of suspect system.

# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[NAVIGATION]

## NORMAL OPERATING CONDITION

### Description

INFOID:000000010578712

**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.	

#### 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.

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[NAVIGATION]

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. <b>NOTE:</b> 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). <b>NOTE:</b> 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 HANDS-FREE PHONE (EXCEPT FOR MEXICO)

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[NAVIGATION]

Symptom	Cause and Counter measure	A
Does not recognize cellular phone connection. (No connection is displayed on the display at the guide.)	Some Bluetooth <sup>®</sup> enabled cellular phones may not be recognized by the in-vehicle phone module. Refer to "RELATED TO HANDS-FREE PHONE (Check Compatibility)" of MULTI AV SYSTEM SYMPTOM.	B
Cannot use hands-free phone	Customer will not be able to use a hands-free phone under the following conditions. <ul style="list-style-type: none"> <li>• The vehicle is outside of the telephone service area.</li> <li>• The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area.</li> <li>• The cellular phone is locked to prevent it from being dialed.</li> </ul> <b>NOTE:</b> While a cellular phone is connected through the Bluetooth <sup>®</sup> wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth <sup>®</sup> Hands-Free Phone System cannot charge cellular phones.	C D E
The other party's voice cannot be heard by hands-free phone.	When the radio wave condition is not ideal or ambient sound is too loud, it may be difficult to hear the other person's voice during a call.	F
Poor sound quality	Do not place the cellular phone in an area surrounded by metal or far away from the in-vehicle phone module to prevent tone quality degradation and wireless connection disruption.	G

### RELATED TO HANDS-FREE PHONE (FOR MEXICO)

Symptom	Cause and Counter measure	H
Cannot use hands-free phone	Customer will not be able to use a hands-free phone under the following conditions. <ul style="list-style-type: none"> <li>• The vehicle is outside of the telephone service area.</li> <li>• The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area.</li> <li>• The cellular phone is locked to prevent it from being dialed.</li> </ul> <b>NOTE:</b> While a cellular phone is connected through the Bluetooth <sup>®</sup> wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth <sup>®</sup> Hands-Free Phone System cannot charge cellular phones.	I J K L
The other party's voice cannot be heard by hands-free phone.	When the radio wave condition is not ideal or ambient sound is too loud, it may be difficult to hear the other person's voice during a call.	M
Poor sound quality	Do not place the cellular phone in an area surrounded by metal or far away from the in-vehicle phone module to prevent tone quality degradation and wireless connection disruption.	AV

### 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.

# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[NAVIGATION]

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/M4A 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" or ".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.
Poor sound quality	Check if the CD is scratched or dirty.
	Check if the CD is protected by copyright.
It takes a relatively long time before the music starts playing.	Disks recorded in live file system format are not supported. (For Microsoft Windows Vista, check the settings.)
Music cuts off or skips	Check if the finalization process, such as session close and disc close, is done for the disc.
Skipping with high bit rate files	Check if the CD is protected by copyright.
Move immediately to the next song when playing	Disks recorded in live file system format are not supported. (For Microsoft Windows Vista, check the settings.)
The songs do not play back in the desired order.	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.
Poor reception only from a certain radio broadcast station.	Skipping may occur with large quantities if data such as for high bit rate data.
Buzz/rattle sound from speaker	When a non-MP3/WMA/AAC/M4A 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 playback order is the order in which the files were written by the software, so the files might not play in the desired order.
	Check incoming radio wave signal strength of applicable broadcast station.
	The majority of rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the rattle.

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.

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[NAVIGATION]

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).	A
	Check that there is no condensation inside the player.	Wait until the condensation evaporates (approximately one hour).	B
	DVD menu is displayed.	Select item to touch "ENTER".	C
	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.	D
		Wipe and clean the dirt on the disc.	
Subtitles not shown	Subtitle setting is OFF.	Set subtitle.	E
	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.	F
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.	G
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.	H
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.	I
	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.	J
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.	K

### 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.	M
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.	O
	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.	P
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.	

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[NAVIGATION]

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.

# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[NAVIGATION]

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.

## RELATED TO SONAR

Symptom	Possible cause
Unstable object detection	<ul style="list-style-type: none"> <li>• The vehicle is on a rough surface, such as stone or gravel.</li> <li>• When used in poor weather conditions, such as heavy snow/rain or strong wind.</li> <li>• When subjected to an ultrasonic noise generated from exhaust muffler or brakes.</li> <li>• When left standing in the hot sun or in a cold climate.</li> <li>• When the surface of the sensor is frozen or covered with snow/dirt/moisture.</li> <li>• When a retrofitted xenon lamp, lighted license plate, or harness is close to the sensor body or sensor harness.</li> <li>• When subjected to loop coil noises generated from a vehicle detector placed at an intersection or coin parking area.</li> </ul>
Object undetectable	<ul style="list-style-type: none"> <li>• Air-containing objects, such as cloth, cotton, glass wool, dust, and snow.</li> <li>• Thin objects, such as rope, chain, and wire.</li> <li>• Smooth-faced objects placed in a slanting direction.</li> <li>• Fast-moving small animals.</li> <li>• A corner of an angular object.</li> </ul> <p><b>NOTE:</b> If the sensor detection part is scratched, obstacles cannot be detected.</p>

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AV

# AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

[NAVIGATION]

## REMOVAL AND INSTALLATION

### AV CONTROL UNIT

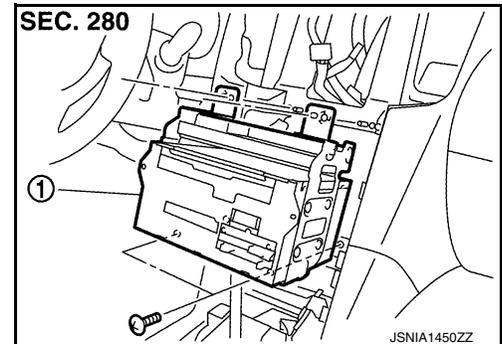
Exploded View

INFOID:0000000010578713

#### CAUTION:

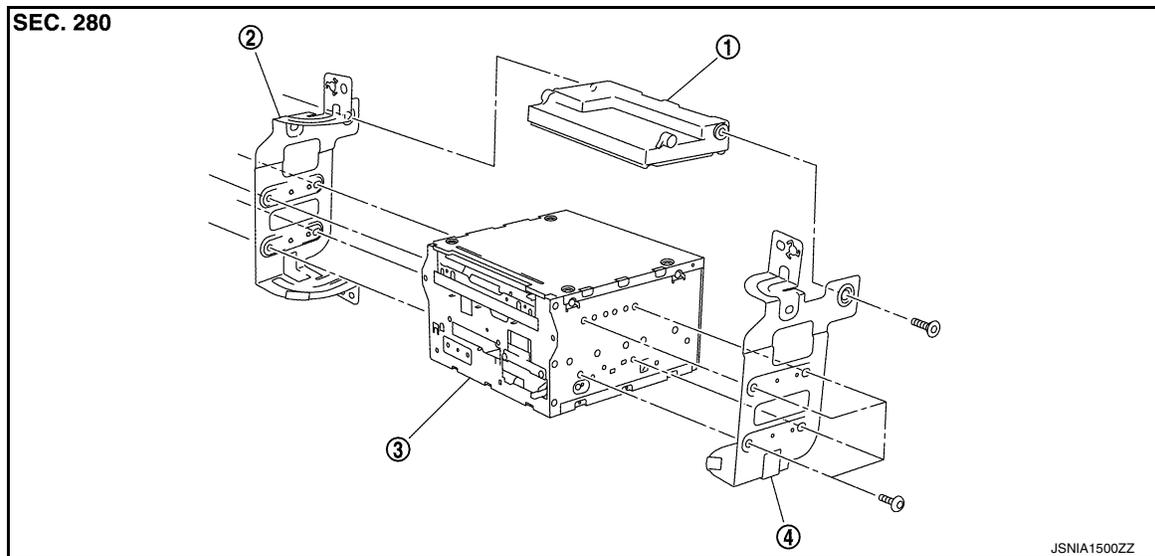
- Before replacing AV control unit, perform "Read/Write Configuration" to save or print current vehicle specification. For details, refer to [AV-243, "ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Description"](#).
- Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF.

#### 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:0000000010578714

#### CAUTION:

- Before replacing AV control unit, perform "Read/Write Configuration" to save or print current vehicle specification. For details, refer to [AV-243, "ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Description"](#).
- Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF.

#### NOTE:

# AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

[NAVIGATION]

After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Therefore, data corruption may occur if battery voltage is cut off within 30 seconds.

A

## REMOVAL

1. Remove front display unit. Refer to [AV-352, "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.

B

## INSTALLATION

Installation is the reverse order of removal.

### CAUTION:

- Be sure to perform "Read/Write Configuration" when replacing AV control unit. For details, refer to [AV-243, "CONFIGURATION \(AV CONTROL UNIT\) : Special Repair Requirement"](#).
- Since AV control unit connector and unified meter and A/C amp. connector have the same form, be careful not to insert them wrongly.

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# FRONT DISPLAY UNIT

< REMOVAL AND INSTALLATION >

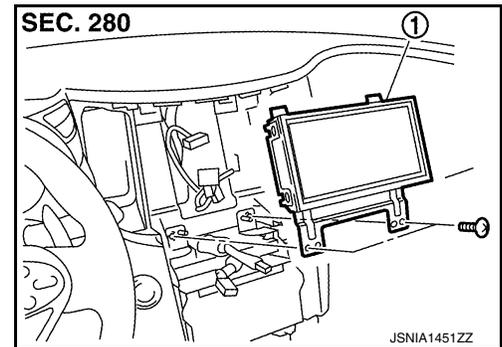
[NAVIGATION]

## FRONT DISPLAY UNIT

### Exploded View

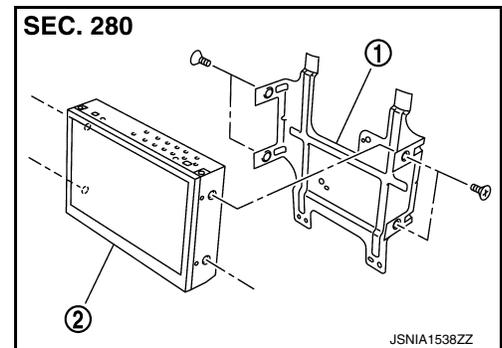
INFOID:000000010578715

### REMOVAL



1. Front display unit

### DISASSEMBLY



1. Bracket
2. Front display unit

### Removal and Installation

INFOID:000000010578716

### REMOVAL

1. Remove cluster lid D. Refer to [IP-12, "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

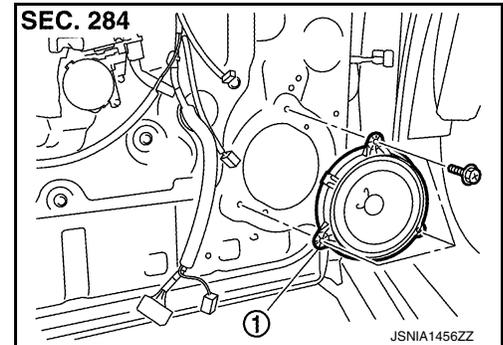
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## FRONT DOOR SPEAKER

### Exploded View

INFOID:0000000010578717



1. Front door speaker

### Removal and Installation

INFOID:0000000010578718

#### REMOVAL

1. Remove front door finisher. Refer to [INT-12. "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.

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AV

# REAR DOOR SPEAKER

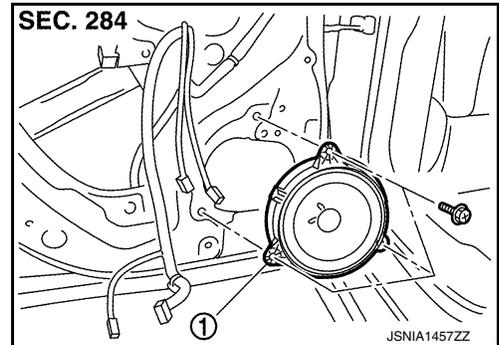
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## REAR DOOR SPEAKER

### Exploded View

INFOID:0000000010578719



1. Rear door speaker

### Removal and Installation

INFOID:0000000010578720

#### REMOVAL

1. Remove rear door finisher. Refer to [INT-15. "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

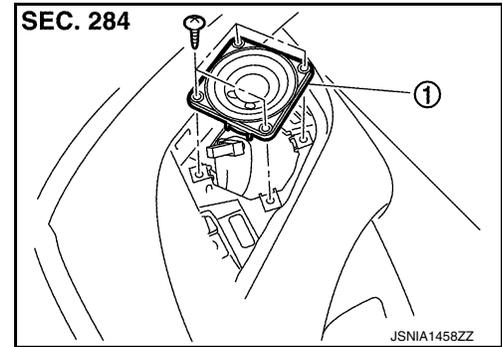
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## FRONT SQUAWKER

### Exploded View

INFOID:0000000010578721



1. Front squawker

### Removal and Installation

INFOID:0000000010578722

#### REMOVAL

1. Remove speaker grille. Refer to [IP-12. "Exploded View"](#).
2. Remove front squawker mounting screws.
3. Disconnect connector and remove front squawker.

#### INSTALLATION

Installation is the reverse order of removal.

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AV

# REAR SQUAWKER

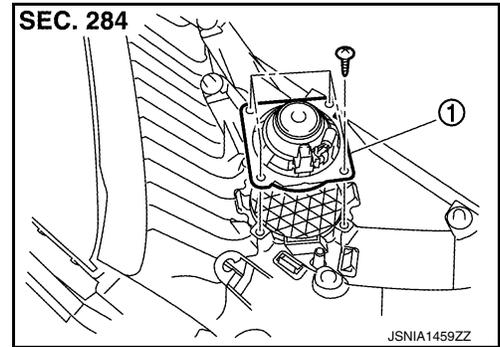
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## REAR SQUAWKER

### Exploded View

INFOID:0000000010578723



1. Rear squawker

### Removal and Installation

INFOID:0000000010578724

#### REMOVAL

1. Remove luggage side finisher upper. Refer to [INT-30, "Exploded View"](#).
2. Remove rear squawker mounting screws.
3. Remove rear squawker.

#### INSTALLATION

Installation is the reverse order of removal.

# CENTER SPEAKER

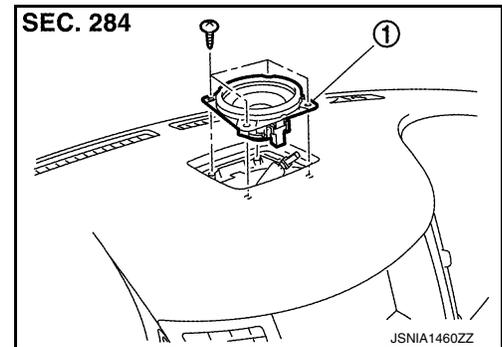
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## CENTER SPEAKER

### Exploded View

INFOID:0000000010578725



1. Center speaker

### Removal and Installation

INFOID:0000000010578726

#### REMOVAL

1. Remove center speaker grille. Refer to [IP-12, "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.

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AV

# WOOFER

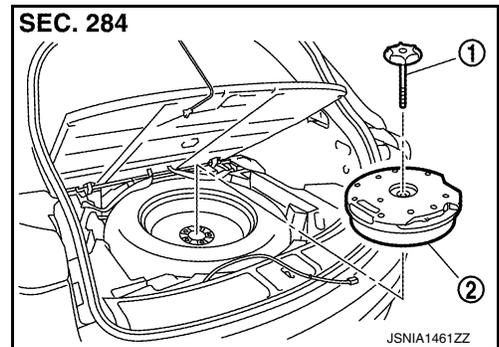
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## WOOFER

### Exploded View

INFOID:0000000010578727



1. Woofer clamp
2. Woofer

### Removal and Installation

INFOID:0000000010578728

#### REMOVAL

1. Pull up luggage finisher cover and hang the strap to upper body.
2. Remove woofer clamp.
3. Remove harness clip and connector.
4. Remove woofer.

#### INSTALLATION

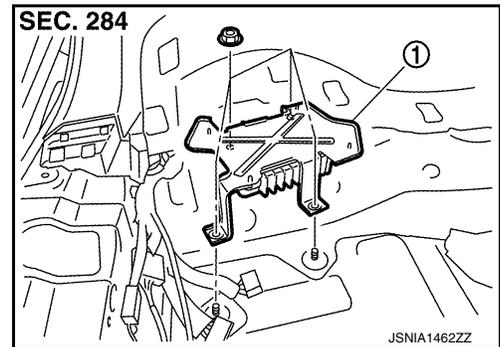
Installation is the reverse order of removal.

## BOSE AMP.

### Exploded View

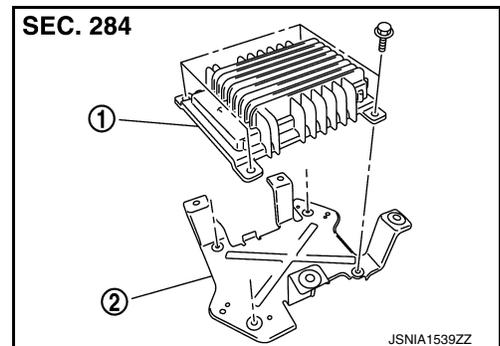
INFOID:000000010578729

### REMOVAL



1. BOSE amp.

### DISASSEMBLY



1. BOSE amp.
2. Bracket

## Removal and Installation

INFOID:000000010578730

### REMOVAL

1. Remove luggage floor spacer (LH). Refer to [INT-30, "Exploded View"](#).
2. Remove BOSE amp. mounting nuts.
3. Disconnect connector and remove BOSE amp.

### INSTALLATION

Installation is the reverse order of removal.

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AV

# ANTENNA BASE

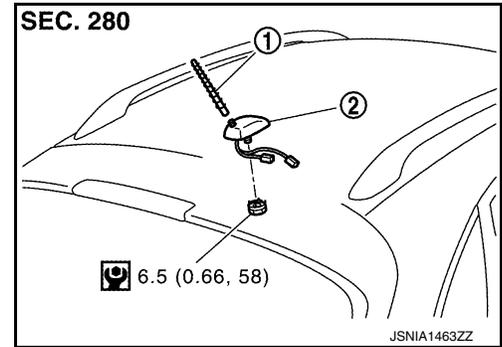
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## ANTENNA BASE

### Exploded View

INFOID:0000000010578731



1. Antenna rod
2. Antenna base

Refer to [GI-3, "Contents"](#) for symbols in the figure.

### Removal and Installation

INFOID:0000000010578732

#### 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

< REMOVAL AND INSTALLATION >

[NAVIGATION]

## MULTIFUNCTION SWITCH

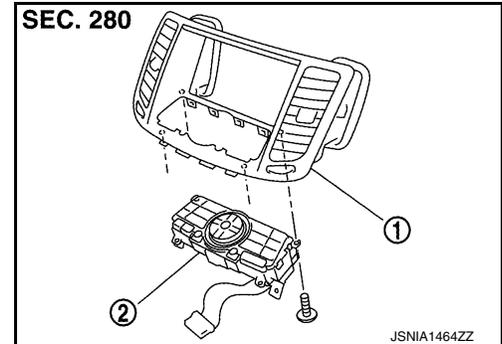
### Exploded View

INFOID:000000010578733

#### REMOVAL

Refer to [IP-12, "Exploded View"](#).

#### DISASSEMBLY



1. Cluster lid D
2. Multifunction switch

### Removal and Installation

INFOID:000000010578734

#### REMOVAL

1. Remove cluster lid D. Refer to [IP-12, "Exploded View"](#).
2. Remove multifunction switch mounting screws.
3. Disconnect connector and remove multifunction switch.

#### INSTALLATION

Installation is the reverse order of removal.

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AV

# PRESET SWITCH

< REMOVAL AND INSTALLATION >

[NAVIGATION]

## PRESET SWITCH

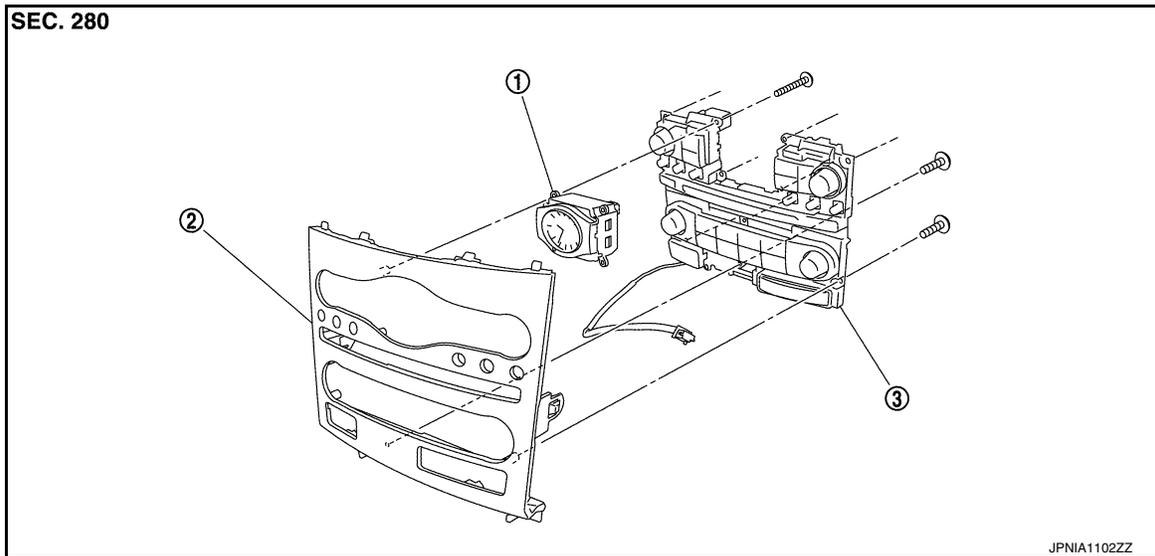
### Exploded View

INFOID:000000010578735

#### REMOVAL

Refer to [IP-12. "Exploded View"](#).

#### DISASSEMBLY



1. Clock

2. Cluster lid C

3. Preset switch

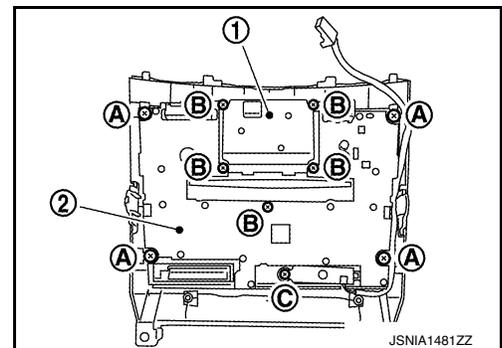
### Removal and Installation

INFOID:000000010578736

#### REMOVAL

1. Remove cluster lid C. Refer to [IP-12. "Exploded View"](#).
2. Remove preset switch mounting screws (A), (B) and (C).
3. Disconnect connector and remove preset switch (2).

1. Clock



#### 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 AV control unit and preset switch.

# USB CONNECTOR

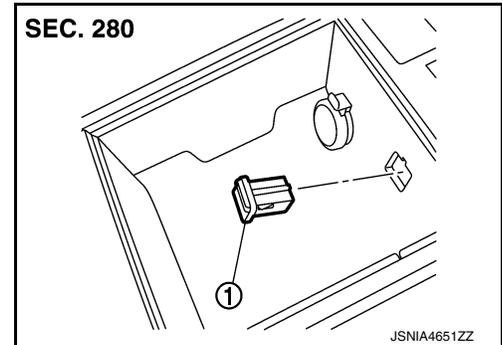
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## USB CONNECTOR

### Exploded View

INFOID:0000000010578737



1. USB connector

### Removal and Installation

INFOID:0000000010578738

#### REMOVAL

1. Remove console box assembly. Refer to [IP-23. "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.

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AV

## MICROPHONE

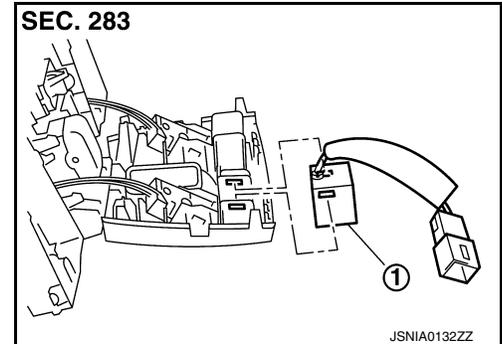
### Exploded View

INFOID:000000010578739

#### REMOVAL

Refer to [INT-25, "Exploded View"](#).

#### DISASSEMBLY



JSNIA0132ZZ

1. Microphone

### Removal and Installation

INFOID:000000010578740

#### 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

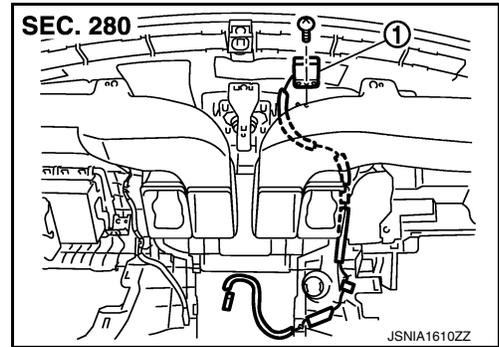
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## GPS ANTENNA

### Exploded View

INFOID:0000000010578741



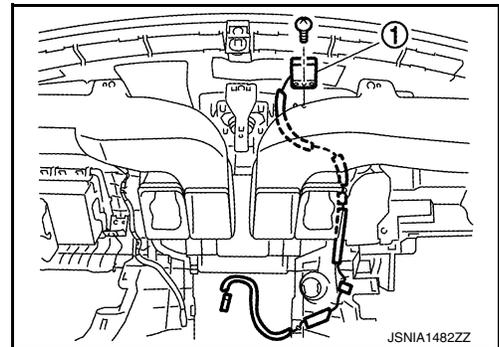
1. GPS antenna

### Removal and Installation

INFOID:0000000010578742

#### REMOVAL

1. Remove instrument panel. Refer to [JP-12. "Exploded View"](#).
2. Remove GPS antenna mounting screw.
3. Remove GPS antenna (1).



#### INSTALLATION

Installation is the reverse order of removal.

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# GPS ANTENNA

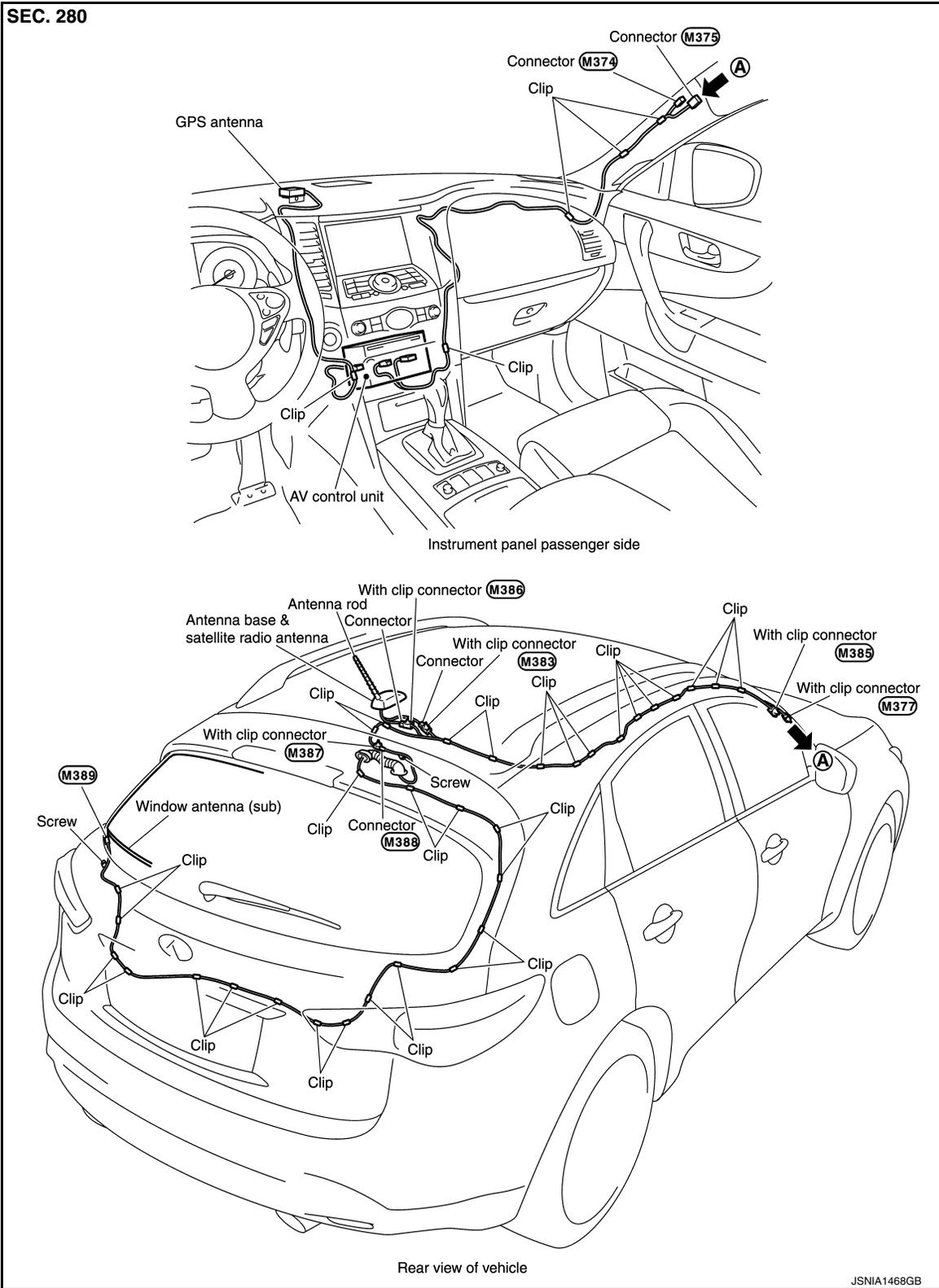
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## Feeder Layout

INFOID:000000010578743

SEC. 280



JSNIA1468GB

# AROUND VIEW MONITOR CONTROL UNIT

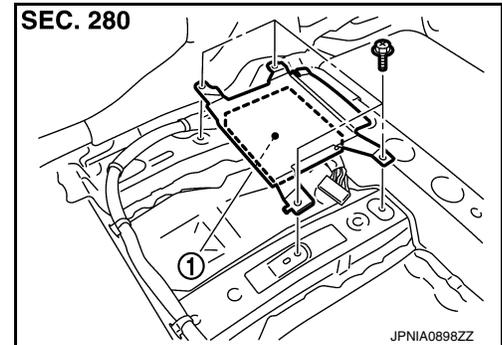
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## AROUND VIEW MONITOR CONTROL UNIT

### Exploded View

INFOID:0000000010578744



1. Around view monitor control unit

### Removal and Installation

INFOID:0000000010578745

#### REMOVAL

##### CAUTION:

Before replacing around view monitor control unit, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to [AV-243, “ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Description”](#).

1. Remove front seat (LH side). Refer to [SE-122, “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-247, “CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description”](#).
3. Perform predictive course line center position adjustment. Refer to [AV-247, “PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Description”](#).

##### CAUTION:

- Be sure to perform “Read/Write Configuration” when replacing around view monitor control unit. For details, refer to [AV-245, “CONFIGURATION \(AROUND VIEW MONITOR CONTROL UNIT\) : Special Repair Requirement”](#).
- 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.

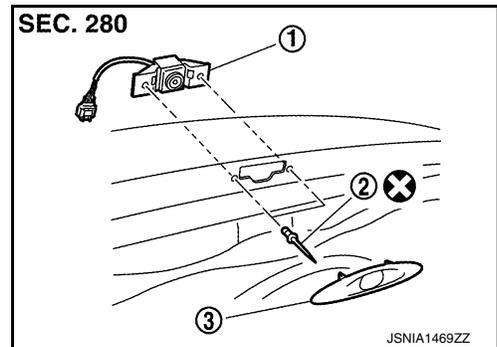
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AV

## FRONT CAMERA

## Exploded View

INFOID:0000000010578746



1. Front camera
2. Rivet
3. Front camera finisher

Refer to [GI-3, "Contents"](#) for symbols in the figure.

## Removal and Installation

INFOID:0000000010578747

## 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-247, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).

**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.

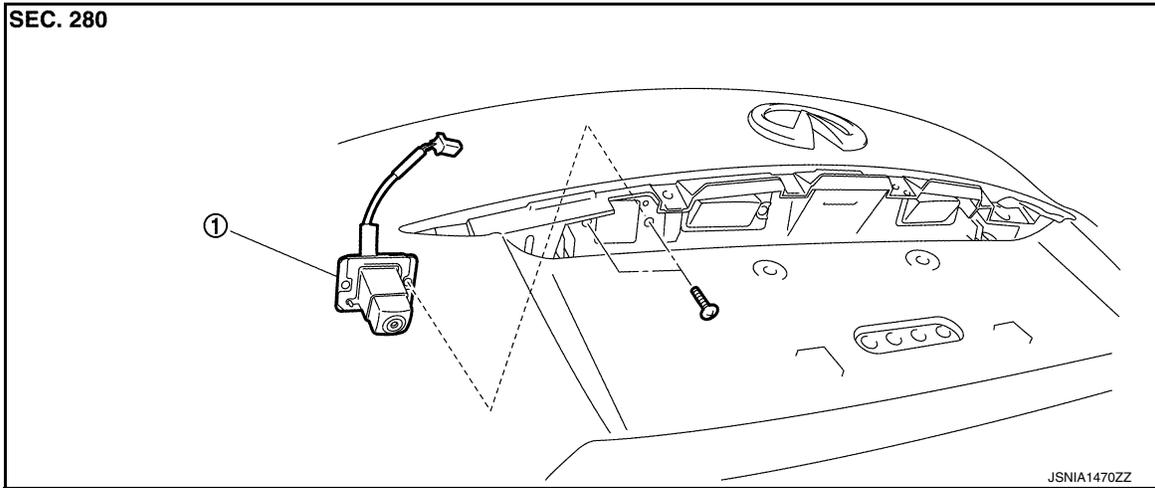
# REAR CAMERA

< REMOVAL AND INSTALLATION >

[NAVIGATION]

## REAR CAMERA

### Exploded View



1. Rear camera

### Removal and Installation

INFOID:000000010578749

#### REMOVAL

1. Remove door handle cover upper. Refer to [EXT-50, "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-247, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).

#### **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.

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# SIDE CAMERA LH

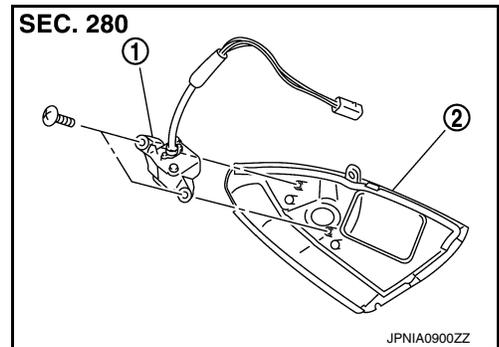
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## SIDE CAMERA LH

### Exploded View

INFOID:000000010578750



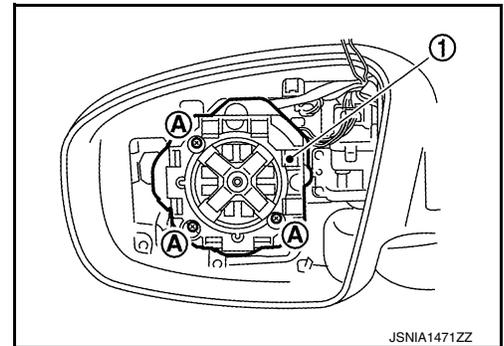
1. Side camera (LH)
2. Side camera finisher assembly

### Removal and Installation

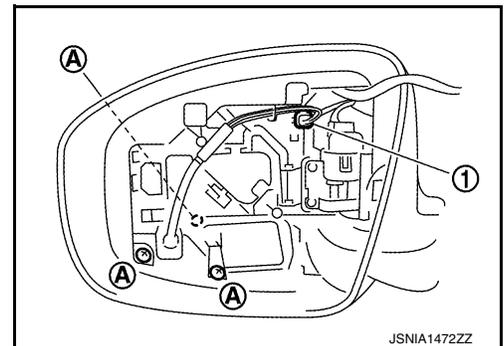
INFOID:000000010578751

#### REMOVAL

1. Remove glass mirror (driver side). Refer to [MIR-99. "Exploded View"](#) (without ADP), [MIR-75. "Exploded View"](#) (with ADP).
2. Remove screws (A), and actuator connector, and then actuator (1).



3. Remove door mirror cover. Refer to [MIR-99. "Exploded View"](#) (without ADP), [MIR-75. "Exploded View"](#) (with ADP).
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-247. "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).

**CAUTION:**

# SIDE CAMERA LH

< REMOVAL AND INSTALLATION >

[NAVIGATION]

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.

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# SIDE CAMERA RH

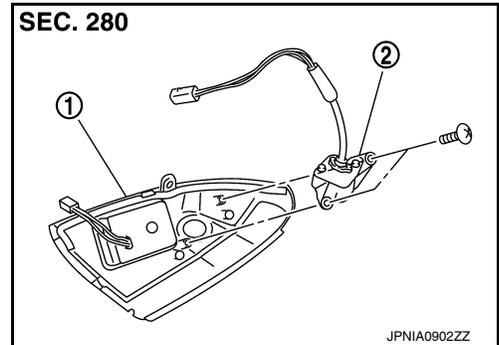
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## SIDE CAMERA RH

### Exploded View

INFOID:000000010578752



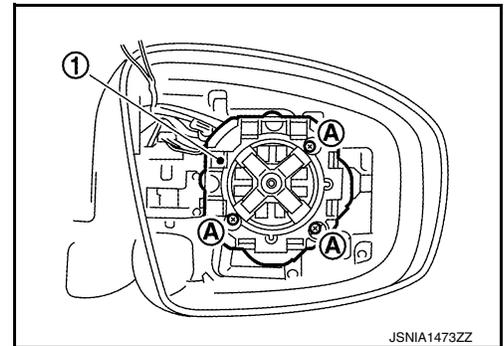
1. Side camera finisher assembly
2. Side camera (RH)

### Removal and Installation

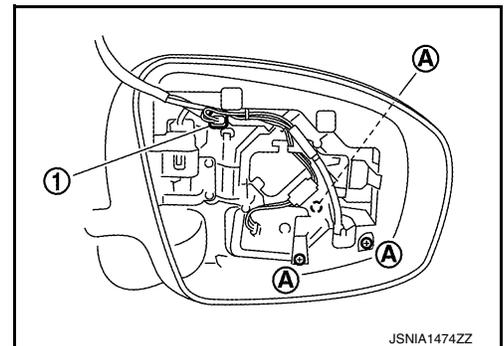
INFOID:000000010578753

#### REMOVAL

1. Remove glass mirror (passenger side). Refer to [MIR-99. "Exploded View"](#) (without ADP), [MIR-75. "Exploded View"](#) (with ADP).
2. Remove screws (A) and actuator connector, and then actuator (1).



3. Remove door mirror cover. Refer to [MIR-99. "Exploded View"](#) (without ADP), [MIR-75. "Exploded View"](#) (with ADP).
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-247. "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).

**CAUTION:**

## SIDE CAMERA RH

< REMOVAL AND INSTALLATION >

[NAVIGATION]

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.

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# SONAR CONTROL UNIT

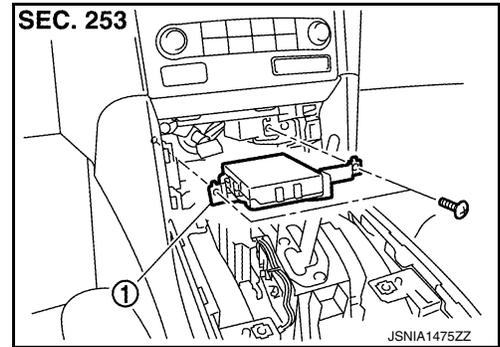
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## SONAR CONTROL UNIT

### Exploded View

INFOID:0000000010578754



1. Sonar control unit

### Removal and Installation

INFOID:0000000010578755

#### REMOVAL

##### **CAUTION:**

Before replacing sonar control unit, perform "Read/Write Configuration" to save or print current vehicle specification. For details, refer to [AV-243, "ADDITIONAL SERVICE WHEN REPLACING SONAR CONTROL UNIT : Description"](#).

1. Remove AV control unit. Refer to [AV-350, "Exploded View"](#).
2. Remove screws and connector, and then sonar control unit.

#### INSTALLATION

Install in the reverse order of removal.

##### **CAUTION:**

Be sure to perform "Read/Write Configuration" when replacing sonar control unit. For details, refer to [AV-246, "CONFIGURATION \(SONAR CONTROL UNIT\) : Special Repair Requirement"](#).

# SONAR SENSOR

< REMOVAL AND INSTALLATION >

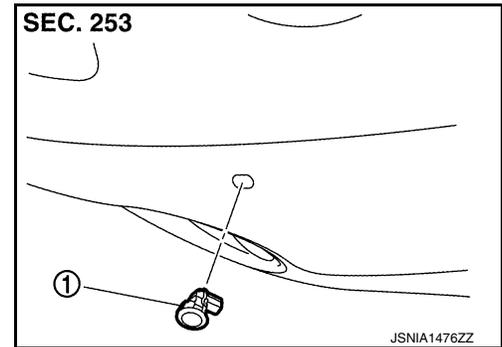
[NAVIGATION]

## SONAR SENSOR

### FRONT

#### FRONT : Exploded View

INFOID:0000000010578756



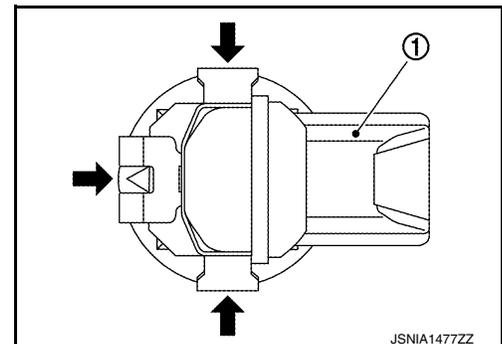
1. Sonar sensor (front)

#### FRONT : Removal and Installation

INFOID:0000000010578757

##### REMOVAL

1. Remove fender protector. Keep a service area. Refer to [EXT-25, "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

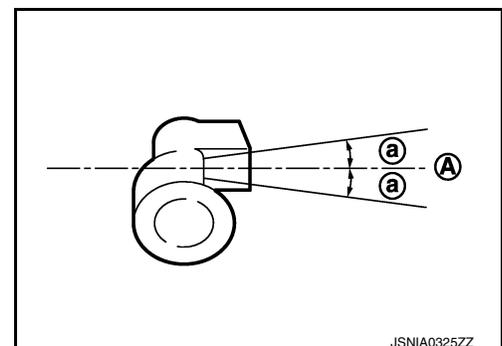
Install the bumper when the pawl engages.

##### CAUTION:

The connector direction is within  $\pm 10^\circ$  from the horizontal position when assembling the bumper.

**A** : Horizontal position

**a** :  $10^\circ$



### REAR

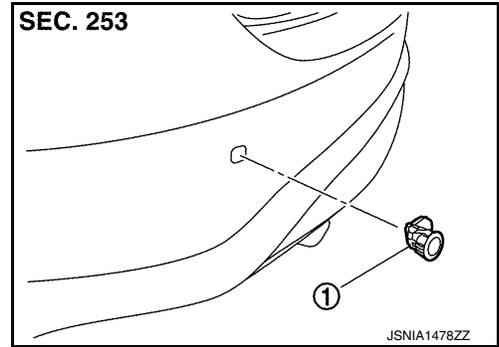
# SONAR SENSOR

< REMOVAL AND INSTALLATION >

[NAVIGATION]

## REAR : Exploded View

INFOID:0000000010578758



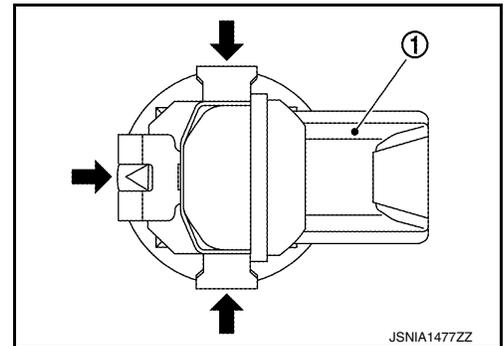
1. Sonar sensor (rear)

## REAR : Removal and Installation

INFOID:0000000010578759

### 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

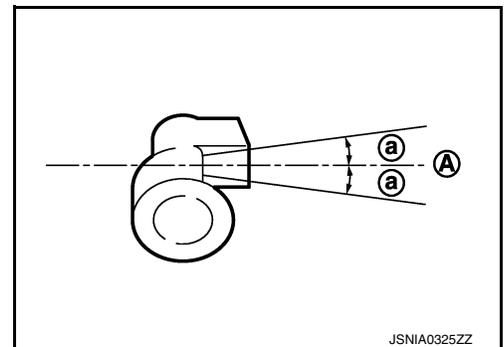
Install the bumper when the pawl engages.

#### CAUTION:

The connector direction is within  $\pm 10^\circ$  from the horizontal position when assembling the bumper.

**A** : Horizontal position

**a** :  $10^\circ$



# ANTENNA FEEDER

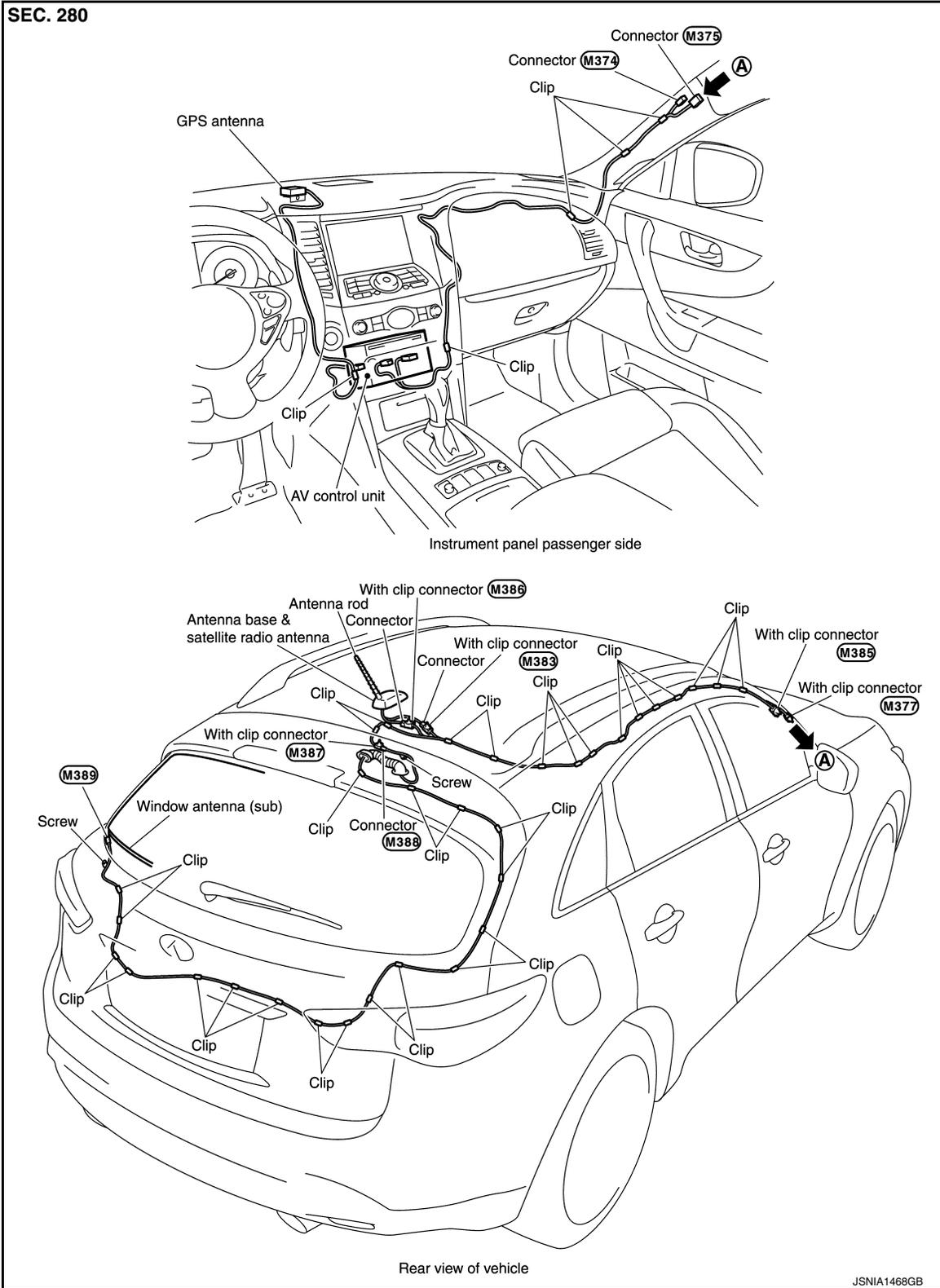
< REMOVAL AND INSTALLATION >

[NAVIGATION]

## ANTENNA FEEDER

### Harness Layout

INFOID:000000010578760



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