

SECTION **AV**

AUDIO, VISUAL & NAVIGATION SYSTEM

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# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

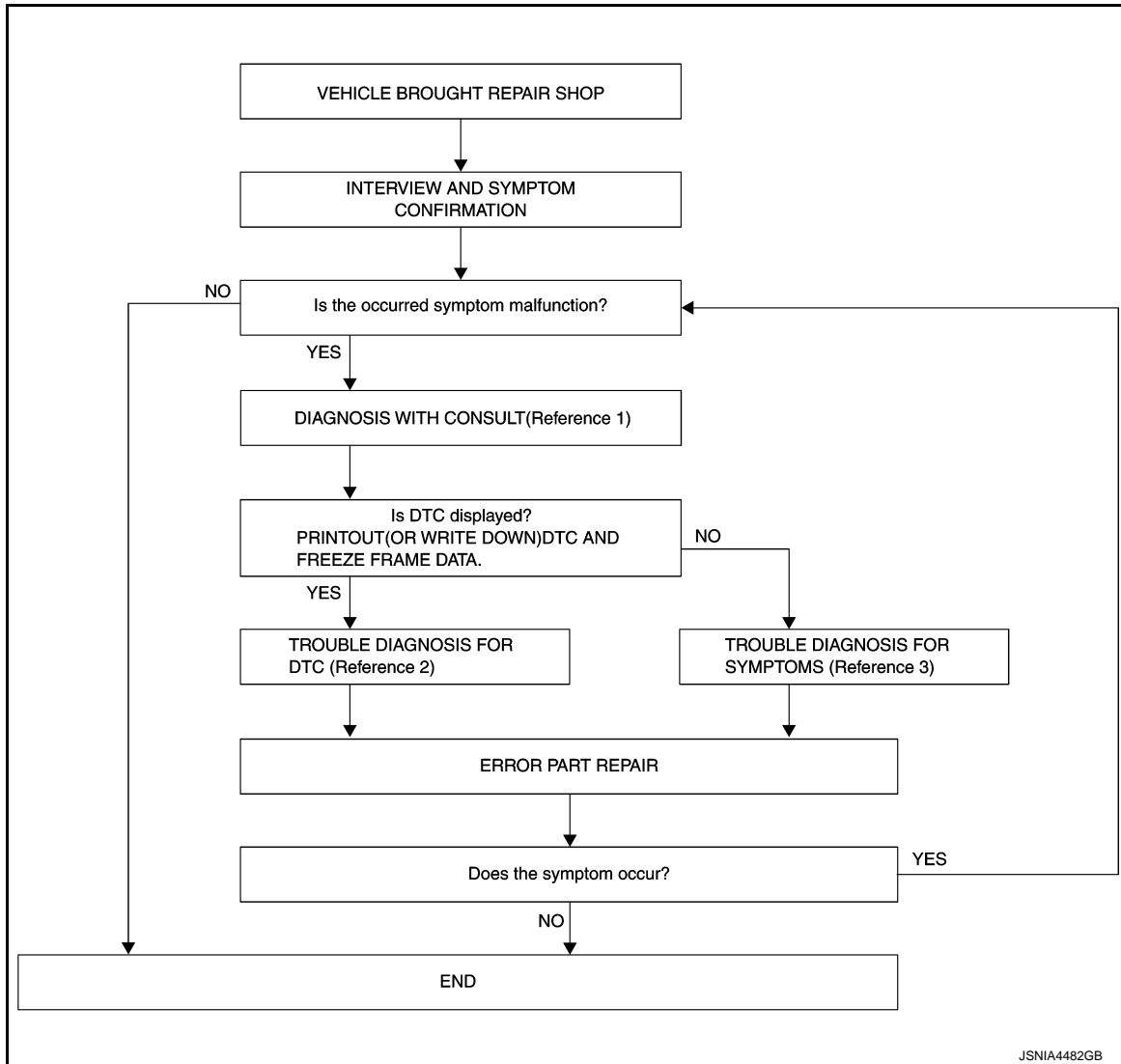
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000008162717

#### OVERALL SEQUENCE



- Reference 1... Refer to [AV-27. "CONSULT Function \(MULTI AV\)".](#)
- Reference 2... Refer to [AV-65. "DTC Index".](#)
- Reference 3... Refer to [AV-75. "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 >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

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-65, "DTC Index"](#).

>> GO TO 5.

### 4. TROUBLE DIAGNOSIS FOR SYMPTOMS

---

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-75, "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

# MULTI AV SYSTEM

< SYSTEM DESCRIPTION >

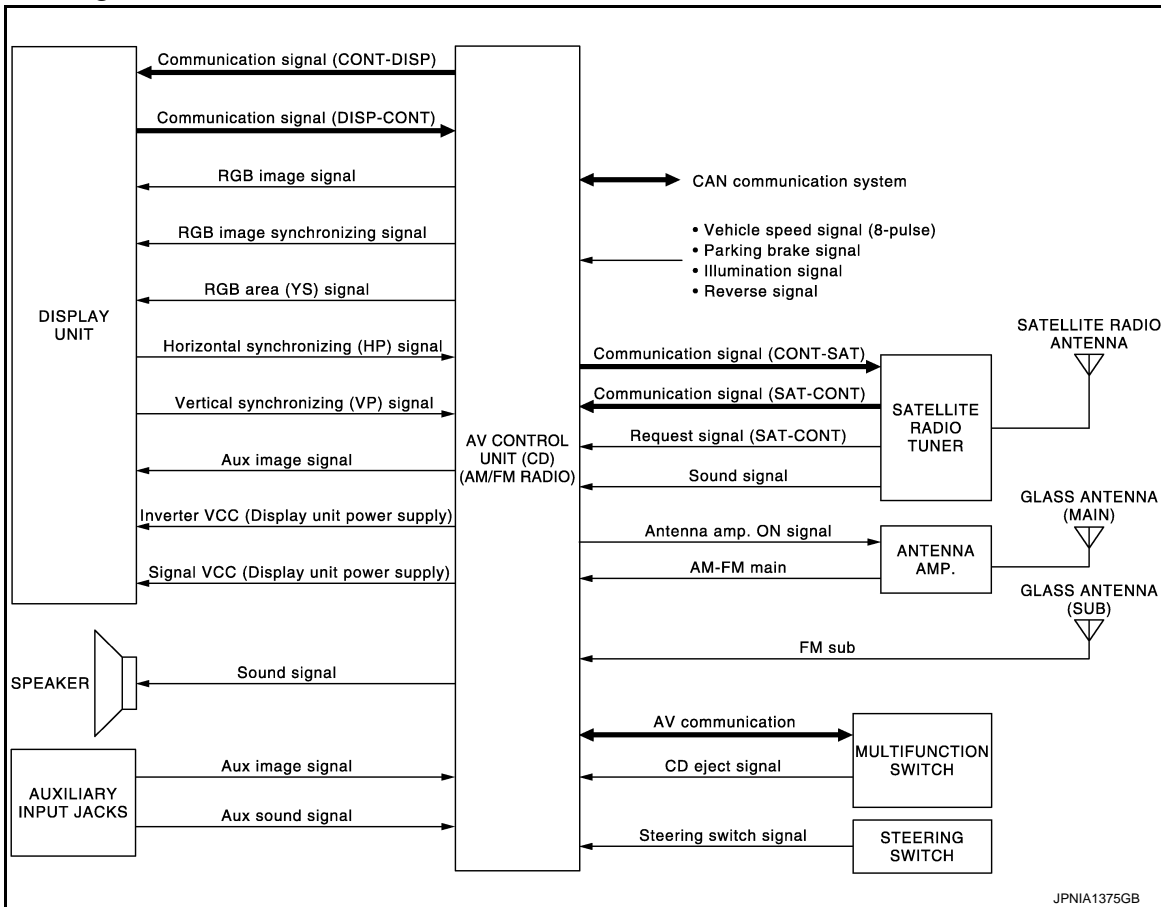
[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## SYSTEM DESCRIPTION

### MULTI AV SYSTEM

#### System Diagram

INFOID:000000008162718



**NOTE:**

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

#### System Description

INFOID:000000008162719

Multi AV system means that the following systems are integrated.

System name	System explanation
AUDIO SYSTEM	<a href="#">AV-17. "System Description"</a>
VEHICLE INFORMATION SYSTEM	<ul style="list-style-type: none"> <li>Indicates the status of audio, climate control system, fuel economy and maintenance.</li> <li>AV control unit displays the fuel consumption status while receiving data signal through CAN communication from ECM, unified meter and A/C amp and BCM.</li> </ul>
SATELLITE RADIO SYSTEM	Refer to "SATELLITE RADIO SYSTEM" shown below.
AUXILIARY INPUT SYSTEM	Refer to "AUXILIARY INPUT SYSTEM" shown below.

- AV control unit functions 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.

# MULTI AV SYSTEM

## [BASE AUDIO WITHOUT REAR VIEW CAMERA]

### < SYSTEM DESCRIPTION >

- AV control unit is connected with display unit and serial communication, and it transmits the required signal of display and display control and receives the response signal from display unit. Also, it is connected with satellite radio by serial communication, and it transmits the operating signal and receives the display signal.

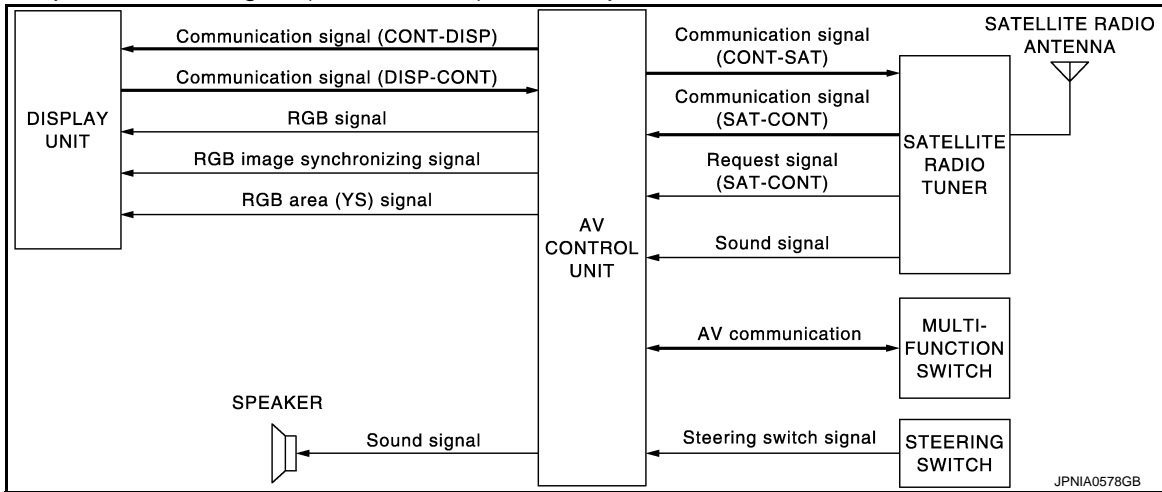
#### NOTE:

AV control unit can perform CONSULT self-operating function and on board self-diagnosis.

- CONSULT self-diagnosis: refer to [AV-27. "CONSULT Function \(MULTI AV\)"](#).
- On board self-diagnosis: refer to [AV-20. "Diagnosis Description"](#).

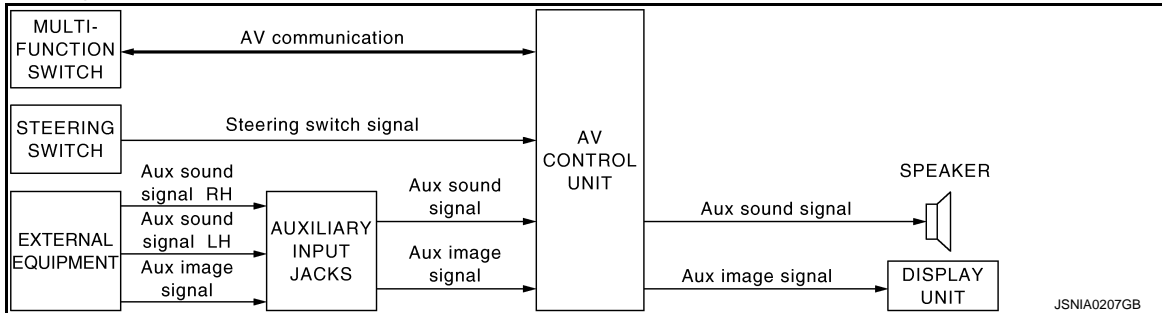
### SATELLITE RADIO SYSTEM

- Satellite radio tuner is controlled by communication signal and request signal with AV control unit.
- Audio signal (satellite radio) is received by satellite antenna and transmitted to AV control unit. AV control unit is output the audio signal (satellite radio) to each speaker.



### AUXILIARY INPUT SYSTEM

- Image and sound can be output from an external device by connecting a device with auxiliary input jacks.
- Operation can be performed with multifunction switch and steering switch. Multifunction switch transmits operation signal to AV control unit with communication.



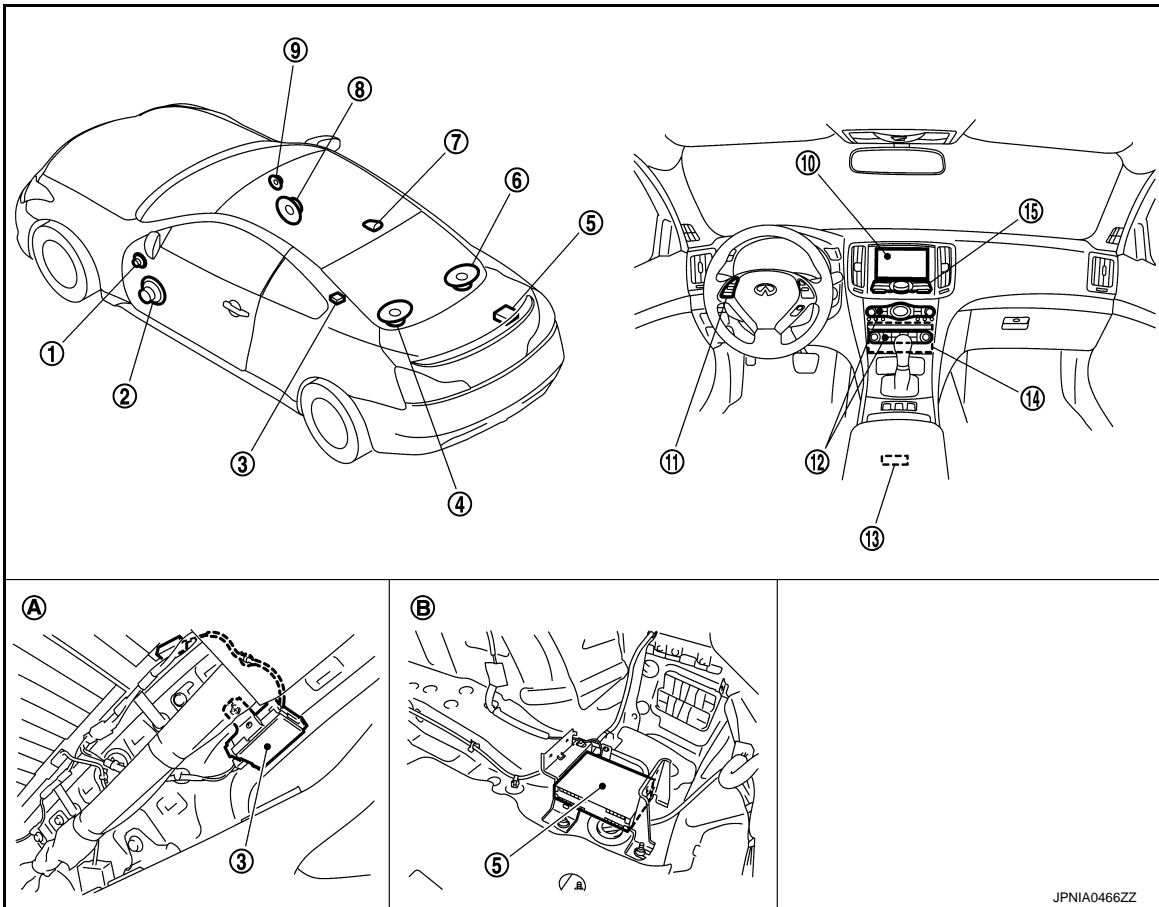
# MULTI AV SYSTEM

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

< SYSTEM DESCRIPTION >

## Component Parts Location

INFOID:000000008162720



- |                                   |                          |                          |
|-----------------------------------|--------------------------|--------------------------|
| 1. Tweeter LH                     | 2. Door speaker LH       | 3. Antenna amp.          |
| 4. Rear speaker LH                | 5. Satellite radio tuner | 6. Rear speaker RH       |
| 7. Satellite radio antenna        | 8. Door speaker RH       | 9. Tweeter RH            |
| 10. Display unit                  | 11. Steering switch      | 12. Preset switch        |
| 13. Auxiliary input jacks         | 14. AV control unit      | 15. Multifunction switch |
| A. Within rear pillar finisher LH | B. Trunk room RH         |                          |

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

AV

# MULTI AV SYSTEM

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

< SYSTEM DESCRIPTION >

## Component Description

INFOID:000000008162721

Part name	Description
AV CONTROL UNIT	<ul style="list-style-type: none"> <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>AV control unit includes audio function and vehicle information function.</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>Auxiliary image signal and auxiliary sound signal are input from the auxiliary input jacks.</li> </ul>
DISPLAY UNIT	<ul style="list-style-type: none"> <li>Display image is controlled by the serial communication from AV control unit.</li> <li>RGB image signal is input from AV control unit (RGB, RGB area and RGB synchronizing).</li> <li>Synchronizing signal (HP, VP) is output to AV control unit.</li> <li>Auxiliary image signal is input from the AV control unit.</li> </ul>
DOOR SPEAKER	<ul style="list-style-type: none"> <li>Outputs sound signal from AV control unit.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
REAR SPEAKER	<ul style="list-style-type: none"> <li>Outputs sound signal from AV control unit.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
TWEETER	<ul style="list-style-type: none"> <li>Outputs sound signal from AV control unit.</li> <li>Outputs high range sound.</li> </ul>
MULTIFUNCTION SWITCH	<ul style="list-style-type: none"> <li>Operation panel is equipped with the centralized switch where audio and auxiliary input 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 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 CD ejection operating signal is performed by hardware.</li> </ul>
STEERING SWITCH	<ul style="list-style-type: none"> <li>The operation of audio, etc. can be performed.</li> <li>Steering switch signal (operation signal) is output to AV control unit.</li> </ul>
AUXILIARY INPUT JACKS	The image signal of the auxiliary input is output via the AV control unit to the display unit, and it outputs the sound signal to the AV control unit.
ANTENNA AMP.	<ul style="list-style-type: none"> <li>Radio signal received by glass antenna is amplified and transmitted to AV control unit.</li> <li>Power (antenna amp ON signal) is supplied from AV control unit.</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>
SATELLITE RADIO ANTENNA	Receives the satellite radio signal and outputs it to the satellite radio tuner.



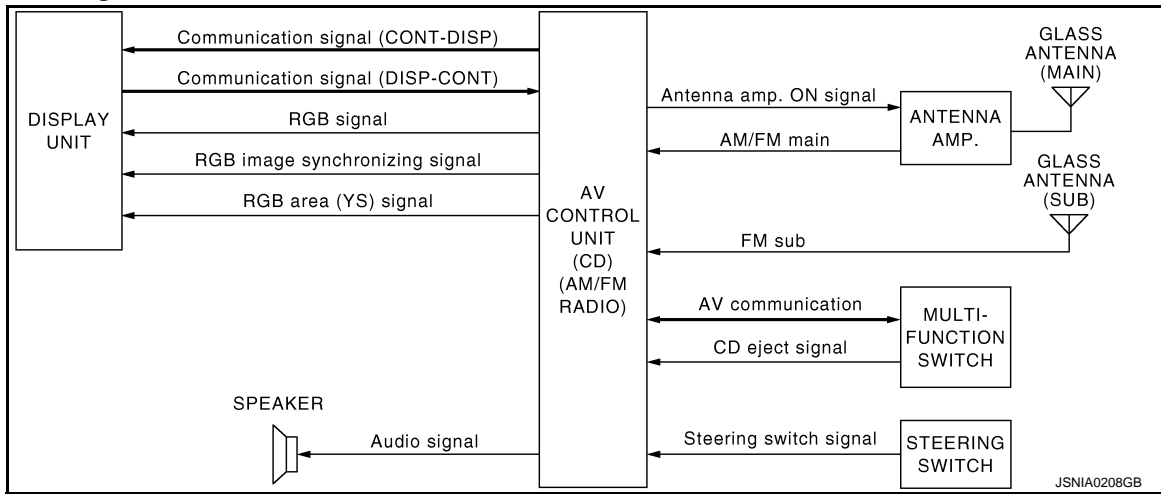
# AUDIO SYSTEM

< SYSTEM DESCRIPTION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## AUDIO SYSTEM

### System Diagram



### System Description

INFOID:000000008162723

The audio system is equipped with the following functions. Each function can be operated with the multifunction switch, preset switch or steering switch. It indicates the operation status of AUDIO to the display.

Function
AM/FM radio
CD

### FUNCTION DESCRIPTION

#### Operating Signal

Operation of the audio system can be performed with the 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 CD 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

- The display switching of the screen is performed with the communication signal between the display unit and the AV control unit.
- The image signal to display operating condition is performed with RGB 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 glass antenna, next it is amplified by antenna amp, and finally it is input to AV control unit. AV control unit outputs the audio signal to each speaker.

#### CD Mode

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

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

AV

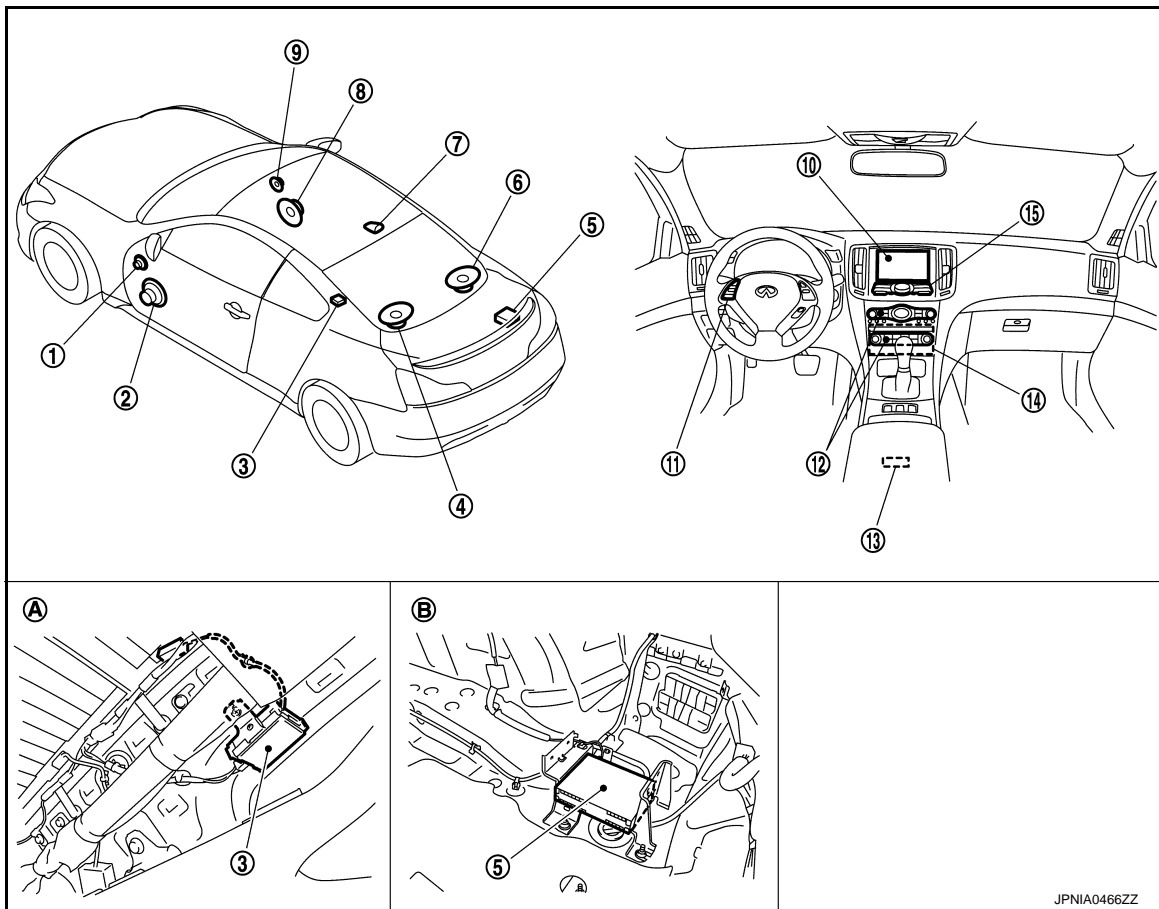
# AUDIO SYSTEM

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

< SYSTEM DESCRIPTION >

## Component Parts Location

INFOID:000000008162724



- |                                   |                          |                          |
|-----------------------------------|--------------------------|--------------------------|
| 1. Tweeter LH                     | 2. Door speaker LH       | 3. Antenna amp.          |
| 4. Rear speaker LH                | 5. Satellite radio tuner | 6. Rear speaker RH       |
| 7. Satellite radio antenna        | 8. Door speaker RH       | 9. Tweeter RH            |
| 10. Display unit                  | 11. Steering switch      | 12. Preset switch        |
| 13. Auxiliary input jacks         | 14. AV control unit      | 15. Multifunction switch |
| A. Within rear pillar finisher LH | B. Trunk room RH         |                          |

## Component Description

INFOID:000000008162725

Part name	Description
AV CONTROL UNIT	<ul style="list-style-type: none"> <li>The AM/FM receiving function and the CD playing function are equipped.</li> <li>Outputs the audio signal from each function to each speaker.</li> </ul>
DISPLAY UNIT	<ul style="list-style-type: none"> <li>Display image is controlled by the serial communication from AV control unit.</li> <li>RGB image signal (audio operation condition) is input from AV control unit.</li> </ul>
DOOR SPEAKER	<ul style="list-style-type: none"> <li>Outputs sound signal from AV control unit.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
REAR SPEAKER	<ul style="list-style-type: none"> <li>Outputs sound signal from AV control unit.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
TWEETER	<ul style="list-style-type: none"> <li>Outputs sound signal from AV control unit.</li> <li>Outputs high range sound.</li> </ul>
MULTIFUNCTION SWITCH	<ul style="list-style-type: none"> <li>Each audio operation can be operated.</li> <li>Connected with preset switch via cable, and operation signal is transmitted to AV control unit via AV communication.</li> </ul>

# AUDIO SYSTEM

## [BASE AUDIO WITHOUT REAR VIEW CAMERA]

### < SYSTEM DESCRIPTION >

Part name	Description
PRESET SWITCH	<ul style="list-style-type: none"><li>• Each audio and air conditioner operation can be operated.</li><li>• Connected with multifunction switch via cable, and operation signal is transmitted to AV control unit via AV communication.</li><li>• The CD ejection operating signal is performed by hardwire</li></ul>
STEERING SWITCH	<ul style="list-style-type: none"><li>• Each audio operation can be operated.</li><li>• Steering switch signal (operation signal) is output to AV control unit.</li></ul>
ANTENNA AMP.	<ul style="list-style-type: none"><li>• Radio signal received by glass antenna is amplified and transmitted to AV control unit.</li><li>• Power (antenna amp ON signal) is supplied from AV control unit.</li></ul>

A

B

C

D

E

F

G

H

I

J

K

L

M

AV

O

P

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## DIAGNOSIS SYSTEM (AV CONTROL UNIT)

### Diagnosis Description

INFOID:000000008162726

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

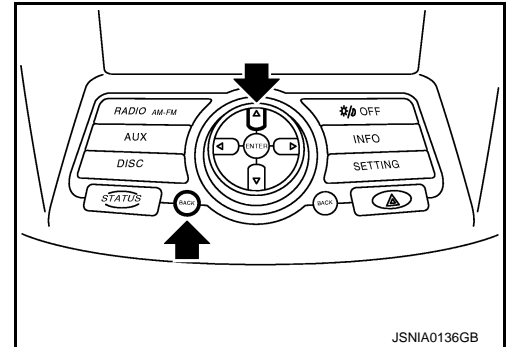
The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

##### Self-diagnosis Mode

- Press the “BACK” switch and the “UP” switch of the 4-direction switches within 10 seconds after turning the ignition switch from OFF to ACC and hold them for 3 seconds or more. 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.

**CAUTION:**

**The hazard switch and CD 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 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 actions 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>• Perform the connection diagnosis between each of the units.</li></ul>

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

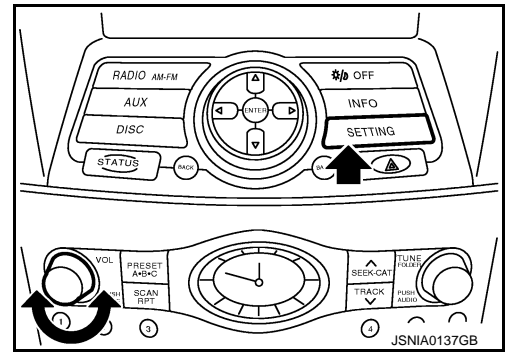
[BASE AUDIO WITHOUT REAR VIEW CAMERA]

< SYSTEM DESCRIPTION >

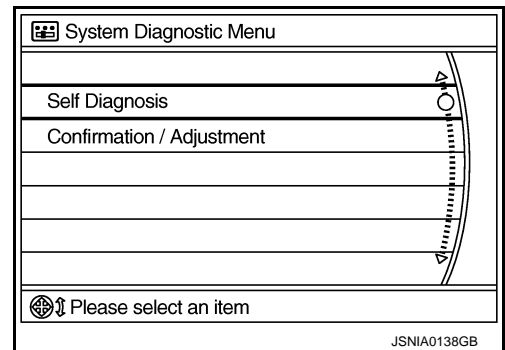
Mode	Description
Display Diagnosis	The confirmations of the tint with the color spectrum bar display and shading of color with the gradation bar display can be performed.
Vehicle Signals	Diagnosis of signals can be performed for vehicle speed, parking brake, lights, ignition switch, and reverse.
Speaker 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.
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.

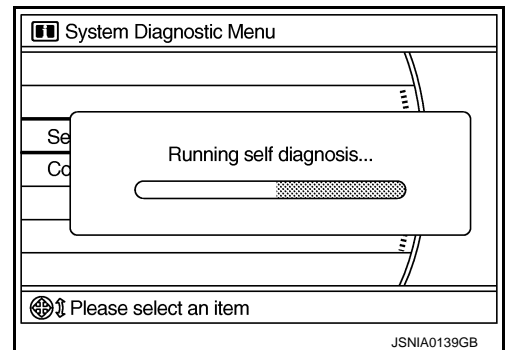


4. The trouble diagnosis initial screen is displayed, and then the items of "Self Diagnosis" and "Confirmation/Adjustment" can be selected.



## 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.



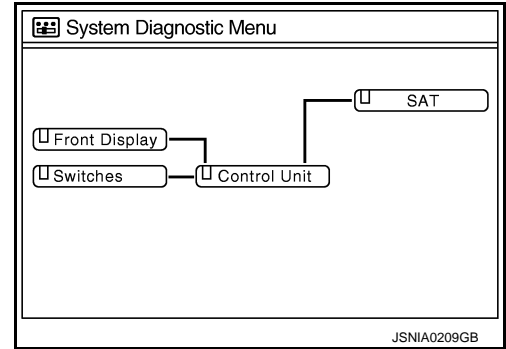
# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## < SYSTEM DESCRIPTION >

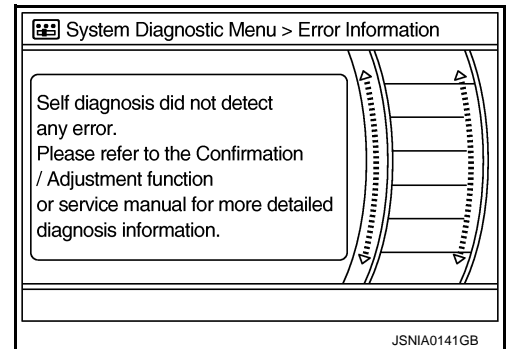
2. Diagnosis results are displayed after the self-diagnosis is completed. The unit names and the connection lines are color-coded according to the diagnostic results.

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



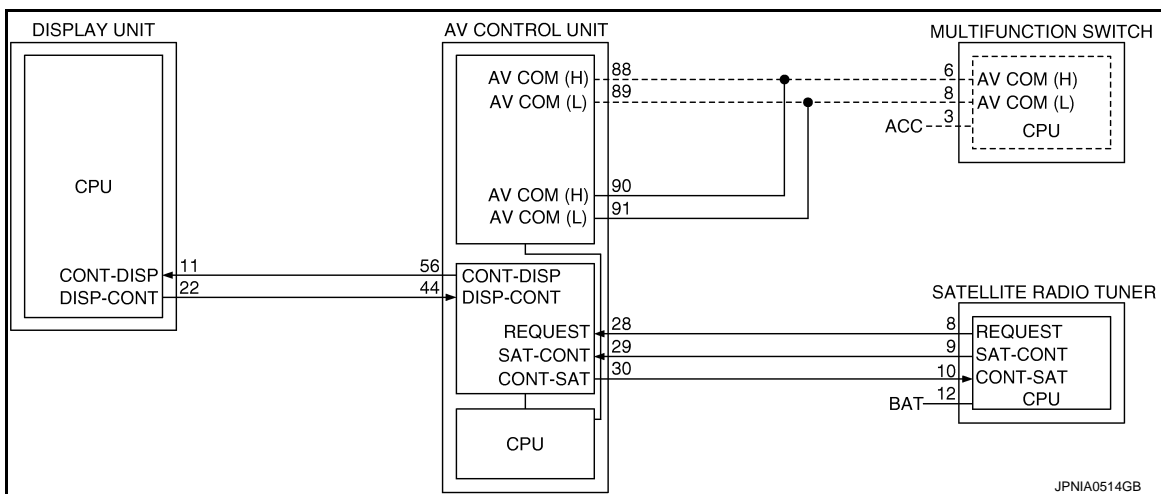
### NOTE:

- Only the 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-83, "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 > yellow > 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.



### NOTE:

Onboard self-diagnosis cannot be started when an error occurs on the dotted-line part above.

## SELF-DIAGNOSIS RESULTS

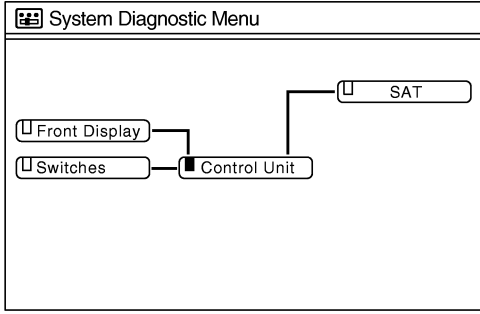
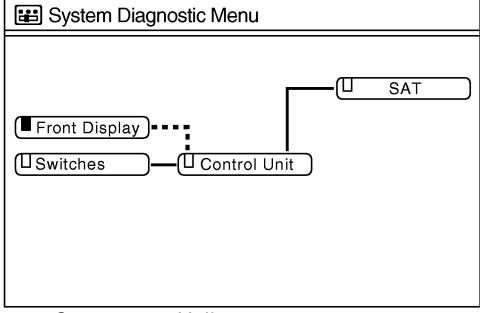
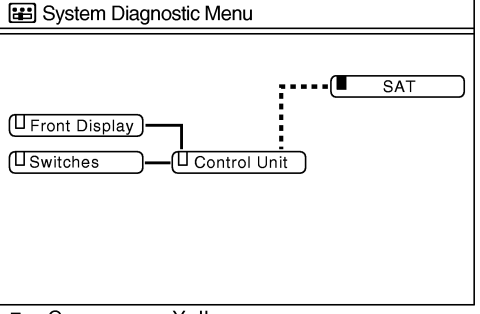
Check the applicable display at the following table, and then repair the malfunctioning parts.

Self-diagnosis Result Chart

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

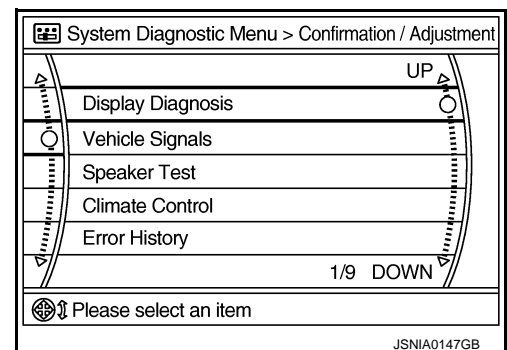
< SYSTEM DESCRIPTION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

Area with yellow connection lines	Description	Possible malfunction location / Action to take
 <p>■ : Red JSNIA0211GB</p> <p>“Self-Diagnosis did not run because of a control unit malfunction”</p>	<p>AV control unit malfunction is detected.</p>	<p>Replace the AV control unit.</p>
 <p>■ : Gray - - - - : Yellow JSNIA0464GB</p>	<ul style="list-style-type: none"> <li>Malfunction is detected in communication circuit between AV control unit and display unit.</li> <li>Malfunction is detected in communication signal between AV control unit and display unit.</li> </ul>	<p>Communication circuit between AV control unit and display unit.</p>
 <p>■ : Gray - - - - : Yellow JSNIA0212GB</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 communication signal 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>

## CONFIRMATION/ADJUSTMENT MODE

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

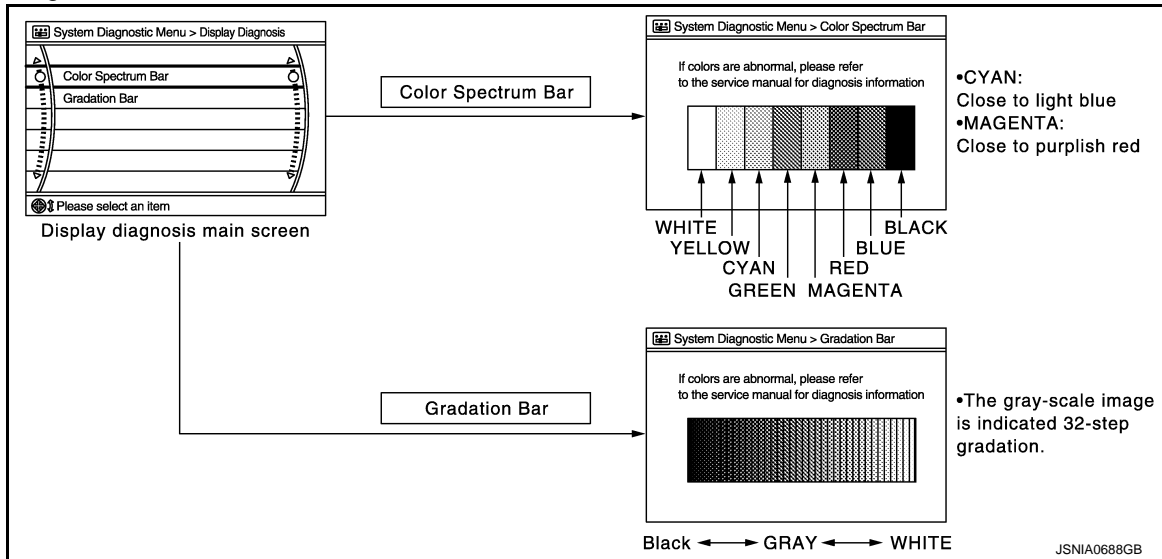


# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## Display Diagnosis

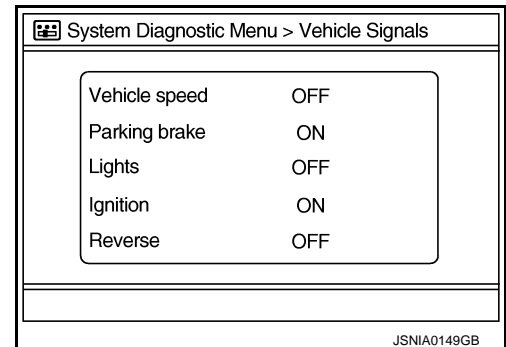


The tint of the color bar indication is as per the following list if RGB signal error is detected.

- R (red) signal error** : Light blue (Cyan) tint
- G (green) signal error** : Purple (Magenta) tint
- B (blue) signal error** : Yellow tint

## Vehicle Signals

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



Diagnosis item	Display	Vehicle status	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
Parking brake	ON	Parking brake is applied.	
	OFF	Parking brake is released.	
Lights	ON	Light switch ON	—
	OFF	Light switch OFF	—
Ignition	ON	Ignition switch ON	—
	OFF	Ignition switch in ACC position	—
Reverse	ON	Shift the selector lever to "R" position	Changes in indication may be delayed. This is normal.
	OFF	Shift the selector lever other than "R" position	

## Speaker Test



# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

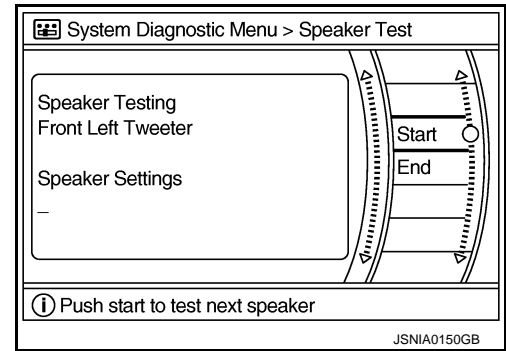
## < SYSTEM DESCRIPTION >

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 "End" to stop the test tones.

### NOTE:

The frequency of test tone emitted from each speaker is as follows.

<b>Tweeter</b>	<b>: 3 kHz</b>
<b>Front speaker</b>	<b>: 300 Hz</b>
<b>Rear speaker</b>	<b>: 1 kHz</b>



### 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.

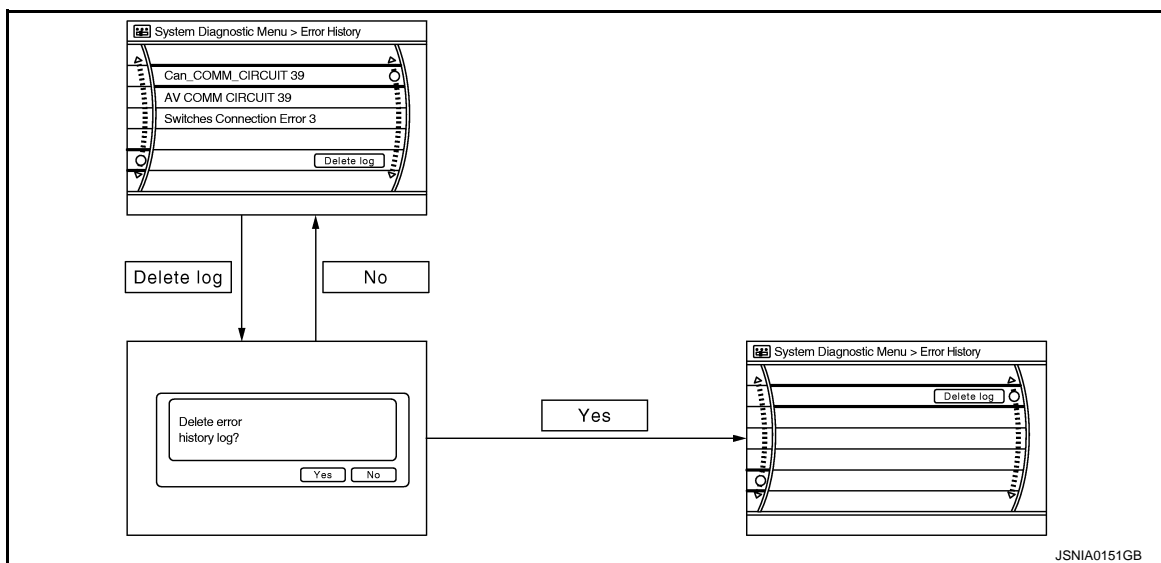
#### Count up method A

- 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 communication)
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

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

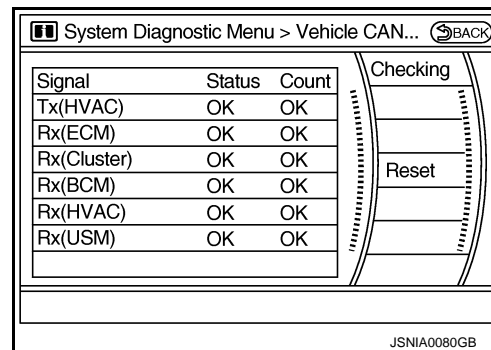
[BASE AUDIO WITHOUT REAR VIEW CAMERA]

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.
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		
Front Display Connection Error	<ul style="list-style-type: none"> <li>Display unit power supply and ground circuit malfunction is detected.</li> <li>Malfunction is detected in communication circuit between AV control unit and display unit.</li> <li>Malfunction is detected in communication signal between AV control unit and display unit.</li> </ul>	<ul style="list-style-type: none"> <li>Display unit power supply and ground circuit.</li> <li>Communication circuit between AV control unit and display unit.</li> </ul>
SAT Connection Error	<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 circuit between AV control unit and satellite radio tuner.</li> <li>Malfunction is detected in communication signal 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>
<ul style="list-style-type: none"> <li>AV COMM CIRCUIT</li> <li>Switches Connection Error</li> </ul>	<ul style="list-style-type: none"> <li>Multifunction switch power supply and ground circuit malfunction is detected.</li> <li>Malfunction is detected in AV communication circuit between AV control unit and multifunction switch.</li> <li>Malfunction is detected in AV communication signal between AV control unit and multifunction switch.</li> </ul>	<ul style="list-style-type: none"> <li>Multifunction switch power supply and ground circuits.</li> <li>AV communication circuit between AV control unit and multifunction switch.</li> </ul>

## 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 / UNKWN	OK / 0 - 39
Rx (ECM)	OK / UNKWN	OK / 0 - 39
Rx (Cluster)	OK / UNKWN	OK / 0 - 39
Rx (BCM)	OK / UNKWN	OK / 0 - 39
Rx (HVAC)	OK / UNKWN	OK / 0 - 39
Rx (USM)	OK / UNKWN	OK / 0 - 39



## AV COMM Diagnosis

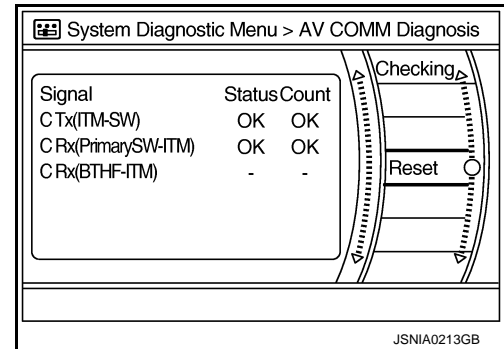
# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

## [BASE AUDIO WITHOUT REAR VIEW CAMERA]

### < SYSTEM DESCRIPTION >

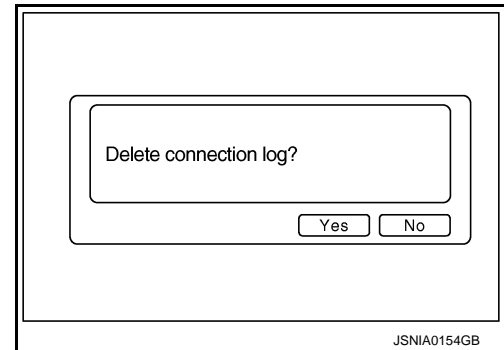
- Displays the communication status between AV control unit (master unit) and each unit.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. 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-SW)	OK / UNKWN	OK / 0 - 39
C Rx (PrimarySW-ITM)	OK / UNKWN	OK / 0 - 39
C Rx (XM-ITM)	—	—



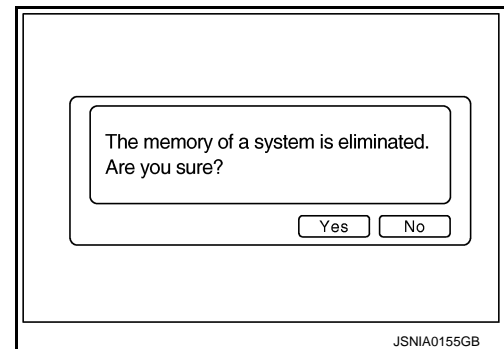
### Delete Unit Connection Log

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



### Initialize Settings

Initializes the AV control unit memory.



## CONSULT Function (MULTI AV)

INFOID:000000008162727

### 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.

### 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.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

< SYSTEM DESCRIPTION >

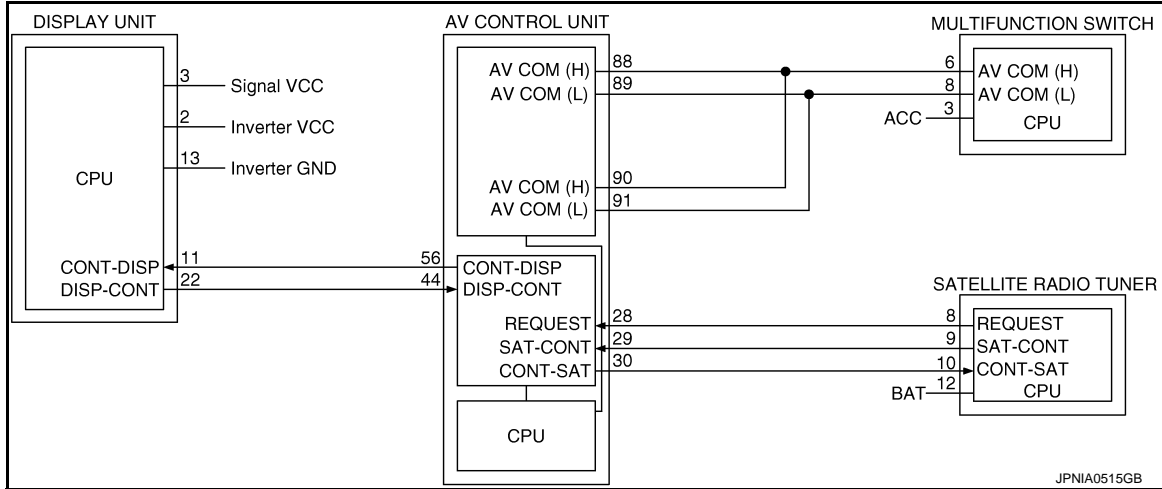
## ECU IDENTIFICATION

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 Detection Range



## Self-diagnosis Results Display Item

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detected.	Perform diagnosis with CONSULT, and then repair the malfunctioning parts according to the diagnosis results. Refer to <a href="#">AV-30. "Diagnosis Procedure"</a> .
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit.
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	
Cont Unit FLASH-ROM [U1200] CAN CONT [U1216]	AV control unit malfunction is detected.	
FRONT DISP CONN [U1243]	<ul style="list-style-type: none"> <li>• Display unit power supply and ground circuit malfunction is detected.</li> <li>• Malfunction is detected in communication circuit between AV control unit and display unit.</li> <li>• Malfunction is detected in communication signal between AV control unit and display unit.</li> </ul>	<ul style="list-style-type: none"> <li>• Display unit power supply and ground circuit.</li> <li>• Communication circuit between AV control unit and display unit.</li> </ul>

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

## [BASE AUDIO WITHOUT REAR VIEW CAMERA]

### < SYSTEM DESCRIPTION >

Error item	Description	Possible malfunction factor/Action to take
SAT CONN [U1255]	<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 circuit between AV control unit and satellite radio tuner.</li> <li>• Malfunction is detected in communication signal 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>
<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• SWITCH CONN [U1240]</li> </ul>	<ul style="list-style-type: none"> <li>• Multifunction switch power supply and ground circuit malfunction is detected.</li> <li>• Malfunction is detected in AV communication circuit between AV control unit and multifunction switch.</li> <li>• Malfunction is detected in AV communication signal between AV control unit and multifunction switch.</li> </ul>	<ul style="list-style-type: none"> <li>• Multifunction switch power supply and ground circuits.</li> <li>• AV communication circuit between AV control unit and multifunction switch.</li> </ul>

### 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.

#### 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	Light switch ON	—
	Off	Light switch OFF	
IGN SIG	On	Ignition switch ON	—
	Off	Ignition switch in ACC position	
REV SIG	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	

### 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	

# U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## DTC/CIRCUIT DIAGNOSIS

### U1000 CAN COMM CIRCUIT

#### Description

INFOID:000000008162728

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-25, "CAN Communication Signal Chart"](#).

#### DTC Logic

INFOID:000000008162729

#### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected when ...	Probable malfunction location
U1000	CAN COMM CIRCUIT	AV control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

#### Diagnosis Procedure

INFOID:000000008162730

#### 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-16, "Trouble Diagnosis Flow Chart"](#).  
NO >> Refer to GI section. Refer to [GI-43, "Intermittent Incident"](#).

# U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## U1010 CONTROL UNIT (CAN)

### Description

INFOID:000000008162731

Initial diagnosis of AV control unit.

### DTC Logic

INFOID:000000008162732

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	Diagnostic item is detected when ...	Probable malfunction location
U1010	CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	AV control unit.

### Diagnosis Procedure

INFOID:000000008162733

#### 1. REPLACE AV CONTROL UNIT

When DTC U1010 is detected, replace AV control unit.

>> INSPECTION END

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# U1310 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## U1310 AV CONTROL UNIT

### Description

INFOID:000000008162734

Replace the AV control unit if this DTC is displayed. Refer to [AV-83. "Exploded View"](#).

Part name	Description
AV CONTROL UNIT	<ul style="list-style-type: none"><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>• AV control unit includes audio function and vehicle information function.</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>• Auxiliary image signal and auxiliary sound signal are input from the auxiliary input jacks.</li></ul>

### DTC Logic

INFOID:000000008162735

DTC	Display contents of CONSULT	DTC Detection Condition	Action to take
U1310	CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace AV control unit.



# U1200 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## U1200 AV CONTROL UNIT

### Description

INFOID:000000008162736

Replace the AV control unit if this DTC is displayed. Refer to [AV-83, "Exploded View"](#).

Part name	Description
AV CONTROL UNIT	<ul style="list-style-type: none"><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>• AV control unit includes audio function and vehicle information function.</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>• Auxiliary image signal and auxiliary sound signal are input from the auxiliary input jacks.</li></ul>

### DTC Logic

INFOID:000000008162737

DTC	Display contents of CONSULT	DTC Detection Condition	Action to take
U1200	Cont Unit FLASH- ROM [U1200]	An internal malfunction is detected in AV control unit (FLASH-ROM).	Replace AV control unit.

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# U1216 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## U1216 AV CONTROL UNIT

### Description

INFOID:000000008162738

Replace the AV control unit if this DTC is displayed. Refer to [AV-83. "Exploded View"](#).

Part name	Description
AV CONTROL UNIT	<ul style="list-style-type: none"><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>• AV control unit includes audio function and vehicle information function.</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>• Auxiliary image signal and auxiliary sound signal are input from the auxiliary input jacks.</li></ul>

### DTC Logic

INFOID:000000008162739

DTC	Display contents of CONSULT	DTC Detection Condition	Action to take
U1216	CAN CONT [U1216]	Internal malfunction of AV control unit (CAN controller) is detected.	Replace AV control unit.

# U1243 DISPLAY UNIT

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

## U1243 DISPLAY UNIT

### Description

INFOID:000000008162740

Part name	Description
DISPLAY UNIT	<ul style="list-style-type: none"> <li>Display image is controlled by the serial communication from AV control unit.</li> <li>Inputs the RGB image signal (RGB, RGB area and RGB synchronizing) from AV control unit and the auxiliary image signal from the auxiliary input jacks.</li> <li>Outputs the synchronizing signals (HP and VP) to the AV control unit.</li> </ul>

### DTC Logic

INFOID:000000008162741

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

### Diagnosis Procedure

INFOID:000000008162742

#### 1. CHECK DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check display unit power supply and ground circuit. Refer to [AV-40, "DISPLAY UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair malfunctioning parts.

#### 2. CHECK CONTINUITY COMMUNICATION CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M71	11	M83	56	Existed
	22		44	

- Check continuity between display unit harness connector and ground.

Display unit		Ground	Continuity
Connector	Terminals		
M71	11		Not existed
	22		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

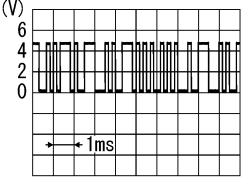
#### 3. CHECK COMMUNICATION SIGNAL

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

# U1243 DISPLAY UNIT

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M71	11	Ground	When adjusting display brightness.	 <p>PKIB5039J</p>

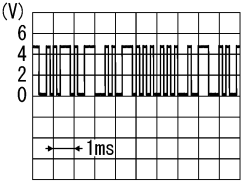
Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit.

## 4. CHECK COMMUNICATION SIGNAL

Check signal between display unit harness connector and ground.

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M71	22	Ground	When adjusting display brightness.	 <p>PKIB5039J</p>

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace display unit.

# U1255 SATELLITE RADIO TUNER

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## U1255 SATELLITE RADIO TUNER

### Description

INFOID:000000008162743

Part name	Description
SATELLITE RADIO TUNER	<ul style="list-style-type: none"> <li>Inputs the satellite radio signal from satellite radio antenna and outputs it to the AV control unit.</li> <li>It is controlled with the communication (communication signal, request signal) from AV control unit.</li> </ul>

### DTC Logic

INFOID:000000008162744

DTC	Display contents of CONSULT	DTC Detection Condition	Possible causes
U1255	SAT CONN [U1255]	<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 circuit between AV control unit and satellite radio tuner.</li> <li>Malfunction is detected in communication signal 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>

### Diagnosis Procedure

INFOID:000000008162745

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

Check satellite radio tuner power supply and ground circuit. Refer to [AV-42, "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	
M82	28	B236	8	Existed
	29		9	
	30		10	

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

AV control unit		Ground	Continuity
Connector	Terminals		
M82	28		Not existed
	29		
	30		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

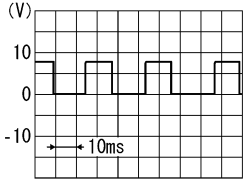
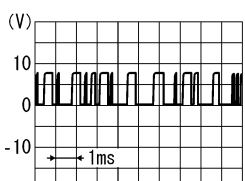
# U1255 SATELLITE RADIO TUNER

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## 3. CHECK AV CONTROL UNIT VOLTAGE

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

(+)		(-)	Reference value (Approx.)
AV control unit			
Connector	Terminals		
M82	28	Ground	 <p>SKIA9299J</p>
	29	Ground	 <p>SKIA9300J</p>

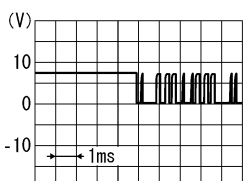
Is the inspection result normal?

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 signal between satellite radio tuner harness connector and ground.

(+)		(-)	Reference value (Approx.)
Satellite radio tuner			
Connector	Terminal		
B236	10	Ground	 <p>SKIA9301J</p>

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace satellite radio tuner.

# U1300 AV COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## U1300 AV COMM CIRCUIT

### Description

INFOID:000000008162746

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>	<ul style="list-style-type: none"><li>Multifunction switch power supply and ground circuit malfunction is detected.</li><li>Malfunction is detected in AV communication circuit between AV control unit and multifunction switch.</li><li>Malfunction is detected in AV communication signal between AV control unit and multifunction switch.</li></ul>	<ul style="list-style-type: none"><li>Multifunction switch power supply and ground circuits.</li><li>AV communication circuit between AV control unit and multifunction switch.</li></ul>

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# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## POWER SUPPLY AND GROUND CIRCUIT

### AV CONTROL UNIT

#### AV CONTROL UNIT : Diagnosis Procedure

INFOID:000000008162747

#### 1. CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34
Ignition switch ACC or ON	19
Ignition switch ON or START	3

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	M81	19	OFF	Battery voltage
ACC power supply	M81	7	ACC	Battery voltage
Ignition signal	M85	104	ON	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	M81	20	OFF	Existed
	M85	85		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

## DISPLAY UNIT

#### DISPLAY UNIT : Diagnosis Procedure

INFOID:000000008162748

#### 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	M71	2	ACC	9 V
Signal VCC		3		

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.



# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## 2.CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

1. Turn ignition switch OFF.
2. Disconnect the harness connector between display unit and AV control unit.
3. Check continuity between display unit harness connector M71 and AV control unit harness connector M83.

Signal name	Display unit (M71)	AV control unit (M83)	Continuity
Inverter VCC	2	59	Existed
Signal VCC	3	47	Existed

4. Check continuity between display unit harness connector M71 and ground.

Signal name	Display unit (M71)	—	Continuity
Inverter VCC	2	Ground	Not existed
Signal VCC	3	Ground	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.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Inverter VCC	M83	59	ACC	9 V
Signal VCC		47		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replacement of AV control unit.

## 4.CHECK GROUND CIRCUIT

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M71	1	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

## MULTIFUNCTION SWITCH

### MULTIFUNCTION SWITCH : Diagnosis Procedure

INFOID:000000008162749

#### 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.

NO >> Be sure to eliminate cause of malfunction before installing new fuse.

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# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## 2.CHECK POWER SUPPLY CIRCUIT

Check voltage between multifunction switch harness connector and ground.

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between multifunction switch and fuse.

## 3.CHECK GROUND CIRCUIT

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

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

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

## SATELLITE RADIO TUNER

### SATELLITE RADIO TUNER : Diagnosis Procedure

INFOID:000000008162750

## 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 >> GO TO 3.

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

## 3.CHECK GROUND CIRCUIT

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B236	15	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

# RGB (R: RED) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## RGB (R: RED) SIGNAL CIRCUIT

### Description

INFOID:000000008162751

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

### Diagnosis Procedure

INFOID:000000008162752

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

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	17	M83	40	Existed

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

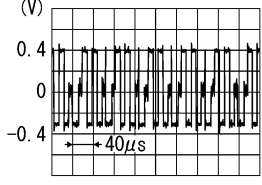
Display unit		Ground	Continuity
Connector	Terminal		
M71	17		Not existed

Is the inspection result normal?

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

#### 2. CHECK RGB (R: RED) SIGNAL

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

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M71	17	Ground	Start confirmation/adjustment mode, and then display color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	

Is the inspection result normal?

- YES >> Replace display unit.  
 NO >> Replace AV control unit.

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# RGB (G: GREEN) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## RGB (G: GREEN) SIGNAL CIRCUIT

### Description

INFOID:000000008162753

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

### Diagnosis Procedure

INFOID:000000008162754

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

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	6	M83	39	Existed

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

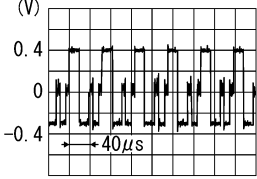
Display unit		Ground	Continuity
Connector	Terminal		
M71	6		Not existed

Is the inspection result normal?

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

#### 2. CHECK RGB (G: GREEN) SIGNAL

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

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M71	6	Ground	Start confirmation/adjustment mode, and then display color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	 <p>(V)</p> <p>0.4</p> <p>0</p> <p>-0.4</p> <p>40µs</p> <p>SKIB2236J</p>

Is the inspection result normal?

- YES >> Replace display unit.  
 NO >> Replace AV control unit.

# RGB (B: BLUE) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## RGB (B: BLUE) SIGNAL CIRCUIT

### Description

INFOID:000000008162755

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

### Diagnosis Procedure

INFOID:000000008162756

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

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	18	M83	38	Existed

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

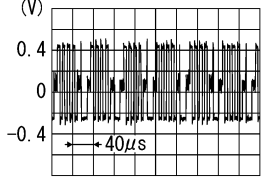
Display unit		Ground	Continuity
Connector	Terminal		
M71	18		Not existed

Is the inspection result normal?

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

#### 2. CHECK RGB (B: BLUE) SIGNAL

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

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M71	18	Ground	Start confirmation/adjustment mode, and then display color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	 <p>(V)</p> <p>0.4</p> <p>0</p> <p>-0.4</p> <p>← 40µs</p> <p>SKIB2237J</p>

Is the inspection result normal?

- YES >> Replace display unit.  
 NO >> Replace AV control unit.

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# RGB SYNCHRONIZING SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## RGB SYNCHRONIZING SIGNAL CIRCUIT

### Description

INFOID:000000008162757

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

### Diagnosis Procedure

INFOID:000000008162758

#### 1. CHECK CONTINUITY RGB SYNCHRONIZING SIGNAL CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	19	M83	41	Existed

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

Display unit		Ground	Continuity
Connector	Terminal		
M71	19		Not existed

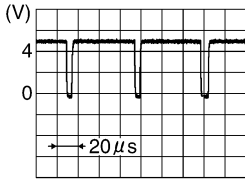
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK RGB SYNCHRONIZING SIGNAL

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

(+) Display unit		(-)	Reference value
Connector	Terminal		
M71	19	Ground	 SKIB3603E

Is the inspection result normal?

YES >> Replace display unit.

NO >> Replace AV control unit.

# RGB AREA (YS) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## RGB AREA (YS) SIGNAL CIRCUIT

### Description

INFOID:000000008162759

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

### Diagnosis Procedure

INFOID:000000008162760

#### 1. CHECK CONTINUITY RGB AREA (YS) SIGNAL CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	9	M83	43	Existed

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

Display unit		Ground	Continuity
Connector	Terminal		
M71	9		Not existed

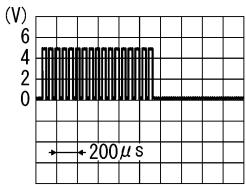
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

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

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

(+)		(-)	Condition	Reference value (Approx.)
Display unit				
Connector	Terminal			
M71	9	Ground	At RGB image displayed	5 V
			At AUX image is displayed.	 <p style="text-align: right; font-size: small;">PKIB4948J</p>

Is the inspection result normal?

YES >> Replace display unit.

NO >> Replace AV control unit.

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AV

# HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

### Description

INFOID:000000008162761

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

### Diagnosis Procedure

INFOID:000000008162762

#### 1. CHECK CONTINUITY HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	8	M83	45	Existed

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

Display unit		Ground	Continuity
Connector	Terminal		
M71	8		Not existed

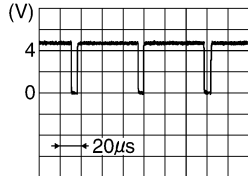
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

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

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

(+)		(-)	Reference value
Display unit			
Connector	Terminal		
M71	8	Ground	 SKIB3601E

Is the inspection result normal?

YES >> Replace AV control unit.

NO >> Replace display unit.



# VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

### Description

INFOID:000000008162763

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

### Diagnosis Procedure

INFOID:000000008162764

#### 1. CHECK CONTINUITY VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	20	M83	57	Existed

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

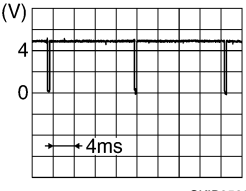
Display unit		Ground	Continuity
Connector	Terminal		
M71	20		Not existed

Is the inspection result normal?

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

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

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

(+)		(-)	Reference value
Display unit			
Connector	Terminal		
M71	20	Ground	

Is the inspection result normal?

- YES >> Replace AV control unit.  
NO >> Replace display unit.

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# AUX IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## AUX IMAGE SIGNAL CIRCUIT

### Description

INFOID:000000008162765

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

### Diagnosis Procedure

INFOID:000000008162766

#### 1. CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT (AUX INPUT JACKS AND AV CONTROL UNIT)

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

Auxiliary input jacks		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M154	7	M84	66	Existed

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

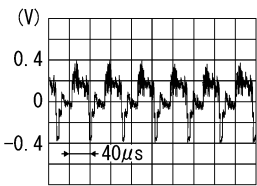
Auxiliary input jacks		Ground	Continuity
Connector	Terminal		
M154	7		Not existed

Is the inspection result normal?

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

#### 2. CHECK AUX IMAGE SIGNAL (AUX INPUT JACKS TO AV CONTROL UNIT)

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

(+)		(-)	Condition	Reference value
Connector	Terminal			
M154	7	Ground	At AUX image displayed.	 <p>SKIB2251J</p>

Is the inspection result normal?

- YES >> GO TO 3.  
 NO >> Check that there is no malfunction in the external device.

#### 3. CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT (AV CONTROL UNIT AND DISPLAY UNIT)

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	15	M83	36	Existed

## AUX IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

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

Display unit		Ground	Continuity
Connector	Terminal		
M71	15		Not existed

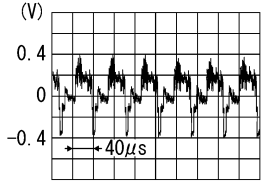
Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

### 4. CHECK AUX IMAGE SIGNAL

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

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M71	15	Ground	At AUX image displayed.	 <p style="text-align: right; font-size: small;">SKIB2251J</p>

Is the inspection result normal?

YES >> Replace display unit.

NO >> Replace AV control unit.

AV

# CD EJECT SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## CD EJECT SIGNAL CIRCUIT

### Description

INFOID:000000008162767

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

### Diagnosis Procedure

INFOID:000000008162768

#### 1. CHECK CONTINUITY CD EJECT SIGNAL CIRCUIT

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

Multifunction switch		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M72	14	M85	103	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			
M85	103	Ground	Pressing the eject switch	0 V
			Except for above	3.3 V

Is the inspection result normal?

- YES >> Replace preset switch.  
NO >> Replace AV control unit.

# STEERING SWITCH SIGNAL A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## STEERING SWITCH SIGNAL A CIRCUIT

### Description

INFOID:000000008162769

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:000000008162770

#### 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	
M81	6	M36	24	Existed

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

AV control unit		Ground	Continuity
Connector	Terminal		
M81	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.

#### 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	
M81	6	M81	15	3.3 V

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace AV control unit.

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-53, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch.

### Component Inspection

INFOID:000000008162771

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 A CIRCUIT

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## < DTC/CIRCUIT DIAGNOSIS >

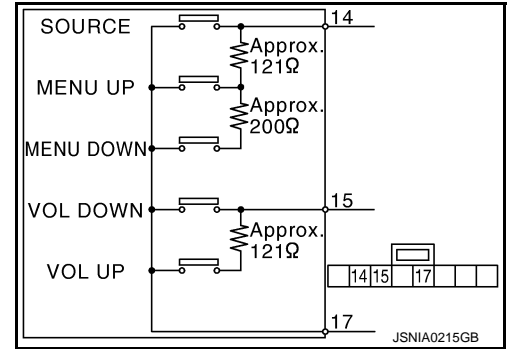
### Standard

Between terminals 14 and 17

MENU DOWN switch ON	: Approx. 318 – 324 $\Omega$
MENU UP switch ON	: Approx. 120 – 122 $\Omega$
SOURCE switch ON	: Approx. 0 $\Omega$

Between terminals 15 and 17

VOL UP switch ON	: Approx. 120 – 122 $\Omega$
VOL DOWN switch ON	: Approx. 0 $\Omega$



# STEERING SWITCH SIGNAL B CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## STEERING SWITCH SIGNAL B CIRCUIT

### Description

INFOID:000000008162772

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:000000008162773

#### 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	
M81	16	M36	31	Existed

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

AV control unit		Ground	Continuity
Connector	Terminal		
M81	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.

#### 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	
M81	16	M81	15	3.3 V

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace AV control unit.

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-55, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch.

### Component Inspection

INFOID:000000008162774

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

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## < DTC/CIRCUIT DIAGNOSIS >

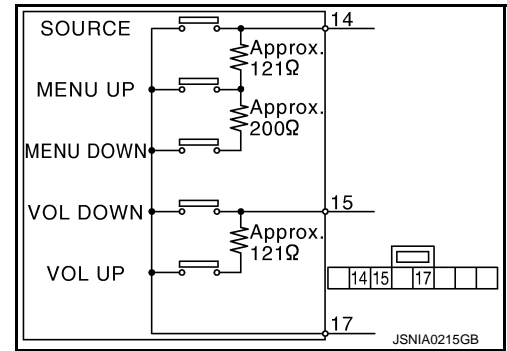
### Standard

Between terminals 14 and 17

MENU DOWN switch ON	: Approx. 318 – 324 $\Omega$
MENU UP switch ON	: Approx. 120 – 122 $\Omega$
SOURCE switch ON	: Approx. 0 $\Omega$

Between terminals 15 and 17

VOL UP switch ON	: Approx. 120 – 122 $\Omega$
VOL DOWN switch ON	: Approx. 0 $\Omega$





# STEERING SWITCH SIGNAL GND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## STEERING SWITCH SIGNAL GND CIRCUIT

### Description

INFOID:000000008162775

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:000000008162776

#### 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	
M81	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.

#### 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		
M81	15		Existed

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace AV control unit.

#### 4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-57, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch.

### Component Inspection

INFOID:000000008162777

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

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AV

# STEERING SWITCH SIGNAL GND CIRCUIT

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## < DTC/CIRCUIT DIAGNOSIS >

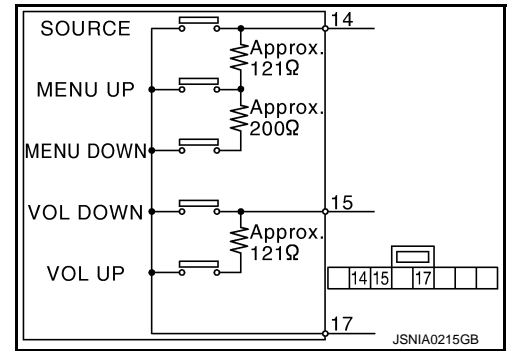
### Standard

Between terminals 14 and 17

MENU DOWN switch ON	: Approx. 318 – 324 $\Omega$
MENU UP switch ON	: Approx. 120 – 122 $\Omega$
SOURCE switch ON	: Approx. 0 $\Omega$

Between terminals 15 and 17

VOL UP switch ON	: Approx. 120 – 122 $\Omega$
VOL DOWN switch ON	: Approx. 0 $\Omega$



# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## ECU DIAGNOSIS INFORMATION

### AV CONTROL UNIT

#### Reference Value

INFOID:000000008162778

#### VALUES ON THE DIAGNOSIS TOOL

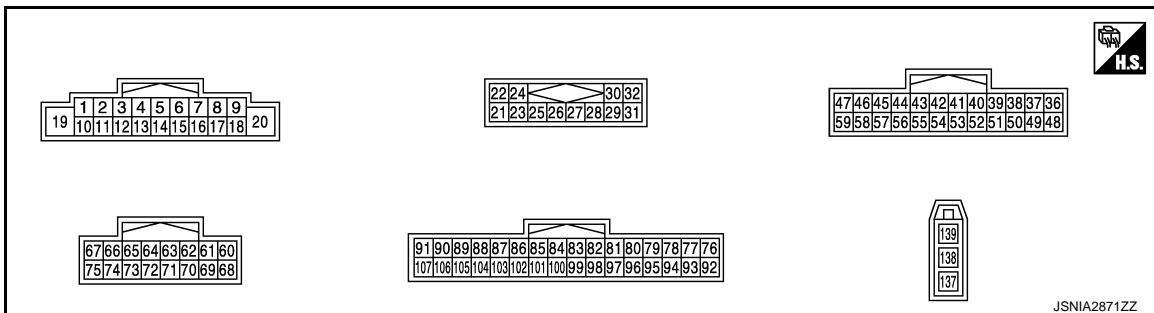
**NOTE:**

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

#### TERMINAL LAYOUT



#### PHYSICAL VALUES

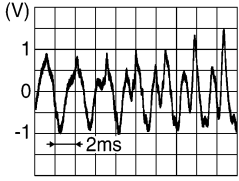
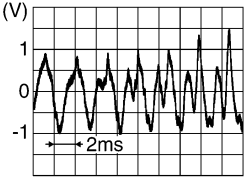
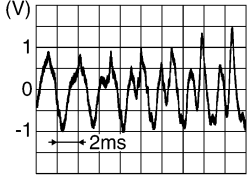
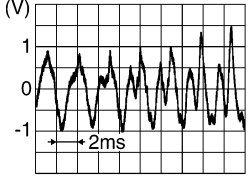
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AV

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

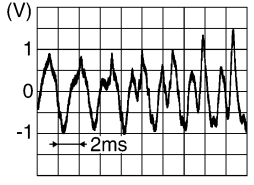
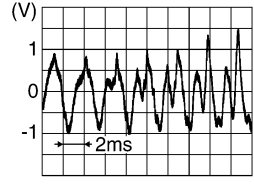
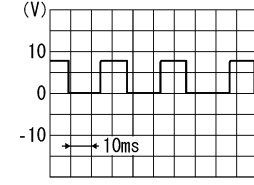
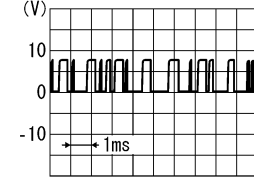
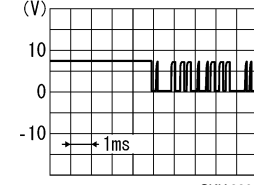
[BASE AUDIO WITHOUT REAR VIEW CAMERA]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
2 (L)	3 (W)	Sound signal front LH	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
4 (LG)	5 (SB)	Sound signal rear speaker LH	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
6 (P)	15 (B)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing Δ switch.	0.7 V
					Keep pressing ∇ switch.	1.3 V
					Except for above.	3.3 V
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
8 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
9 (L)	Ground	Illumination signal	Input	OFF	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12.0 V
11 (BR)	12 (R)	Sound signal front RH	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
13 (L)	14 (P)	Sound signal rear speaker 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.	0.7 V
					Except for above.	3.3 V

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

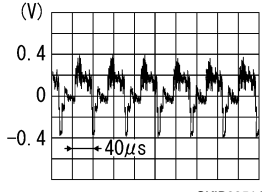
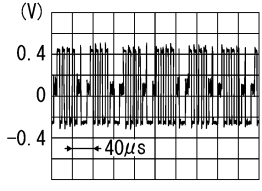
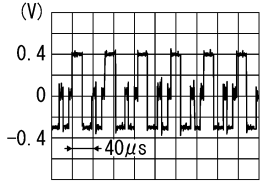
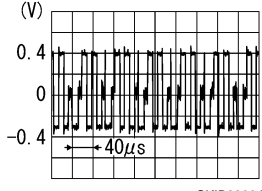
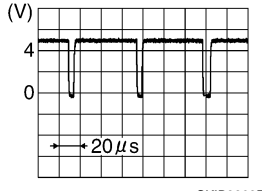
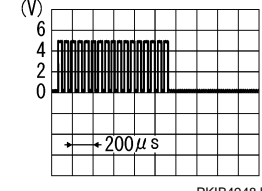
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
20 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
22 (B)	21 (W)	Satellite radio sound signal LH	Input	Ignition switch ON	When satellite radio mode is selected.	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
24 (G)	23 (R)	Satellite radio sound signal RH	Input	Ignition switch ON	When satellite radio mode is selected.	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
25	—	Shield	—	—	—	—
26	—	Shield	—	—	—	—
28 (P)	Ground	Request signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected	 <p style="text-align: right; font-size: small;">SKIA9299J</p>
29 (G)	Ground	Communication signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected	 <p style="text-align: right; font-size: small;">SKIA9300J</p>
30 (L)	Ground	Communication signal (CONT→SAT)	Output	Ignition switch ON	When satellite radio mode is selected	 <p style="text-align: right; font-size: small;">SKIA9301J</p>

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# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

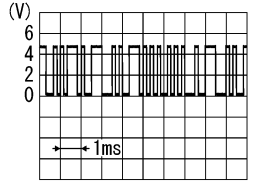
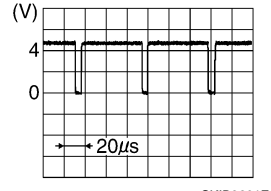
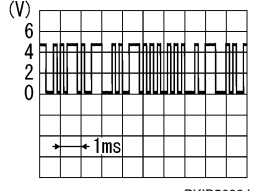
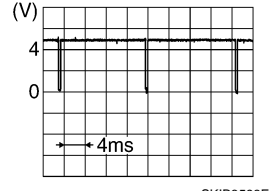
[BASE AUDIO WITHOUT REAR VIEW CAMERA]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
36 (BR)	Ground	Composite image signal	Output	Ignition switch ON	At AUX image is displayed	
37 (Y)	Ground	Composite image ground	—	Ignition switch ON	—	0 V
38 (P)	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.	
39 (L)	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.	
40 (G)	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.	
41 (W)	Ground	RGB synchronizing signal	Output	Ignition switch ON	—	
42	—	Shield	—	—	—	—
					At RGB image is displayed	5 V
43 (B)	Ground	RGB area (YS) signal	Output	Ignition switch ON	At AUX image is displayed	

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
44 (L)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	 <p style="text-align: right; font-size: small;">PKIB5039J</p>
45 (R)	Ground	Horizontal synchronizing (HP) signal	Input	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">SKIB3601E</p>
46 (LG)	Ground	Signal ground	—	Ignition switch ON	—	0 V
47 (BG)	Ground	Signal VCC	Output	Ignition switch ACC	—	9 V
48 (BR)	—	Composite synchronizing signal	—	—	—	—
49 (Y)	—	Shield	—	—	—	—
50	—	Shield	—	—	—	—
55 (B)	—	Shield	—	—	—	—
56 (LG)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	 <p style="text-align: right; font-size: small;">PKIB5039J</p>
57 (G)	Ground	Vertical synchronizing (VP) signal	Input	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">SKIB3598E</p>
58 (BR)	Ground	Inverter ground	—	Ignition switch ON	—	0 V
59 (Y)	Ground	Inverter VCC	Output	Ignition switch ACC	—	9 V

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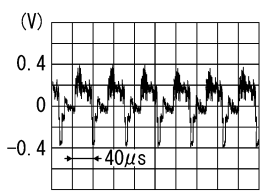
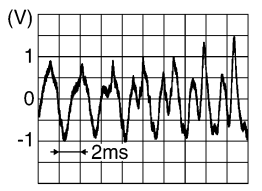
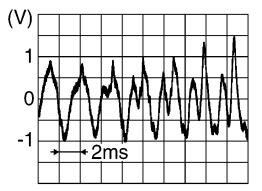
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# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

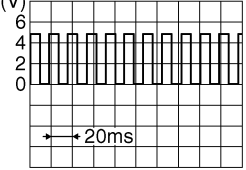
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
66 (G)	Ground	AUX image signal	Input	Ignition switch ON	When AUX mode is select- ed	 <p style="text-align: right; font-size: small;">SKIB2251J</p>
73	—	Shield	—	—	—	—
74 (R)	Ground	AUX image signal ground	—	Ignition switch ON	—	0 V
85 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
86 (L)	—	CAN-H	Input/ Output	—	—	—
87 (P)	—	CAN-L	Input/ Output	—	—	—
88 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
89 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
90 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
91 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
95 (R)	97 (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>
96 (W)	97 (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>
101 (BR)	Ground	Switch ground	—	Ignition switch ON	—	0 V
103 (V)	Ground	Eject signal	Input	—	Pressing the eject switch	0 V
					Except for above	3.3 V
104 (G)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage



# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)	
+	-	Signal name	Input/ Output			
105 (BG)	Ground	Reverse signal	Input	Ignition switch ON	R position: 12 V Other than R position: 0 V	
				Ignition switch ON	Parking brake ON: 0 V	
106 (SB)	Ground	Parking brake signal	Input		Ignition switch ON	Parking brake OFF
107 (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 V due to specifications (connected units).</p>  <p style="text-align: right; font-size: small;">SKIA6649J</p>
137	—	FM sub	Input	—	—	—
138	—	AM-FM main	Input	—	—	—
139	Ground	Antenna amp. ON signal	Output	Ignition switch ACC	—	12 V

## DTC Index

INFOID:000000008162779

## SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	<a href="#">AV-30, "Diagnosis Procedure"</a>
U1010	CONTROL UNIT (CAN) [U1010]	<a href="#">AV-31, "Diagnosis Procedure"</a>
U1310	CONTROL UNIT (AV) [U1310]	<a href="#">AV-32, "DTC Logic"</a>
U1200	Cont Unit FLASH-ROM [U1200]	<a href="#">AV-33, "DTC Logic"</a>
U1216	CAN CONT [U1216]	<a href="#">AV-34, "DTC Logic"</a>
U1243	FRONT DISP CONN [U1243]	<a href="#">AV-35, "Diagnosis Procedure"</a>
U1255	SAT CONN [U1255]	<a href="#">AV-37, "Diagnosis Procedure"</a>
U1300 U1240	<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• SWITCH CONN [U1240]</li> </ul>	<a href="#">AV-39, "Description"</a>

# DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

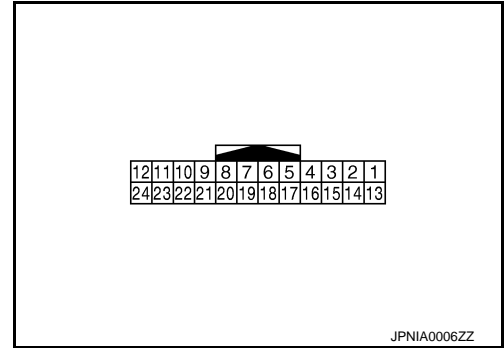
[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## DISPLAY UNIT

Reference Value

INFOID:000000008162780

TERMINAL LAYOUT



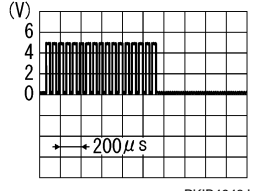
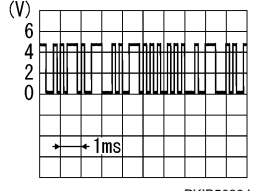
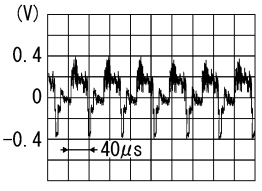
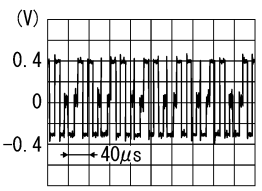
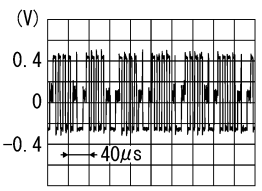
## PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y)	Ground	Inverter VCC	Input	Ignition switch ACC	—	9 V
3 (BG)	Ground	Signal VCC	Input	Ignition switch ACC	—	9 V
4 (Y)	Ground	Composite image ground	—	Ignition switch ON	—	0 V
5 (Y)	—	Shield	—	—	—	—
6 (L)	Ground	RGB signal (G: green)	Input	Ignition switch ON	Start confirmation/adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	<p style="text-align: right;">SKIB2236J</p>
7	—	Shield	—	—	—	—
8 (R)	Ground	Horizontal synchronizing (HP) signal	Output	Ignition switch ON	—	<p style="text-align: right;">SKIB3601E</p>

# DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

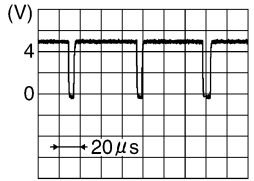
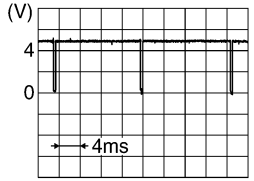
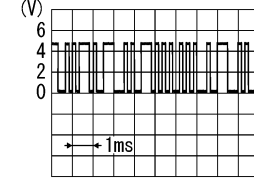
Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
9 (B)	Ground	RGB area (YS) signal	Input	Ignition switch ON	At RGB image is displayed 5 V
				Ignition switch ON	At AUX image is displayed 
11 (LG)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness. 
13 (BR)	Ground	Inverter ground	—	Ignition switch ON	— 0 V
14 (LG)	Ground	Signal ground	—	Ignition switch ON	— 0 V
15 (BR)	Ground	Composite image signal	Input	Ignition switch ON	At AUX image is displayed 
16 (BR)	—	Composite synchronizing signal	—	—	—
17 (G)	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. 
18 (P)	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. 

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# DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
19 (W)	Ground	RGB synchronizing signal	Input	Ignition switch ON	—	 <p>SKIB3603E</p>
20 (G)	Ground	Vertical synchronizing (VP) signal	Output	Ignition switch ON	—	 <p>SKIB3598E</p>
21	—	Shield	—	—	—	—
22 (L)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	 <p>PKIB5039J</p>
23 (B)	—	Shield	—	—	—	—

# SATELLITE RADIO TUNER

< ECU DIAGNOSIS INFORMATION >

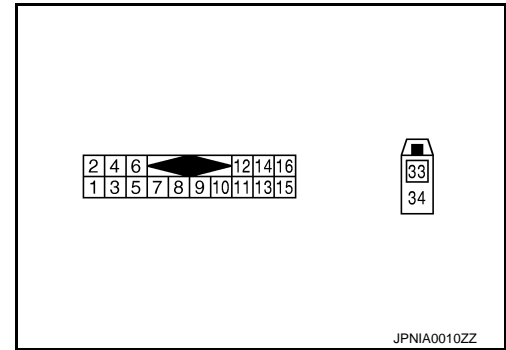
[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## SATELLITE RADIO TUNER

Reference Value

INFOID:000000008162781

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/Output			
2 (R)	1 (G)	Satellite radio sound signal LH	Output	Ignition switch ON	When satellite radio mode is selected.	<p style="text-align: right;">SKIB3609E</p>
4 (B)	3 (W)	Satellite radio sound signal RH	Output	Ignition switch ON	When satellite radio mode is selected.	<p style="text-align: right;">SKIB3609E</p>
5	—	Shield	—	—	—	—
6	—	Shield	—	—	—	—
8 (Y)	Ground	Request signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected.	<p style="text-align: right;">SKIA9299J</p>
9 (O)	Ground	Communication signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected.	<p style="text-align: right;">SKIA9300J</p>

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# SATELLITE RADIO TUNER

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]


Terminal		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
10 (BR)	Ground	Communication signal (CONT→SAT)	Input	Ignition switch ON	When satellite radio mode is selected.	
12 (SB)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
15 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
16 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
33	—	Satellite antenna	Input	—	—	—
34	—	Shield	—	—	—	—

# WIRING DIAGRAM

## BASE AUDIO WITHOUT REAR VIEW CAMERA

### Wiring Diagram

INFOID:000000008162782

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

**NOTE:**

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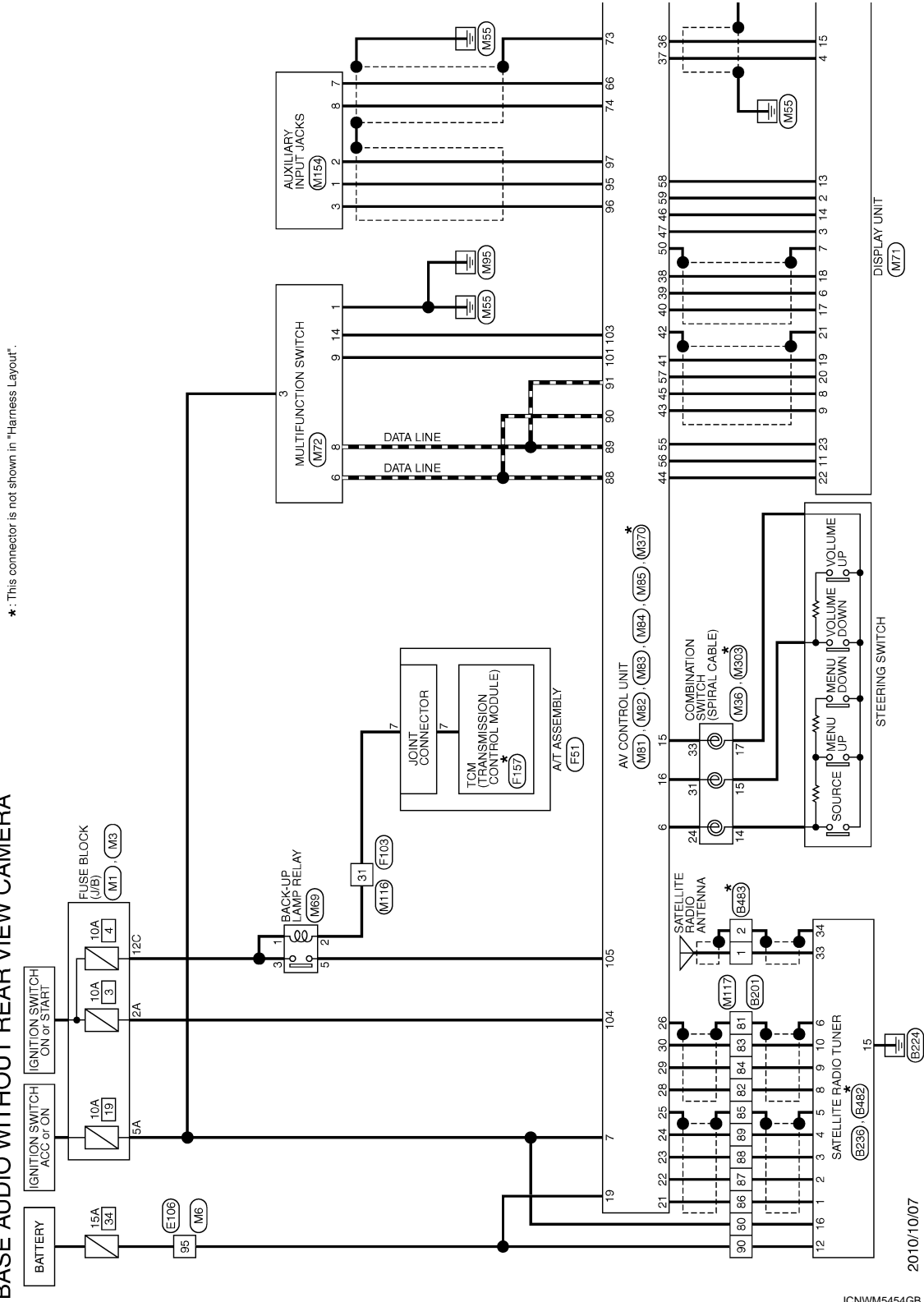
# BASE AUDIO WITHOUT REAR VIEW CAMERA

## [BASE AUDIO WITHOUT REAR VIEW CAMERA]

< WIRING DIAGRAM >

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

### BASE AUDIO WITHOUT REAR VIEW CAMERA



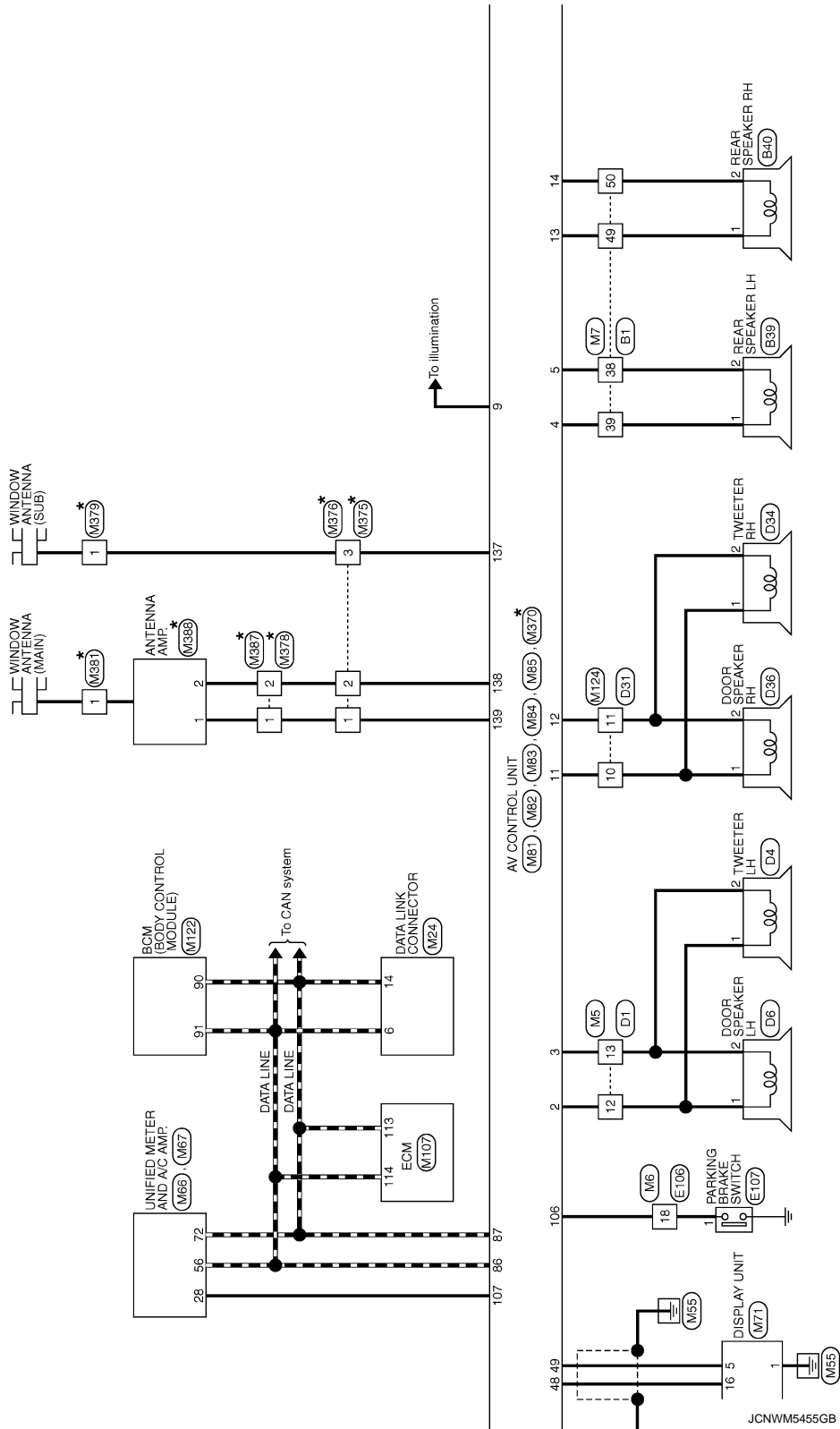


# BASE AUDIO WITHOUT REAR VIEW CAMERA

< WIRING DIAGRAM >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

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



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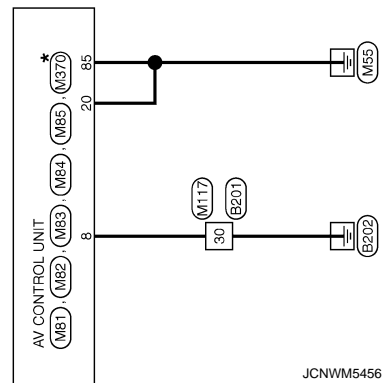
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# BASE AUDIO WITHOUT REAR VIEW CAMERA

< WIRING DIAGRAM >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

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



JCNWM5456GB

# MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## SYMPTOM DIAGNOSIS

### MULTI AV SYSTEM SYMPTOMS

#### Symptom Table

INFOID:000000008162783

#### OPERATION

Trouble diagnosis chart by symptom

Symptoms	Check items	Possible malfunction location / Action to take
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 with CONSULT.</li> </ul>	<ul style="list-style-type: none"> <li>Multifunction switch power supply and ground circuit.</li> <li>AV communication circuits 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 the CONSULT is initialized.</li> </ul>	AV control unit power supply and ground circuit malfunction. Refer to <a href="#">AV-40, "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-20, "Diagnosis Description"</a> .

#### RELATED TO RGB IMAGE

Trouble diagnosis chart by symptom

Symptoms	Check items	Possible malfunction location / Action to take
RGB image is not shown.	There is malfunction in the CONSULT self-diagnosis result.	Perform CONSULT self-diagnosis. Refer to <a href="#">AV-27, "CONSULT Function (MULTI AV)"</a> .
	There is no malfunction in CONSULT self-diagnosis results.	<ul style="list-style-type: none"> <li>Display unit power supply circuit. Refer to <a href="#">AV-40, "DISPLAY UNIT : Diagnosis Procedure"</a>.</li> <li>Vertical synchronizing (VP) signal circuit. Refer to <a href="#">AV-49, "Diagnosis Procedure"</a>.</li> </ul>
Color of RGB image is not proper.	Light blue (Cyan) tint.	RGB signal (R: red) circuit. Refer to <a href="#">AV-43, "Diagnosis Procedure"</a> .
	Purple (Magenta) tint.	RGB signal (G: green) circuit. Refer to <a href="#">AV-44, "Diagnosis Procedure"</a> .
	Screen looks yellowish.	RGB signal (B: blue) circuit. Refer to <a href="#">AV-45, "Diagnosis Procedure"</a> .
RGB screen is rolling.	—	RGB synchronizing signal circuit. Refer to <a href="#">AV-46, "Diagnosis Procedure"</a> .
Fuel economy display is malfunctioning.	There is malfunction in the CONSULT self-diagnosis result.	Perform CONSULT self-diagnosis. Refer to <a href="#">AV-27, "CONSULT Function (MULTI AV)"</a> .
	There is no malfunction in CONSULT self-diagnosis results.	Ignition signal circuit malfunction. Refer to <a href="#">AV-40, "AV CONTROL UNIT : Diagnosis Procedure"</a> .

#### RELATED TO AUDIO

Trouble diagnosis chart by symptom

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to <a href="#">AV-52, "Diagnosis Procedure"</a> .

# MULTI AV SYSTEM SYMPTOMS

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

< SYMPTOM DIAGNOSIS >

Symptoms	Check items	Probable malfunction location
No sound comes out or the level of the sound is low.	No sound from all speakers.	AV control unit power supply and ground circuits malfunction. Refer to <a href="#">AV-52, "Diagnosis Procedure"</a> .
	Only a certain speaker (front right, front left, rear right, or rear left) 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 speaker.</li> <li>Malfunction in speaker.</li> <li>Malfunction in AV control unit.</li> </ul>
Noise is mixed with audio.	Noise comes out from all speaker.	Malfunction in AV control unit.
	Noise comes out only from a certain speaker (front right, front left, rear right, or rear left).	<ul style="list-style-type: none"> <li>Poor connector connection of speaker.</li> <li>Sound signal circuit malfunction between AV control unit 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> </ul>
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	Poor connector connection of antenna or antenna feeder.
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> </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-65, "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. Refer to <a href="#">AV-90, "Exploded View"</a>.</li> </ul>

## RELATED TO STEERING SWITCH

Trouble diagnosis chart by symptom

Symptoms	Inspection location / Probable malfunction location
None of the steering switch operations work.	Steering switch signal GND circuit. Refer to <a href="#">AV-57, "Diagnosis Procedure"</a> .
Only specified switch cannot be operated.	Steering switch. Refer to <a href="#">AV-93, "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-53, "Diagnosis Procedure"</a> .
"VOL UP", "VOL DOWN" switches of steering switch are not operated.	Steering switch signal B circuit. Refer to <a href="#">AV-55, "Diagnosis Procedure"</a> .

## RELATED TO AUXILIARY INPUT

### NOTE:

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

# MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

Trouble diagnosis chart by symptom

Symptoms	Check items	Probable malfunction location
No voice sound is heard when AUX mode is selected.	Voice sound is heard when other modes are selected.	AUX sound signal circuits malfunction between auxiliary input jacks and AV control unit.
Image is not displayed when AUX mode is selected.	—	<ul style="list-style-type: none"> <li>AUX image signal circuit malfunction between auxiliary input jacks and AV control unit. Refer to <a href="#">AV-50, "Diagnosis Procedure"</a>.</li> <li>Horizontal synchronizing (HP) signal circuit malfunction between AV control unit and display unit. Refer to <a href="#">AV-48, "Diagnosis Procedure"</a>.</li> <li>RGB area (YS) signal circuit malfunction between AV control unit and display unit. Refer to <a href="#">AV-47, "Diagnosis Procedure"</a>.</li> </ul>
It does not change from AUX mode to other modes.	—	Vertical synchronizing (VP) signal circuit malfunction between AV control unit and display unit. Refer to <a href="#">AV-49, "Diagnosis Procedure"</a> .

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AV

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

### NORMAL OPERATING CONDITION

#### Description

INFOID:000000008162784

#### 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 system in the video mode.	Press <DISC> to change the mode.
	The display is turned off.	Press <Day/Night> 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 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) or could be incorrectly mastered by the customer on a computer.
- Check if the CDs carry the Compact Disk Logo. If not, the disk is not mastered to the “red book” Compact Disk Standard and may not play.

Symptom	Cause and Counter measure
Cannot play	Check if the CD was inserted correctly.
	Check if the CD is scratched or dirty.
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.
	If there is a mixture of music CD files (CD-DA data) and MP3/WMA files on a CD, only the music CD files (CD-DA data) will be played.
	Files with extensions other than “.MP3”, “.WMA”, “.mp3”, or “.wma” 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 disk or the file is generated in an irregular format, This may occur depending on the variation or the setting of MP3/WMA writing applications or other text editing applications.
	Check if the finalization process, such as session close and disk close, is done for the disk.
Poor sound quality	Check if the CD is scratched or dirty.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA CD, or if it is a multisession disk, 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 file has been given an extension of “.MP3”, “.WMA”, “.mp3”, or “.wma”, or when play is prohibited by copyright protection, the player will skip to the next song.

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

Symptom	Cause and Counter measure
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.

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## PRECAUTIONS

< PRECAUTION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

### PRECAUTION

#### PRECAUTIONS

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

INFOID:000000008162785

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 Battery Service

INFOID:000000008162786

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

##### Precaution for Trouble Diagnosis

INFOID:000000008162787

#### 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:000000008162788

#### AV COMMUNICATION SYSTEM

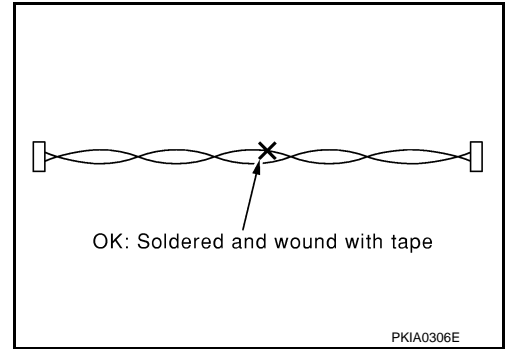


# PRECAUTIONS

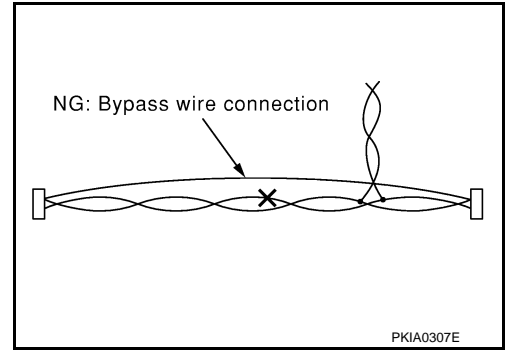
## [BASE AUDIO WITHOUT REAR VIEW CAMERA]

### < PRECAUTION >

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



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



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# PREPARATION

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

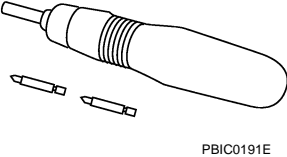
< PREPARATION >

## PREPARATION

### PREPARATION

#### Commercial Service Tools

INFOID:000000008162789

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

# AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## REMOVAL AND INSTALLATION

### AV CONTROL UNIT

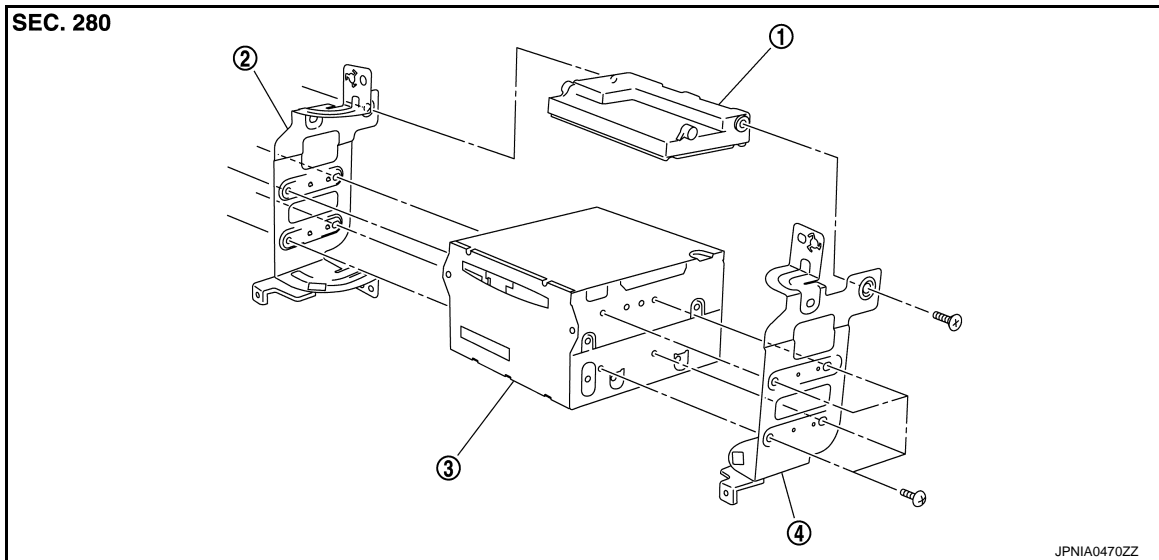
#### Exploded View

INFOID:000000008162790

#### REMOVAL

Refer to [IP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23. "M/T MODELS : Exploded View"](#) (M/T models).

#### DISASSEMBLY



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

#### Removal and Installation

INFOID:000000008162791

#### REMOVAL

1. Remove display unit.
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

Install in 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.

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## DISPLAY UNIT

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

---

### DISPLAY UNIT

#### Exploded View

INFOID:000000008162792

Refer to [IP-12, "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23, "M/T MODELS : Exploded View"](#) (M/T models).

#### Removal and Installation

INFOID:000000008162793

#### REMOVAL

1. Remove cluster lid D. Refer to [IP-12, "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23, "M/T MODELS : Exploded View"](#) (M/T models).
2. Remove display unit with bracket as a single unit.

#### INSTALLATION

Install in the reverse order of removal.

# DOOR SPEAKER

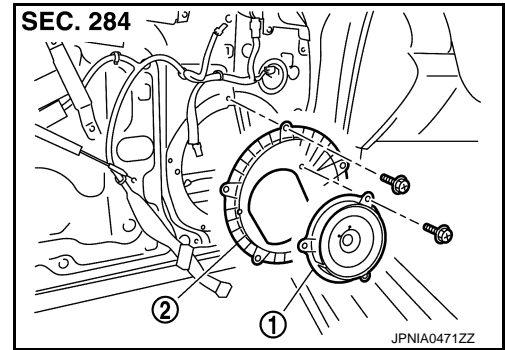
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## DOOR SPEAKER

### Exploded View

INFOID:000000008162794



1. Door speaker
2. Speaker bracket

### Removal and Installation

INFOID:000000008162795

#### REMOVAL

1. Remove door finisher. Refer to [INT-12. "Exploded View"](#).
2. Remove the door speaker from speaker bracket.

#### INSTALLATION

Install in the reverse order of removal.

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AV

## REAR SPEAKER

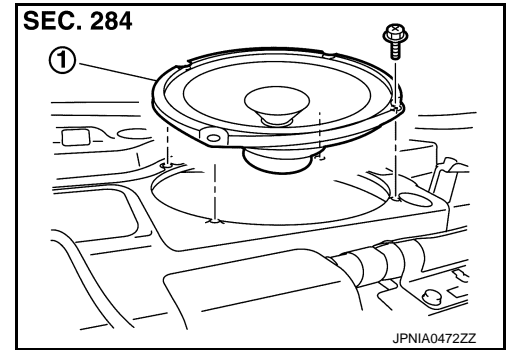
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

### REAR SPEAKER

Exploded View

INFOID:000000008162796



1. Rear speaker

### Removal and Installation

INFOID:000000008162797

#### REMOVAL

1. Remove rear parcel shelf finisher. Refer to [INT-19, "Exploded View"](#).
2. Remove rear speaker from rear parcel shelf.

#### INSTALLATION

Install in the reverse order of removal.

# TWEETER

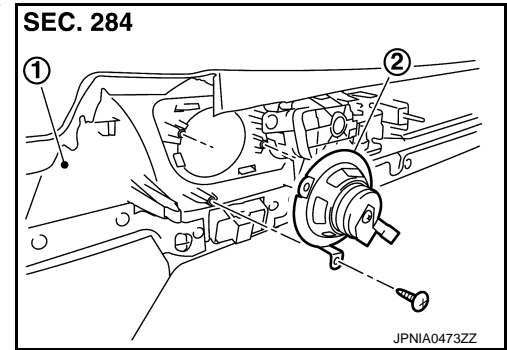
[BASE AUDIO WITHOUT REAR VIEW CAMERA]

< REMOVAL AND INSTALLATION >

## TWEETER

### Exploded View

INFOID:000000008162798



1. Door finisher
2. Tweeter

### Removal and Installation

INFOID:000000008162798

#### REMOVAL

1. Remove door finisher. Refer to [INT-12. "Exploded View"](#).
2. Remove the tweeter from the door finisher.

#### INSTALLATION

Install in the reverse order of removal.

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## ANTENNA AMP.

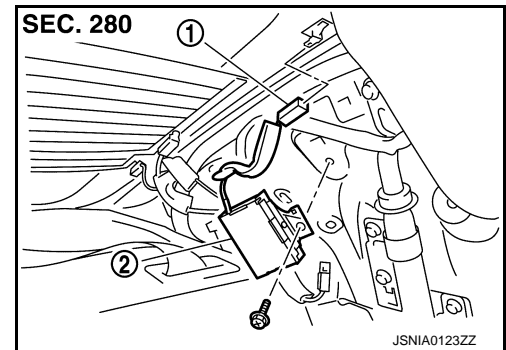
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

### ANTENNA AMP.

#### Exploded View

INFOID:000000008162800



1. AM-FM main connector
2. Antenna amp.

#### Removal and Installation

INFOID:000000008162801

##### REMOVAL

1. Remove back pillar garnish LH. Refer to [INT-15. "Exploded View"](#).
2. Remove antenna amp. from rear pillar LH.

##### INSTALLATION

Install in the reverse order of removal.



# SATELLITE RADIO TUNER

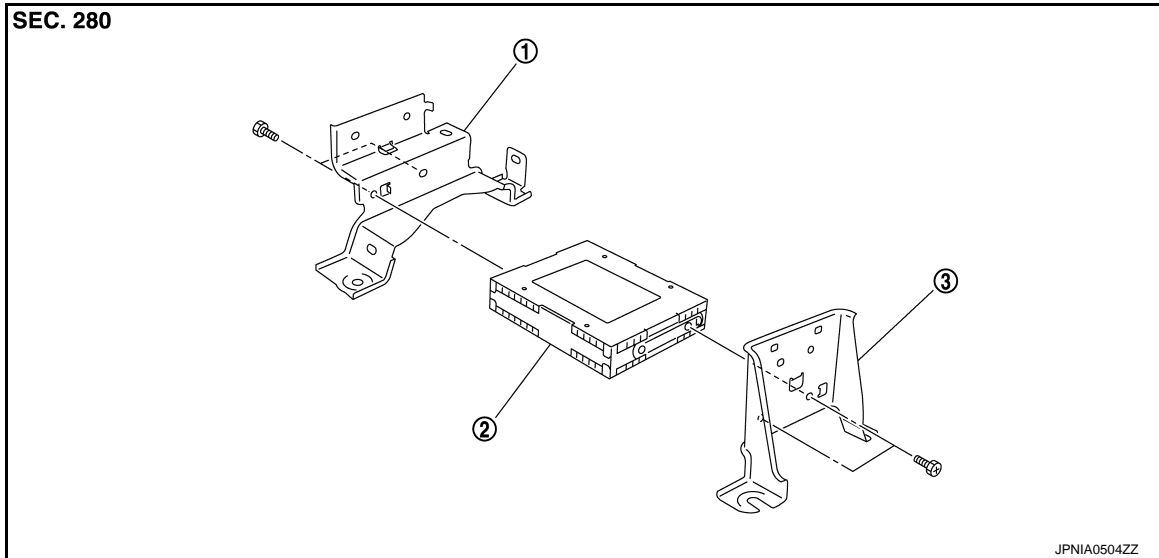
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## SATELLITE RADIO TUNER

Exploded View

INFOID:000000008162802



1. Bracket (front)

2. Satellite radio tuner

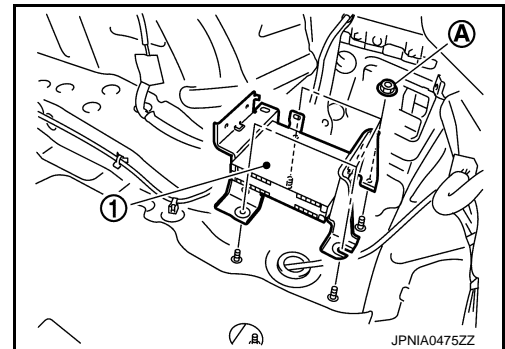
3. Bracket (rear)

## Removal and Installation

INFOID:000000008162803

### REMOVAL

1. Remove trunk floor spacer RH. Refer to [INT-29. "Exploded View"](#).
2. Remove nuts (A) from the trunk room RH, and satellite radio tuner (1) from trunk room side.



### INSTALLATION

Install in the reverse order of removal.

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# SATELLITE RADIO ANTENNA

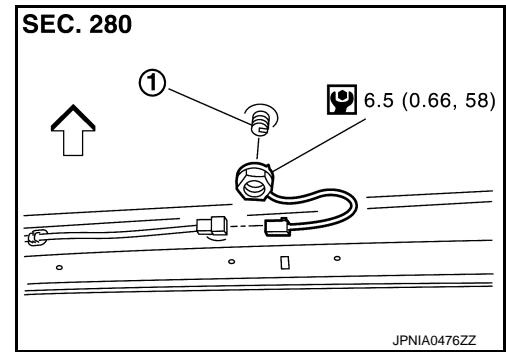
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## SATELLITE RADIO ANTENNA

### Exploded View

INFOID:000000008162804



1. Satellite radio antenna

⇐: Vehicle front

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

### Removal and Installation

INFOID:000000008162805

#### REMOVAL

1. Remove headlining assembly (rear) to secure work space between vehicle and headlining. Refer to [INT-23, "NORMAL ROOF : Exploded View"](#) [with normal roof] or [INT-26, "SUNROOF : Exploded View"](#) [with sunroof].
2. Remove nut, and then remove satellite radio antenna from roof panel.

#### INSTALLATION

Install in the reverse order of removal.

**Satellite radio antenna mounting nut**  : 6.5 N·m (0.66 kg·m, 58 in·lb)

#### CAUTION:

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

# MULTIFUNCTION SWITCH

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## MULTIFUNCTION SWITCH

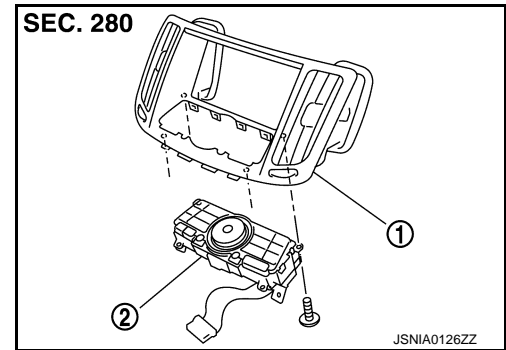
### Exploded View

INFOID:000000008162806

#### REMOVAL

Refer to [IP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23. "M/T MODELS : Exploded View"](#) (M/T models).

#### DISASSEMBLY



1. Center ventilator grille
2. Multifunction switch

### Removal and Installation

INFOID:000000008162807

#### REMOVAL

1. Remove cluster lid D. Refer to [IP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23. "M/T MODELS : Exploded View"](#) (M/T models).
2. Remove multifunction switch mounting screws.
3. Remove multifunction switch from center ventilator.

#### INSTALLATION

Install in the reverse order of removal.

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# PRESET SWITCH

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## PRESET SWITCH

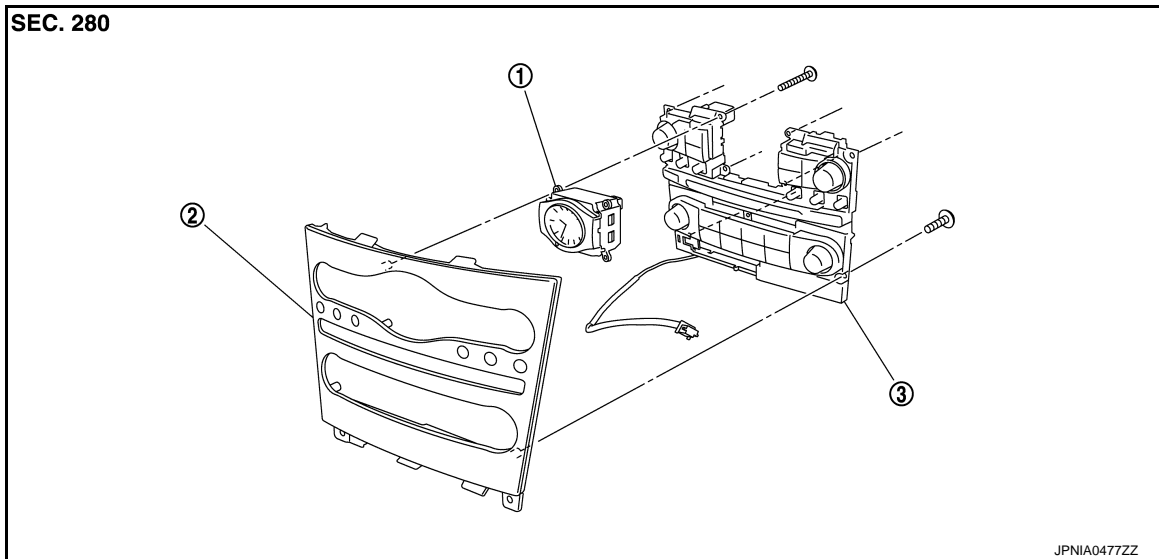
### Exploded View

INFOID:000000008162808

#### REMOVAL

Refer to [IP-12, "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23, "M/T MODELS : Exploded View"](#) (M/T models).

#### DISASSEMBLY



1. Clock

2. Cluster lid C

3. Preset switch

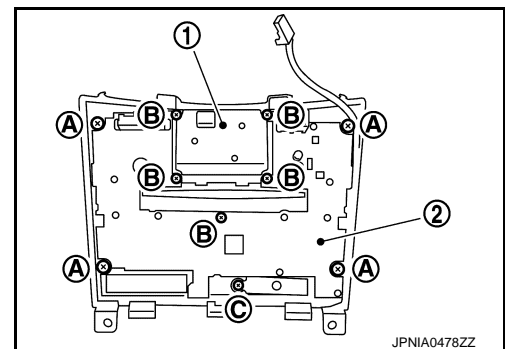
### Removal and Installation

INFOID:000000008162809

#### REMOVAL

1. Remove cluster lid C. Refer to [IP-12, "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23, "M/T MODELS : Exploded View"](#) (M/T models).
2. Remove preset switch screws (A), (B), and (C), and then remove preset switch (2) from cluster lid C.

1. Clock



#### INSTALLATION

Install in 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.

# STEERING SWITCH

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## STEERING SWITCH

### Exploded View

INFOID:000000008162810

Refer to [ST-17, "Exploded View"](#).

### Removal and Installation

INFOID:000000008162811

#### REMOVAL

Refer to [ST-17, "Removal and Installation"](#).

#### INSTALLATION

Install in the reverse order of removal.

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# AUXILIARY INPUT JACKS

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## AUXILIARY INPUT JACKS

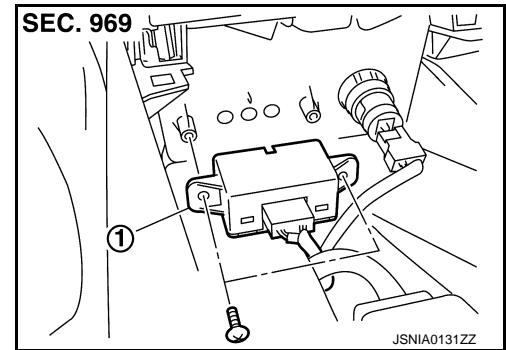
### Exploded View

INFOID:000000008162812

#### REMOVAL

Refer to [IP-35. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-40. "M/T MODELS : Exploded View"](#) (M/T models).

#### DISASSEMBLY



1. Auxiliary input jacks

### Removal and Installation

INFOID:000000008162813

#### REMOVAL

1. Remove center console. (M/T models) Refer to [IP-40. "M/T MODELS : Exploded View"](#).  
Remove center console cup. (A/T models) Refer to [IP-35. "A/T MODELS : Exploded View"](#).
2. Remove auxiliary input jacks from center console. (M/T models)  
Remove auxiliary input jacks from center console cup. (A/T models)

#### INSTALLATION

Install in the reverse order of removal.

# ANTENNA FEEDER

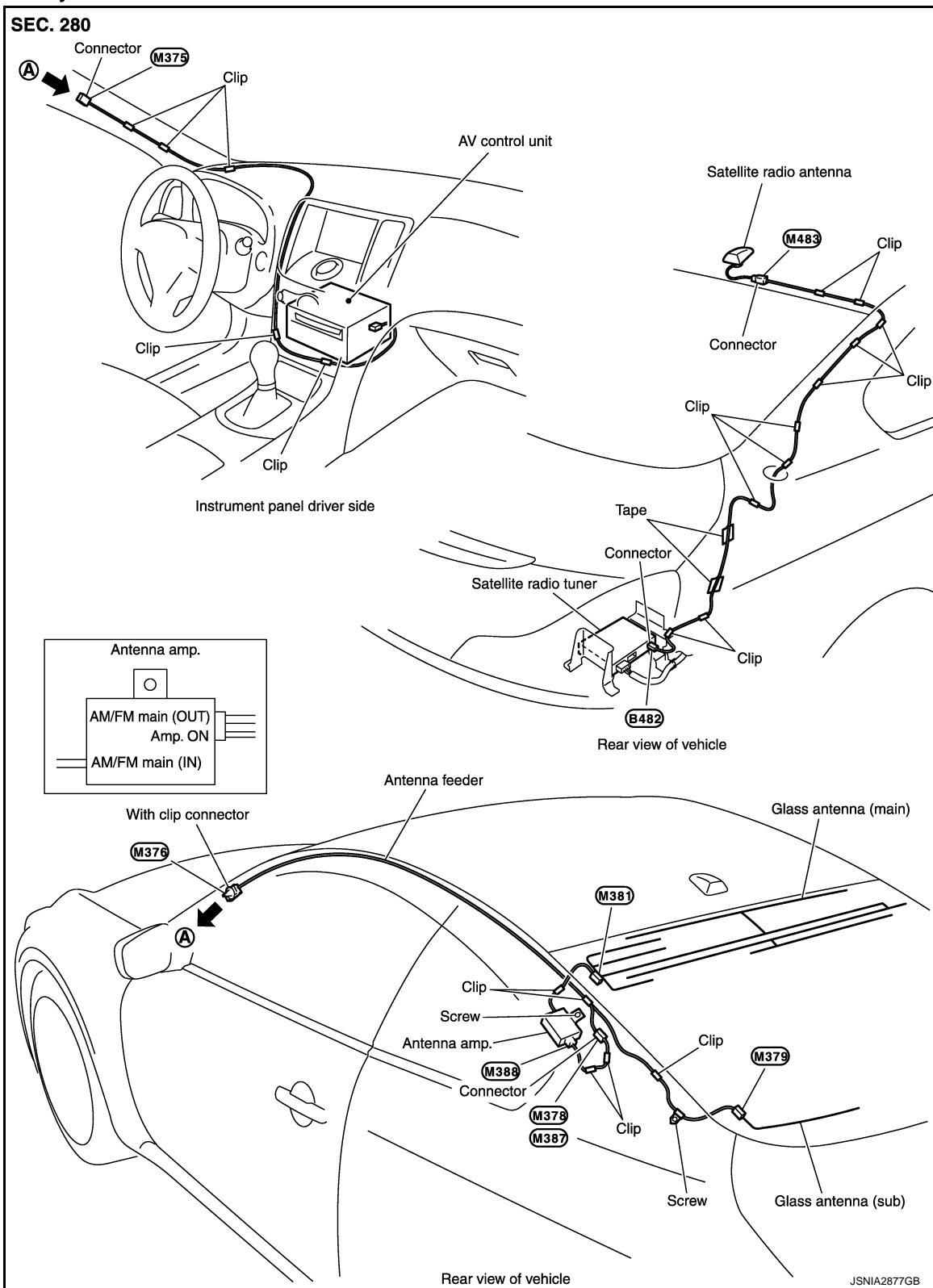
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITHOUT REAR VIEW CAMERA]

## ANTENNA FEEDER

### Feeder Layout

INFOID:000000008162814



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## PRECAUTION

### PRECAUTIONS

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

INFOID:000000008162815

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 Battery Service

INFOID:000000008162816

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

#### Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit)

INFOID:000000008162817

**CAUTION:**

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.

#### Precaution for Trouble Diagnosis

INFOID:000000008162818

#### 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.



# PRECAUTIONS

## [BASE AUDIO WITH REAR VIEW CAMERA]

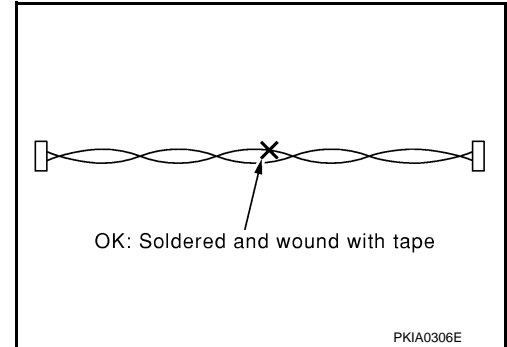
< PRECAUTION >

### Precaution for Harness Repair

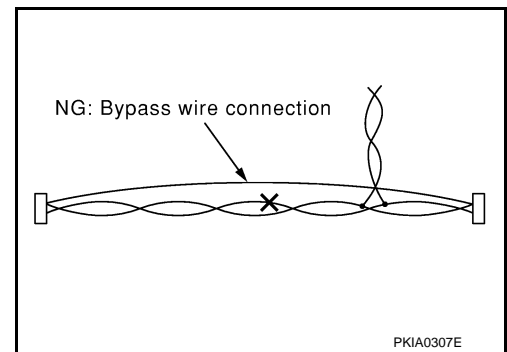
INFOID:000000008162819

#### AV COMMUNICATION SYSTEM

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



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



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AV

# PREPARATION

[BASE AUDIO WITH REAR VIEW CAMERA]

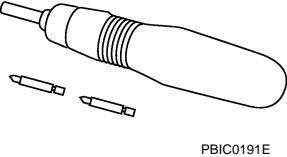
< PREPARATION >

## PREPARATION

### PREPARATION

#### Commercial Service Tools

INFOID:000000008162820

Tool	Description
Power tool 	Loosening screws

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

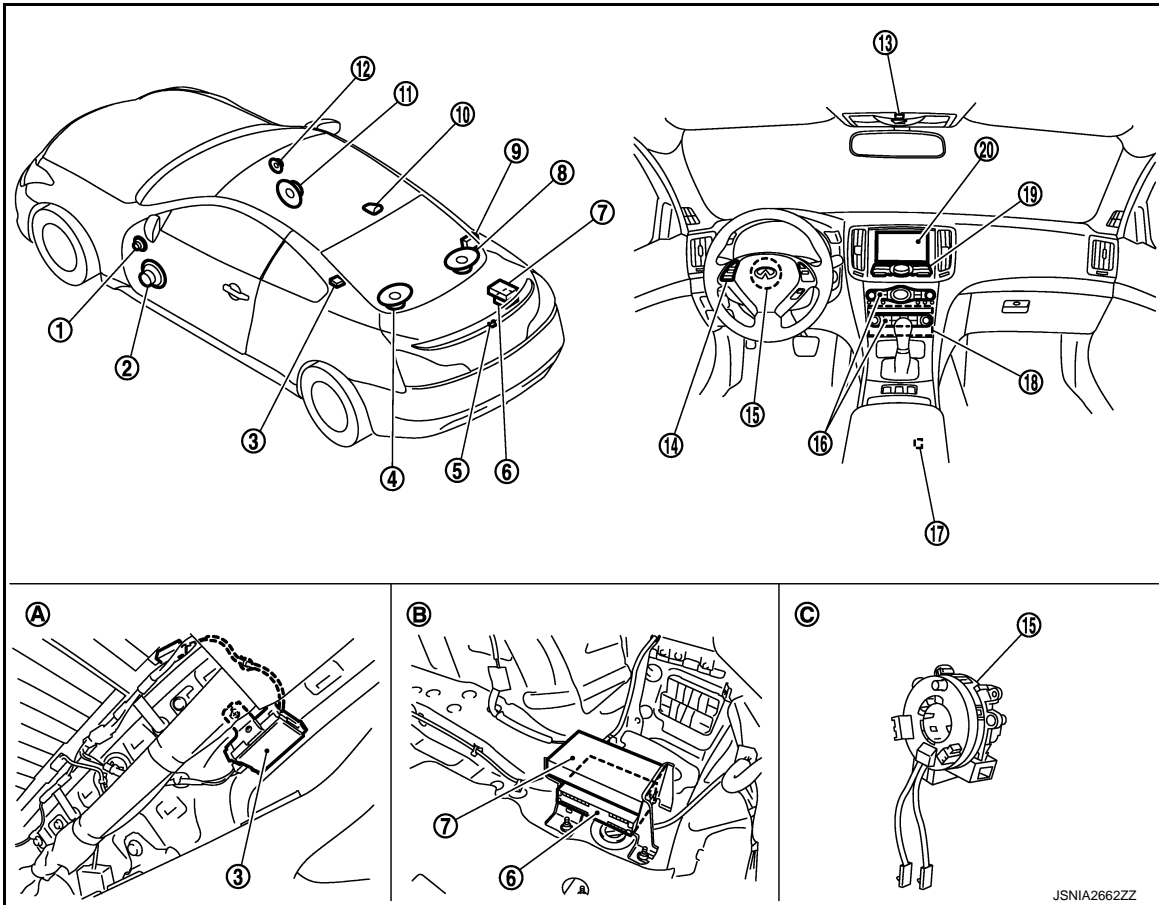
[BASE AUDIO WITH REAR VIEW CAMERA]

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000008162821



- |                                   |                     |                                   |
|-----------------------------------|---------------------|-----------------------------------|
| 1. Tweeter LH                     | 2. Door speaker LH  | 3. Antenna amp.                   |
| 4. Rear speaker LH                | 5. Rear view camera | 6. Satellite radio tuner          |
| 7. TEL adapter unit               | 8. Rear speaker RH  | 9. TEL antenna                    |
| 10. Satellite radio antenna       | 11. Door speaker RH | 12. Tweeter RH                    |
| 13. Microphone                    | 14. Steering switch | 15. Steering angle sensor         |
| 16. Preset switch                 | 17. USB connector   | 18. AV control unit               |
| 19. Multifunction switch          | 20. Display unit    |                                   |
| A. Within rear pillar finisher LH | B. Trunk room RH    | C. Spiral cable removed condition |

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# COMPONENT PARTS

[BASE AUDIO WITH REAR VIEW CAMERA]

< SYSTEM DESCRIPTION >

## Component Description

INFOID:000000008162822

Part name	Description
AV control unit	<ul style="list-style-type: none"> <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 the steering angle sensor and receives the steering angle sensor signal via CAN communication.</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>
Display unit	<ul style="list-style-type: none"> <li>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 image, RGB area and RGB synchronizing).</li> <li>Composite image signals are input from AV control unit.</li> <li>Synchronizing signal (HP, VP) is output to AV control unit.</li> </ul>
Door speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from AV control unit.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
Rear speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from AV control unit.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
Tweeter	<ul style="list-style-type: none"> <li>Outputs sound signal from AV control unit.</li> <li>Outputs high range sound.</li> </ul>
Multifunction switch	<ul style="list-style-type: none"> <li>Operation panel is equipped with the centralized switch where audio 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>
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 angle sensor	It is connected to the AV control unit and transmits the steering angle sensor signal via CAN communication.
Steering switch	<ul style="list-style-type: none"> <li>Operations for audio, hands-free phone and voice control, 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 TEL adapter unit.</li> <li>Power (Microphone VCC) is supplied from TEL adapter unit.</li> </ul>
Antenna amp.	<ul style="list-style-type: none"> <li>Radio signal received by glass antenna is amplified and transmitted to AV control unit.</li> <li>Power (antenna amp. ON signal) is supplied from AV control unit.</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>
Satellite radio antenna	Satellite radio signal is received and transmitted to satellite radio tuner.
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>

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[BASE AUDIO WITH REAR VIEW CAMERA]

Part name	Description
TEL antenna	Receives the TEL voice signal and outputs it to the TEL adapter unit.
USB connector	Image signal*1 and sound signal of USB input is transmitted to AV control unit.

\*1: Image signals cannot be received from iPod®.

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AV

# SYSTEM

< SYSTEM DESCRIPTION >

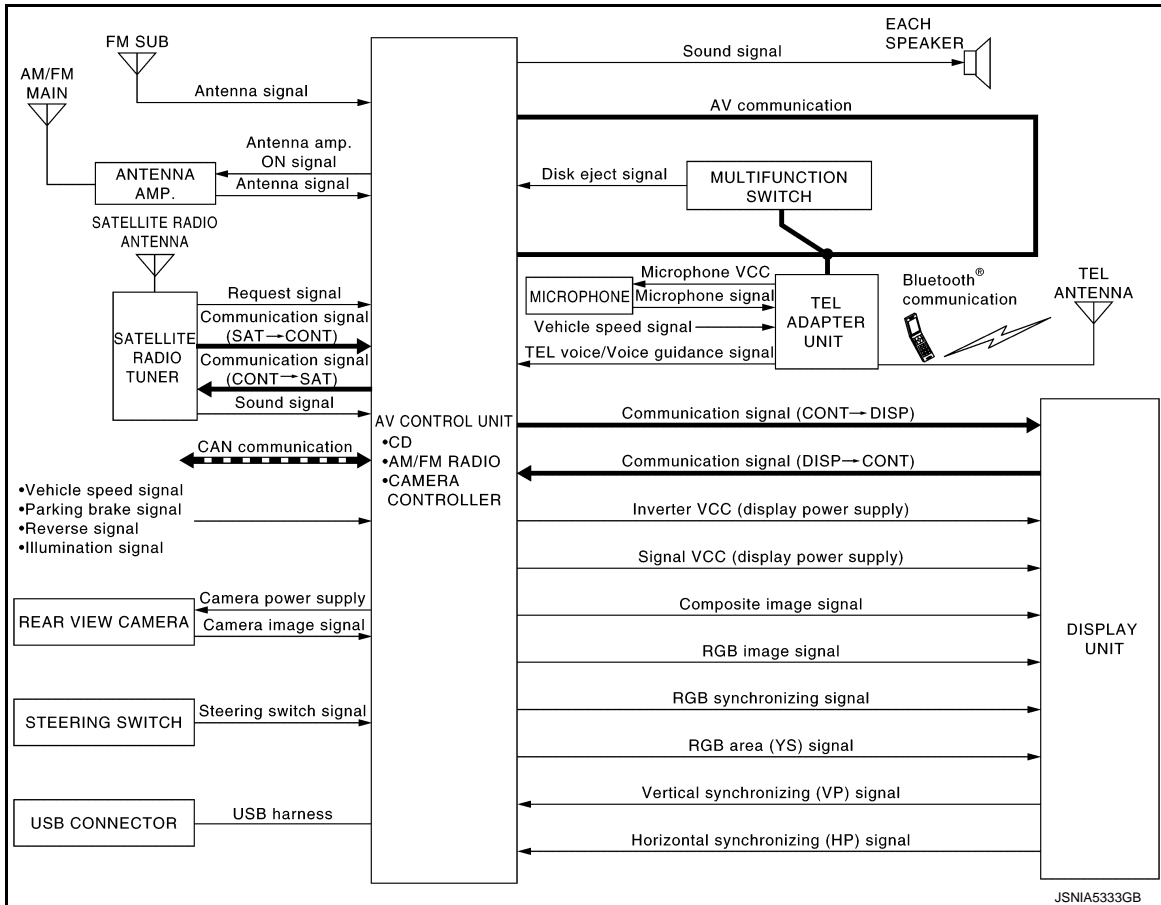
[BASE AUDIO WITH REAR VIEW CAMERA]

## SYSTEM

### MULTI AV SYSTEM

#### MULTI AV SYSTEM : System Diagram

INFOID:000000008162823



**NOTE:**

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

#### MULTI AV SYSTEM : System Description

INFOID:000000008162824

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.
- AV control unit is connected with display and serial communication, and it transmits the required signal of display and display control and receives the response signal from display.

#### AUDIO FUNCTION

# SYSTEM

## < SYSTEM DESCRIPTION >

## [BASE AUDIO WITH REAR VIEW CAMERA]

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

FUNCTION
AM/FM radio
Satellite radio
CD
USB connection function

### Operating Signal

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

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

### Screen Display

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

### AM/FM Radio Mode

- AM/FM radio tuner is built into AV control unit.
- Audio signal is received by glass antenna, next it is amplified by antenna amp, and finally it is input to AV control unit. AV control unit outputs the sound signal 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 is output the sound signal (satellite radio) to each speaker.

### CD Mode

- CD function is built into AV control unit.
- AV control unit outputs the sound signal to each speaker when inserting the CD to AV control unit.

### USB Connection Function

- iPod or music files in USB memory can be played.
- iPod 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.

## 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 to the front speaker when operating the cellular phone.
- TEL adapter unit has the on board self-diagnosis function. Refer to [AV-117, "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<sup>®</sup> communication as a TEL voice signal.
- Voice sound is then heard at the other party.

### When Receiving A Call

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

## REAR VIEW MONITOR FUNCTION

- The AV control unit supplies power to the rear view camera when receiving a reverse signal.

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AV

## SYSTEM

### < SYSTEM DESCRIPTION >

### [BASE AUDIO WITH REAR VIEW CAMERA]

- 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 display unit by RGB image signal. Rear view monitor images are displayed by combining the RGB image signal and the camera image signals from the rear view camera.
- Predictive course lines are controlled by a steering angle sensor signal received the AV control unit via CAN communication.

### VEHICLE INFORMATION FUNCTION

- Status of audio, climate control system, fuel economy and maintenance are displayed.
- AV control unit displays the fuel consumption status while receiving data signal through CAN communication from ECM, unified meter and A/C amp.
- AV control unit is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function.



# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## DIAGNOSIS SYSTEM (AV CONTROL UNIT)

### Description

INFOID:000000008162825

- 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 Function

INFOID:000000008162826

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

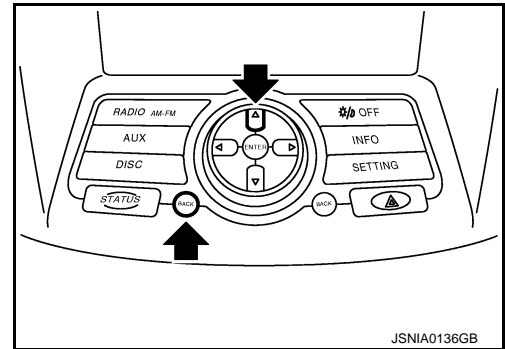
The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

##### Self-diagnosis Mode

- Press the “BACK” switch and the “UP” switch of the 4-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.

### ON BOARD DIAGNOSIS ITEM

#### Description

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

#### On Board Diagnosis Item

Mode	Description
Self Diagnosis	<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>

AV

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

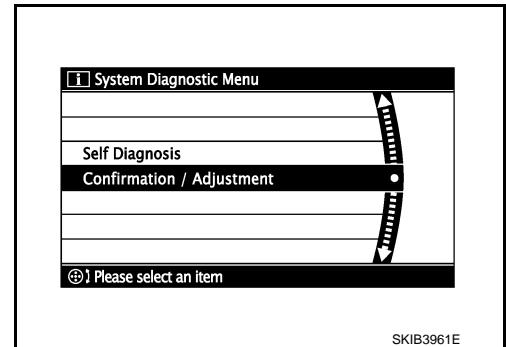
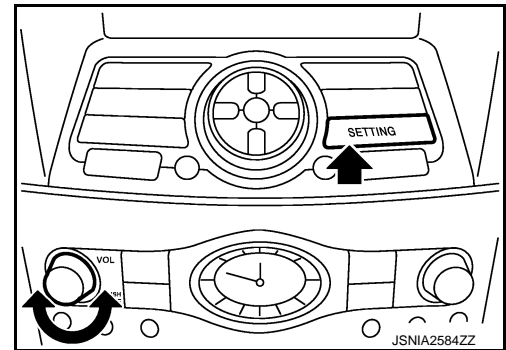
< SYSTEM DESCRIPTION >

[BASE AUDIO WITH REAR VIEW CAMERA]

	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.

## METHOD OF STARTING

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.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

[BASE AUDIO WITH REAR VIEW CAMERA]

## < SYSTEM DESCRIPTION >

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.

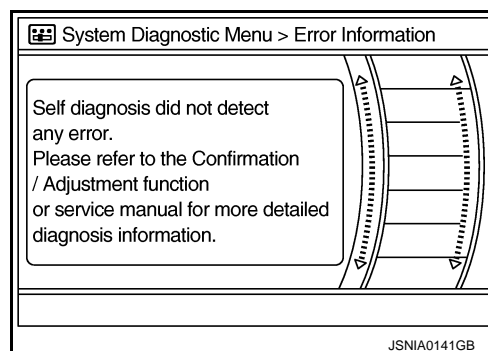
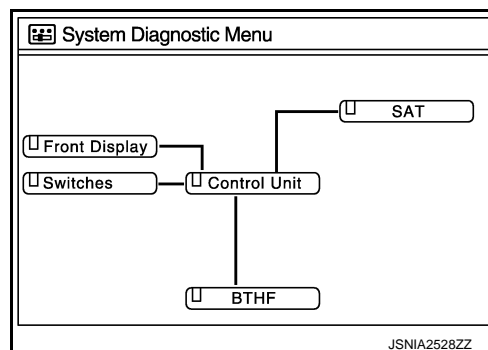
Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction <sup>Note</sup>	Red	Green

### 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-185, "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. Refer to <a href="#">AV-185, "Exploded View"</a> .

A Connecting Cable Between Units Is Displayed In Yellow.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

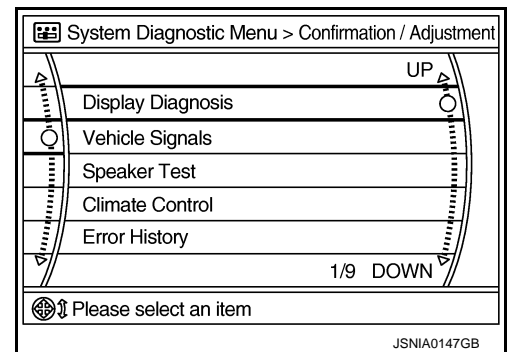
< SYSTEM DESCRIPTION >

[BASE AUDIO WITH REAR VIEW CAMERA]

Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control unit ↔ Front Display	Malfunction is detected in serial communication circuits between AV control unit and display unit.	Serial communication circuits between AV control unit and display unit.
Control unit ↔ 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 are malfunctioning.</li> <li>• communication circuits between AV control unit and satellite radio tuner are malfunctioning.</li> <li>• request signal circuit between AV control unit and satellite radio tuner are malfunctioning.</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 ↔ BTHF	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>

## 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.

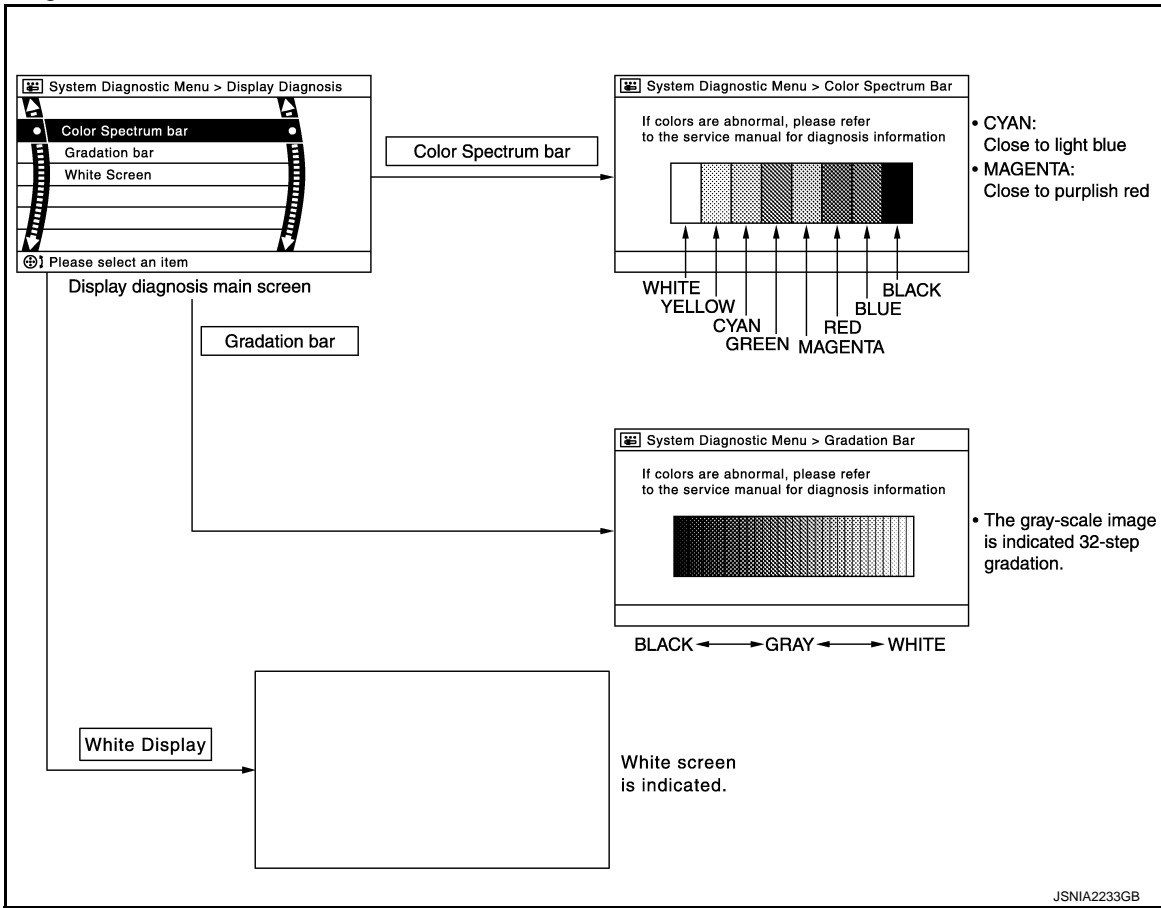


# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

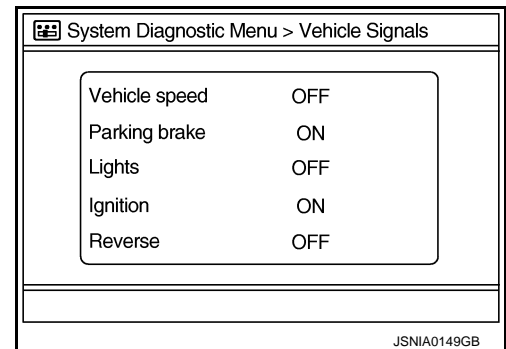
[BASE AUDIO WITH REAR VIEW CAMERA]

## 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)

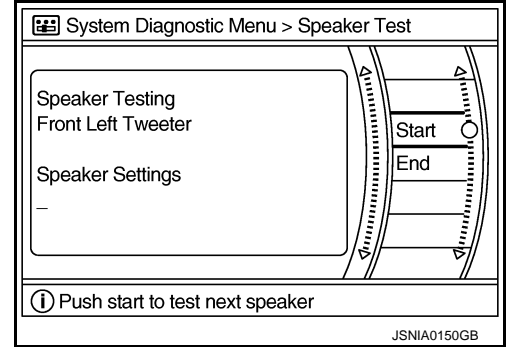
< SYSTEM DESCRIPTION >

[BASE AUDIO WITH REAR VIEW CAMERA]

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

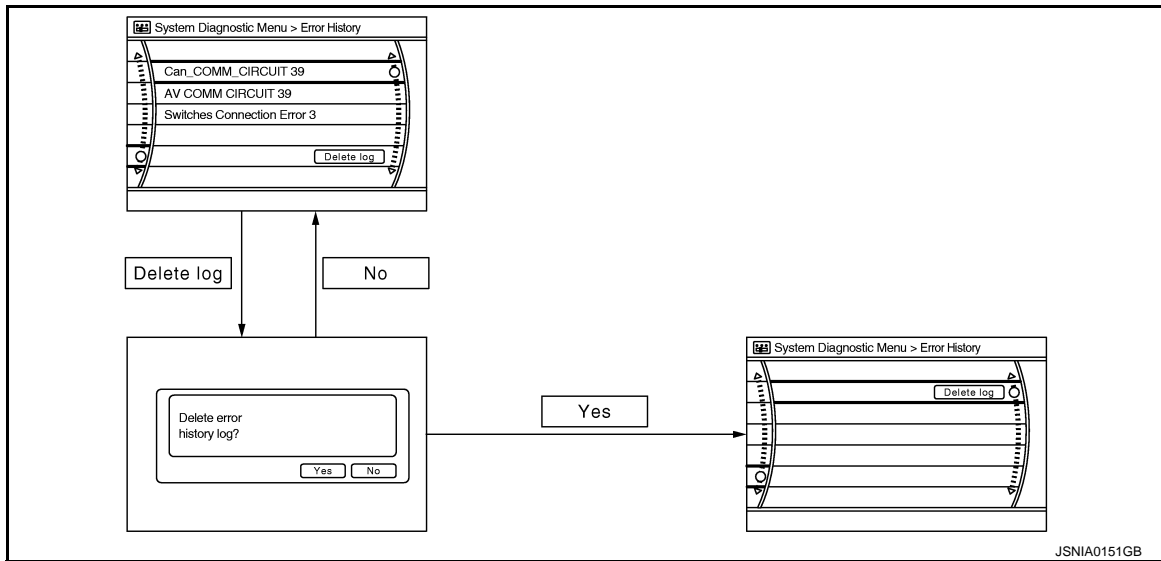
- The counter increases by 1 if an error occurs when ignition switch is ON. The counter will not decrease even if the condition is normal at the next ignition ON cycle.
- The counter upper limit is 50. Any counts exceeding 50 are ignored. The counter can be reset (no error record display) with the “Delete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

[BASE AUDIO WITH REAR VIEW CAMERA]



## 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-114. "CONSULT Function"</a> .
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to <a href="#">AV-185. "Exploded View"</a> .
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	
FLASH-ROM Error Of Control Unit CAN Controller Memory Error	AV control unit malfunction is detected.	
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-114. "CONSULT Function"</a> .
Front Display Connection Error	When either one of the following items is detected: <ul style="list-style-type: none"> <li>display unit power supply and ground circuits are malfunctioning.</li> <li>communication circuits between AV control unit and display unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>Display unit power supply and ground circuits.</li> <li>Communication circuits between AV control unit and display unit.</li> </ul>
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 are malfunctioning.</li> <li>communication circuits between AV control unit and satellite radio tuner are malfunctioning.</li> <li>request signal circuit between AV control unit and satellite radio tuner are malfunctioning.</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>
<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>

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

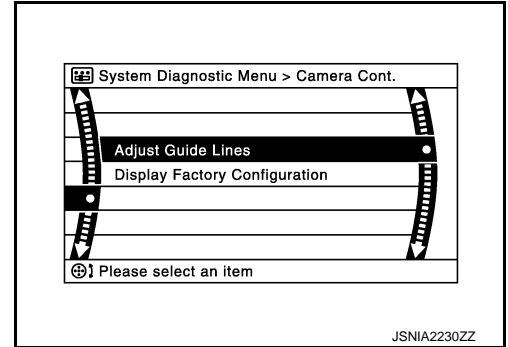
[BASE AUDIO WITH REAR VIEW CAMERA]

< SYSTEM DESCRIPTION >

Error item	Description	Possible malfunction factor/Action to take
<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.

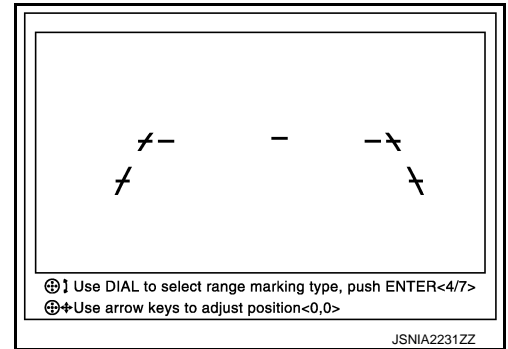


## Adjust Offset of Rear view Camera

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

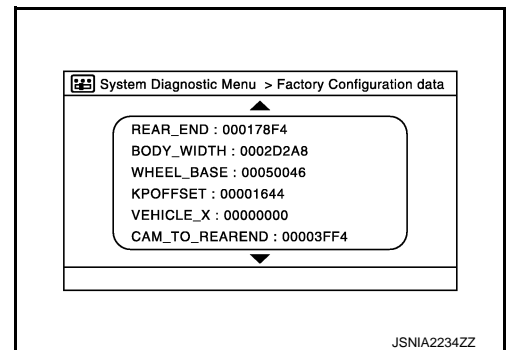
### CAUTION:

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



## Factory Configuration Confirmation

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



## Vehicle CAN Diagnosis



# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

## [BASE AUDIO WITH REAR VIEW CAMERA]

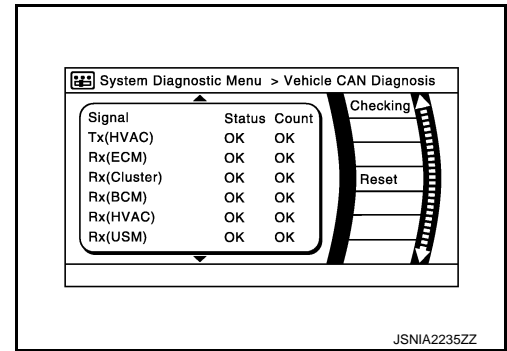
### < SYSTEM DESCRIPTION >

- 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(VDC)	OK / ???	OK / 0 – 39
Rx(STRG)	OK / ???	OK / 0 – 39

**NOTE:**

“???” indicates UNKWN.



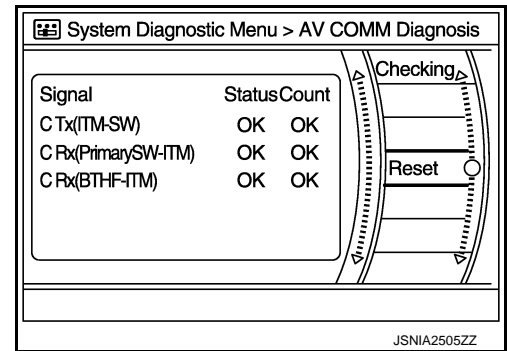
### AV COMM Diagnosis

- 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-SW)	OK / ???	OK / 0 – 39
C Rx(PrimarySW-ITM)	OK / ???	OK / 0 – 39
C Rx(BTHF-ITM)	OK / ???	OK / 0 – 39

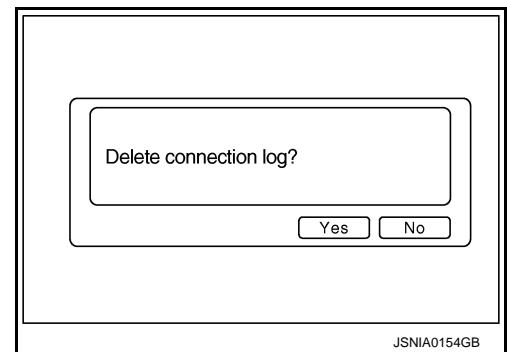
**NOTE:**

“???” indicates UNKWN.



### Delete Unit Connection Log

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

A  
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AV  
O  
P

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

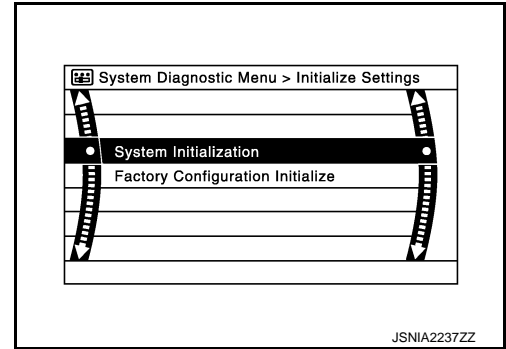
[BASE AUDIO WITH REAR VIEW CAMERA]

< SYSTEM DESCRIPTION >

“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-142, "Description"](#).



JSNIA2237ZZ

INFOID:000000008162827

## CONSULT Function

### 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

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detected.	Refer to <a href="#">AV-144, "Diagnosis Procedure"</a> .
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to <a href="#">AV-185, "Exploded View"</a> .
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	
Cont Unit [U1200] CAN CONT [U1216]	AV control unit malfunction is detected.	
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> .

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BASE AUDIO WITH REAR VIEW CAMERA]

Error item	Description	Possible malfunction factor/Action to take
FRONT DISP CONN [U1243]	When either one of the following items is detected: <ul style="list-style-type: none"> <li>display unit power supply and ground circuits are malfunctioning.</li> <li>communication circuits between AV control unit and display unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>Display unit power supply and ground circuits.</li> <li>Communication circuits between AV control unit and display unit.</li> </ul>
SAT CONN [U1255]	When either one of the following items is detected: <ul style="list-style-type: none"> <li>satellite radio tuner power supply and ground circuit are malfunctioning.</li> <li>communication circuits between AV control unit and satellite radio tuner are malfunctioning.</li> <li>request signal circuit between AV control unit and satellite radio tuner are malfunctioning.</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>
<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>
<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

### NOTE:

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

### 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	

## DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BASE AUDIO WITH REAR VIEW CAMERA]

Display Item	Display	Vehicle status	Remarks
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.

### CONFIGURATION

Configuration has three 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 >

[BASE AUDIO WITH REAR VIEW CAMERA]

## DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

### On Board Diagnosis Function

INFOID:000000008162828

#### 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  
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M  
O  
P

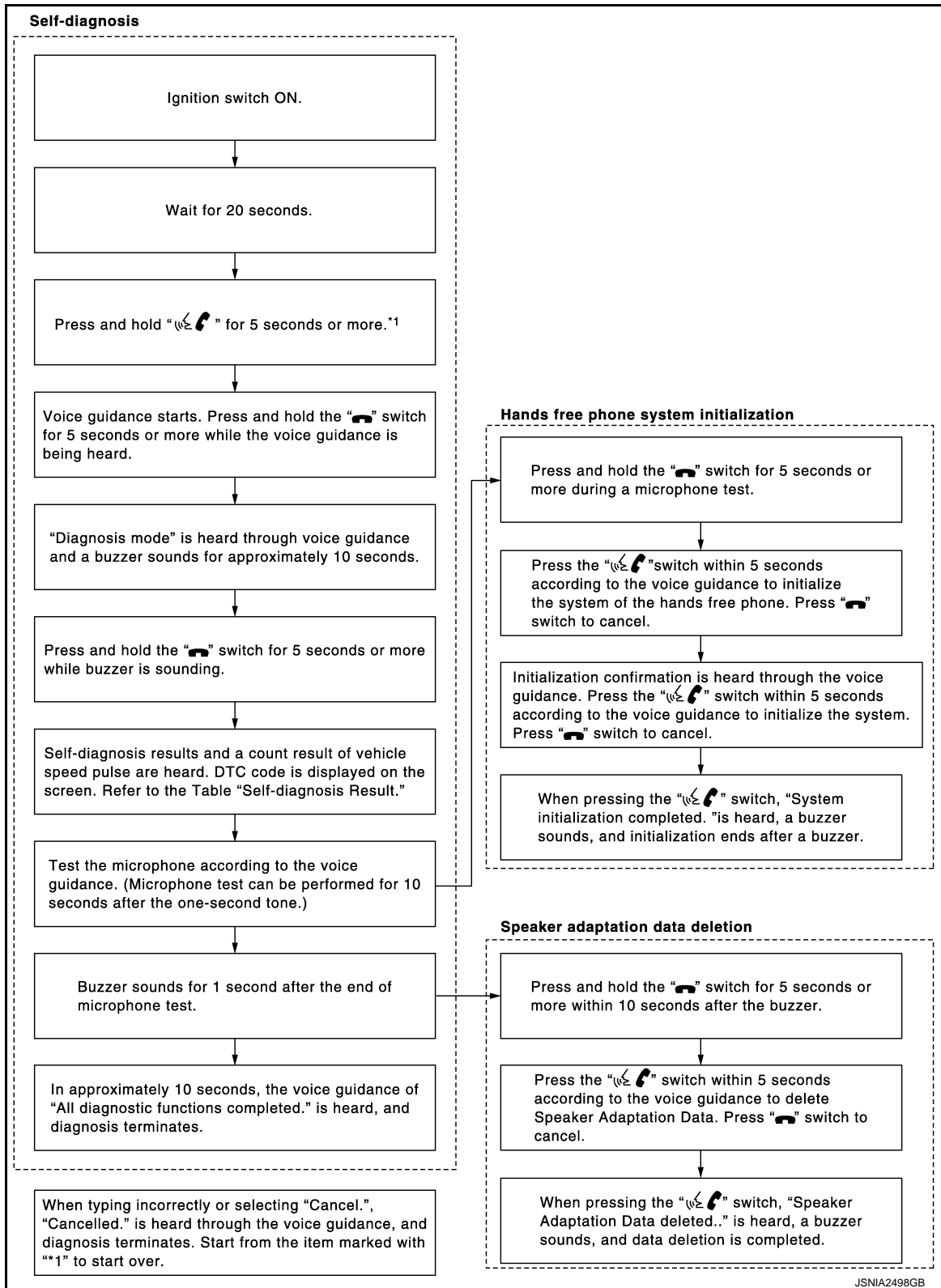
AV

# DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## FLOW CHART OF TROUBLE DIAGNOSIS



# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## ECU DIAGNOSIS INFORMATION

### AV CONTROL UNIT

#### Reference Value

INFOID:000000008162829

#### VALUES ON THE DIAGNOSIS TOOL

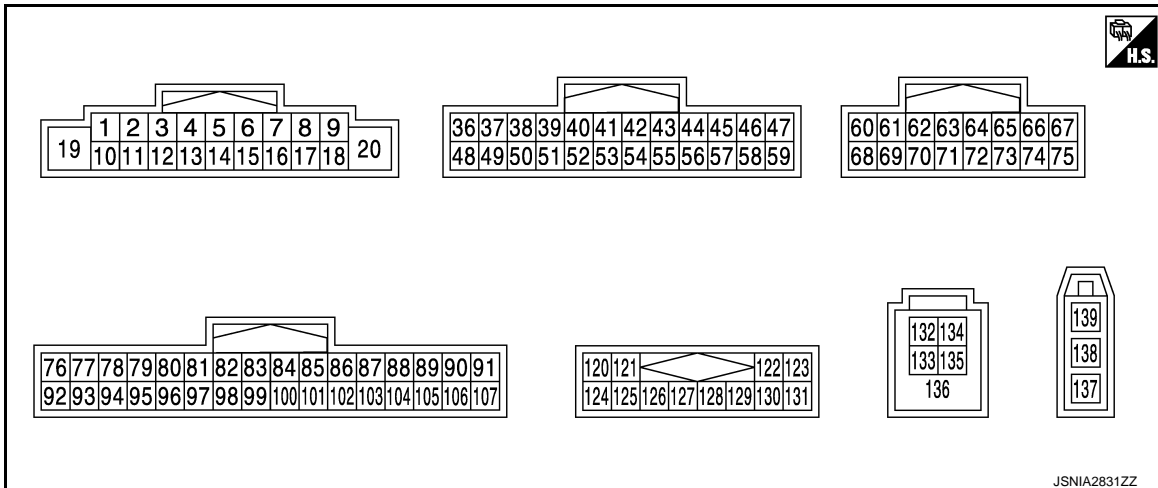
**NOTE:**

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

#### TERMINAL LAYOUT



#### PHYSICAL VALUES

A  
B  
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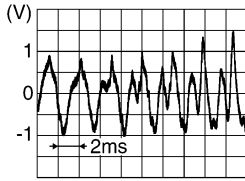
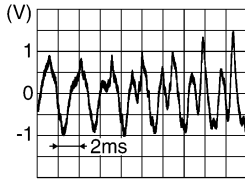

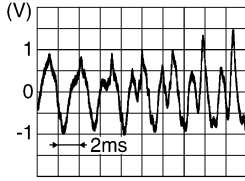
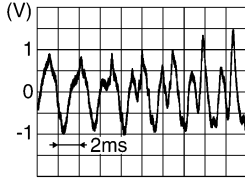
AV

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# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITH REAR VIEW CAMERA]


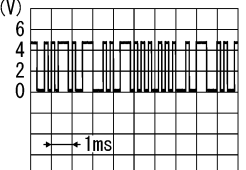
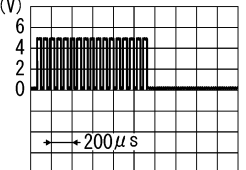
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
2 (L)	3 (W)	Sound signal front LH	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
4 (LG)	5 (SB)	Sound signal rear LH	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
6 (P)	15 (B)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing MENU UP switch.	0.7 V
					Keep pressing MENU DOWN switch.	1.3 V
					Keep pressing  switch	2.0 V
					Except for above.	3.3 V
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
9 (L)	Ground	Illumination signal	Input	Ignition switch OFF	Lighting switch is OFF.	0 V
					Lighting switch is ON.	12.0 V
11 (BR)	12 (R)	Sound signal front RH	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
13 (L)	14 (P)	Sound signal rear RH	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>



# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

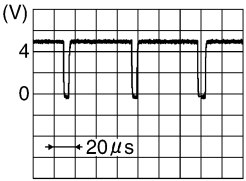
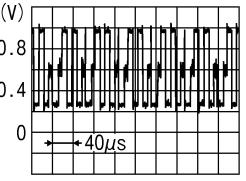
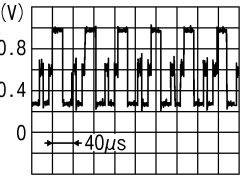
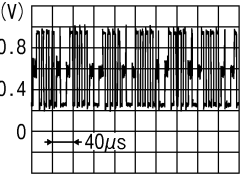
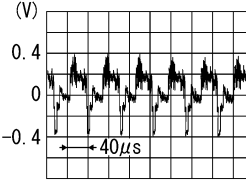
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
16 (L)	15 (B)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	0.7 V
					Keep pressing  switch.	1.3 V
					Except for above.	3.3 V
18 (G)	Ground	Ground	—	Ignition switch ON	—	0 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	—	9.0 V
37 (LG)	Ground	Signal ground	—	Ignition switch OFF	—	0 V
38 (R)	Ground	Horizontal synchronizing (HP) signal	Input	Ignition switch ON	—	 <small>SKIB3601E</small>
39 (L)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	 <small>PKIB5039J</small>
40 (B)	Ground	RGB area (YS) signal	Output	Ignition switch ON	At RGB image is displayed.	5.0 V
					At DVD image is displayed.	 <small>PKIB4948J</small>
41	—	Shield	—	—	—	—

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# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

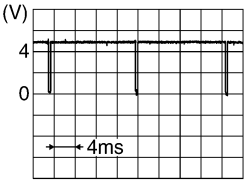
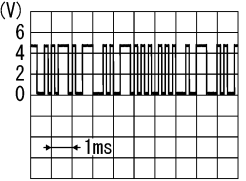
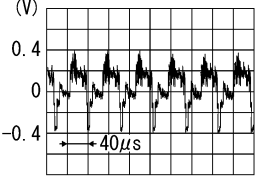
[BASE AUDIO WITH REAR VIEW CAMERA]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
42 (W)	Ground	RGB synchronizing signal	Output	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">SKIB3603E</p>
43 (G)	Ground	RGB signal (R: red)	Output	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	 <p style="text-align: right; font-size: small;">JSNIA1029ZZ</p>
44 (L)	Ground	RGB signal (G: green)	Output	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	 <p style="text-align: right; font-size: small;">JSNIA1030ZZ</p>
45 (P)	Ground	RGB signal (B: blue)	Output	Ignition switch ON	Start Confirmation/Adjustment mode, and then display color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	 <p style="text-align: right; font-size: small;">JSNIA1031ZZ</p>
46 (Y)	Ground	Composite image ground	—	Ignition switch ON	—	0 V
47 (BR)	Ground	Composite image signal	Output	Ignition switch ON	At rear view camera image is displayed.	 <p style="text-align: right; font-size: small;">SKIB2251J</p>
48 (Y)	Ground	Inverter VCC	Output	Ignition switch ACC	—	9.0 V
49 (BR)	Ground	Inverter ground	—	Ignition switch OFF	—	0 V

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

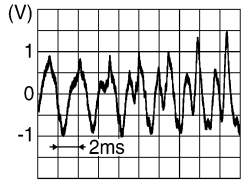
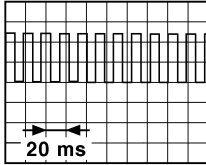
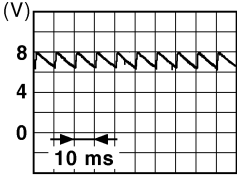
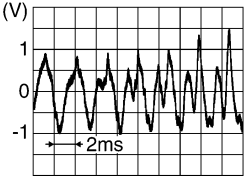
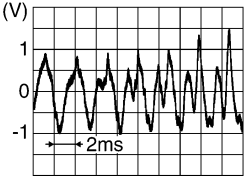
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
50 (G)	Ground	Vertical synchronizing (VP) signal	Input	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">SKIB3598E</p>
51 (P)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	 <p style="text-align: right; font-size: small;">PKIB5039J</p>
52	—	Shield	—	—	—	—
57	—	Shield	—	—	—	—
58	—	Shield	—	—	—	—
62 (W)	Ground	Camera image signal	Input	Ignition switch ON	At rear view camera image is displayed.	 <p style="text-align: right; font-size: small;">SKIB2251J</p>
71	—	Shield	—	—	—	—
72 (B)	Ground	Camera ground	—	Ignition switch ON	—	0 V
73 (R)	Ground	Camera power supply	Output	Ignition switch ON	At rear view camera image is displayed.	6.0 V
76 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
77 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
78 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
79 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
80 (P)	—	CAN-L	Input/ Output	—	—	—
81 (L)	—	CAN-H	Input/ Output	—	—	—
82 (BR)	Ground	Switch ground	—	Ignition switch ON	—	0 V
86	—	Shield	—	—	—	—

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# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

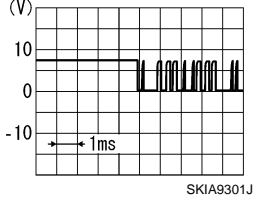
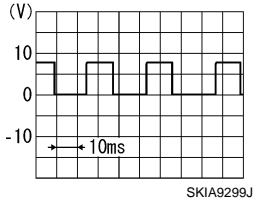
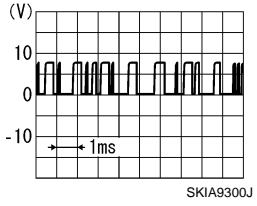
[BASE AUDIO WITH REAR VIEW CAMERA]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
87 (L)	88 (P)	TEL voice signal	Input	Ignition switch ON	During voice guide output with the  switch pressed.	 SKIB3609E
92 (R)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is ap- prox. 40 km/h (25 MPH)	<p><b>NOTE:</b> The maximum voltage varies de- pending on the specification (destination unit).</p>  JSNIA0012GB
93 (SB)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake is ON.	0 V
					Parking brake is OFF.	 JSNIA0007GB
94 (BG)	Ground	Reverse signal	Input	Ignition switch ON	R position	12.0 V
					Other than R position	0 V
95 (G)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
96 (V)	Ground	Disk eject signal	Input	Ignition switch ON	Pressing the eject switch.	0 V
					Except for above.	3.3 V
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 >

[BASE AUDIO WITH REAR VIEW CAMERA]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
122 (L)	Ground	Communication signal (CONT→SAT)	Output	Ignition switch ON	When satellite radio mode is selected.	
126	—	Shield	—	—	—	—
127	—	Shield	—	—	—	—
129 (P)	Ground	Request signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected.	
130 (G)	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	Output	Ignition switch ACC	—	12.0 V

## DTC Index

INFOID:000000008162830

## SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	<a href="#">AV-144, "Diagnosis Procedure"</a>
U1010	CONTROL UNIT (CAN) [1010]	<a href="#">AV-145, "DTC Logic"</a>
U1200	Cont Unit [U1200]	<a href="#">AV-146, "DTC Logic"</a>
U1216	CAN CONT [U1216]	<a href="#">AV-147, "DTC Logic"</a>
U1232	ST ANGLE SEN CALIB [1232]	<a href="#">AV-148, "Diagnosis Procedure"</a>

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

DTC	Display item	Refer to
U1243	FRONT DISP CONN [U1243]	<a href="#">AV-149, "Diagnosis Procedure"</a>
U1255	SAT CONN [U1255]	<a href="#">AV-151, "Diagnosis Procedure"</a>
U1310	CONTROL UNIT (AV) [U1310]	<a href="#">AV-154, "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-153, "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-153, "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-153, "Description"</a>

# DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

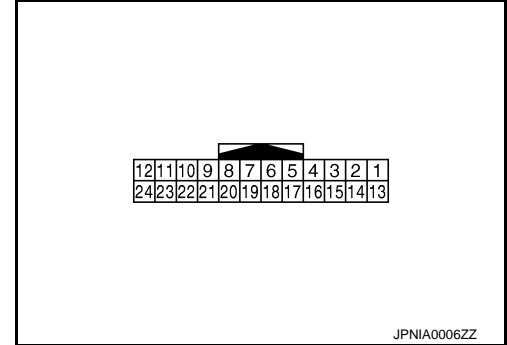
[BASE AUDIO WITH REAR VIEW CAMERA]

## DISPLAY UNIT

Reference Value

INFOID:000000008162831

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y)	Ground	Inverter VCC	Input	Ignition switch ACC	—	9.0 V
3 (BG)	Ground	Signal VCC	Input	Ignition switch ACC	—	9.0 V
4 (Y)	Ground	Composite image ground	—	Ignition switch ON	—	0 V
5	—	Shield	—	—	—	—
6 (L)	Ground	RGB signal (G: green)	Input	Ignition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	<p style="text-align: right;">JSNIA1030ZZ</p>
7	—	Shield	—	—	—	—
8 (R)	Ground	Horizontal synchronizing (HP) signal	Output	Ignition switch ON	—	<p style="text-align: right;">SKIB3601E</p>

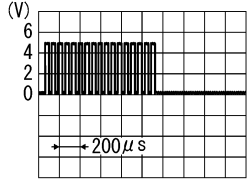
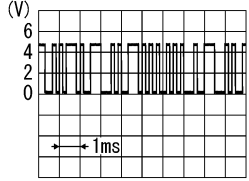
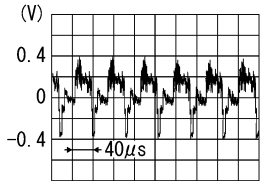
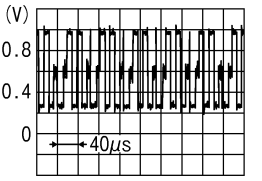
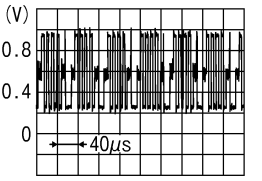
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# DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

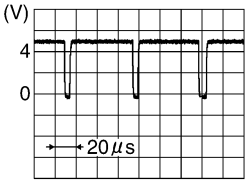
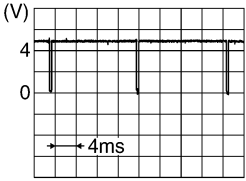
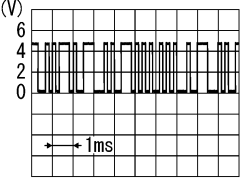
Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
9 (B)	Ground	RGB area (YS) signal	Input	Ignition switch ON	At RGB image is displayed. 5.0 V
				At DVD image is displayed.	 <p>PKIB4948J</p>
11 (P)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.  <p>PKIB5039J</p>
13 (BR)	Ground	Inverter ground	—	Ignition switch ON	— 0 V
14 (LG)	Ground	Signal ground	—	Ignition switch ON	— 0 V
15 (BR)	Ground	Composite image signal	Input	Ignition switch ON	At rear view camera image is displayed.  <p>SKIB2251J</p>
17 (G)	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>JSNIA1029ZZ</p>
18 (P)	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>JSNIA1031ZZ</p>



# DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
19 (W)	Ground	RGB synchronizing signal	Input	Ignition switch ON	—	 <p>SKIB3603E</p>
20 (G)	Ground	Vertical synchronizing (VP) signal	Output	Ignition switch On	—	 <p>SKIB3598E</p>
21	—	Shield	—	—	—	—
22 (L)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	 <p>PKIB5039J</p>
23	—	Shield	—	—	—	—

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# SATELLITE RADIO TUNER

< ECU DIAGNOSIS INFORMATION >

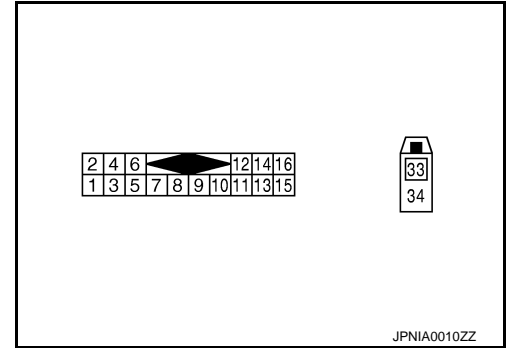
[BASE AUDIO WITH REAR VIEW CAMERA]

## SATELLITE RADIO TUNER

Reference Value

INFOID:000000008162832

TERMINAL LAYOUT



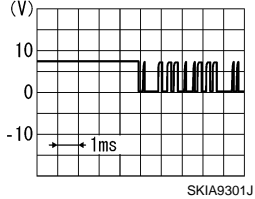
PHYSICAL VALUES

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

# SATELLITE RADIO TUNER

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

Terminal		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/Output			
10 (BR)	Ground	Communication signal (CONT→SAT)	Input	Ignition switch ON	When satellite radio mode is selected	
12 (SB)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
15 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
16 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
33	—	Satellite antenna	Input	—	—	—
34	—	Shield	—	—	—	—

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# TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

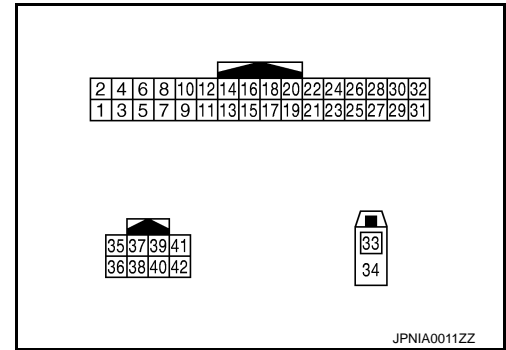
[BASE AUDIO WITH REAR VIEW CAMERA]

## TEL ADAPTER UNIT

Reference Value

INFOID:000000008162833

TERMINAL LAYOUT



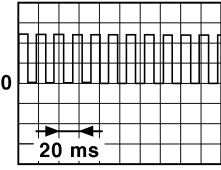
PHYSICAL VALUES

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 (BG)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
4 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
5	—	Shield	—	—	—	—
7 (R)	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>
22 (B)	Ground	Control signal	Input	Ignition switch ON	—	0 V
24 (B)	Ground	Control signal	Input	Ignition switch ON	—	0 V

# TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
28 (P)	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> The maximum voltage varies de- pending on the specification (destination unit).</p>  <p style="text-align: right; font-size: small;">JSNIA0012GB</p>
29 (G)	8	Microphone VCC	Output	Ignition switch ON	—	5.0 V
33	—	TEL antenna	Input	—	—	—
34	—	Shield	—	—	—	—
35 (L)	—	AV communication signal (H)	Input/ Output	—	—	—
36 (P)	—	AV communication signal (L)	Input/ Output	—	—	—

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
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## WIRING DIAGRAM

### BASE AUDIO WITH REAR VIEW CAMERA

#### Wiring Diagram

INFOID:000000008162834

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

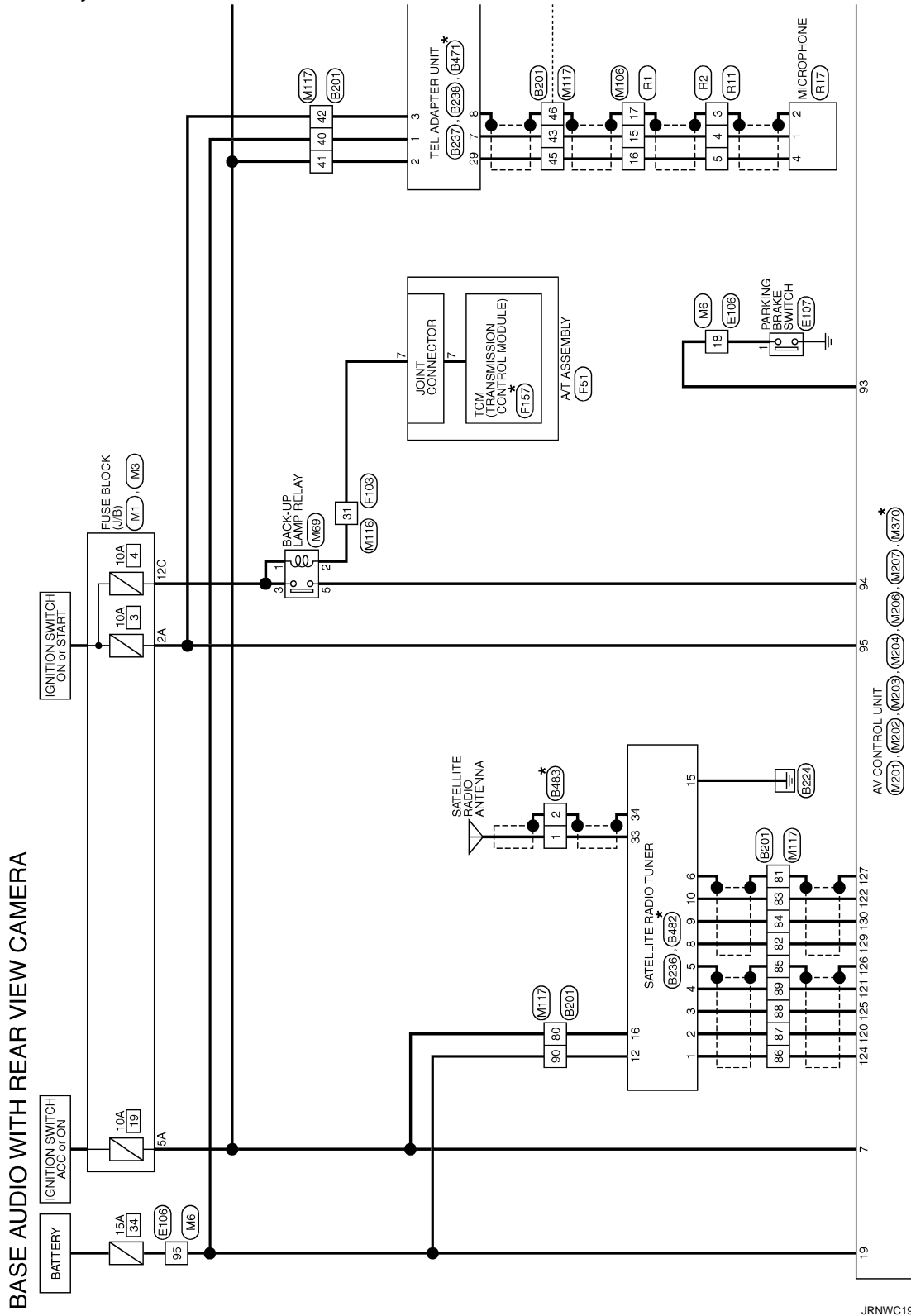
**NOTE:**

# BASE AUDIO WITH REAR VIEW CAMERA

## [BASE AUDIO WITH REAR VIEW CAMERA]

< WIRING DIAGRAM >

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



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

2012/02/28

JRNWC1996GB

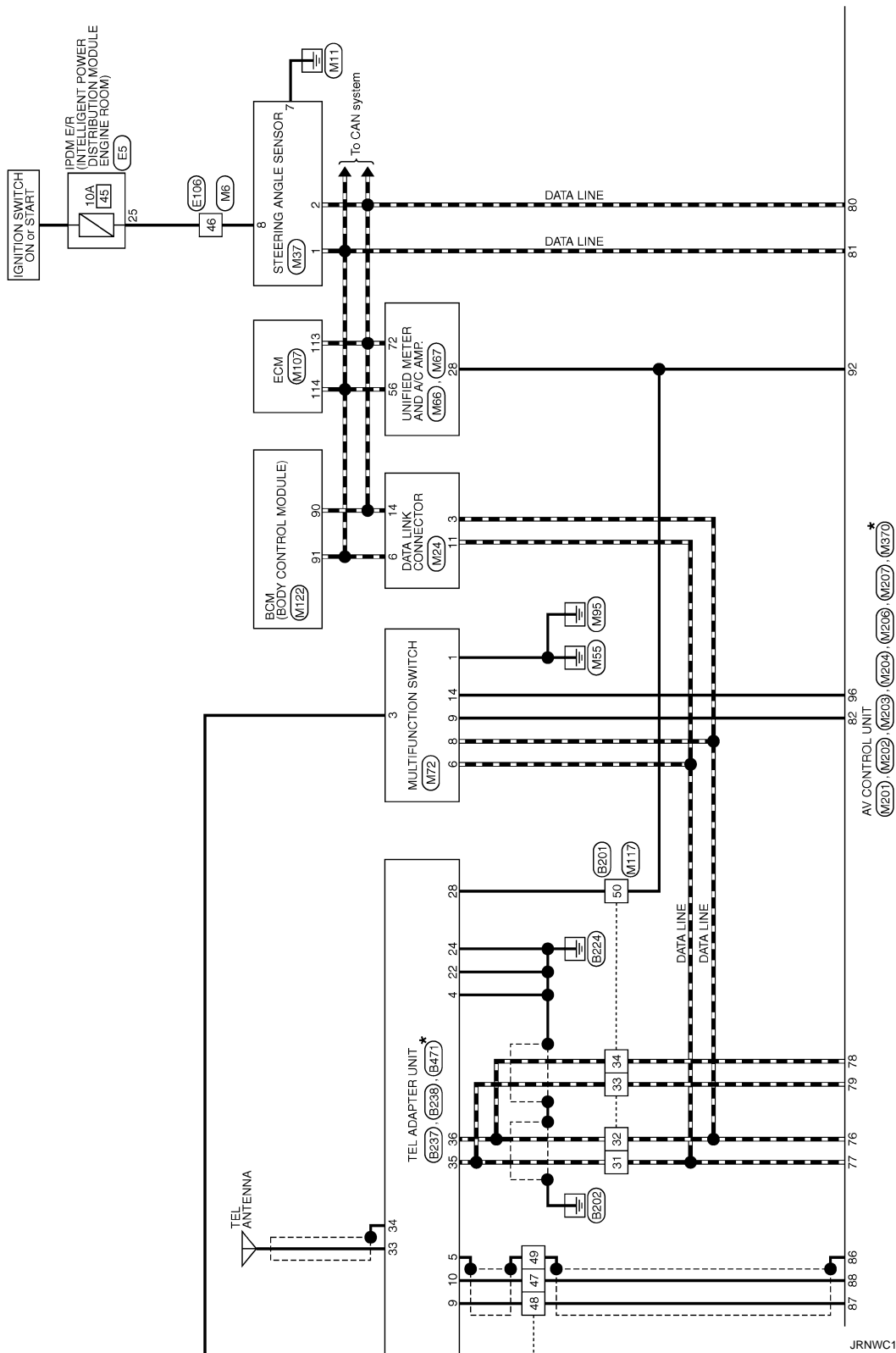
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# BASE AUDIO WITH REAR VIEW CAMERA

< WIRING DIAGRAM >

[BASE AUDIO WITH REAR VIEW CAMERA]



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

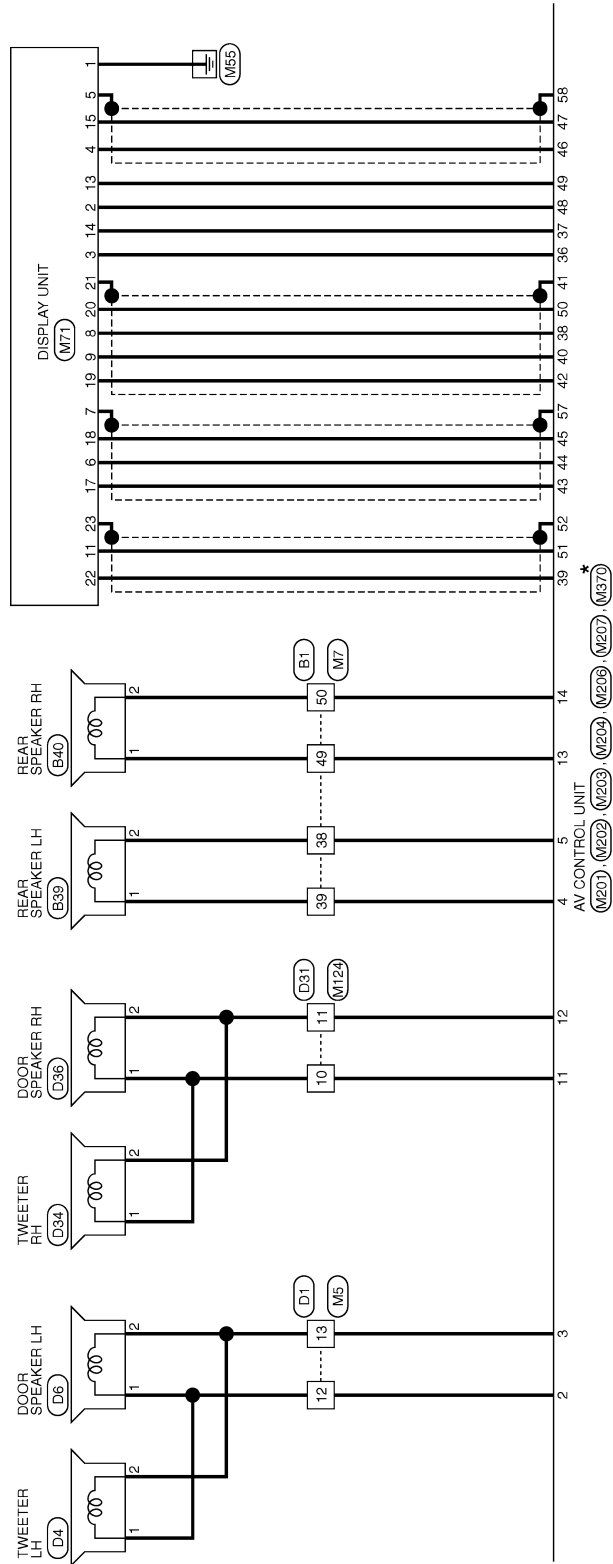
JRNWC1997GB



# BASE AUDIO WITH REAR VIEW CAMERA

< WIRING DIAGRAM >

[BASE AUDIO WITH REAR VIEW CAMERA]



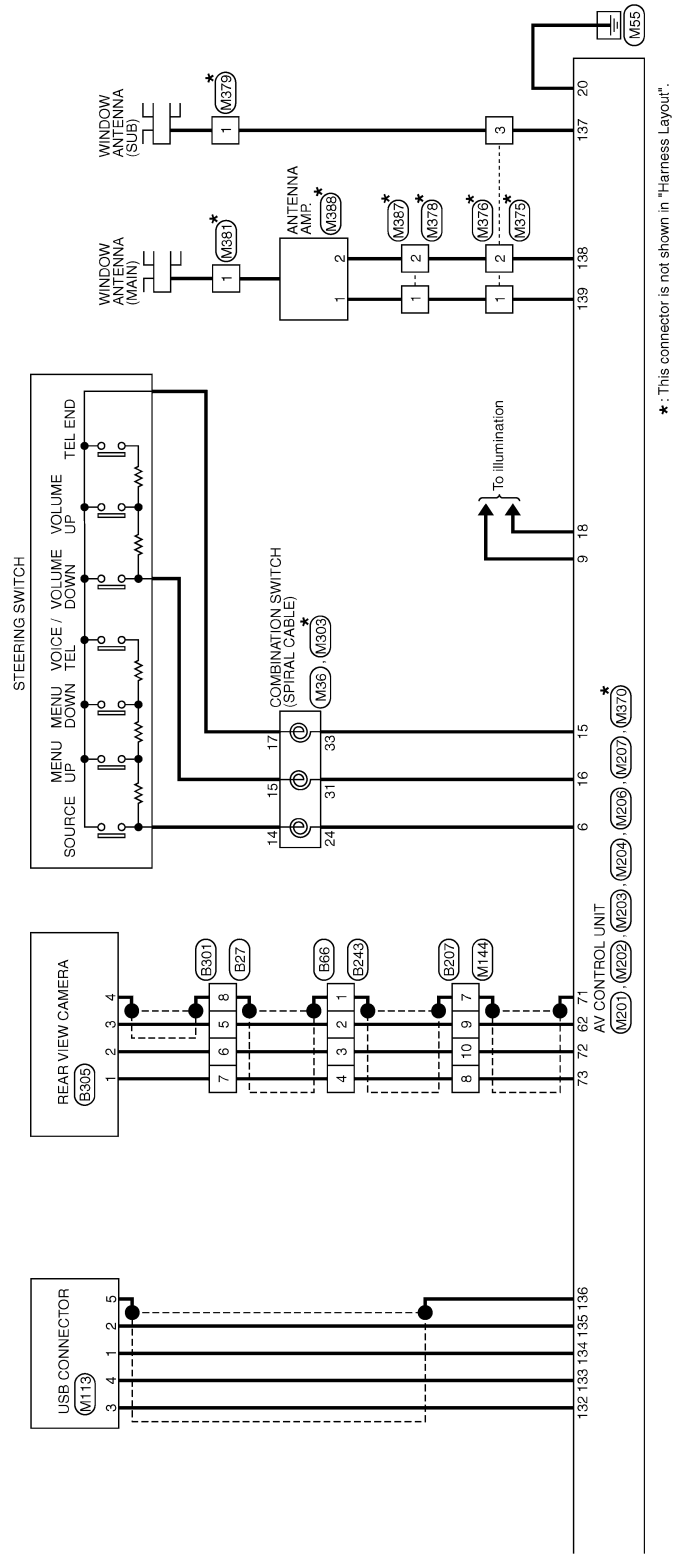
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# BASE AUDIO WITH REAR VIEW CAMERA

< WIRING DIAGRAM >

[BASE AUDIO WITH REAR VIEW CAMERA]



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

JRNWC1999GB

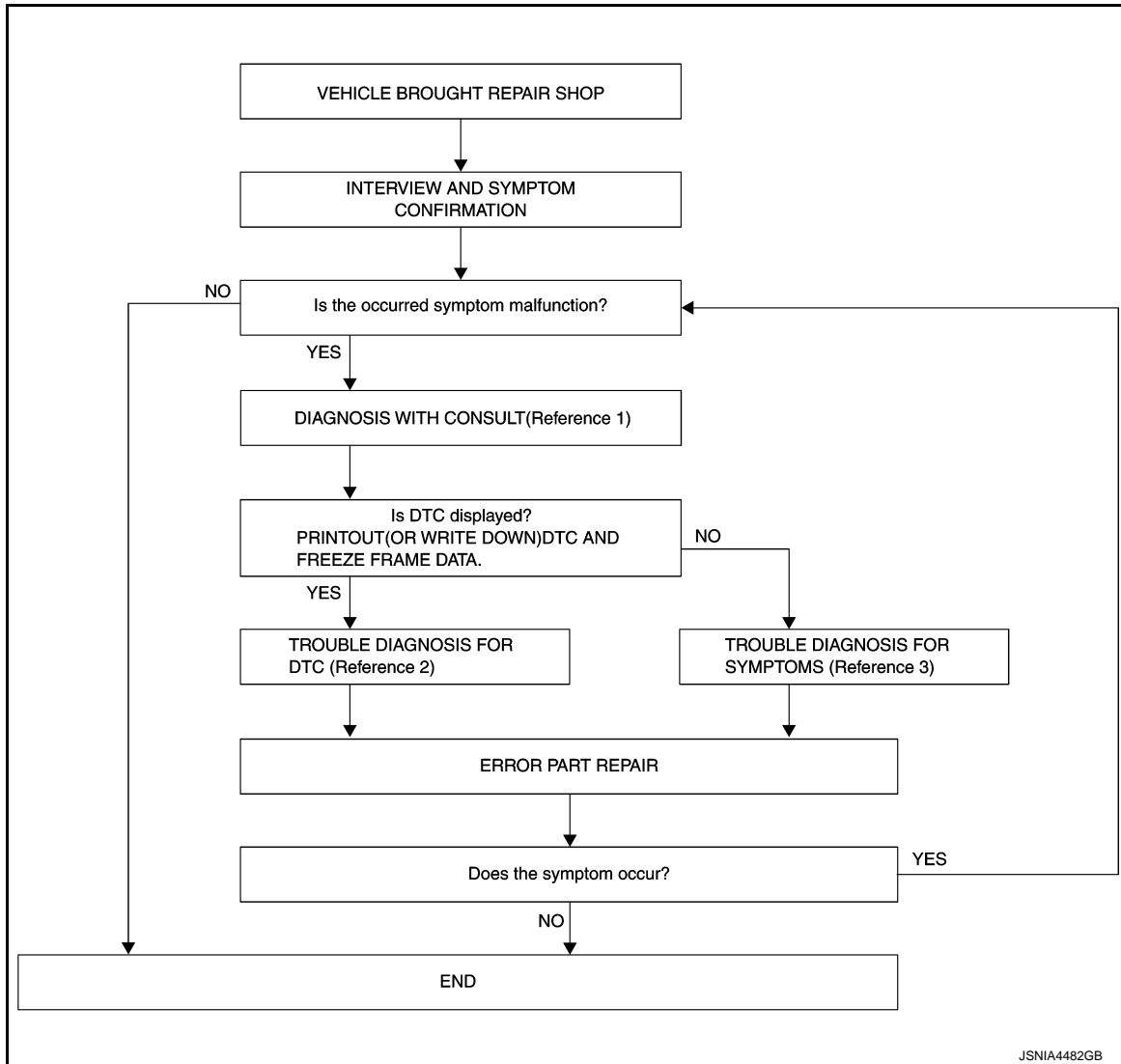
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

#### Work Flow

INFOID:000000008162835

#### OVERALL SEQUENCE



- Reference 1... Refer to [AV-114. "CONSULT Function"](#).
- Reference 2... Refer to [AV-125. "DTC Index"](#).
- Reference 3... Refer to [AV-178. "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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## DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[BASE AUDIO WITH REAR VIEW CAMERA]

1. Connect CONSULT and perform a self-diagnosis for "MULTI AV". Refer to [AV-114. "CONSULT Function"](#).

**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-125. "DTC Index"](#).

>> GO TO 5.

### 4. TROUBLE DIAGNOSIS FOR SYMPTOMS

---

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-178. "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

# ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT)

< BASIC INSPECTION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT)

### Description

INFOID:000000008162836

#### BEFORE REPLACEMENT

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

#### 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.

### Work Procedure

INFOID:000000008162837

#### 1. SAVING VEHICLE SPECIFICATION

##### ⓂCONSULT Configuration

Perform “Before Replace ECU” to save or print current vehicle specification. Refer to [AV-142, "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-185, "Exploded View"](#).

>> GO TO 3.

#### 3. WRITING VEHICLE SPECIFICATION

##### ⓂCONSULT Configuration

Perform “After Replace ECU” or “Manual Configuration” to write vehicle specification. Refer to [AV-142, "Work Procedure"](#).

>> 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

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# CONFIGURATION (AV CONTROL UNIT)

< BASIC INSPECTION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## CONFIGURATION (AV CONTROL UNIT)

### Description

INFOID:000000008162838

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

### Work Procedure

INFOID:000000008162839

#### 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-142. "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 List

INFOID:000000008162840

##### 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.

# CONFIGURATION (AV CONTROL UNIT)

< BASIC INSPECTION >

[BASE AUDIO WITH REAR VIEW CAMERA]

MANUAL SETTING ITEM		NOTE
Items	Setting value	
STEERING	LHD	—
	RHD	—
GRADE	MODE 1	SPORT premium grade with 4WAS
	MODE 3	SPORT premium grade without 4WAS
	MODE 2	Except for above
4WAS	WITHOUT	—
	WITH	—
SOUND SYSTEM	BASE	—
	BOSE	—

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AV

# U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## DTC/CIRCUIT DIAGNOSIS

### U1000 CAN COMM CIRCUIT

#### Description

INFOID:000000008162841

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-25, "CAN Communication Signal Chart"](#).

#### DTC Logic

INFOID:000000008162842

#### 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:000000008162843

##### 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-16, "Trouble Diagnosis Procedure"](#).  
NO >> Refer to GI section. Refer to [GI-43, "Intermittent Incident"](#).



# U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## U1010 CONTROL UNIT (CAN)

### DTC Logic

INFOID:000000008162844

### 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. Refer to <a href="#">AV-185, "Exploded View"</a> .

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AV

# U1200 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## U1200 AV CONTROL UNIT

### DTC Logic

INFOID:000000008162845

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. Refer to <a href="#">AV-185, "Exploded View"</a> .

# U1216 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## U1216 AV CONTROL UNIT

### DTC Logic

INFOID:000000008162846

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. Refer to <a href="#">AV-185, "Exploded View"</a> .

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AV

# U1232 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## U1232 STEERING ANGLE SENSOR

### DTC Logic

INFOID:000000008162847

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:000000008162848

#### 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 DISPLAY UNIT

[BASE AUDIO WITH REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

## U1243 DISPLAY UNIT

### DTC Logic

INFOID:000000008162849

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1243	FRONT DISP CONN [U1243]	When either one of the following items is detected: <ul style="list-style-type: none"> <li>display unit power supply and ground circuit are malfunctioning.</li> <li>communication circuit between AV control unit and display unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>Display unit power supply and ground circuit.</li> <li>Communication circuit between AV control unit and display unit.</li> </ul>

### Diagnosis Procedure

INFOID:000000008162850

#### 1. CHECK DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check display unit power supply and ground circuit. Refer to [AV-155. "DISPLAY UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair malfunctioning parts.

#### 2. CHECK CONTINUITY COMMUNICATION CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M71	11	M202	51	Existed
	22		39	

- Check continuity between display unit harness connector and ground.

Display unit		Ground	Continuity
Connector	Terminals		
M71	11		Not existed
	22		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

#### 3. CHECK COMMUNICATION SIGNAL

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

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# U1243 DISPLAY UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M71	11	Ground	When adjusting display brightness.	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit. Refer to [AV-185. "Exploded View"](#).

## 4. CHECK COMMUNICATION SIGNAL

Check signal between display unit harness connector and ground.

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M71	22	Ground	When adjusting display brightness.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace display unit. Refer to [AV-187. "Exploded View"](#).

# U1255 SATELLITE RADIO TUNER

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## U1255 SATELLITE RADIO TUNER

### DTC Logic

INFOID:000000008162851

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

### Diagnosis Procedure

INFOID:000000008162852

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

Check satellite radio tuner power supply and ground circuit. Refer to [AV-156, "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
	122		10	
	130		9	

- Check continuity between AV control unit harness connector.

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

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 signal between AV control unit harness connector and ground.

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AV

# U1255 SATELLITE RADIO TUNER

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

(+)		(-)	Reference value (Approx.)
AV control unit			
Connector	Terminals		
M206	129	Ground	7.0 V
	130	Ground	7.0 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit. Refer to [AV-185, "Exploded View"](#).

## 4. CHECK SATELLITE RADIO TUNER VOLTAGE

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

(+)		(-)	Reference value (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. Refer to [AV-192, "Exploded View"](#).



# U1300 AV COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## U1300 AV COMM CIRCUIT

### Description

INFOID:000000008162853

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 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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AV

# U1310 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## U1310 AV CONTROL UNIT

### DTC Logic

INFOID:000000008162854

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 AV control unit. If the malfunction occurs constantly. Refer to <a href="#">AV-185, "Exploded View"</a> .

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## POWER SUPPLY AND GROUND CIRCUIT

### AV CONTROL UNIT

#### AV CONTROL UNIT : Diagnosis Procedure

INFOID:000000008162855

#### 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.

## DISPLAY UNIT

#### DISPLAY UNIT : Diagnosis Procedure

INFOID:000000008162856

#### 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	M71	2	ACC	9.0 V
Signal VCC		3		

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

#### 2.CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

1. Turn ignition switch OFF.
2. Disconnect the harness connector between display unit and AV control unit.
3. Check continuity between display unit harness connector M71 and AV control unit harness connector.

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AV

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

Signal name	Display unit (M71)	AV control unit (M202)	Continuity
Inverter VCC	2	48	Existed
Signal VCC	3	36	Existed

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

Signal name	Display unit (M71)	—	Continuity
Inverter VCC	2	Ground	Not existed
Signal VCC	3	Ground	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.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Inverter VCC	M202	48	ACC	9.0 V
Signal VCC		36		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replacement of AV control unit.

## 4.CHECK GROUND CIRCUIT

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M71	1	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

## SATELLITE RADIO TUNER

### SATELLITE RADIO TUNER : Diagnosis Procedure

INFOID:000000008162857

## 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.

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

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 >> GO TO 3.

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

## 3.CHECK GROUND CIRCUIT

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B236	15	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

## TEL ADAPTER UNIT

### TEL ADAPTER UNIT : Diagnosis Procedure

INFOID:000000008162858

## 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 TEL adapter unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B237	1	OFF	Battery voltage
ACC power supply	B237	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	B237	4	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

# RGB (R: RED) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## RGB (R: RED) SIGNAL CIRCUIT

### Description

INFOID:000000008162859

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

### Diagnosis Procedure

INFOID:000000008162860

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

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	17	M202	43	Existed

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

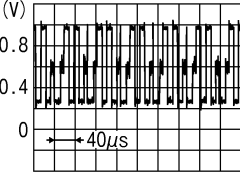
Display unit		Ground	Continuity
Connector	Terminal		
M71	17		Not existed

Is inspection result normal?

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

#### 2. CHECK RGB (R: RED) SIGNAL

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

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M71	17	Ground	Start confirmation/adjustment mode, and then display color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	 <p style="text-align: right;">JSNIA1029ZZ</p>

Is inspection result normal?

- YES >> Replace display unit. Refer to [AV-187. "Exploded View"](#).  
 NO >> Replace AV control unit. Refer to [AV-185. "Exploded View"](#).

# RGB (G: GREEN) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## RGB (G: GREEN) SIGNAL CIRCUIT

### Description

INFOID:000000008162861

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

### Diagnosis Procedure

INFOID:000000008162862

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

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	6	M202	44	Existed

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

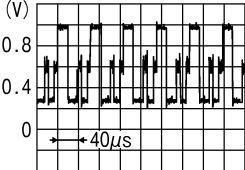
Display unit		Ground	Continuity
Connector	Terminal		
M71	6		Not existed

Is inspection result normal?

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

#### 2. CHECK RGB (G: GREEN) SIGNAL

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

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M71	6	Ground	Start confirmation/adjustment mode, and then display color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	 <p>(V)</p> <p>0.8</p> <p>0.4</p> <p>0</p> <p>40µs</p> <p>JSNIA1030ZZ</p>

Is inspection result normal?

- YES >> Replace display unit. Refer to [AV-187. "Exploded View"](#).  
 NO >> Replace AV control unit. Refer to [AV-185. "Exploded View"](#).

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# RGB (B: BLUE) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## RGB (B: BLUE) SIGNAL CIRCUIT

### Description

INFOID:000000008162863

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

### Diagnosis Procedure

INFOID:000000008162864

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

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	18	M202	45	Existed

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

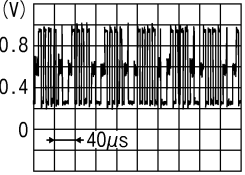
Display unit		Ground	Continuity
Connector	Terminal		
M71	18		Not existed

Is inspection result normal?

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

#### 2. CHECK RGB (B: BLUE) SIGNAL

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

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M71	18	Ground	Start confirmation/adjustment mode, and then display color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	 <p style="text-align: right;">JSNIA1031ZZ</p>

Is inspection result normal?

- YES >> Replace display unit. Refer to [AV-187. "Exploded View"](#).  
 NO >> Replace AV control unit. Refer to [AV-185. "Exploded View"](#).



# RGB SYNCHRONIZING SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## RGB SYNCHRONIZING SIGNAL CIRCUIT

### Description

INFOID:000000008162865

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

### Diagnosis Procedure

INFOID:000000008162866

#### 1. CHECK CONTINUITY RGB SYNCHRONIZING SIGNAL CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	19	M202	42	Existed

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

Display unit		Ground	Continuity
Connector	Terminal		
M71	19		Not existed

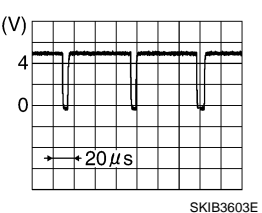
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK RGB SYNCHRONIZING SIGNAL

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

(+)		(-)	Reference value
Display unit			
Connector	Terminal		
M71	19	Ground	

Is the inspection result normal?

YES >> Replace display unit. Refer to [AV-187, "Exploded View"](#).

NO >> Replace AV control unit. Refer to [AV-185, "Exploded View"](#).

# RGB AREA (YS) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## RGB AREA (YS) SIGNAL CIRCUIT

### Description

INFOID:000000008162867

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

### Diagnosis Procedure

INFOID:000000008162868

#### 1. CHECK CONTINUITY RGB AREA (YS) SIGNAL CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	9	M202	40	Existed

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

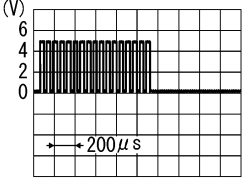
Display unit		Ground	Continuity
Connector	Terminal		
M71	9		Not existed

Is the inspection result normal?

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

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

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

(+)		(-)	Condition	Reference value (Approx.)
Connector	Terminal			
M71	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 display unit. Refer to [AV-187. "Exploded View"](#).  
 NO >> Replace AV control unit. Refer to [AV-185. "Exploded View"](#).

# CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## CAMERA IMAGE SIGNAL CIRCUIT

### Description

INFOID:000000008162869

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

### Diagnosis Procedure

INFOID:000000008162870

#### 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	B305	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.)
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-185. "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	B305	3	Existed

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

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AV

# CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

AV control unit		Ground	Continuity
Connector	Terminal		
M203	62		Not existed

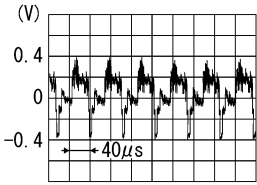
**Is inspection result normal?**

YES >> GO TO 4.

NO >> Repair harness or connector.

## 4. CHECK CAMERA IMAGE SIGNAL

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

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

**Is inspection result normal?**

YES >> Replace AV control unit. Refer to [AV-185, "Exploded View"](#).

NO >> Replace rear view camera. Refer to [AV-202, "Exploded View"](#).

# COMPOSITE IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## COMPOSITE IMAGE SIGNAL CIRCUIT

### Description

INFOID:000000008162871

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

### Diagnosis Procedure

INFOID:000000008162872

#### 1. CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

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

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M202	47	M71	15	Existed

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

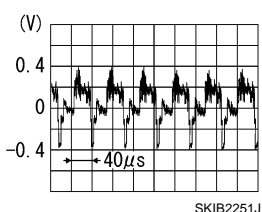
AV control unit		Ground	Continuity
Connector	Terminal		
M202	47		Not existed

Is the inspection result normal?

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

#### 2. CHECK COMPOSITE IMAGE SIGNAL

1. Connect AV control unit connector and 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 camera image is displayed.	

Is the inspection result normal?

- YES >> Replace display unit. Refer to [AV-187. "Exploded View"](#).  
 NO >> Replace AV control unit. Refer to [AV-185. "Exploded View"](#).

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AV

# HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

### Description

INFOID:000000008162873

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

### Diagnosis Procedure

INFOID:000000008162874

#### 1. CHECK CONTINUITY HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	8	M202	38	Existed

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

Display unit		Ground	Continuity
Connector	Terminal		
M71	8		Not existed

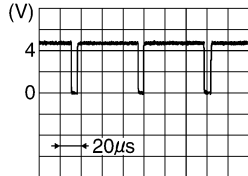
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

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

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

(+)		(-)	Reference value
Display unit			
Connector	Terminal		
M71	8	Ground	 SKIB3601E

Is the inspection result normal?

YES >> Replace AV control unit. Refer to [AV-185, "Exploded View"](#).

NO >> Replace display unit. Refer to [AV-187, "Exploded View"](#).

# VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

### Description

INFOID:000000008162875

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

### Diagnosis Procedure

INFOID:000000008162876

#### 1. CHECK CONTINUITY VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	20	M202	50	Existed

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

Display unit		Ground	Continuity
Connector	Terminal		
M71	20		Not existed

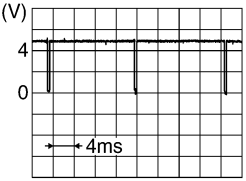
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

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

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

(+)		(-)	Reference value
Display unit			
Connector	Terminal		
M71	20	Ground	

Is the inspection result normal?

YES >> Replace AV control unit. Refer to [AV-185, "Exploded View"](#).

NO >> Replace display unit. Refer to [AV-187, "Exploded View"](#).

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# DISK EJECT SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## DISK EJECT SIGNAL CIRCUIT

### Description

INFOID:000000008162877

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

### Diagnosis Procedure

INFOID:000000008162878

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

(+)		(-)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M204	96	Ground	Pressing the eject switch	0 V
			Except for above	3.3 V

Is the inspection result normal?

- YES >> Replace preset switch. Refer to [AV-195, "Exploded View"](#).  
NO >> Replace AV control unit. Refer to [AV-185, "Exploded View"](#).



# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## MICROPHONE SIGNAL CIRCUIT

### Description

INFOID:000000008162879

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

### Diagnosis Procedure

INFOID:000000008162880

#### 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	
B237	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		
M237	7		Not existed
	29		

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2.CHECK VOLTAGE MICROPHONE VCC

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

(+)		(-)		Voltage (Approx.)
TEL adapter unit		TEL adapter unit		
Connector	Terminal	Connector	Terminal	
B237	29	B237	8	5.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace TEL adapter unit. Refer to [AV-199. "Exploded View"](#).

#### 3.CHECK MICROPHONE SIGNAL

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

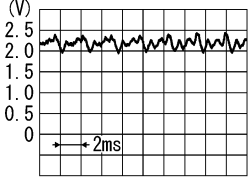
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# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

(+)		(-)		Condition	Reference value
TEL adapter unit		TEL adapter unit			
Connector	Terminal	Connector	Terminal		
B237	7	B237	8	give a voice.	 <p style="text-align: right;">PKIB5037J</p>

Is the inspection result normal?

- YES >> Replace TEL adapter unit. Refer to [AV-199, "Exploded View"](#).
- NO >> Replace microphone. Refer to [AV-198, "Exploded View"](#).

# CONTROL SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## CONTROL SIGNAL CIRCUIT

### Description

INFOID:000000008162881

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

### Diagnosis Procedure

INFOID:000000008162882

#### 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		
B237	22		Existed
	24		

Is the inspection result normal?

- YES >> Replace TEL adapter unit. Refer to [AV-199, "Exploded View"](#).  
NO >> Repair harness or connector.

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# STEERING SWITCH SIGNAL A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## STEERING SWITCH SIGNAL A CIRCUIT

### Description

INFOID:000000008162883

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:000000008162884

#### 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-185, "Exploded View"](#).

#### 4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-172, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [ST-17, "Exploded View"](#).

### Component Inspection

INFOID:000000008162885

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

# STEERING SWITCH SIGNAL A CIRCUIT

[BASE AUDIO WITH REAR VIEW CAMERA]

## < DTC/CIRCUIT DIAGNOSIS >

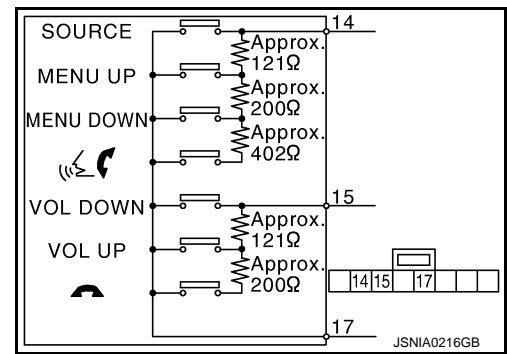
### Standard

Between terminals 14 and 17

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



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# STEERING SWITCH SIGNAL B CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## STEERING SWITCH SIGNAL B CIRCUIT

### Description

INFOID:000000008162886

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:000000008162887

#### 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-185, "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-174, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [ST-17, "Exploded View"](#).

### Component Inspection

INFOID:000000008162888

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

# STEERING SWITCH SIGNAL B CIRCUIT

[BASE AUDIO WITH REAR VIEW CAMERA]

## < DTC/CIRCUIT DIAGNOSIS >

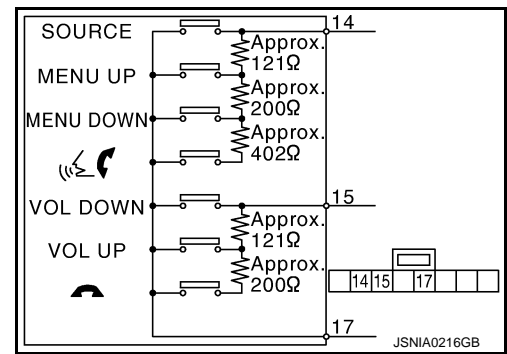
### Standard

Between terminals 14 and 17

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



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# STEERING SWITCH GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## STEERING SWITCH GROUND CIRCUIT

### Description

INFOID:000000008162889

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:000000008162890

#### 1. CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

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

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

3. Connect AV control unit connector.

Is the inspection result normal?

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

#### 2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Replace spiral cable. Refer to [SR-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		Existed

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace AV control unit. Refer to [AV-185, "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-176, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [ST-17, "Exploded View"](#).

### Component Inspection

INFOID:000000008162891

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



# STEERING SWITCH GROUND CIRCUIT

[BASE AUDIO WITH REAR VIEW CAMERA]

< DTC/CIRCUIT DIAGNOSIS >

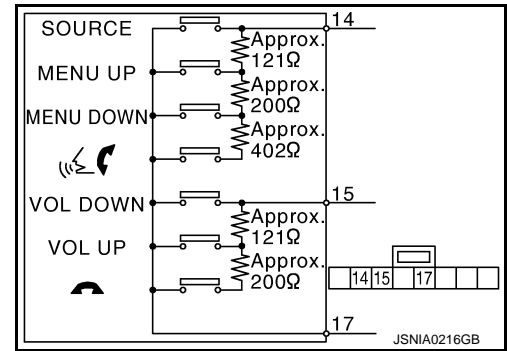
Standard

Between terminals 14 and 17

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



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# MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

## SYMPTOM DIAGNOSIS

### MULTI AV SYSTEM SYMPTOMS

#### Symptom Table

INFOID:000000008162892

#### OPERATION

Symptoms	Check items	Possible malfunction location / Action to take
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 "Self diagnosis Result" of "MULTI AV" with CONSULT. Refer to <a href="#">AV-114, "CONSULT Function"</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-155, "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-105, "On Board Diagnosis Function"</a> .
Fuel economy display, vehicle setting operation is abnormal.	There is malfunction in the CONSULT self-diagnosis result. Refer to <a href="#">AV-114, "CONSULT Function"</a> .	Perform detected DTC diagnosis. Refer to <a href="#">AV-125, "DTC Index"</a> .
	There is no malfunction in the CONSULT self-diagnosis result. Refer to <a href="#">AV-114, "CONSULT Function"</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):
 

Perform diagnosis as per the following table.

# MULTI AV SYSTEM SYMPTOMS

[BASE AUDIO WITH REAR VIEW CAMERA]

< SYMPTOM DIAGNOSIS >

Symptoms	Check items	Probable malfunction location	
Does not recognize cellular phone connection. (No connection is displayed on the display at the guide.)	Repeat the registration of cellular phone.	TEL adapter unit malfunction. Refer to <a href="#">AV-199, "Exploded View"</a> .	A
Hands-free phone cannot be established.	Both the reception and the speech cannot be performed	<ul style="list-style-type: none"> <li>Perform "Self diagnosis Result" of "MULTI AV" with CONSULT. Refer to <a href="#">AV-114, "CONSULT Function"</a>.</li> <li>No malfunction. TEL adapter unit malfunction. Refer to <a href="#">AV-199, "Exploded View"</a>.</li> <li>Malfunction is detected. Perform detected DTC diagnosis. Refer to <a href="#">AV-125, "DTC Index"</a>.</li> </ul>	B C
The other party's voice cannot be heard by hands-free phone.	The operation of the "☞" switch can be performed.	TEL voice signal circuit malfunction between TEL adapter unit and AV control unit.	D
	The operation of the "☞" switch cannot be performed.	Control signal circuit.	E
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	TEL adapter unit. Refer to <a href="#">AV-199, "Exploded View"</a> .	F
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to <a href="#">AV-169, "Diagnosis Procedure"</a> .	G
The system cannot be operated.	"SOURCE", "MENU UP", and "MENU DOWN" switches are operated. But "☞" switch is not operated.	<ul style="list-style-type: none"> <li>Check steering switch. Refer to <a href="#">AV-172, "Component Inspection"</a>.</li> <li>Malfunction is detected. Replace steering switch. Refer to <a href="#">ST-17, "Exploded View"</a>.</li> </ul>	H
	"SOURCE", "MENU UP", "MENU DOWN" and "☞" switches are not operated.	Steering switch signal A circuit malfunction. Refer to <a href="#">AV-172, "Diagnosis Procedure"</a> .	I
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to <a href="#">AV-176, "Diagnosis Procedure"</a> .	J

## RELATED TO RGB IMAGE

Symptoms	Check items	Possible malfunction location / Action to take	
RGB image is not shown.	There is malfunction in the CONSULT self-diagnosis result. Refer to <a href="#">AV-114, "CONSULT Function"</a> .	Perform detected DTC diagnosis. Refer to <a href="#">AV-125, "DTC Index"</a> .	K
	There is no malfunction in CONSULT self-diagnosis results. Refer to <a href="#">AV-114, "CONSULT Function"</a> .	Vertical synchronizing (VP) signal circuit. Refer to <a href="#">AV-167, "Diagnosis Procedure"</a> .	L M
Color of RGB image is not proper.	Light blue (Cyan) tint.	RGB signal (R: red) circuit. Refer to <a href="#">AV-158, "Diagnosis Procedure"</a> .	AV
	Purple (Magenta) tint.	RGB signal (G: green) circuit. Refer to <a href="#">AV-159, "Diagnosis Procedure"</a> .	
	Screen looks yellowish.	RGB signal (B: blue) circuit. Refer to <a href="#">AV-160, "Diagnosis Procedure"</a> .	O
RGB screen is rolling.	—	RGB synchronizing signal circuit. Refer to <a href="#">AV-161, "Diagnosis Procedure"</a> .	P

## RELATED TO AUDIO

## MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to <a href="#">AV-168, "Diagnosis Procedure"</a> .
No sound comes out or the level of the sound is low.	No sound from all speakers.	AV control unit power supply and ground circuits malfunction. Refer to <a href="#">AV-155, "AV CONTROL UNIT : Diagnosis Procedure"</a> .
	Only a certain speaker (front right, front left, rear right, or rear left) 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 speaker.</li> <li>• Malfunction in speaker.</li> <li>• Malfunction in AV control unit.</li> </ul>
Noise is mixed with audio.	Noise comes out from all speaker.	Malfunction in AV control unit.
	Noise comes out only from a certain speaker (front right, front left, rear right, or rear left).	<ul style="list-style-type: none"> <li>• Poor connector connection of speaker.</li> <li>• Sound signal circuit malfunction between AV control unit 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> </ul>
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	Poor connector connection of antenna or antenna feeder.
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> </ul>
Satellite radio is not received.	There is malfunction in the CONSULT self-diagnosis result. Refer to <a href="#">AV-114, "CONSULT Function"</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-125, "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-114, "CONSULT Function"</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-193, "Exploded View"</a>.</li> </ul>

### 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-176, "Diagnosis Procedure"</a> .
Only specified switch cannot be operated.	<ul style="list-style-type: none"> <li>• Check steering switch. Refer to <a href="#">AV-172, "Component Inspection"</a>.</li> <li>• Malfunction is detected. Replace steering switch. Refer to <a href="#">ST-17, "Exploded View"</a>.</li> </ul>

# MULTI AV SYSTEM SYMPTOMS

## [BASE AUDIO WITH REAR VIEW CAMERA]

### < SYMPTOM DIAGNOSIS >

Symptoms	Probable malfunction location
"SOURCE", "MENU UP", "MENU DOWN" and "↶ ↷" switches are not operated.	Steering switch signal A circuit. Refer to <a href="#">AV-172, "Diagnosis Procedure"</a> .
"VOL UP", "VOL DOWN" and "⏮" switches are not operated.	Steering switch signal B circuit. Refer to <a href="#">AV-174, "Diagnosis Procedure"</a> .

### RELATED TO CAMERA

#### Trouble Diagnosis Chart by Symptom

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-163, "Diagnosis Procedure"</a>.</li> <li>• Composite image signal circuit. Refer to <a href="#">AV-165, "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-185, "Exploded View"</a> .

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## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

### NORMAL OPERATING CONDITION

#### Description

INFOID:000000008162893

#### 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.
The system consistently selects the wrong voicetag	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".
	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the "List Names" command.
	2. Replace one of the names being confused with a new name.

#### RELATED TO AUDIO

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

##### NOTE:

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA, AAC, 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 >

[BASE AUDIO WITH REAR VIEW CAMERA]

Symptom	Cause and Counter measure	A
Cannot play	Check if the CD was inserted correctly.	B
	Check if the CD is scratched or dirty.	C
	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.	D
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.	E
	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.	F
	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.	G
	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.	H
	Check if the finalization process, such as session close and disc close, is done for the disc.	I
	Check if the CD is protected by copyright.	J
Discs recorded in live file system format are not supported. (For Microsoft Windows Vista, check the settings.)	K	
Poor sound quality	Check if the CD is scratched or dirty.	L
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.	M
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.	N
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.	O
Move immediately to the next song when playing	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.	P
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.	Q
Poor reception only from a certain radio broadcast station.	Check incoming radio wave signal strength of applicable broadcast station.	R
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.	S

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**

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## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BASE AUDIO WITH REAR VIEW CAMERA]

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> <p><b>NOTE:</b></p> <p>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.</p>
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.



# AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## REMOVAL AND INSTALLATION

### AV CONTROL UNIT

#### Exploded View

INFOID:000000008162894

#### CAUTION:

- Before replacing AV control unit, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to [AV-141, "Description"](#).
- Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF.

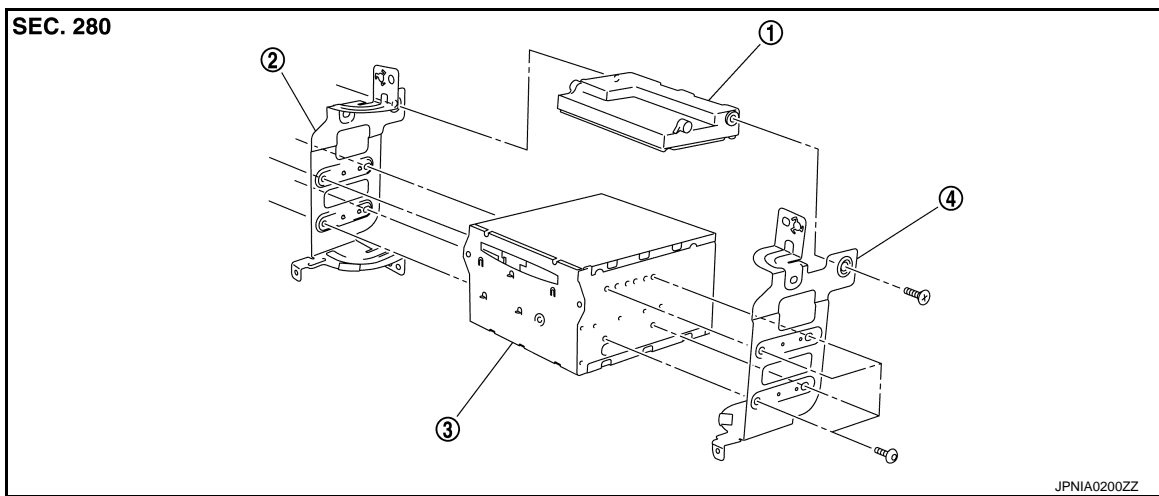
#### NOTE:

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.

#### REMOVAL

Refer to [IP-12, "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23, "M/T MODELS : Exploded View"](#) (M/T models).

#### DISASSEMBLY



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

#### Removal and Installation

INFOID:000000008162895

#### REMOVAL

#### CAUTION:

- Before replacing AV control unit, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to [AV-141, "Work Procedure"](#).
- 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.

1. Remove display unit. Refer to [AV-187, "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

Install in 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.

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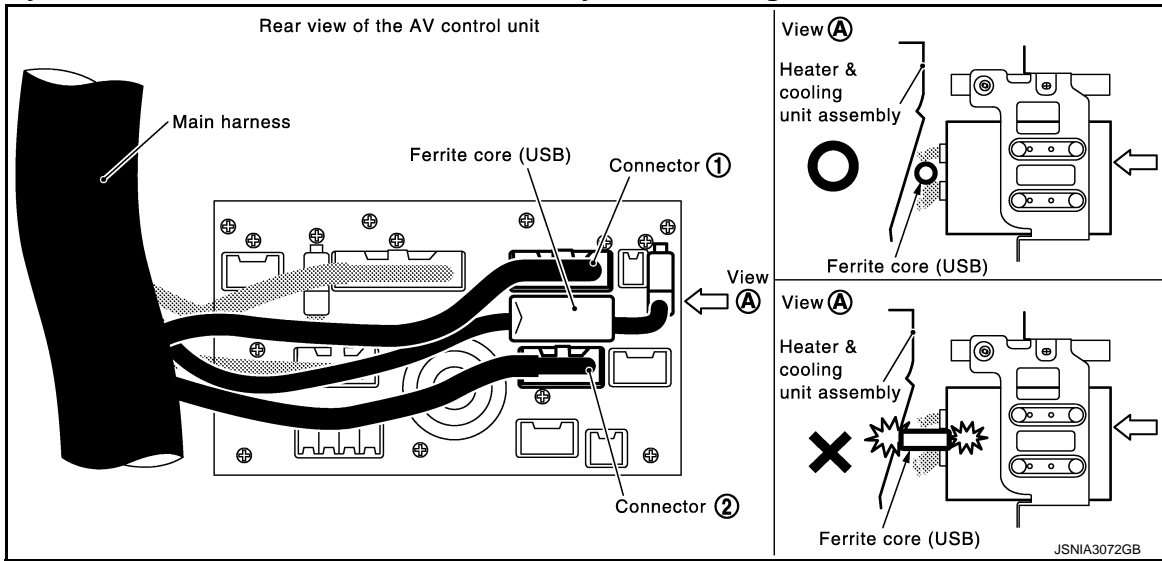
AV

# AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

- Be sure to perform "Read/Write Configuration" when replacing AV control unit. For details, refer to [AV-142, "Work Procedure"](#).
- Install AV control unit between connector (1) and connector (2) with the ferrite core (USB) orientated sideways to the vehicle. Incorrect installation may cause damage to the AV control unit.



# DISPLAY UNIT

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## DISPLAY UNIT

### Exploded View

INFOID:000000008162896

Refer to [IP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23. "M/T MODELS : Exploded View"](#) (M/T models).

### Removal and Installation

INFOID:000000008162897

#### REMOVAL

1. Remove cluster lid D. Refer to [IP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23. "M/T MODELS : Exploded View"](#) (M/T models).
2. Remove display unit with bracket as a single unit.

#### INSTALLATION

Install in the reverse order of removal.

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AV

## DOOR SPEAKER

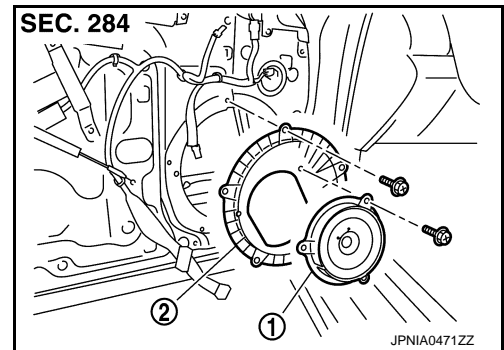
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

### DOOR SPEAKER

#### Exploded View

INFOID:000000008162898



1. Door speaker
2. Speaker bracket

#### Removal and Installation

INFOID:000000008162899

##### REMOVAL

1. Remove door finisher. Refer to [INT-12, "Exploded View"](#).
2. Remove the door speaker from speaker bracket.

##### INSTALLATION

Install in the reverse order of removal.

# REAR SPEAKER

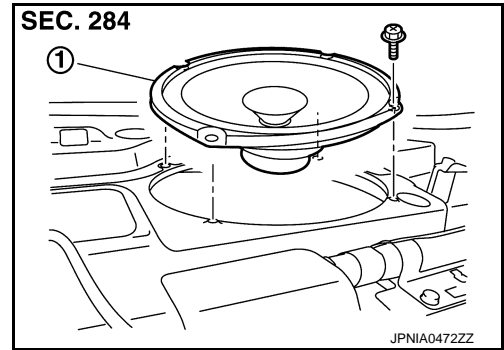
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## REAR SPEAKER

### Exploded View

INFOID:000000008162900



1. Rear speaker

### Removal and Installation

INFOID:000000008162901

#### REMOVAL

1. Remove rear parcel shelf finisher. Refer to [JNT-19, "Exploded View"](#).
2. Remove rear speaker from rear parcel shelf.

#### INSTALLATION

Install in the reverse order of removal.

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# TWEETER

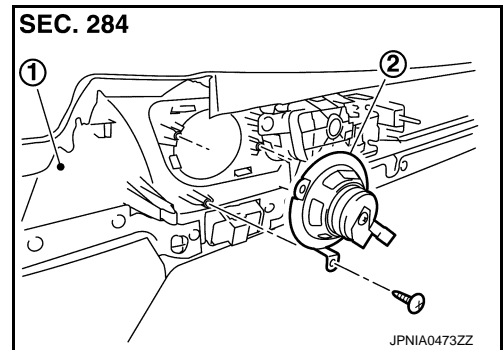
[BASE AUDIO WITH REAR VIEW CAMERA]

< REMOVAL AND INSTALLATION >

## TWEETER

### Exploded View

INFOID:000000008162902



1. Door finisher
2. Tweeter

### Removal and Installation

INFOID:000000008162903

#### REMOVAL

1. Remove door finisher. Refer to [INT-12, "Exploded View"](#).
2. Remove the tweeter from the door finisher.

#### INSTALLATION

Install in the reverse order of removal.

## ANTENNA AMP.

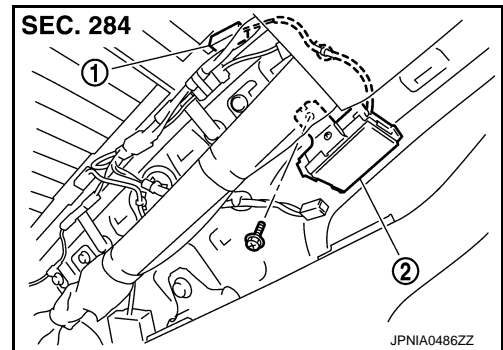
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

### ANTENNA AMP.

#### Exploded View

INFOID:000000008162904



1. AM-FM main connector
2. Antenna amp.

#### Removal and Installation

INFOID:000000008162905

##### REMOVAL

1. Remove back pillar garnish LH. Refer to [INT-15. "Exploded View"](#).
2. Remove antenna amp. from rear pillar LH.

##### INSTALLATION

Install in the reverse order of removal.

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# SATELLITE RADIO TUNER

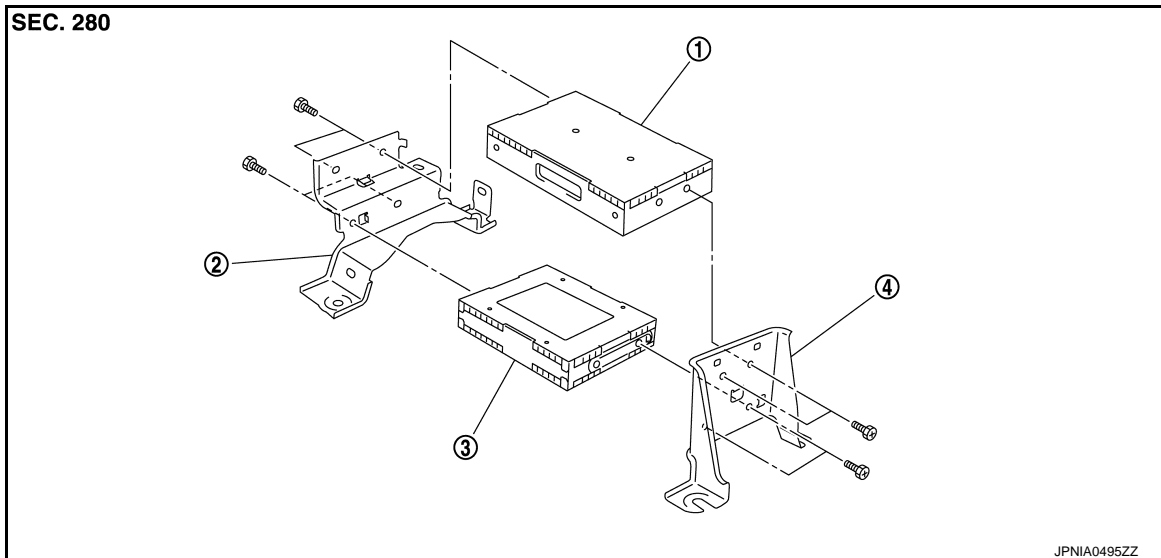
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## SATELLITE RADIO TUNER

Exploded View

INFOID:000000008162906



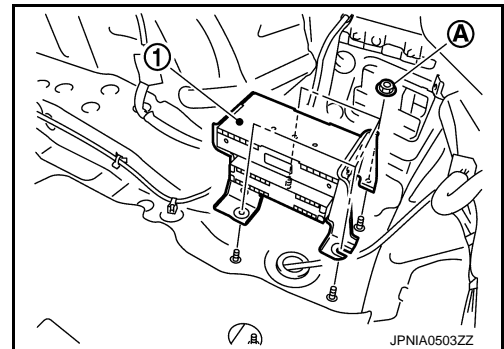
1. TEL adapter unit
2. Bracket (front)
3. Satellite radio tuner
4. Bracket (rear)

## Removal and Installation

INFOID:000000008162907

### REMOVAL

1. Remove trunk floor spacer RH. Refer to [INT-29, "Exploded View"](#).
2. Remove nuts (A) from the trunk room RH, and remove TEL adapter unit and satellite radio tuner (1) from trunk room side.



### INSTALLATION

Install in the reverse order of removal.



# SATELLITE RADIO ANTENNA

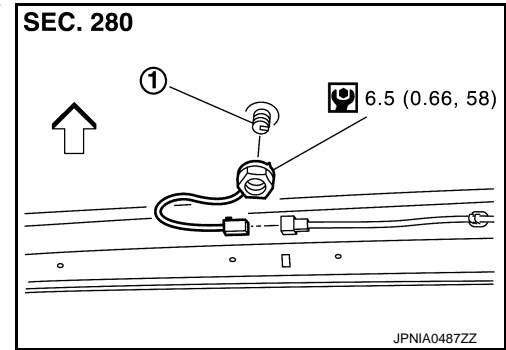
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## SATELLITE RADIO ANTENNA

### Exploded View

INFOID:000000008162908



1. Satellite radio antenna

↖: Vehicle front

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

### Removal and Installation

INFOID:000000008162909

#### REMOVAL

1. Remove headlining assembly (rear) to secure work space between vehicle and headlining. Refer to [INT-23, "NORMAL ROOF : Exploded View"](#) [with normal roof] or [INT-26, "SUNROOF : Exploded View"](#) [with sunroof].
2. Remove nut, and then remove satellite radio antenna from roof panel.

#### INSTALLATION

Install in the reverse order of removal.

**Satellite radio antenna mounting nut**  : 6.5 N-m (0.66 kg-m, 58 in-lb)

#### CAUTION:

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

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AV

# MULTIFUNCTION SWITCH

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## MULTIFUNCTION SWITCH

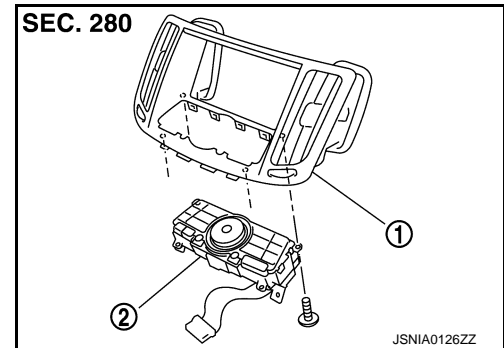
### Exploded View

INFOID:000000008162910

#### REMOVAL

Refer to [IP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23. "M/T MODELS : Exploded View"](#) (M/T models).

#### DISASSEMBLY



1. Center ventilator grille
2. Multifunction switch

### Removal and Installation

INFOID:000000008162911

#### REMOVAL

1. Remove cluster lid D. Refer to [IP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23. "M/T MODELS : Exploded View"](#) (M/T models).
2. Remove multifunction switch mounting screws.
3. Remove multifunction switch from center ventilator.

#### INSTALLATION

Install in the reverse order of removal.

# PRESET SWITCH

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## PRESET SWITCH

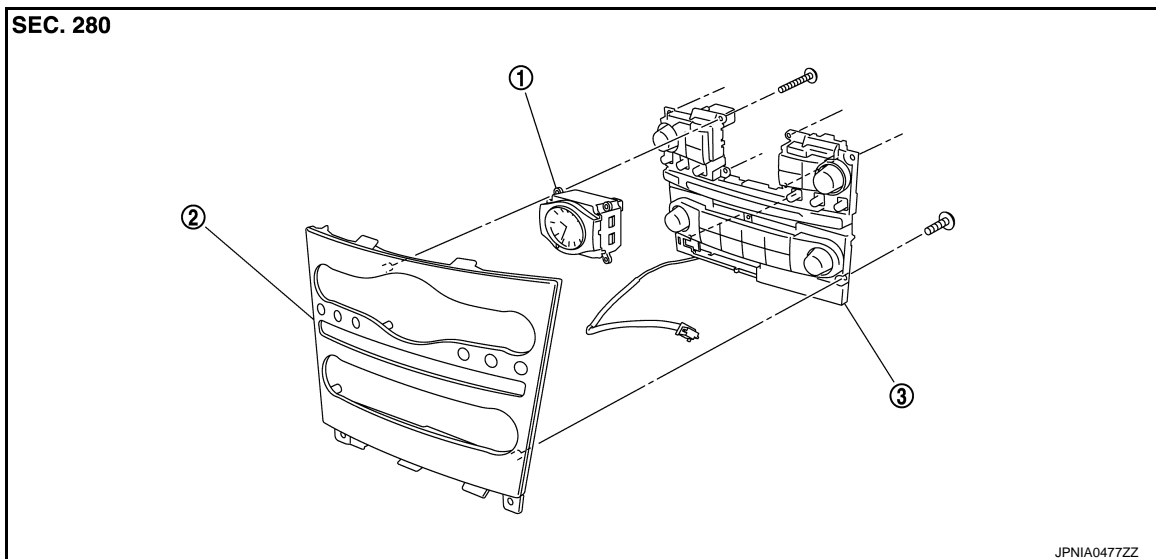
### Exploded View

INFOID:000000008162912

#### REMOVAL

Refer to [IP-12, "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23, "M/T MODELS : Exploded View"](#) (M/T models).

#### DISASSEMBLY



1. Clock

2. Cluster lid C

3. Preset switch

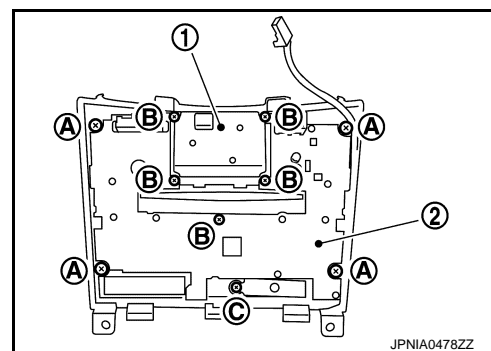
### Removal and Installation

INFOID:000000008162913

#### REMOVAL

1. Remove cluster lid C. Refer to [IP-12, "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23, "M/T MODELS : Exploded View"](#) (M/T models).
2. Remove preset switch screws (A), (B), and (C), and then remove preset switch (2) from cluster lid C.

1. Clock



#### INSTALLATION

Install in 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.

## STEERING SWITCH

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

---

### STEERING SWITCH

#### Exploded View

INFOID:000000008162914

Refer to [ST-17, "Exploded View"](#).

#### Removal and Installation

INFOID:000000008162915

#### REMOVAL

Refer to [ST-17, "Removal and Installation"](#).

#### INSTALLATION

Install in the reverse order of removal.

# USB CONNECTOR

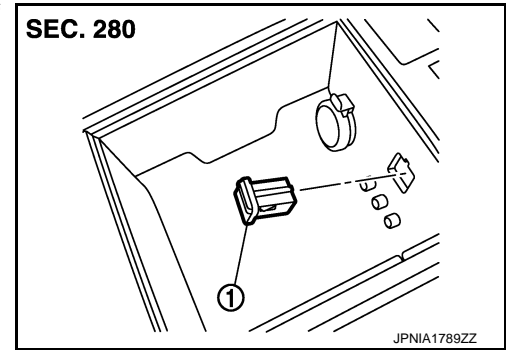
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## USB CONNECTOR

### Exploded View

INFOID:000000008162916



1. USB connector

### Removal and Installation

INFOID:000000008162917

#### REMOVAL

1. Remove center console. Refer to [IP-35. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-40. "M/T MODELS : Exploded View"](#) (M/T models).
2. Push the pawl from the back of center console to remove USB connector.

#### INSTALLATION

Install in the reverse order of removal.

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AV

# MICROPHONE

[BASE AUDIO WITH REAR VIEW CAMERA]

< REMOVAL AND INSTALLATION >

## MICROPHONE

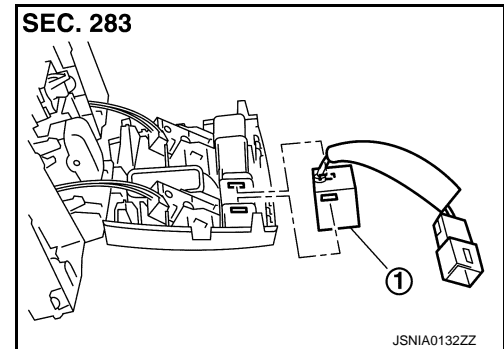
### Exploded View

INFOID:000000008162918

### REMOVAL

Refer to [INL-70, "Exploded View"](#).

### DISASSEMBLY



JSNIA0132ZZ

1. Microphone

### Removal and Installation

INFOID:000000008162919

### REMOVAL

1. Remove map lamp. Refer to [INL-70, "Exploded View"](#).
2. Remove microphone from map lamp.

### INSTALLATION

Install in the reverse order of removal.

# TEL ADAPTER UNIT

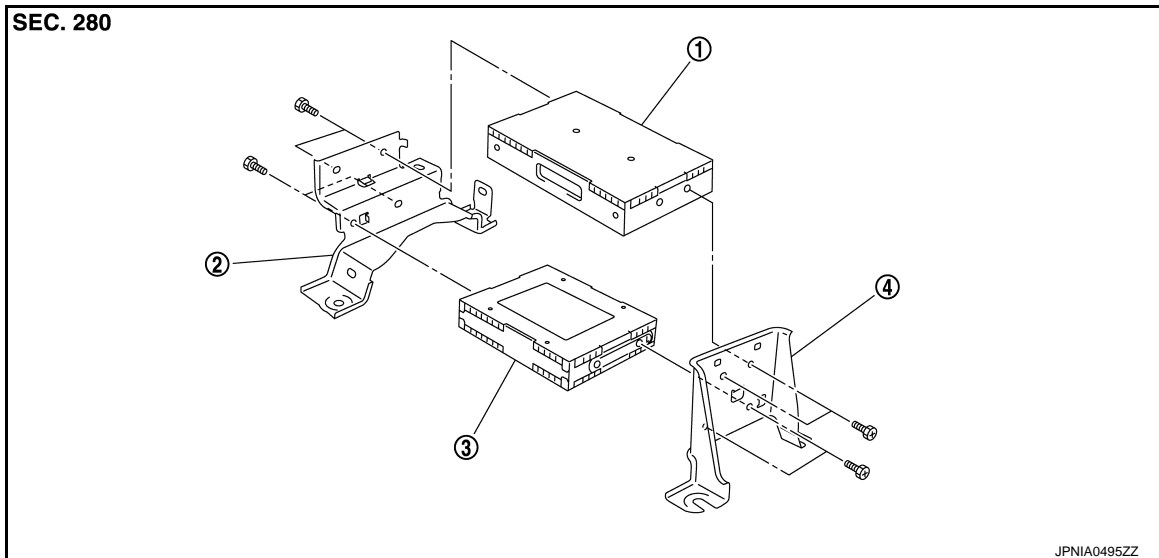
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## TEL ADAPTER UNIT

Exploded View

INFOID:000000008162920



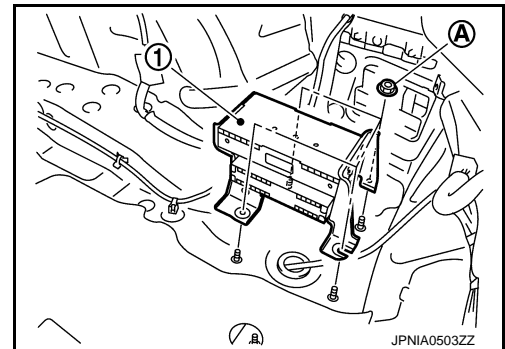
- 1. TEL adapter unit
- 2. Bracket (front)
- 3. Satellite radio tuner
- 4. Bracket (rear)

## Removal and Installation

INFOID:000000008162921

### REMOVAL

1. Remove trunk floor spacer RH. Refer to [INT-29, "Exploded View"](#).
2. Remove nuts (A) from the trunk room RH, and remove TEL adapter unit and satellite radio tuner (1) from trunk room side.



### INSTALLATION

Install in the reverse order of removal.

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**TEL ANTENNA****Removal and Installation**

INFOID:000000008162922

**REMOVAL**

1. Remove wheel house finisher RH, trunk floor spacer RH and trunk front finisher upper. Refer to [INT-29. "Exploded View"](#).
2. Remove rear parcel shelf finisher. Refer to [INT-19. "Exploded View"](#).
3. Remove rear side finisher RH. Refer to [INT-15. "Exploded View"](#).
4. Remove TEL antenna from vehicle.

**INSTALLATION**

Install in the reverse order of removal.



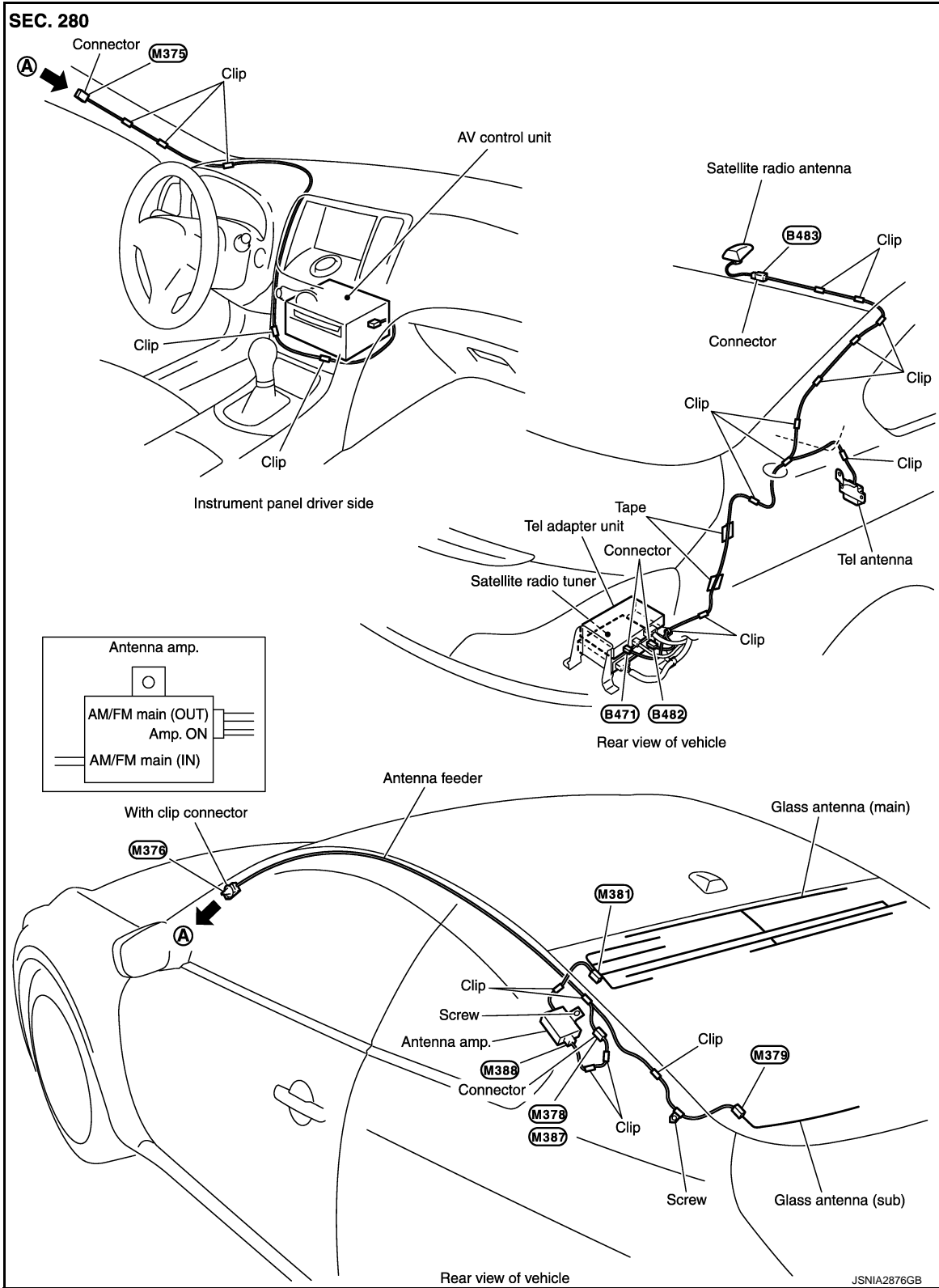
# TEL ANTENNA

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## Feeder Layout

INFOID:000000008162923



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# REAR VIEW CAMERA

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## REAR VIEW CAMERA

### Exploded View

INFOID:000000008162924

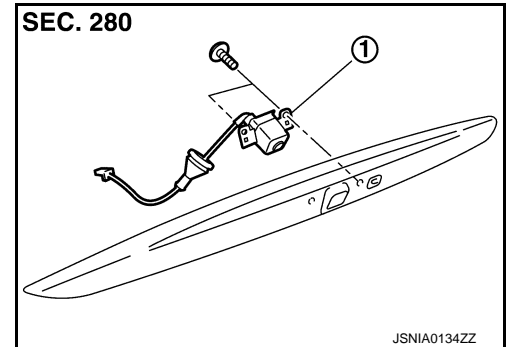
#### REMOVAL (WITHOUT REAR SPOILER)

Refer to [EXT-39, "TRUNK LID OUTER FINISHER : Exploded View"](#).

#### REMOVAL (WITH REAR SPOILER)

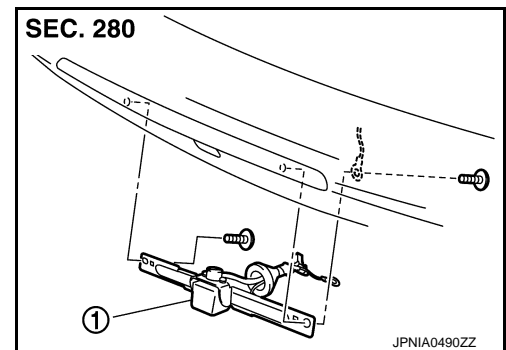
Refer to [EXT-43, "Exploded View"](#).

#### DISASSEMBLY (WITHOUT REAR SPOILER)



1. Rear view camera

#### DISASSEMBLY (WITH REAR SPOILER)



1. Rear view camera

## Removal and Installation

INFOID:000000008162925

### REMOVAL

#### Without rear spoiler

1. Remove trunk lid finisher outer. Refer to [EXT-39, "TRUNK LID OUTER FINISHER : Exploded View"](#).
2. Remove rear view camera from trunk lid finisher outer.

#### With rear spoiler

1. Remove rear spoiler. Refer to [EXT-43, "Exploded View"](#).
2. Remove rear view camera from rear spoiler.

### INSTALLATION

Install in the reverse order of removal.

#### NOTE:

Adjust the guide line position if the guide line position is shifted after installing the rear view camera. Refer to [AV-202, "Adjustment"](#).

### Adjustment

INFOID:000000008162926

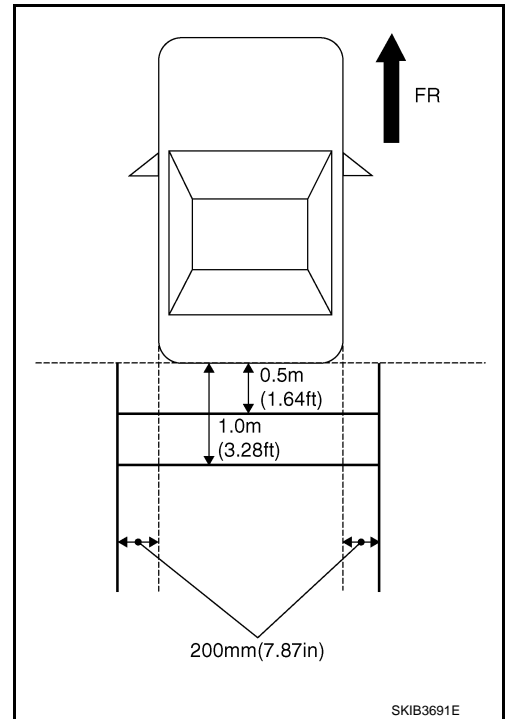
Adjust the guide line position if the guide line position is shifted after installing the rear view camera.

# REAR VIEW CAMERA

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

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 Guide Lines" mode of "Confirmation/Adjustment" mode.



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

**Selected pattern : 7**

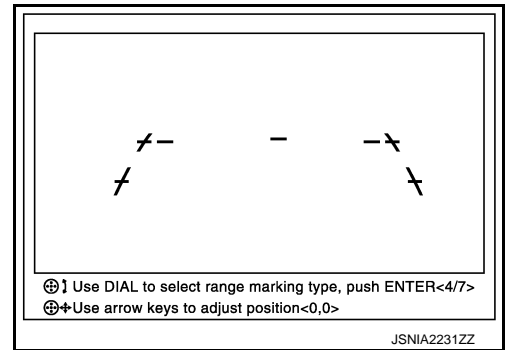
4. Make fine adjustment to the correction line of the rear of the vehicle with up/down/left/right switches so that its position is aligned with the guiding line. Press "OK" switch and record the adjusted guiding line position to the AV control unit.

**Up/Down adjustment range : 20° to 20°**

**Left/Right adjustment range : 20° to 20°**

**CAUTION:**

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



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# STEERING ANGLE SENSOR

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## STEERING ANGLE SENSOR

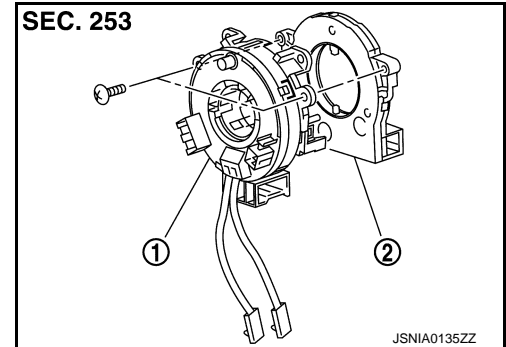
### Exploded View

INFOID:000000008162927

#### REMOVAL

Refer to [SR-14, "Exploded View"](#).

#### DISASSEMBLY



1. Spiral cable
2. Steering angle sensor

### Removal and Installation

INFOID:000000008162928

#### REMOVAL

1. Remove spiral cable.
2. Remove steering angle sensor from spiral cable.

#### INSTALLATION

1. Install in the reverse order of removal.
2. Perform 4WAS front actuator adjustment. Refer to [AV-204, "Adjustment"](#).

### Adjustment

INFOID:000000008162929

Perform 4WAS front actuator adjustment. Refer to [STC-25, "4WAS FRONT ACTUATOR NEUTRAL POSITION ADJUSTMENT : Description"](#).

# ANTENNA FEEDER

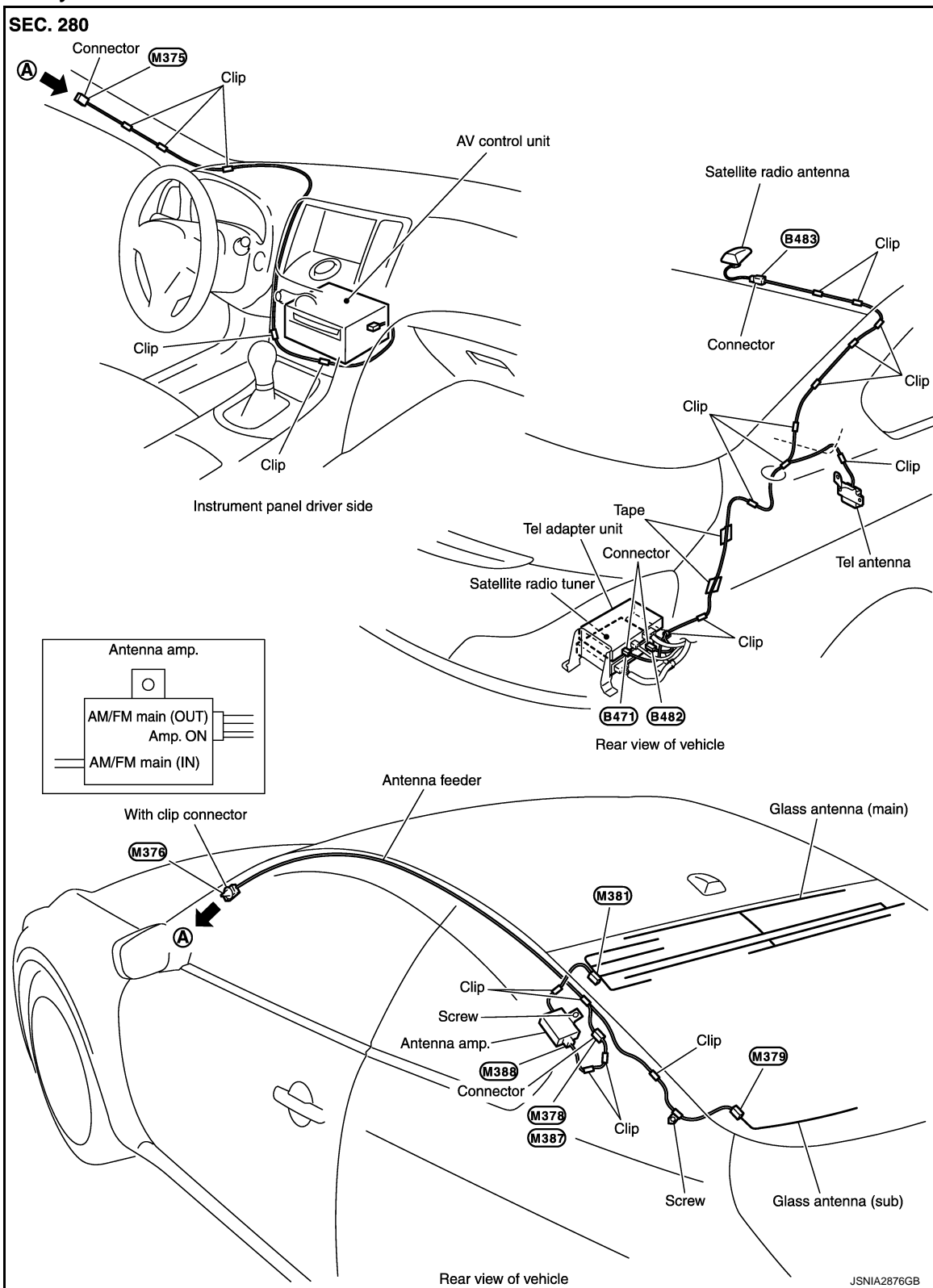
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH REAR VIEW CAMERA]

## ANTENNA FEEDER

### Feeder Layout

INFOID:000000008162930



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AV

## PRECAUTION

### PRECAUTIONS

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

INFOID:000000008162931

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 Battery Service

INFOID:000000008162932

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

#### Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit)

INFOID:000000008162933

**CAUTION:**

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.

#### Precaution for Trouble Diagnosis

INFOID:000000008162934

#### 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.

# PRECAUTIONS

< PRECAUTION >

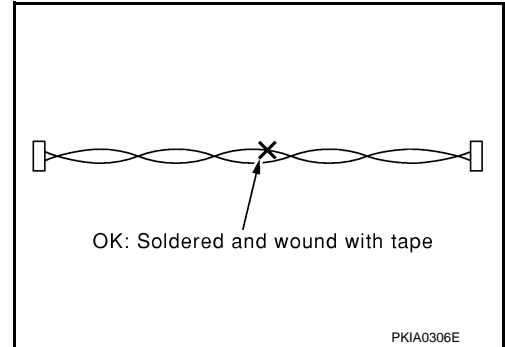
[BOSE AUDIO WITHOUT NAVIGATION]

## Precaution for Harness Repair

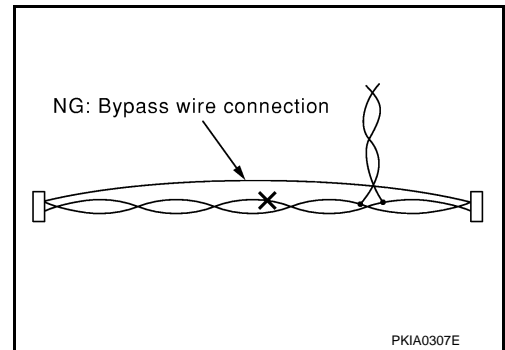
INFOID:000000008162935

### AV COMMUNICATION SYSTEM

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



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



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# PREPARATION

< PREPARATION >

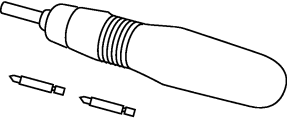
[BOSE AUDIO WITHOUT NAVIGATION]

## PREPARATION

### PREPARATION

#### Commercial Service Tools

INFOID:000000008162936

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



# COMPONENT PARTS

< SYSTEM DESCRIPTION >

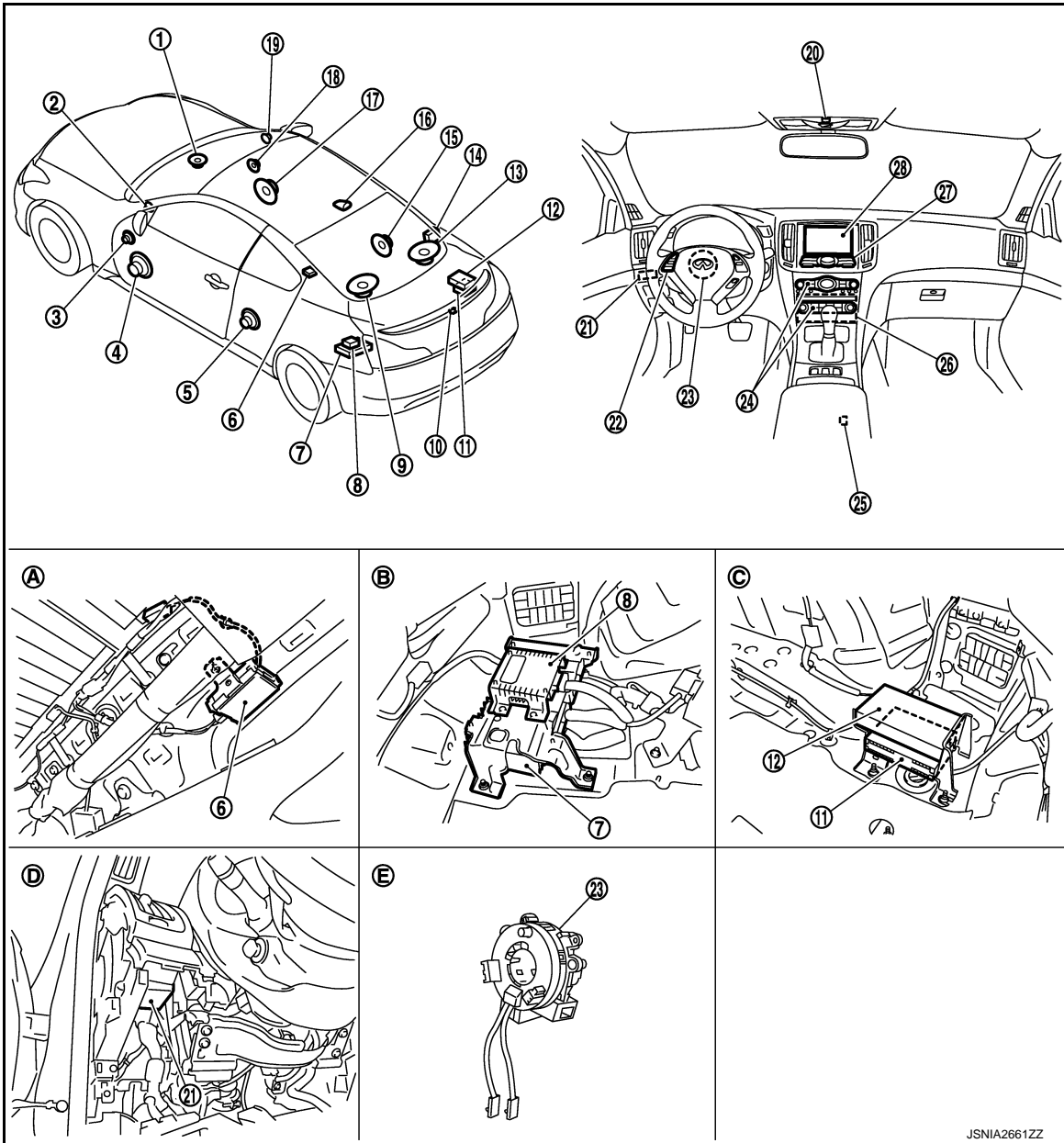
[BOSE AUDIO WITHOUT NAVIGATION]

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000008162937



- |                             |                           |                          |
|-----------------------------|---------------------------|--------------------------|
| 1. Center speaker           | 2. Tweeter LH             | 3. Door squawker LH      |
| 4. Door woofer LH           | 5. Rear speaker LH        | 6. Antenna amp.          |
| 7. BOSE amp.                | 8. Woofer amp.            | 9. Rear woofer LH        |
| 10. Rear view camera        | 11. Satellite radio tuner | 12. TEL adapter unit     |
| 13. Rear woofer RH          | 14. TEL antenna           | 15. Rear speaker RH      |
| 16. Satellite radio antenna | 17. Door woofer RH        | 18. Door squawker RH     |
| 19. Tweeter RH              | 20. Microphone            | 21. Sonar control unit   |
| 22. Steering switch         | 23. Steering angle sensor | 24. Preset switch        |
| 25. USB connector           | 26. AV control unit       | 27. Multifunction switch |
| 28. Display unit            |                           |                          |

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# COMPONENT PARTS

[BOSE AUDIO WITHOUT NAVIGATION]

< SYSTEM DESCRIPTION >

- A. Within rear pillar finisher LH      B. Trunk room LH      C. Trunk room RH  
 D. Instrument driver lower panel removed condition      E. Spiral cable removed condition

## Component Description

INFOID:000000008162938

Part name	Description
AV control unit	<ul style="list-style-type: none"> <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 the steering angle sensor and receives the steering angle sensor signal via CAN communication.</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>Amp. ON signal, sound signal and mode change signal transmitted to BOSE amp.</li> <li>TEL voice signal and voice guidance signal are input from TEL adapter unit.</li> </ul>
Display unit	<ul style="list-style-type: none"> <li>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 image, RGB area and RGB synchronizing).</li> <li>Composite image signals 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 woofer amp. and each speaker.</li> <li>Input mode change signal from AV control unit.</li> </ul>
Woofer amp.	Inputs power (amp ON) and sound signal from BOSE amp., and outputs sound signal to rear woofer.
Door woofer	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs low range sound.</li> </ul>
Door squawker	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs mid range sound.</li> </ul>
Rear 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>
Tweeter	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs high range sound.</li> </ul>
Center 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 woofer	<ul style="list-style-type: none"> <li>Outputs sound signal from woofer 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 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>
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 angle sensor	It is connected to the AV control unit and transmits the steering angle sensor signal via CAN communication.

## COMPONENT PARTS

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITHOUT NAVIGATION]

Part name	Description
Sonar control unit	<ul style="list-style-type: none"> <li>Controlled by AV communication transmitted from AV control unit.</li> <li>Trouble diagnosis is supported with CONSULT (K-LINE).</li> </ul>
Steering switch	<ul style="list-style-type: none"> <li>Operations for audio, hands-free phone and voice control, 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>
Antenna amp.	<ul style="list-style-type: none"> <li>Radio signal received by glass antenna is amplified and transmitted to AV control unit.</li> <li>Power (antenna amp. ON signal) is supplied from AV control unit.</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>
Satellite radio antenna	Satellite radio signal is received and transmitted to AV control unit.
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.
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®.

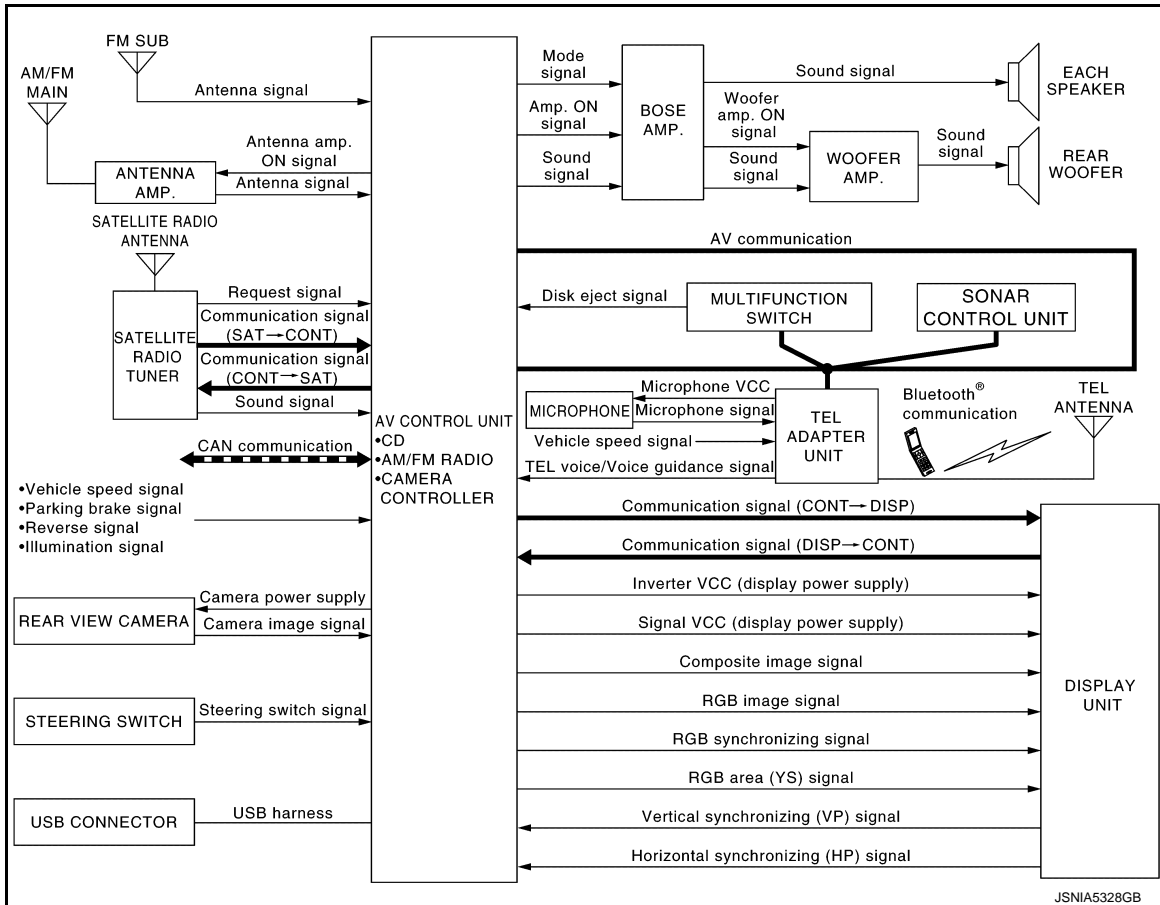
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SYSTEM

MULTI AV SYSTEM

MULTI AV SYSTEM : System Diagram

INFOID:000000008162939



JSNIA5328GB

**NOTE:**

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

MULTI AV SYSTEM : System Description

INFOID:000000008162940

Multi AV system means that the following systems are integrated.

FUNCTION NAME
Audio function
Hands-free phone function
Rear view monitor function
Sonar 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.
- 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.

# SYSTEM

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITHOUT NAVIGATION]

## AUDIO FUNCTION

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

FUNCTION
AM/FM radio
Satellite radio
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 display is performed with serial communication between display unit and AV control unit.
- The image signal to display operating condition is performed with RGB image signal, RGB area signal and RGB image synchronizing signal.

### AM/FM Radio Mode

- AM/FM radio tuner is built into AV control unit.
- Audio signal is received by glass 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 is output the sound signal (satellite radio) to 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 or music files in USB memory can be played.
- iPod sound signals are transmitted from USB connector to the AV control unit and to each speaker.
- iPod® is recharged when connected to USB connector.

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

### NOTE:

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

### Driver's Audio Stage

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

## HANDS-FREE PHONE SYSTEM

- TEL adapter unit is controlled with AV communication from AV control unit.
- The connection between cellular phone and TEL adapter unit is performed with Bluetooth® communication.
- The voice guidance signal is input from the TEL adapter unit to the AV control unit and output via BOSE amp. to the front speaker when operating the cellular phone.
- TEL adapter unit has the on board self-diagnosis function. Refer to [AV-227. "On Board Diagnosis Function"](#).

### When A Call Is Originated

- Spoken voice sound output from the microphone (microphone signal) is input to TEL adapter unit.

# SYSTEM

## < SYSTEM DESCRIPTION >

## [BOSE AUDIO WITHOUT NAVIGATION]

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- TEL adapter unit outputs to cellular phone with Bluetooth® communication as a TEL voice signal.
- Voice sound is then heard at the other party.

### When Receiving A Call

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

### 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 display unit by RGB image signal. Rear view monitor images are displayed by combining the RGB image signal 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.

### SONAR SYSTEM

For further information about the sonar system, refer to [SN-7, "System Description"](#).

### 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.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

[BOSE AUDIO WITHOUT NAVIGATION]

< SYSTEM DESCRIPTION >

## DIAGNOSIS SYSTEM (AV CONTROL UNIT)

### Description

INFOID:000000008162941

- 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 Function

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

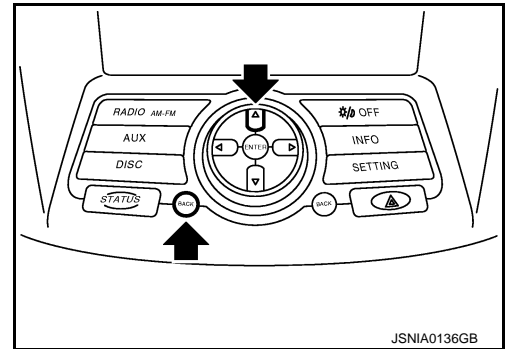
The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

##### Self-diagnosis Mode

- Press the “BACK” switch and the “UP” switch of the 4-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.

### ON BOARD DIAGNOSIS ITEM

#### Description

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

#### On Board Diagnosis Item

Mode	Description
Self Diagnosis	<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>

AV

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

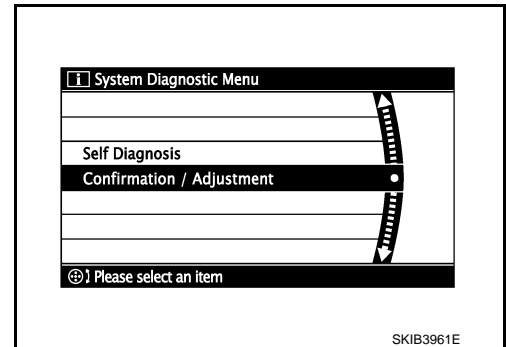
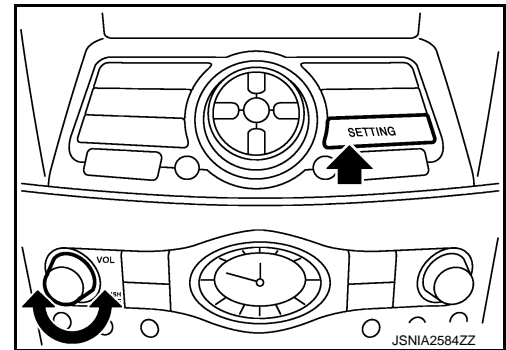
< SYSTEM DESCRIPTION >

[BOSE AUDIO 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.

## METHOD OF STARTING

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.



# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

[BOSE AUDIO WITHOUT NAVIGATION]

## < SYSTEM DESCRIPTION >

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.

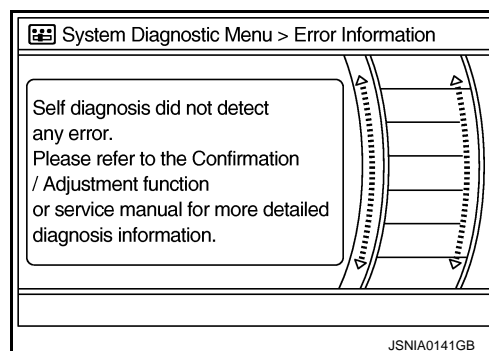
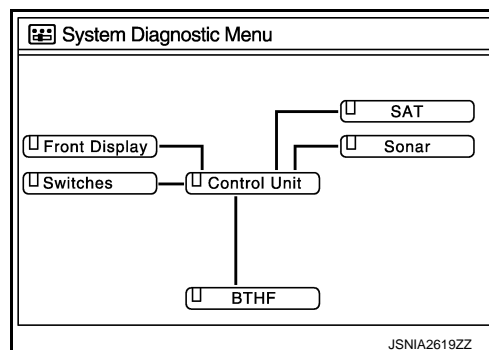
Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction <sup>Note</sup>	Red	Green

### 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-301, "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. Refer to <a href="#">AV-301, "Exploded View"</a> .

A Connecting Cable Between Units Is Displayed In Yellow.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

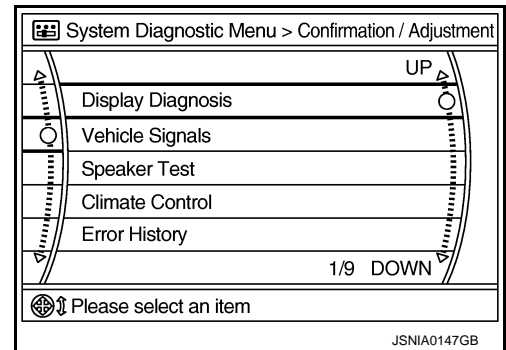
< SYSTEM DESCRIPTION >

[BOSE AUDIO 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 display unit.	Serial communication circuits between AV control unit and 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 are malfunctioning.</li> <li>• communication circuits between AV control unit and satellite radio tuner are malfunctioning.</li> <li>• request signal circuit between AV control unit and satellite radio tuner are malfunctioning.</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 ↔ Sonar	When either one of the following items is detected: <ul style="list-style-type: none"> <li>• sonar control unit power supply and ground circuits are malfunctioning.</li> <li>• AV communication circuits between AV control unit and sonar control unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Sonar control unit power supply and ground circuits.</li> <li>• AV communication circuits between AV control unit and sonar control unit.</li> </ul>
Control unit ↔ BTHF	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>

## 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.

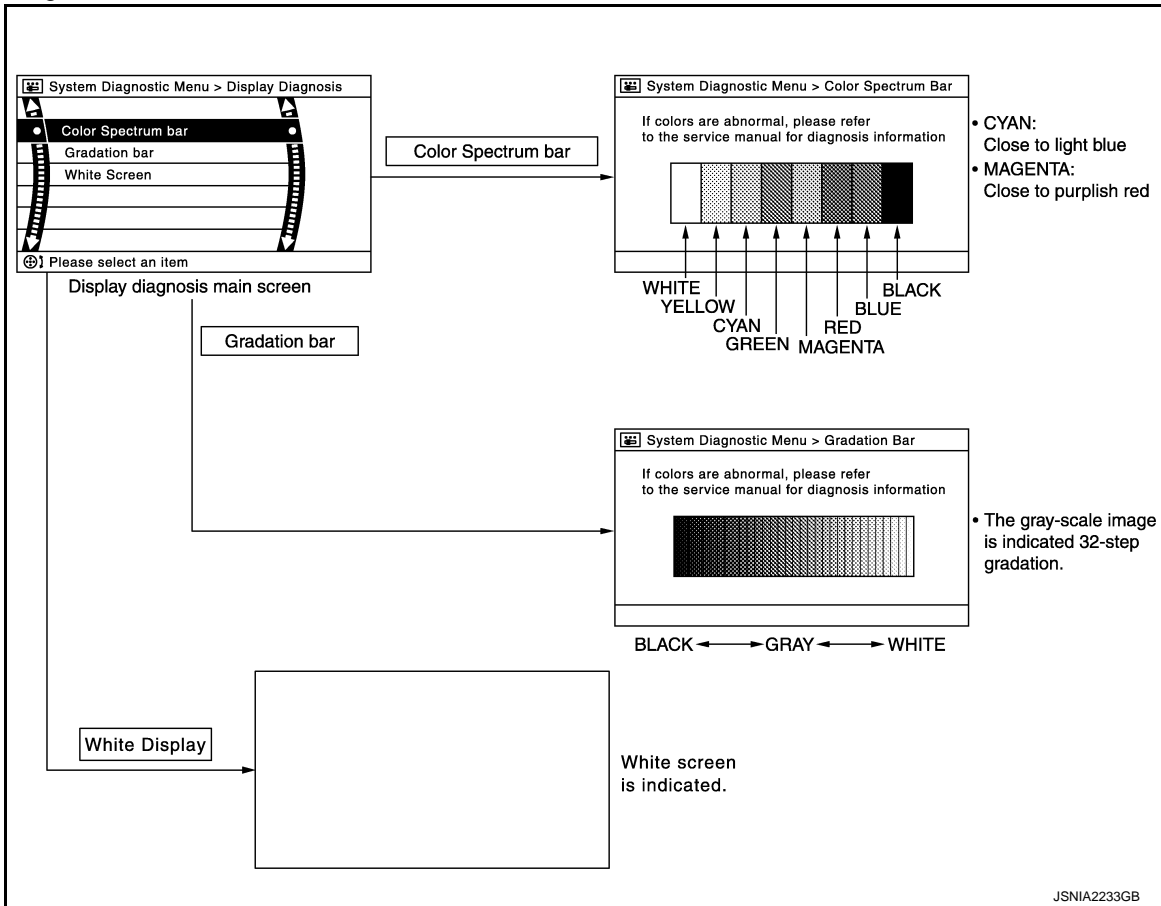


# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

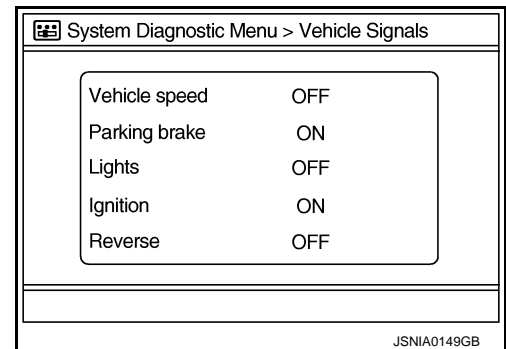
[BOSE AUDIO WITHOUT NAVIGATION]

## 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)

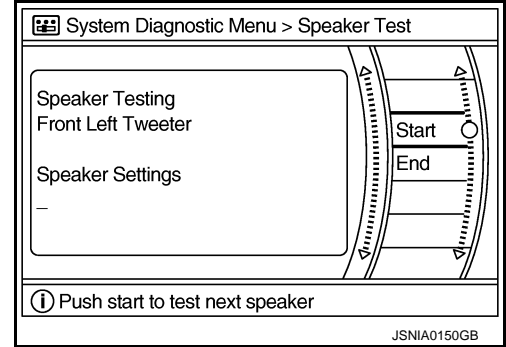
< SYSTEM DESCRIPTION >

[BOSE AUDIO 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

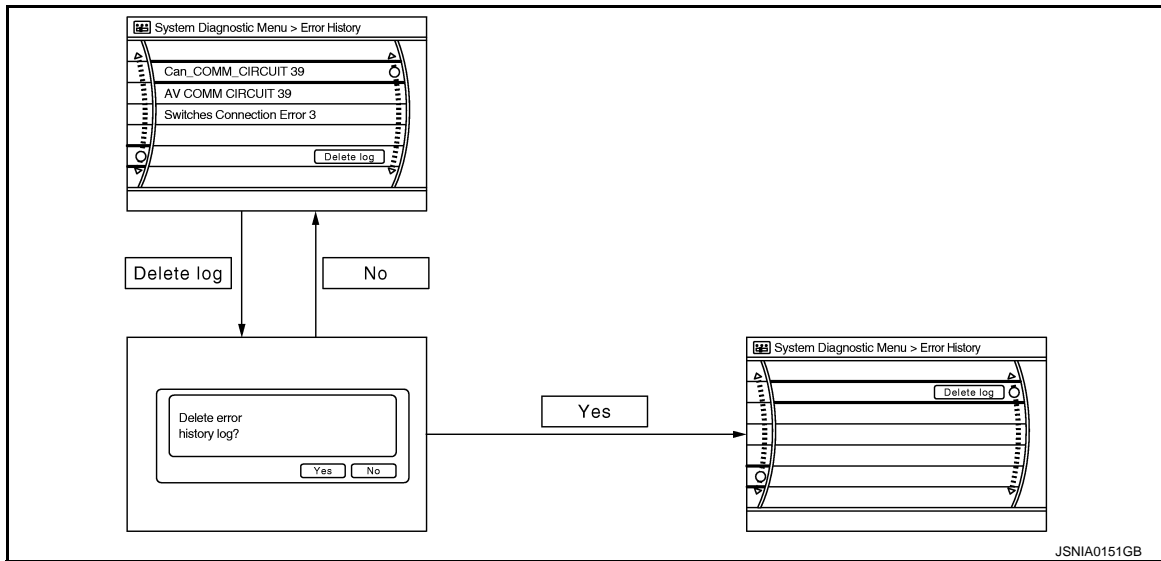
- The counter increases by 1 if an error occurs when ignition switch is ON. The counter will not decrease even if the condition is normal at the next ignition ON cycle.
- The counter upper limit is 50. Any counts exceeding 50 are ignored. The counter can be reset (no error record display) with the "Delete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

[BOSE AUDIO 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-224. "CONSULT Function"</a> .
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to <a href="#">AV-301. "Exploded View"</a> .
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	
FLASH-ROM Error Of Control Unit CAN Controller Memory Error	AV control unit malfunction is detected.	
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-224. "CONSULT Function"</a> .
Front Display Connection Error	When either one of the following items is detected: <ul style="list-style-type: none"> <li>display unit power supply and ground circuits are malfunctioning.</li> <li>communication circuits between AV control unit and display unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>Display unit power supply and ground circuits.</li> <li>Communication circuits between AV control unit and display unit.</li> </ul>
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 are malfunctioning.</li> <li>communication circuits between AV control unit and satellite radio tuner are malfunctioning.</li> <li>request signal circuit between AV control unit and satellite radio tuner are malfunctioning.</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>
<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>

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

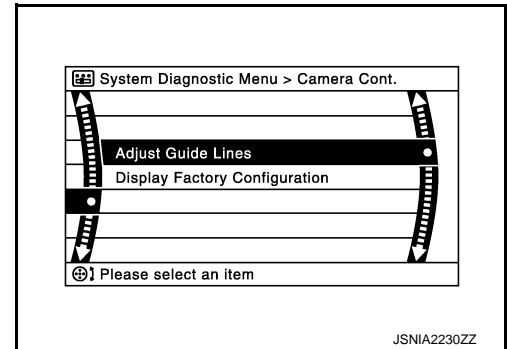
[BOSE AUDIO WITHOUT NAVIGATION]

< SYSTEM DESCRIPTION >

Error item	Description	Possible malfunction factor/Action to take
<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT</li> <li>• Sonar Connection Error</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>• AV communication circuits between AV control unit and sonar control unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Sonar control unit power supply and ground circuits.</li> <li>• AV communication circuits between AV control unit and sonar control unit.</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>• Sonar 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 are malfunctioning.	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.

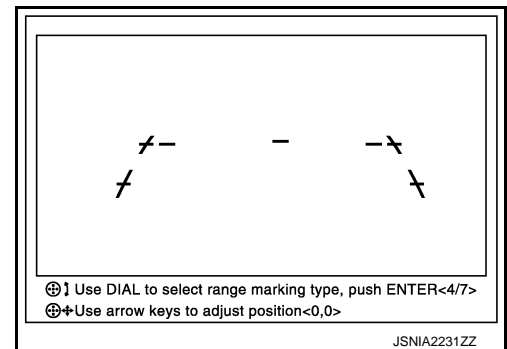


## Adjust Offset of Rear view Camera

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

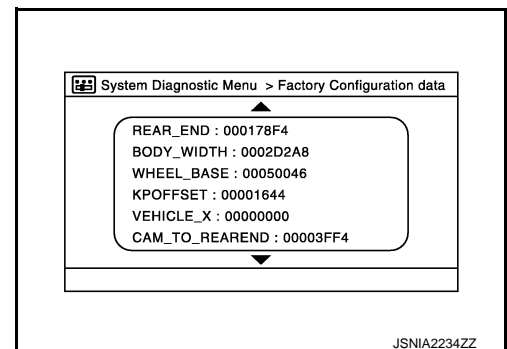
### CAUTION:

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



## Factory Configuration Confirmation

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

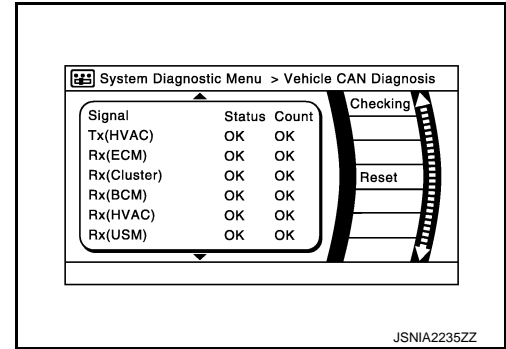


# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

## [BOSE AUDIO WITHOUT NAVIGATION]

### < SYSTEM DESCRIPTION >

- 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.



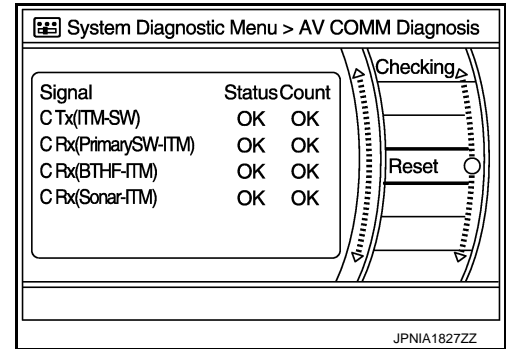
Items	Display (Current)	Malfunction counter (Past)
Tx(HVAC)	OK / ???	OK / 0 – 39
Rx(ECM)	OK / ???	OK / 0 – 39
Rx(Cluster)	OK / ???	OK / 0 – 39
Rx(BCM)	OK / ???	OK / 0 – 39
Rx(HVAC)	OK / ???	OK / 0 – 39
Rx(USM)	OK / ???	OK / 0 – 39
Rx(VDC)	OK / ???	OK / 0 – 39
Rx(STRG)	OK / ???	OK / 0 – 39

#### 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.



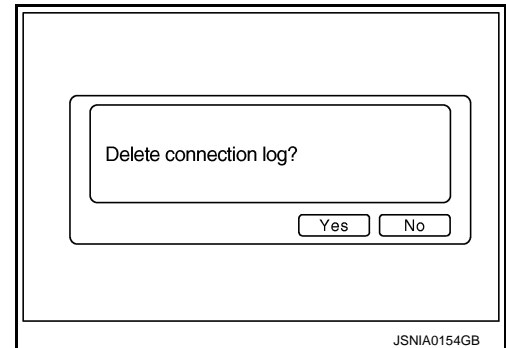
Items	Status (Current)	Counter (Past)
C Tx(ITM-SW)	OK / ???	OK / 0 – 39
C Rx(PrimarySW-ITM)	OK / ???	OK / 0 – 39
C Rx(BTHF-ITM)	OK / ???	OK / 0 – 39
C Rx(Sonar-ITM)	OK / ???	OK / 0 – 39

#### NOTE:

“???” indicates UNKWN.

### Delete Unit Connection Log

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



### Initialize Settings

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

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

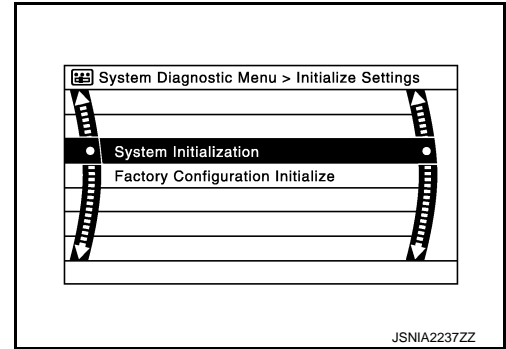
[BOSE AUDIO WITHOUT NAVIGATION]

< SYSTEM DESCRIPTION >

“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-255, "Description"](#).



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## CONSULT Function

### APPLICATION ITEMS

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

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detected.	Refer to <a href="#">AV-258, "Diagnosis Procedure"</a> .
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to <a href="#">AV-301, "Exploded View"</a> .
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.	
Cont Unit [U1200] CAN CONT [U1216]	AV control unit malfunction is detected.	
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> .



# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITHOUT NAVIGATION]

Error item	Description	Possible malfunction factor/Action to take
FRONT DISP CONN [U1243]	When either one of the following items is detected: <ul style="list-style-type: none"> <li>• display unit power supply and ground circuits are malfunctioning.</li> <li>• communication circuits between AV control unit and display unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Display unit power supply and ground circuits.</li> <li>• Communication circuits between AV control unit and display unit.</li> </ul>
SAT CONN [U1255]	When either one of the following items is detected: <ul style="list-style-type: none"> <li>• satellite radio tuner power supply and ground circuit are malfunctioning.</li> <li>• communication circuits between AV control unit and satellite radio tuner are malfunctioning.</li> <li>• request signal circuit between AV control unit and satellite radio tuner are malfunctioning.</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>
<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>
<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>• AV communication circuits between AV control unit and sonar control unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Sonar control unit power supply and ground circuits.</li> <li>• AV communication circuits between AV control unit and sonar control unit.</li> </ul>
<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>• SONAR CONN [U125C]</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

### NOTE:

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

### 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.	

## DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITHOUT NAVIGATION]

Display Item	Display	Vehicle status	Remarks
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.

### CONFIGURATION

Configuration has three 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 >

[BOSE AUDIO WITHOUT NAVIGATION]

## DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

### On Board Diagnosis Function

INFOID:000000008162944

#### 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.

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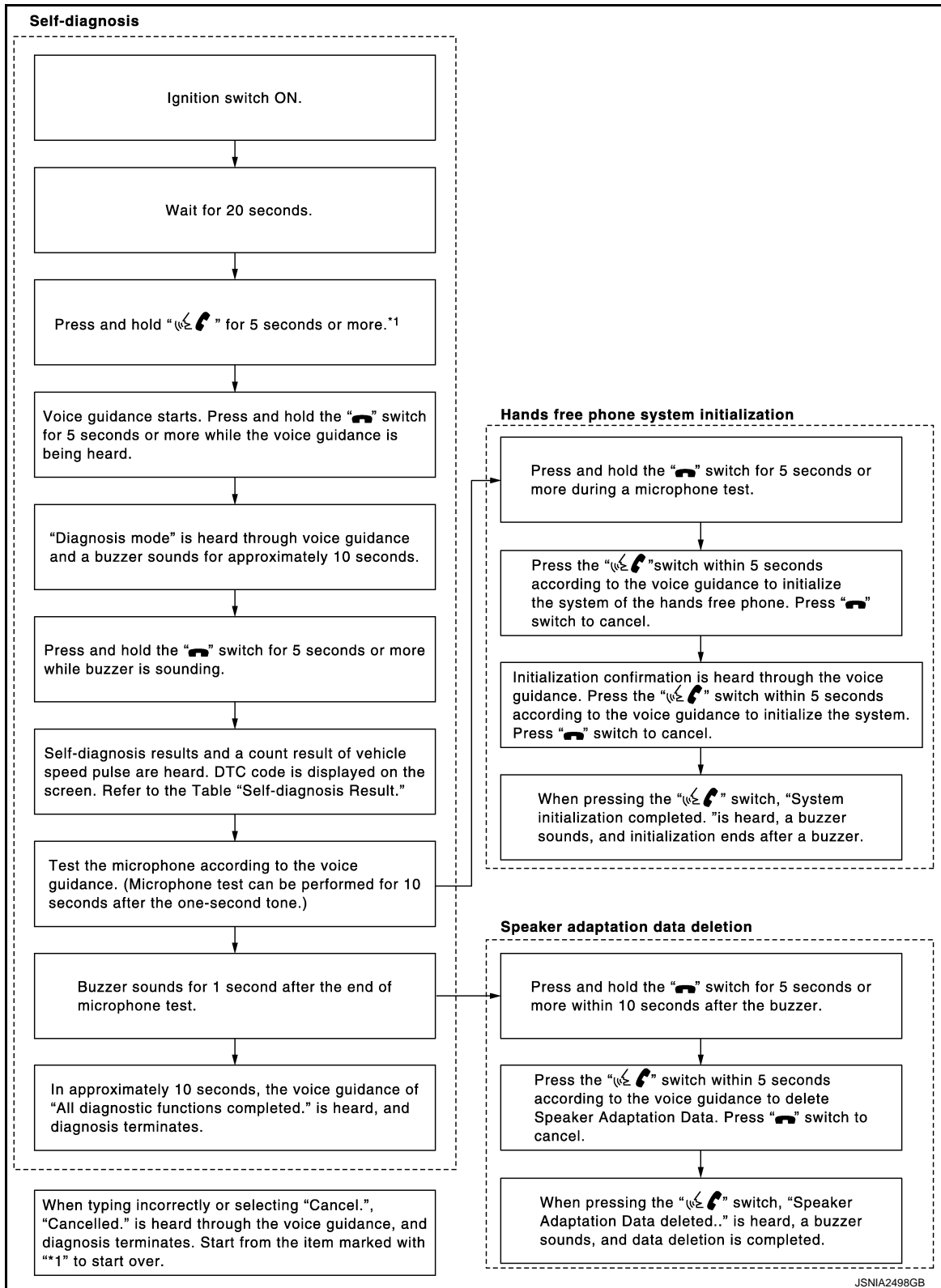
AV

# DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

[BOSE AUDIO WITHOUT NAVIGATION]

< SYSTEM DESCRIPTION >

## FLOW CHART OF TROUBLE DIAGNOSIS



# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## ECU DIAGNOSIS INFORMATION

### AV CONTROL UNIT

#### Reference Value

INFOID:000000008162945

#### VALUES ON THE DIAGNOSIS TOOL

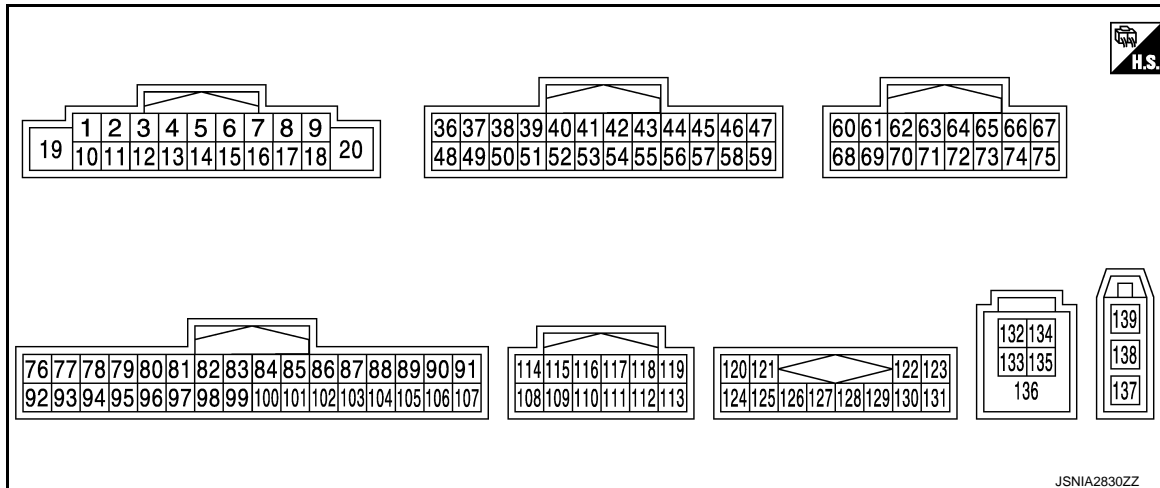
**NOTE:**

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

#### TERMINAL LAYOUT

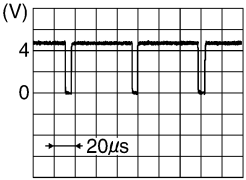


#### PHYSICAL VALUES

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

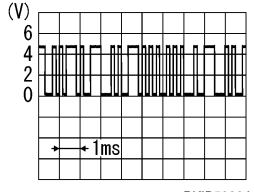
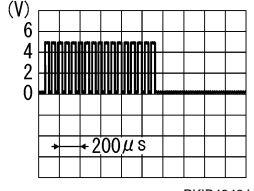
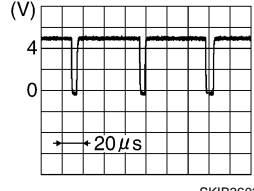
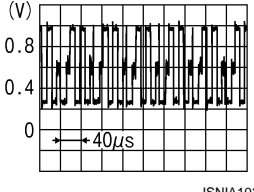
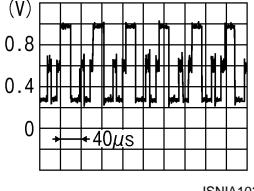
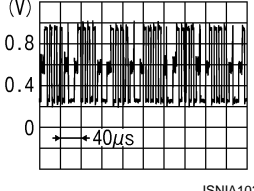
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
6 (P)	15 (B)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing MENU UP switch.	0.7 V
					Keep pressing MENU DOWN switch.	1.3 V
					Keep pressing  switch	2.0 V
					Except for above.	3.3 V
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
9 (L)	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
18 (G)	Ground	Ground	—	Ignition switch ON	—	0 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	—	9.0 V
37 (LG)	Ground	Signal ground	—	Ignition switch OFF	—	0 V
38 (R)	Ground	Horizontal synchronizing (HP) signal	Input	Ignition switch ON	—	

SKIB3601E

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
39 (L)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	 <p style="text-align: right; font-size: small;">PKIB5039J</p>
40 (B)	Ground	RGB area (YS) signal	Output	Ignition switch ON	At RGB image is displayed.	5.0 V
					At DVD image is displayed.	 <p style="text-align: right; font-size: small;">PKIB4948J</p>
41	—	Shield	—	—	—	—
42 (W)	Ground	RGB synchronizing signal	Output	Ignition switch ON	—	 <p style="text-align: right; font-size: small;">SKIB3603E</p>
43 (G)	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.	 <p style="text-align: right; font-size: small;">JSNIA1029ZZ</p>
44 (L)	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.	 <p style="text-align: right; font-size: small;">JSNIA1030ZZ</p>
45 (P)	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.	 <p style="text-align: right; font-size: small;">JSNIA1031ZZ</p>
46 (Y)	Ground	Composite image ground	—	Ignition switch ON	—	0 V

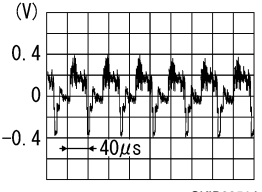
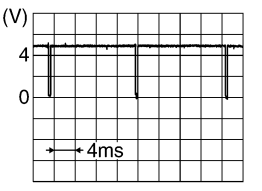
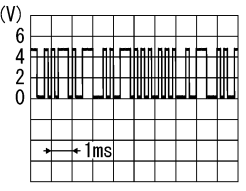
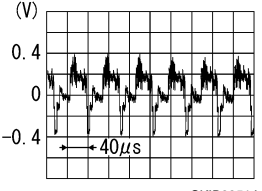
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AV

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

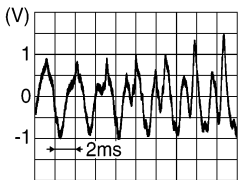
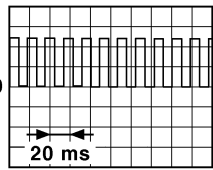
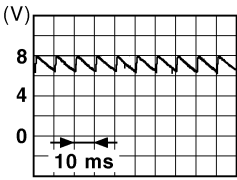
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
47 (BR)	Ground	Composite image signal	Output	Ignition switch ON	At rear view camera image is displayed.	
48 (Y)	Ground	Inverter VCC	Output	Ignition switch ACC	—	9.0 V
49 (BR)	Ground	Inverter ground	—	Ignition switch OFF	—	0 V
50 (G)	Ground	Vertical synchronizing (VP) signal	Input	Ignition switch ON	—	
51 (P)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	
52	—	Shield	—	—	—	—
57	—	Shield	—	—	—	—
58	—	Shield	—	—	—	—
62 (W)	Ground	Camera image signal	Input	Ignition switch ON	At rear view camera image is displayed.	
71	—	Shield	—	—	—	—
72 (B)	Ground	Camera ground	—	Ignition switch ON	—	0 V
73 (R)	Ground	Camera power supply	Output	Ignition switch ON	At rear view camera image is displayed.	6.0 V
76 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
77 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—



# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
78 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
79 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
80 (P)	—	CAN-L	Input/ Output	—	—	—
81 (L)	—	CAN-H	Input/ Output	—	—	—
82 (BR)	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 ap- prox. 40 km/h (25 MPH)	<p><b>NOTE:</b> The maximum voltage varies de- pending on the specification (destination unit).</p>  <small>JSNIA0012GB</small>
93 (SB)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake is ON.	0 V
					Parking brake is OFF.	 <small>JSNIA0007GB</small>
94 (BG)	Ground	Reverse signal	Input	Ignition switch ON	R position	12.0 V
					Other than R position	0 V
95 (G)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
96 (V)	Ground	Disk eject signal	Input	Ignition switch ON	Pressing the eject switch.	0 V
					Except for above.	3.3 V

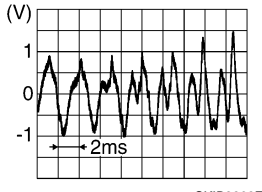
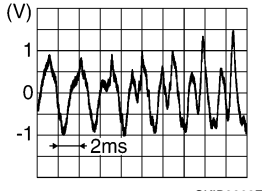
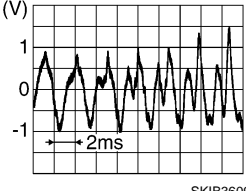
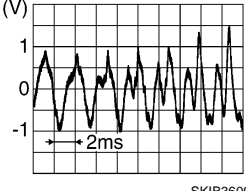
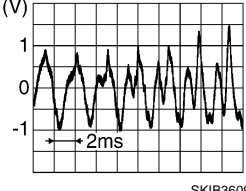
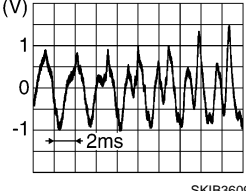
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AV

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

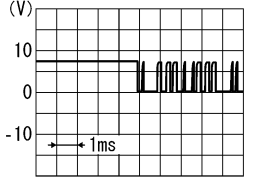
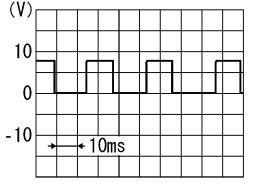
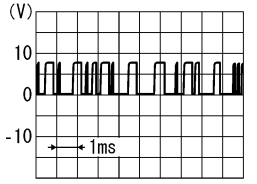
[BOSE AUDIO WITHOUT NAVIGATION]

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	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
109 (R)	115 (G)	Sound signal front RH	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
110 (GR)	Ground	Amp. ON signal	Output	Ignition switch ON	—	10.0 V
111 (B)	—	Shield	—	—	—	—
112 (V)	118 (LG)	Sound signal rear LH	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
113 (O)	119 (W)	Sound signal front LH	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
120 (B)	124 (W)	Satellite radio sound signal LH	Input	Ignition switch ON	When satellite radio mode is selected.	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
121 (G)	125 (R)	Satellite radio sound signal RH	Input	Ignition switch ON	When satellite radio mode is selected.	 <p style="text-align: right; font-size: small;">SKIB3609E</p>

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
122 (L)	Ground	Communication signal (CONT→SAT)	Output	Ignition switch ON	When satellite radio mode is selected.	 <p style="text-align: right; font-size: small;">SKIA9301J</p>
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 (P)	Ground	Request signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected.	 <p style="text-align: right; font-size: small;">SKIA9299J</p>
130 (G)	Ground	Communication signal (SAT→CONT)	Input	Ignition switch ON	When satellite radio mode is selected.	 <p style="text-align: right; font-size: small;">SKIA9300J</p>
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	Output	Ignition switch ACC	—	12.0 V

## DTC Index

INFOID:000000008162946

## SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	<a href="#">AV-258, "Diagnosis Procedure"</a>
U1010	CONTROL UNIT (CAN) [1010]	<a href="#">AV-259, "DTC Logic"</a>

## AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

DTC	Display item	Refer to
U1200	Cont Unit [U1200]	<a href="#">AV-260, "DTC Logic"</a>
U1216	CAN CONT [U1216]	<a href="#">AV-261, "DTC Logic"</a>
U1232	ST ANGLE SEN CALIB [1232]	<a href="#">AV-262, "Diagnosis Procedure"</a>
U1243	FRONT DISP CONN [U1243]	<a href="#">AV-263, "Diagnosis Procedure"</a>
U1255	SAT CONN [U1255]	<a href="#">AV-265, "Diagnosis Procedure"</a>
U1310	CONTROL UNIT (AV) [U1310]	<a href="#">AV-268, "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-267, "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-267, "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-267, "Description"</a>
U1300 U1240 U125C U1256	<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• SWITCH CONN [U1240]</li> <li>• SONAR CONN [U125C]</li> <li>• HAND FREE CONN [U1256]</li> </ul>	<a href="#">AV-267, "Description"</a>

# DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

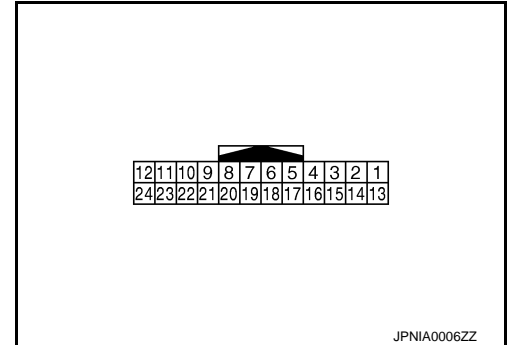
[BOSE AUDIO WITHOUT NAVIGATION]

## DISPLAY UNIT

Reference Value

INFOID:000000008162947

TERMINAL LAYOUT



## PHYSICAL VALUES

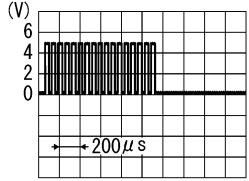
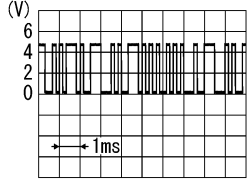
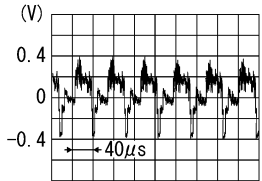
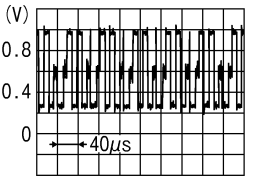
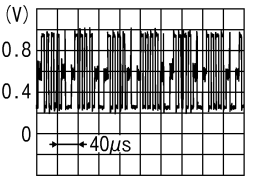
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y)	Ground	Inverter VCC	Input	Ignition switch ACC	—	9.0 V
3 (BG)	Ground	Signal VCC	Input	Ignition switch ACC	—	9.0 V
4 (Y)	Ground	Composite image ground	—	Ignition switch ON	—	0 V
5	—	Shield	—	—	—	—
6 (L)	Ground	RGB signal (G: green)	Input	Ignition switch ON	Start Confirmation/Adjust- ment mode, and then dis- play color bar by selecting "Color Spectrum Bar" on Display Diagnosis screen.	<p style="text-align: right;">JSNIA1030ZZ</p>
7	—	Shield	—	—	—	—
8 (R)	Ground	Horizontal synchronizing (HP) signal	Output	Ignition switch ON	—	<p style="text-align: right;">SKIB3601E</p>

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# DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

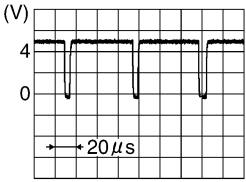
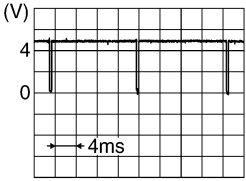
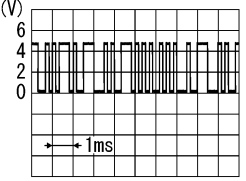
[BOSE AUDIO WITHOUT NAVIGATION]

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 DVD image is displayed.	 <p>PKIB4948J</p>	
11 (P)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.	 <p>PKIB5039J</p>
13 (BR)	Ground	Inverter ground	—	Ignition switch ON	—	0 V
14 (LG)	Ground	Signal ground	—	Ignition switch ON	—	0 V
15 (BR)	Ground	Composite image signal	Input	Ignition switch ON	At rear view camera image is displayed.	 <p>SKIB2251J</p>
17 (G)	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>JSNIA1029ZZ</p>
18 (P)	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>JSNIA1031ZZ</p>

# DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
19 (W)	Ground	RGB synchronizing signal	Input	Ignition switch ON	—	 <p>SKIB3603E</p>
20 (G)	Ground	Vertical synchronizing (VP) signal	Output	Ignition switch On	—	 <p>SKIB3598E</p>
21	—	Shield	—	—	—	—
22 (L)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	 <p>PKIB5039J</p>
23	—	Shield	—	—	—	—

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# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

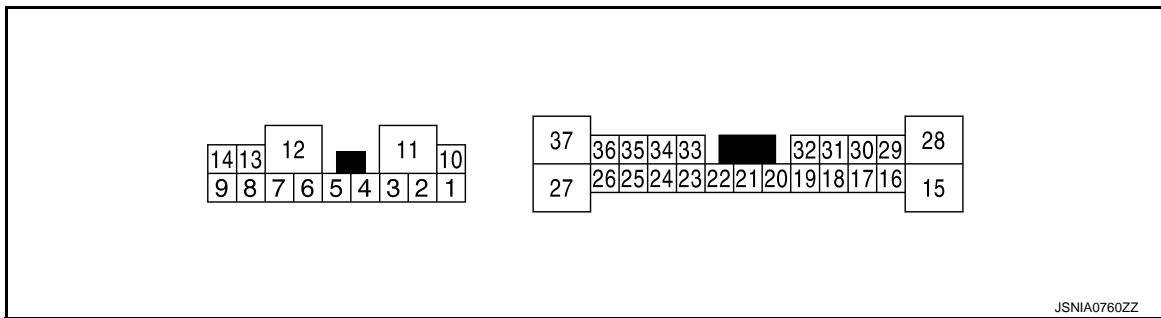
[BOSE AUDIO WITHOUT NAVIGATION]

## BOSE AMP.

Reference Value

INFOID:000000008162948

### TERMINAL LAYOUT



### PHYSICAL VALUES

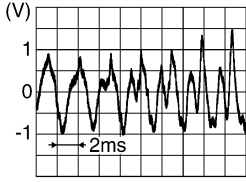
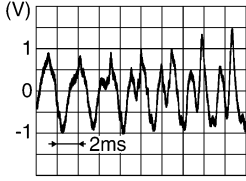
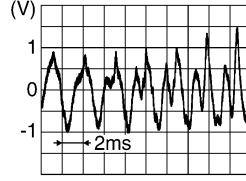
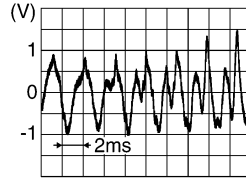
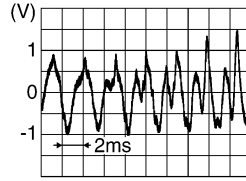
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (L)	2 (W)	Sound signal front LH	Output	Ignition switch ON	Sound output	 SKIB3609E
4 (V)	3 (LG)	Sound signal front RH	Output	Ignition switch ON	Sound output	 SKIB3609E
5 (G)	6 (R)	Sound signal door woofer RH	Output	Ignition switch ON	Sound output	 SKIB3609E
7 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
10 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
11 (GR)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V



# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

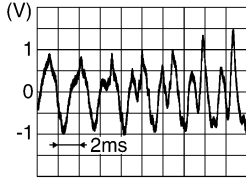
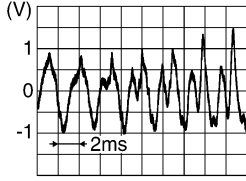
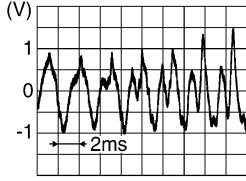
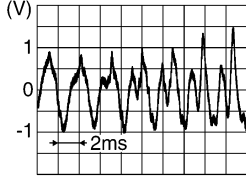
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
14 (B)	9 (W)	Sound signal door woofer LH	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
16 (SB)	17 (V)	Sound signal rear woofer	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
18 (LG)	19 (Y)	Sound signal rear LH	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
20 (W)	Ground	Amp. ON signal	Input	Ignition switch ACC	—	10.0 V
21	—	Shield	—	—	—	—
22 (GR)	Ground	Woofer Amp. ON signal	Output	Ignition switch ACC	—	10.0 V
24 (V)	23 (SB)	Sound signal rear LH	Input	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
26 (BR)	25 (Y)	Sound signal rear RH	Input	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>

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# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
29 (L)	30 (BG)	Sound signal center speaker	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
31 (L)	32 (P)	Sound signal rear speaker RH	Output	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
33 (R)	34 (G)	Sound signal front RH	Input	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
35 (P)	36 (L)	Sound signal front LH	Input	Ignition switch ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
37 (SB)	Ground	Mode change signal	Input	Ignition switch ON	Driver's Audio Stage ON	0 V
					Driver's Audio Stage OFF	8.5 V

# SATELLITE RADIO TUNER

< ECU DIAGNOSIS INFORMATION >

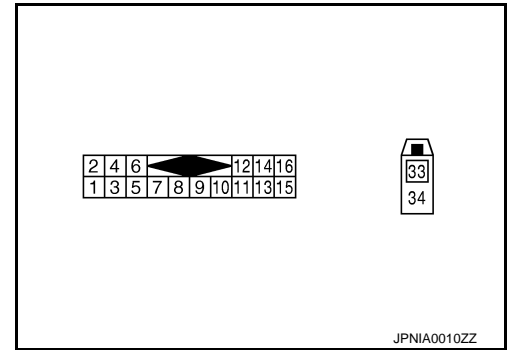
[BOSE AUDIO WITHOUT NAVIGATION]

## SATELLITE RADIO TUNER

Reference Value

INFOID:000000008162949

TERMINAL LAYOUT



PHYSICAL VALUES

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

[BOSE AUDIO WITHOUT NAVIGATION]

Terminal		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
10 (BR)	Ground	Communication signal (CONT→SAT)	Input	Ignition switch ON	When satellite radio mode is selected	
12 (SB)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
15 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
16 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
33	—	Satellite antenna	Input	—	—	—
34	—	Shield	—	—	—	—

# TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

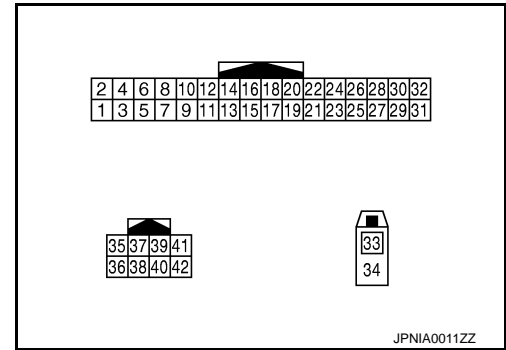
[BOSE AUDIO WITHOUT NAVIGATION]

## TEL ADAPTER UNIT

Reference Value

INFOID:000000008162950

TERMINAL LAYOUT



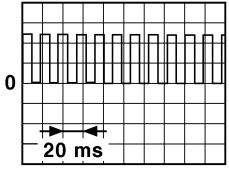
PHYSICAL VALUES

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 (BG)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
4 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
5	—	Shield	—	—	—	—
7 (R)	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>
22 (B)	Ground	Control signal	Input	Ignition switch ON	—	0 V
24 (B)	Ground	Control signal	Input	Ignition switch ON	—	0 V

# TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITHOUT NAVIGATION]


Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
28 (P)	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> The maximum voltage varies de- pending on the specification (destination unit).</p>  <p style="text-align: right; font-size: small;">JSNIA0012GB</p>
29 (G)	8	Microphone VCC	Output	Ignition switch ON	—	5.0 V
33	—	TEL antenna	Input	—	—	—
34	—	Shield	—	—	—	—
35 (L)	—	AV communication signal (H)	Input/ Output	—	—	—
36 (P)	—	AV communication signal (L)	Input/ Output	—	—	—

# WIRING DIAGRAM

## BOSE AUDIO WITHOUT NAVIGATION

### Wiring Diagram

INFOID:000000008162951

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

**NOTE:**

- A
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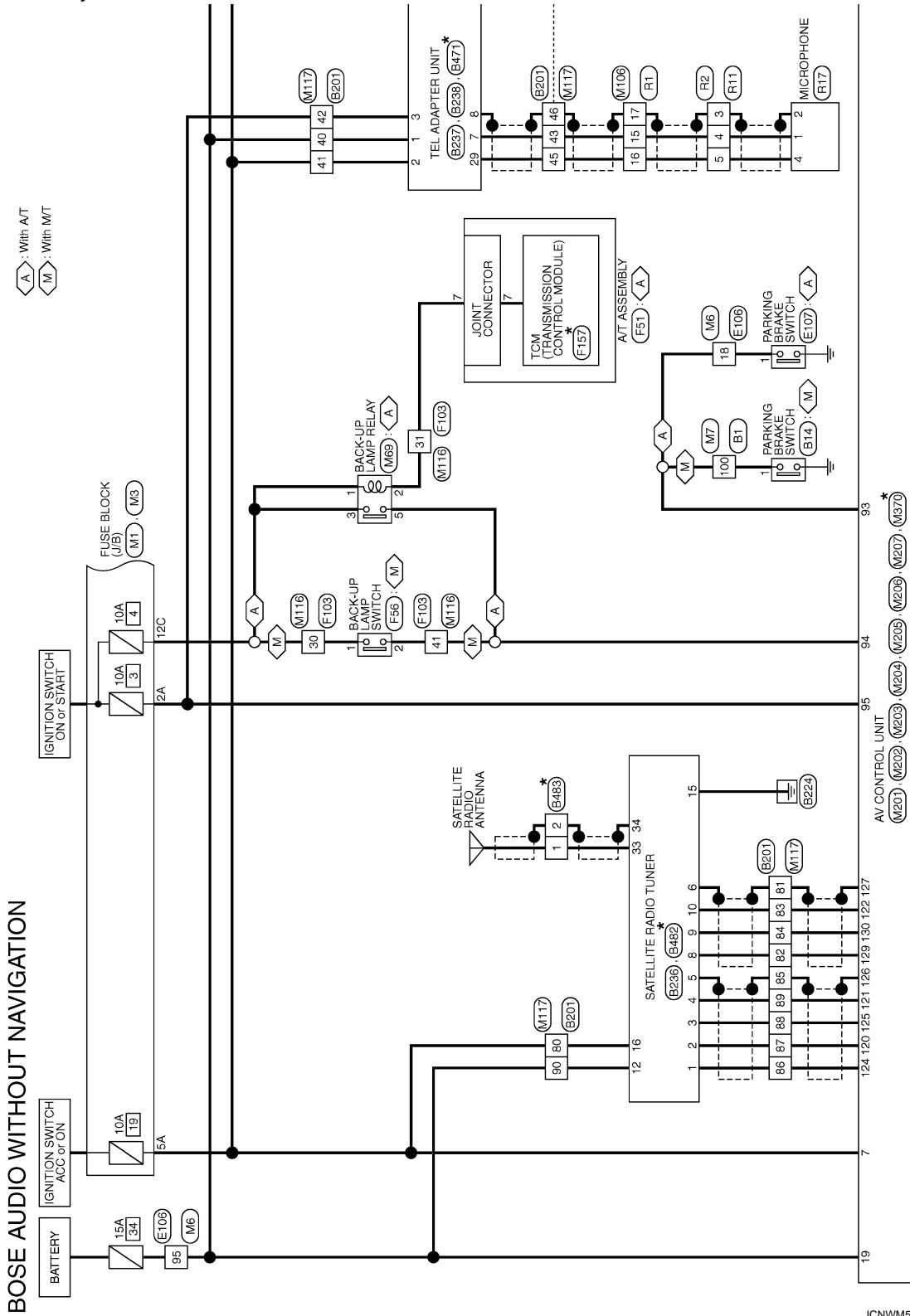
AV

# BOSE AUDIO WITHOUT NAVIGATION

[BOSE AUDIO WITHOUT NAVIGATION]

< WIRING DIAGRAM >

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

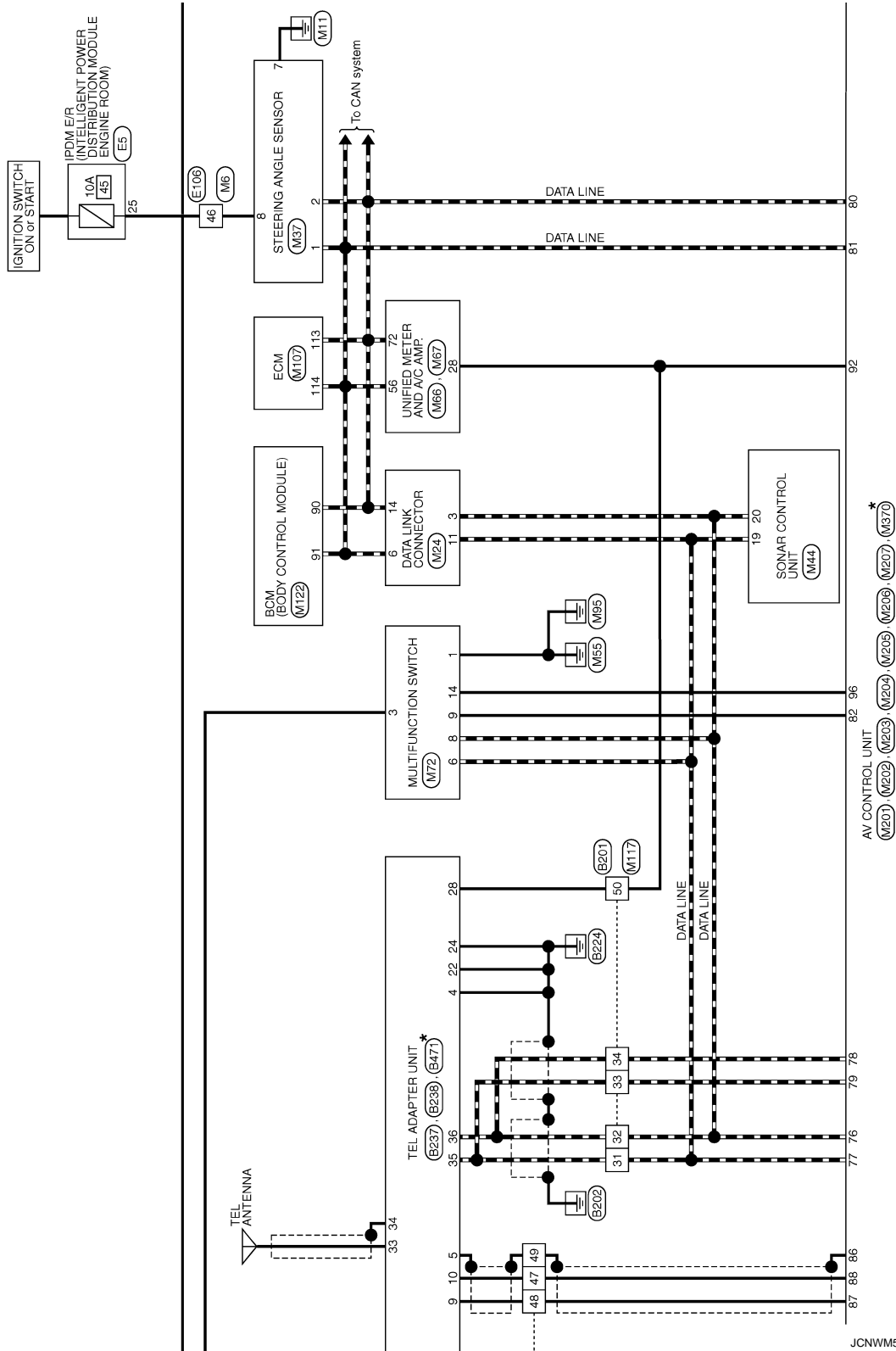




# BOSE AUDIO WITHOUT NAVIGATION

[BOSE AUDIO WITHOUT NAVIGATION]

< WIRING DIAGRAM >



JCNWM5483GB

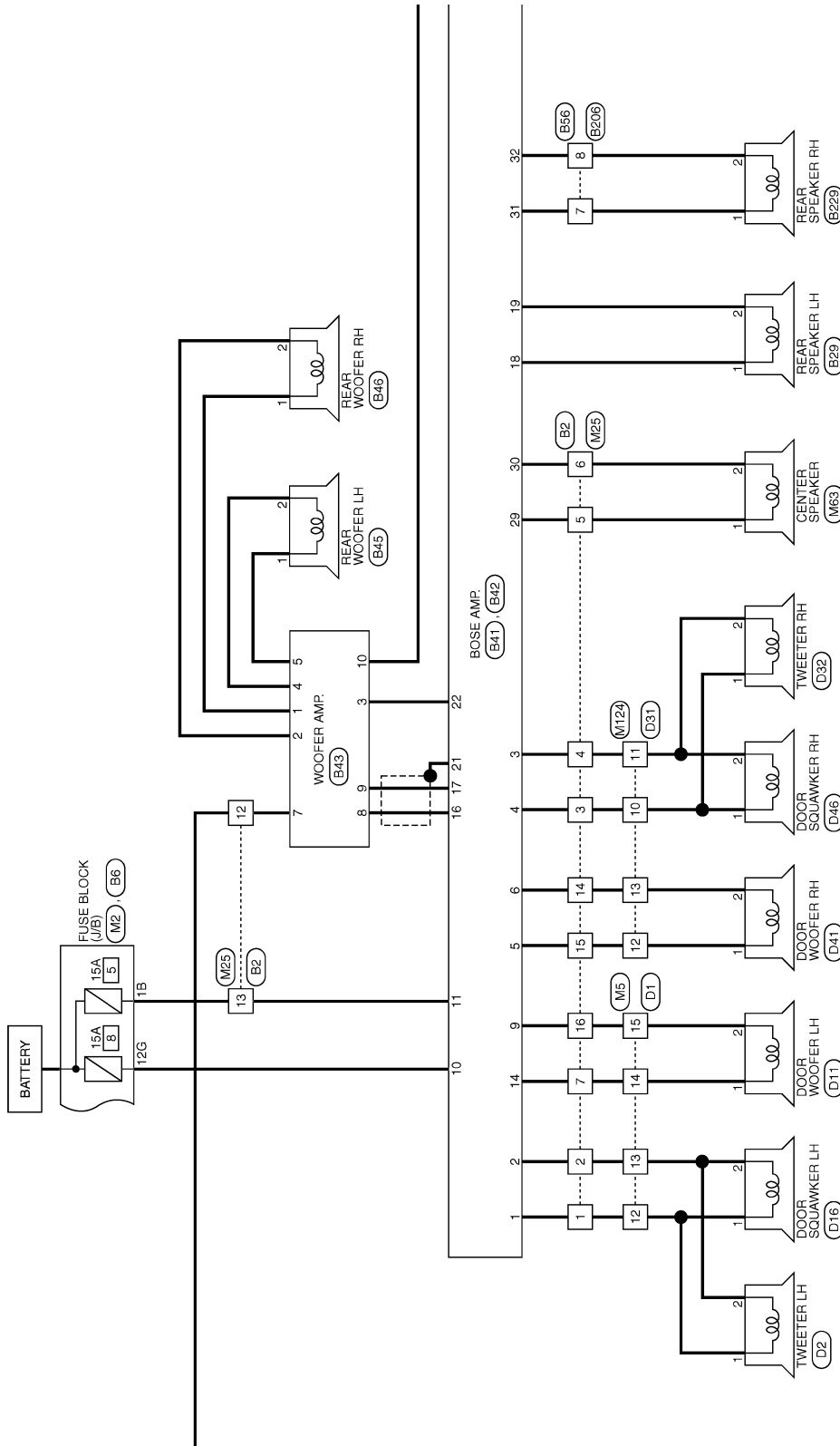
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# BOSE AUDIO WITHOUT NAVIGATION

## [BOSE AUDIO WITHOUT NAVIGATION]

< WIRING DIAGRAM >



JCNWM5484GB

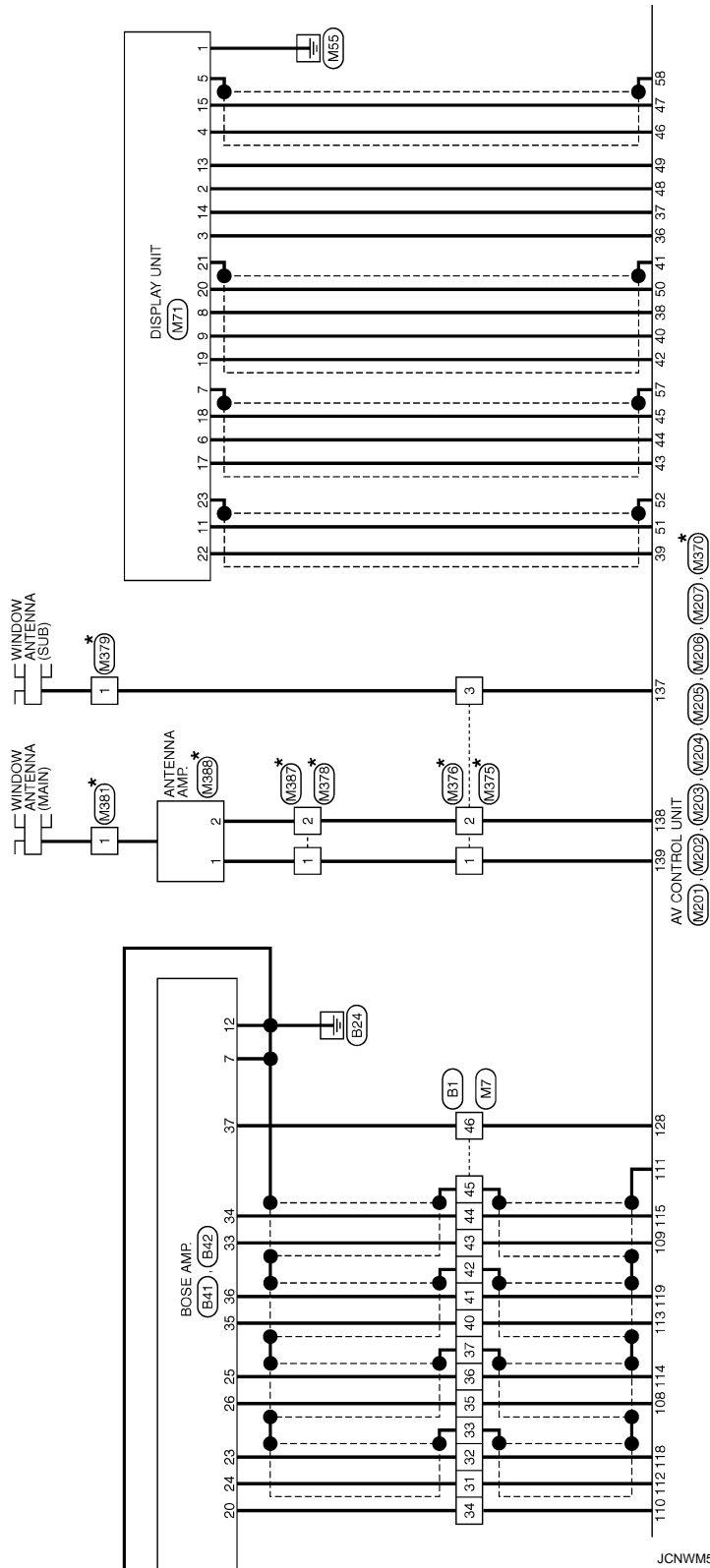
AV CONTROL UNIT  
 (M201) (M202) (M203) (M204) (M205) (M206) (M207) (M370) \*

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

# BOSE AUDIO WITHOUT NAVIGATION

## [BOSE AUDIO WITHOUT NAVIGATION]

< WIRING DIAGRAM >



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

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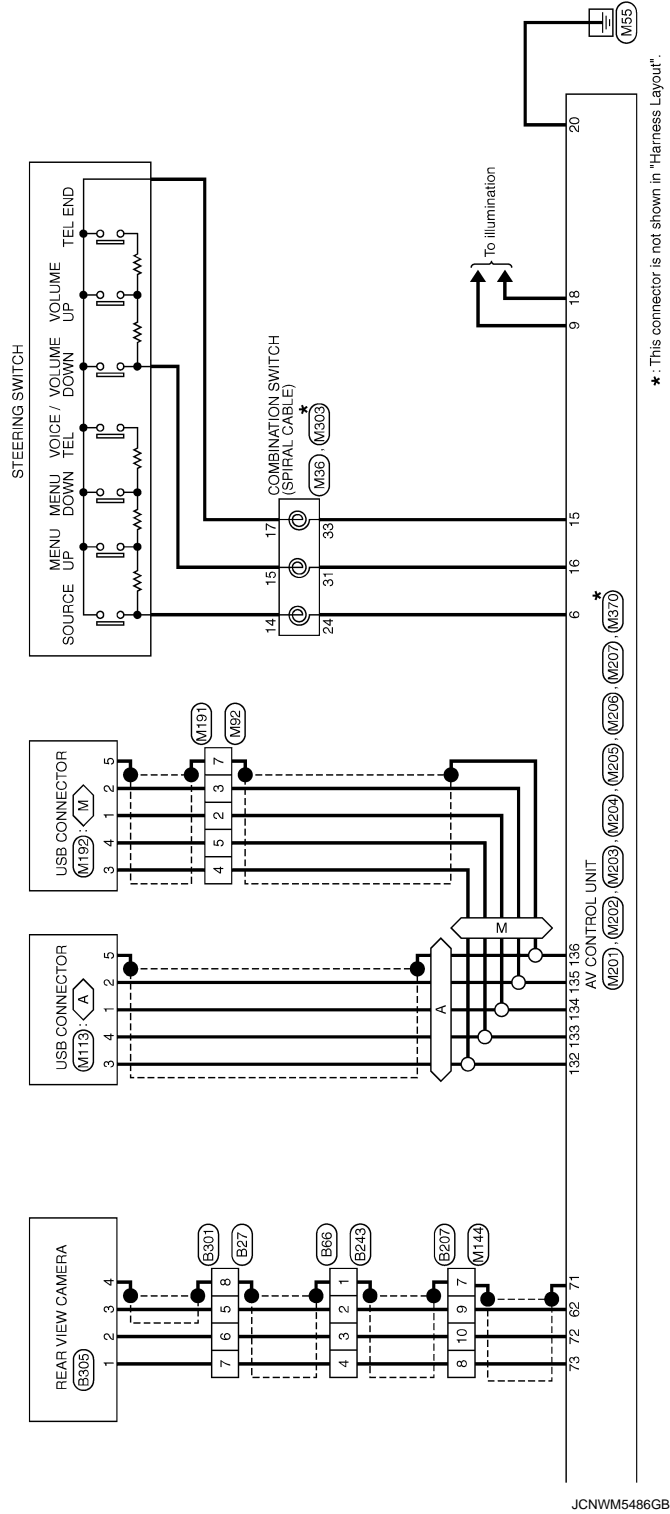
AV

# BOSE AUDIO WITHOUT NAVIGATION

## [BOSE AUDIO WITHOUT NAVIGATION]

< WIRING DIAGRAM >

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M : With M/T



JCNWM5486GB

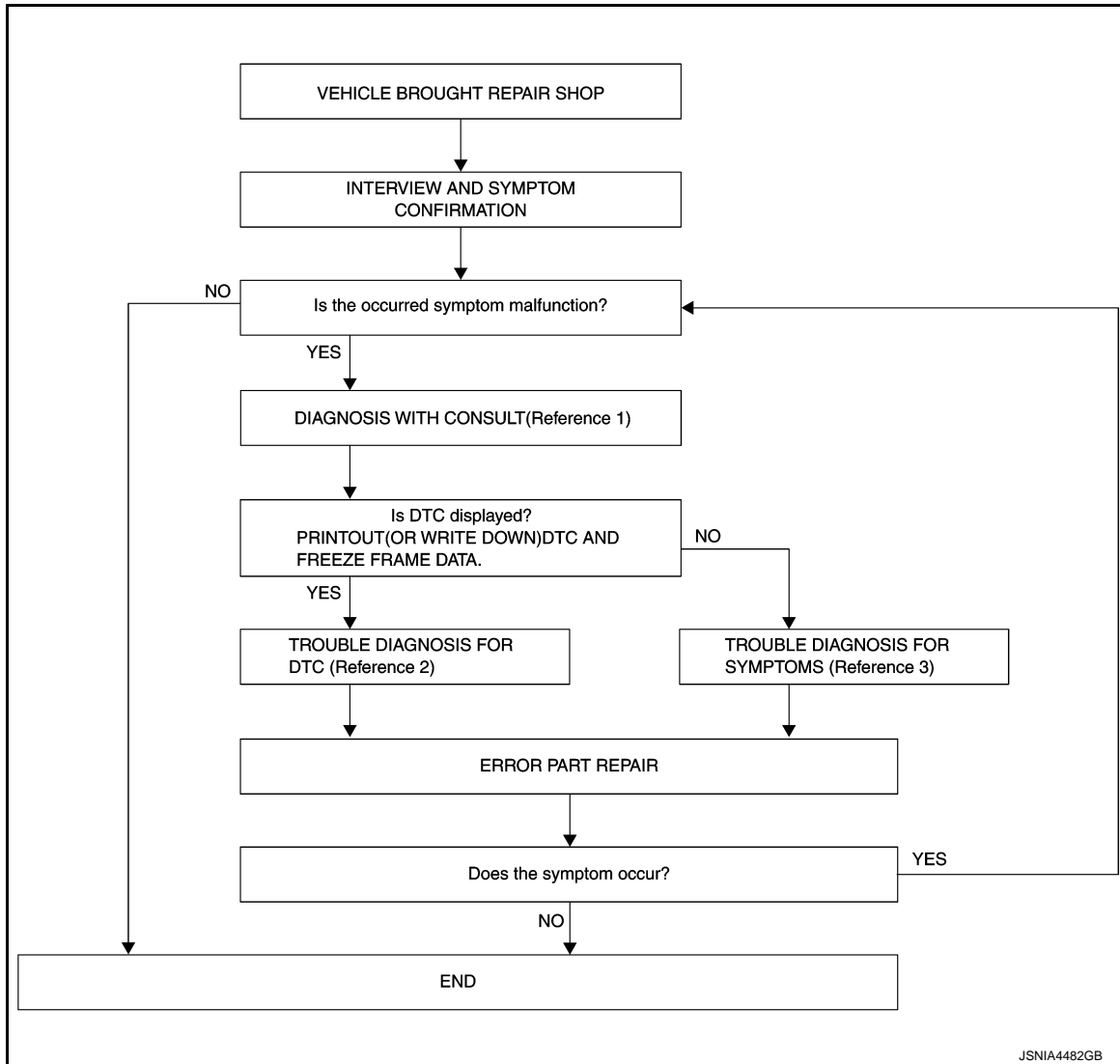
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000008162952

#### OVERALL SEQUENCE



- Reference 1... Refer to [AV-224. "CONSULT Function"](#).
- Reference 2... Refer to [AV-235. "DTC Index"](#).
- Reference 3... Refer to [AV-294. "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

[BOSE AUDIO WITHOUT NAVIGATION]

< BASIC INSPECTION >

1. Connect CONSULT and perform a self-diagnosis for "MULTI AV". Refer to [AV-224. "CONSULT Function"](#).

**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-235. "DTC Index"](#).

>> GO TO 5.

## 4. TROUBLE DIAGNOSIS FOR SYMPTOMS

---

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-294. "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

# ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT)

< BASIC INSPECTION >

[BOSE AUDIO WITHOUT NAVIGATION]

## ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT)

### Description

INFOID:000000008162953

#### BEFORE REPLACEMENT

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

#### 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.

### Work Procedure

INFOID:000000008273053

#### 1. SAVING VEHICLE SPECIFICATION

##### CONSULT Configuration

Perform “Before Replace ECU” to save or print current vehicle specification. Refer to [AV-256, "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-301, "Exploded View"](#).

>> GO TO 3.

#### 3. WRITING VEHICLE SPECIFICATION

##### CONSULT Configuration

Perform “After Replace ECU” or “Manual Configuration” to write vehicle specification. Refer to [AV-256, "Work Procedure"](#).

>> 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

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# CONFIGURATION (AV CONTROL UNIT)

< BASIC INSPECTION >

[BOSE AUDIO WITHOUT NAVIGATION]

## CONFIGURATION (AV CONTROL UNIT)

### Description

INFOID:000000008162955

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

### Work Procedure

INFOID:000000008162956

#### 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-256. "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 List

INFOID:000000008162957

##### 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.



# CONFIGURATION (AV CONTROL UNIT)

< BASIC INSPECTION >

[BOSE AUDIO WITHOUT NAVIGATION]

MANUAL SETTING ITEM		NOTE
Items	Setting value	
STEERING	LHD	—
	RHD	—
GRADE	MODE 1	SPORT premium grade with 4WAS
	MODE 3	SPORT premium grade without 4WAS
	MODE 2	Except for above
4WAS	WITHOUT	—
	WITH	—
SOUND SYSTEM	BASE	—
	BOSE	—

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AV

## DTC/CIRCUIT DIAGNOSIS

### U1000 CAN COMM CIRCUIT

#### Description

INFOID:000000008162958

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-25, "CAN Communication Signal Chart"](#).

#### DTC Logic

INFOID:000000008162959

#### 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:000000008162960

#### 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-16, "Trouble Diagnosis Procedure"](#).
- NO >> Refer to GI section. Refer to [GI-43, "Intermittent Incident"](#).

# U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## U1010 CONTROL UNIT (CAN)

### DTC Logic

INFOID:000000008162961

### 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. Refer to <a href="#">AV-301</a> , "Exploded View".

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AV

# U1200 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## U1200 AV CONTROL UNIT

### DTC Logic

INFOID:000000008162962

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. Refer to <a href="#">AV-301. "Exploded View"</a> .

# U1216 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## U1216 AV CONTROL UNIT

### DTC Logic

INFOID:000000008162963

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. Refer to <a href="#">AV-301, "Exploded View"</a> .

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# U1232 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## U1232 STEERING ANGLE SENSOR

### DTC Logic

INFOID:000000008162964

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:000000008162965

#### 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 DISPLAY UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## U1243 DISPLAY UNIT

### DTC Logic

INFOID:000000008162966

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1243	FRONT DISP CONN [U1243]	When either one of the following items is detected: <ul style="list-style-type: none"> <li>display unit power supply and ground circuit are malfunctioning.</li> <li>communication circuit between AV control unit and display unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>Display unit power supply and ground circuit.</li> <li>Communication circuit between AV control unit and display unit.</li> </ul>

### Diagnosis Procedure

INFOID:000000008162967

#### 1. CHECK DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check display unit power supply and ground circuit. Refer to [AV-269. "DISPLAY UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair malfunctioning parts.

#### 2. CHECK CONTINUITY COMMUNICATION CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M71	11	M202	51	Existed
	22		39	

- Check continuity between display unit harness connector and ground.

Display unit		Ground	Continuity
Connector	Terminals		
M71	11		Not existed
	22		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

#### 3. CHECK COMMUNICATION SIGNAL

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

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# U1243 DISPLAY UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M71	11	Ground	When adjusting display brightness.	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit. Refer to [AV-301. "Exploded View"](#).

## 4. CHECK COMMUNICATION SIGNAL

Check signal between display unit harness connector and ground.

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M71	22	Ground	When adjusting display brightness.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace display unit. Refer to [AV-303. "Exploded View"](#).



# U1255 SATELLITE RADIO TUNER

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## U1255 SATELLITE RADIO TUNER

### DTC Logic

INFOID:000000008162968

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

### Diagnosis Procedure

INFOID:000000008162969

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

Check satellite radio tuner power supply and ground circuit. Refer to [AV-271, "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

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and satellite radio tuner connector.
3. 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
	122		10	
	130		9	

4. Check continuity between AV control unit harness connector.

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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

#### 3. CHECK AV CONTROL UNIT VOLTAGE

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

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AV

# U1255 SATELLITE RADIO TUNER

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

(+)		(-)	Reference value (Approx.)
AV control unit			
Connector	Terminals		
M206	129	Ground	7.0 V
	130	Ground	7.0 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit. Refer to [AV-301, "Exploded View"](#).

## 4. CHECK SATELLITE RADIO TUNER VOLTAGE

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

(+)		(-)	Reference value (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. Refer to [AV-313, "Exploded View"](#).

# U1300 AV COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## U1300 AV COMM CIRCUIT

### Description

INFOID:000000008162970

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 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 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>AV communication circuits between AV control unit and sonar control unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>Sonar control unit power supply and ground circuits.</li> <li>AV communication circuits between AV control unit and sonar control unit.</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 U125C U1256	<ul style="list-style-type: none"> <li>AV COMM CIRCUIT [U1300]</li> <li>SWITCH CONN [U1240]</li> <li>SONAR CONN [U125C]</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 >

[BOSE AUDIO WITHOUT NAVIGATION]

## U1310 AV CONTROL UNIT

### DTC Logic

INFOID:000000008162971

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 AV control unit. If the malfunction occurs constantly. Refer to <a href="#">AV-301</a> . "Exploded View".

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## POWER SUPPLY AND GROUND CIRCUIT

### AV CONTROL UNIT

#### AV CONTROL UNIT : Diagnosis Procedure

INFOID:000000008162972

#### 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.

## DISPLAY UNIT

#### DISPLAY UNIT : Diagnosis Procedure

INFOID:000000008162973

#### 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	M71	2	ACC	9.0 V
Signal VCC		3		

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

#### 2.CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

1. Turn ignition switch OFF.
2. Disconnect the harness connector between display unit and AV control unit.
3. Check continuity between display unit harness connector M71 and AV control unit harness connector.

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# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

Signal name	Display unit (M71)	AV control unit (M202)	Continuity
Inverter VCC	2	48	Existed
Signal VCC	3	36	Existed

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

Signal name	Display unit (M71)	—	Continuity
Inverter VCC	2	Ground	Not existed
Signal VCC	3	Ground	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.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Inverter VCC	M202	48	ACC	9.0 V
Signal VCC		36		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replacement of AV control unit.

## 4.CHECK GROUND CIRCUIT

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M71	1	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

## BOSE AMP.

### BOSE AMP. : Diagnosis Procedure

INFOID:000000008162974

## 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	5, 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	10, 11	OFF	Battery voltage

# POWER SUPPLY AND GROUND CIRCUIT

[BOSE AUDIO WITHOUT NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

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	7, 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:000000008162975

#### 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 >> GO TO 3.
- NO >> Check harness between satellite radio tuner and fuse.

#### 3.CHECK GROUND CIRCUIT

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B236	15	OFF	Existed

Is the inspection result normal?

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

## TEL ADAPTER UNIT

### TEL ADAPTER UNIT : Diagnosis Procedure

INFOID:000000008162976

#### 1.CHECK FUSE

Check for blown fuses.

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AV

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

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 TEL adapter unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B237	1	OFF	Battery voltage
ACC power supply	B237	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	B237	4	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.



# RGB (R: RED) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## RGB (R: RED) SIGNAL CIRCUIT

### Description

INFOID:000000008162977

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

### Diagnosis Procedure

INFOID:000000008162978

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

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	17	M202	43	Existed

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

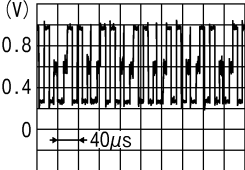
Display unit		Ground	Continuity
Connector	Terminal		
M71	17		Not existed

Is inspection result normal?

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

#### 2.CHECK RGB (R: RED) SIGNAL

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

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M71	17	Ground	Start confirmation/adjustment mode, and then display color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	 <p>(V)</p> <p>0.8</p> <p>0.4</p> <p>0</p> <p>40µs</p> <p>JSNIA1029ZZ</p>

Is inspection result normal?

- YES >> Replace display unit. Refer to [AV-303. "Exploded View"](#).  
 NO >> Replace AV control unit. Refer to [AV-301. "Exploded View"](#).

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# RGB (G: GREEN) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## RGB (G: GREEN) SIGNAL CIRCUIT

### Description

INFOID:000000008162979

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

### Diagnosis Procedure

INFOID:000000008162980

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

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	6	M202	44	Existed

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

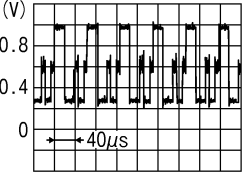
Display unit		Ground	Continuity
Connector	Terminal		
M71	6		Not existed

Is inspection result normal?

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

#### 2. CHECK RGB (G: GREEN) SIGNAL

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

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M71	6	Ground	Start confirmation/adjustment mode, and then display color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	 <p>JSNIA1030ZZ</p>

Is inspection result normal?

- YES >> Replace display unit. Refer to [AV-303. "Exploded View"](#).  
NO >> Replace AV control unit. Refer to [AV-301. "Exploded View"](#).

# RGB (B: BLUE) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## RGB (B: BLUE) SIGNAL CIRCUIT

### Description

INFOID:000000008162981

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

### Diagnosis Procedure

INFOID:000000008162982

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

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	18	M202	45	Existed

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

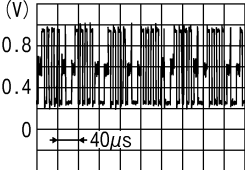
Display unit		Ground	Continuity
Connector	Terminal		
M71	18		Not existed

Is inspection result normal?

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

#### 2. CHECK RGB (B: BLUE) SIGNAL

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

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M71	18	Ground	Start confirmation/adjustment mode, and then display color bar by selecting "Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	 <p>(V)</p> <p>0.8</p> <p>0.4</p> <p>0</p> <p>← 40µs</p> <p>JSNIA1031ZZ</p>

Is inspection result normal?

- YES >> Replace display unit. Refer to [AV-303, "Exploded View"](#).  
 NO >> Replace AV control unit. Refer to [AV-301, "Exploded View"](#).

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# RGB SYNCHRONIZING SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## RGB SYNCHRONIZING SIGNAL CIRCUIT

### Description

INFOID:000000008162983

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

### Diagnosis Procedure

INFOID:000000008162984

#### 1. CHECK CONTINUITY RGB SYNCHRONIZING SIGNAL CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	19	M202	42	Existed

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

Display unit		Ground	Continuity
Connector	Terminal		
M71	19		Not existed

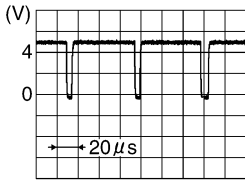
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK RGB SYNCHRONIZING SIGNAL

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

(+)		(-)	Reference value
Display unit			
Connector	Terminal		
M71	19	Ground	 SKIB3603E

Is the inspection result normal?

YES >> Replace display unit. Refer to [AV-303, "Exploded View"](#).

NO >> Replace AV control unit. Refer to [AV-301, "Exploded View"](#).

# RGB AREA (YS) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## RGB AREA (YS) SIGNAL CIRCUIT

### Description

INFOID:000000008162985

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

### Diagnosis Procedure

INFOID:000000008162986

#### 1. CHECK CONTINUITY RGB AREA (YS) SIGNAL CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	9	M202	40	Existed

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

Display unit		Ground	Continuity
Connector	Terminal		
M71	9		Not existed

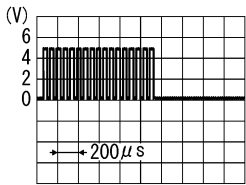
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

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

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

(+)		(-)	Condition	Reference value (Approx.)
Display unit				
Connector	Terminal			
M71	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 display unit. Refer to [AV-303, "Exploded View"](#).

NO >> Replace AV control unit. Refer to [AV-301, "Exploded View"](#).

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AV

# CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## CAMERA IMAGE SIGNAL CIRCUIT

### Description

INFOID:000000008162987

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

### Diagnosis Procedure

INFOID:000000008162988

#### 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	B305	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-301. "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	B305	3	Existed

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

# CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

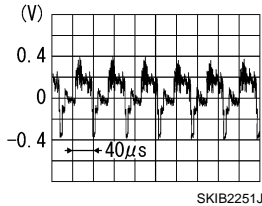
AV control unit		Ground	Continuity
Connector	Terminal		
M203	62		Not existed

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.

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

Is inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-301, "Exploded View"](#).
- NO >> Replace rear view camera. Refer to [AV-323, "Exploded View"](#).

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AV

# COMPOSITE IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## COMPOSITE IMAGE SIGNAL CIRCUIT

### Description

INFOID:000000008162989

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

### Diagnosis Procedure

INFOID:000000008162990

#### 1. CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

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

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M202	47	M71	15	Existed

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

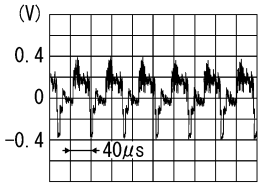
AV control unit		Ground	Continuity
Connector	Terminal		
M202	47		Not existed

Is the inspection result normal?

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

#### 2. CHECK COMPOSITE IMAGE SIGNAL

1. Connect AV control unit connector and 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 camera image is displayed.	 <p>(V)</p> <p>0.4</p> <p>0</p> <p>-0.4</p> <p>40µs</p> <p>SKIB2251J</p>

Is the inspection result normal?

- YES >> Replace display unit. Refer to [AV-303. "Exploded View"](#).  
NO >> Replace AV control unit. Refer to [AV-301. "Exploded View"](#).



# HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

### Description

INFOID:000000008162991

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

### Diagnosis Procedure

INFOID:000000008162992

#### 1. CHECK CONTINUITY HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	8	M202	38	Existed

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

Display unit		Ground	Continuity
Connector	Terminal		
M71	8		Not existed

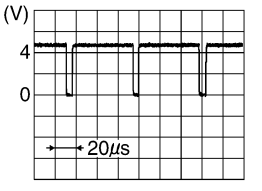
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

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

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

(+) Display unit		(-)	Reference value
Connector	Terminal		
M71	8	Ground	

Is the inspection result normal?

YES >> Replace AV control unit. Refer to [AV-301, "Exploded View"](#).

NO >> Replace display unit. Refer to [AV-303, "Exploded View"](#).

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# VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

### Description

INFOID:000000008162993

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

### Diagnosis Procedure

INFOID:000000008162994

#### 1. CHECK CONTINUITY VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M71	20	M202	50	Existed

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

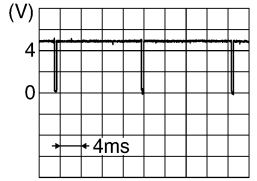
Display unit		Ground	Continuity
Connector	Terminal		
M71	20		Not existed

Is the inspection result normal?

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

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

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

(+)		(-)	Reference value
Display unit			
Connector	Terminal		
M71	20	Ground	

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-301, "Exploded View"](#).  
NO >> Replace display unit. Refer to [AV-303, "Exploded View"](#).

# DISK EJECT SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## DISK EJECT SIGNAL CIRCUIT

### Description

INFOID:000000008162995

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

### Diagnosis Procedure

INFOID:000000008162996

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

(+)		(-)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M204	96	Ground	Pressing the eject switch	0 V
			Except for above	3.3 V

Is the inspection result normal?

- YES >> Replace preset switch. Refer to [AV-316, "Exploded View"](#).  
NO >> Replace AV control unit. Refer to [AV-301, "Exploded View"](#).

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# MODE CHANGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## MODE CHANGE SIGNAL CIRCUIT

### Description

INFOID:000000008162997

- 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:000000008162998

#### 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.

AV control unit		BOSE amp.		Continuity
Connector	Terminal	Connector	Terminal	
M206	128	B41	37	Existed

4. Check continuity between BOSE amp. harness connector and ground.

BOSE amp.		Ground	Continuity
Connector	Terminal		
B41	37		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 and AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between BOSE amp. harness connector and ground.

(+) BOSE amp.		(-)	Condition	Voltage (Approx.)
Connector	Terminal			
B41	37	Ground	Driver's Audio Stage ON.	0 V
			Driver's Audio Stage OFF.	8.5 V

Is the inspection result normal?

YES >> Replace BOSE amp. Refer to [AV-310, "Exploded View"](#).

NO >> Replace AV control unit. Refer to [AV-301, "Exploded View"](#).

# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## MICROPHONE SIGNAL CIRCUIT

### Description

INFOID:000000008162999

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

### Diagnosis Procedure

INFOID:000000008163000

#### 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	
B237	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		
M237	7		Not existed
	29		

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2.CHECK VOLTAGE MICROPHONE VCC

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

(+)		(-)		Voltage (Approx.)
TEL adapter unit		TEL adapter unit		
Connector	Terminal	Connector	Terminal	
B237	29	B237	8	5.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace TEL adapter unit. Refer to [AV-320. "Exploded View"](#).

#### 3.CHECK MICROPHONE SIGNAL

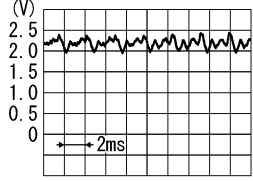
1. Connect microphone connector.
2. Check signal between TEL adapter unit harness connector.

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# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

(+)		(-)		Condition	Reference value
TEL adapter unit		TEL adapter unit			
Connector	Terminal	Connector	Terminal		
B237	7	B237	8	give a voice.	 <p style="text-align: right;">PKIB5037J</p>

Is the inspection result normal?

- YES >> Replace TEL adapter unit. Refer to [AV-320, "Exploded View"](#).
- NO >> Replace microphone. Refer to [AV-319, "Exploded View"](#).

# CONTROL SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## CONTROL SIGNAL CIRCUIT

### Description

INFOID:000000008163001

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

### Diagnosis Procedure

INFOID:000000008163002

#### 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		
B237	22		Existed
	24		

Is the inspection result normal?

- YES >> Replace TEL adapter unit. Refer to [AV-320, "Exploded View"](#).  
NO >> Repair harness or connector.

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# STEERING SWITCH SIGNAL A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## STEERING SWITCH SIGNAL A CIRCUIT

### Description

INFOID:000000008163003

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:000000008163004

#### 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-301, "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-288, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [ST-17, "Exploded View"](#).

### Component Inspection

INFOID:000000008163005

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



# STEERING SWITCH SIGNAL A CIRCUIT

[BOSE AUDIO WITHOUT NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

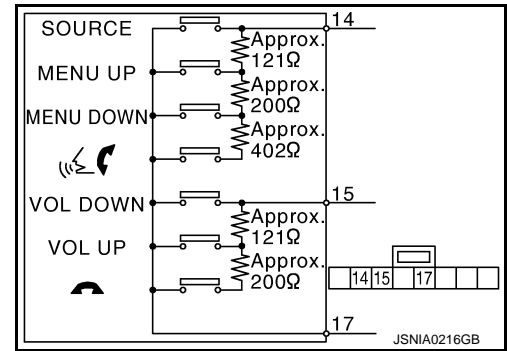
Standard

Between terminals 14 and 17

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



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# STEERING SWITCH SIGNAL B CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## STEERING SWITCH SIGNAL B CIRCUIT

### Description

INFOID:000000008163006

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:000000008163007

#### 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-301, "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-290, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [ST-17, "Exploded View"](#).

### Component Inspection

INFOID:000000008163008

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

# STEERING SWITCH SIGNAL B CIRCUIT

[BOSE AUDIO WITHOUT NAVIGATION]


< DTC/CIRCUIT DIAGNOSIS >

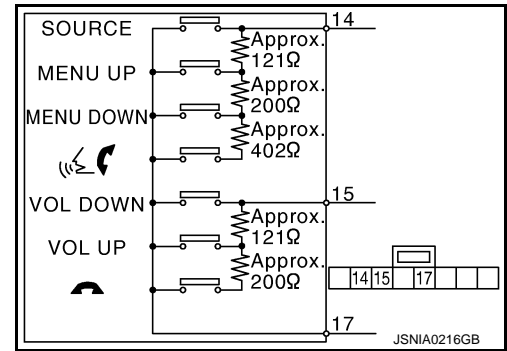
Standard

Between terminals 14 and 17

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



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# STEERING SWITCH GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## STEERING SWITCH GROUND CIRCUIT

### Description

INFOID:000000008163009

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:000000008163010

#### 1. CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

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

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

3. Connect AV control unit connector.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace spiral cable. Refer to [SR-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		Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit. Refer to [AV-301, "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-292, "Component Inspection"](#).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace steering switch. Refer to [ST-17, "Exploded View"](#).

### Component Inspection

INFOID:000000008163011

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

# STEERING SWITCH GROUND CIRCUIT

[BOSE AUDIO WITHOUT NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

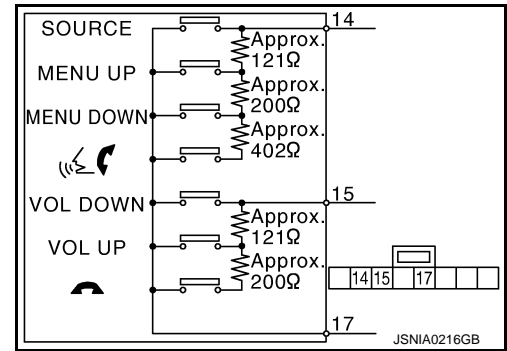
Standard

Between terminals 14 and 17

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



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# MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## SYMPTOM DIAGNOSIS

### MULTI AV SYSTEM SYMPTOMS

#### Symptom Table

INFOID:000000008163012

#### OPERATION

Symptoms	Check items	Possible malfunction location / Action to take
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 "Self diagnosis Result" of "MULTI AV" with CONSULT. Refer to <a href="#">AV-224, "CONSULT Function"</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-269, "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-215, "On Board Diagnosis Function"</a> .
Fuel economy display, vehicle setting operation is abnormal.	There is malfunction in the CONSULT self-diagnosis result. Refer to <a href="#">AV-224, "CONSULT Function"</a> .	Perform detected DTC diagnosis. Refer to <a href="#">AV-235, "DTC Index"</a> .
	There is no malfunction in the self-diagnosis results. Refer to <a href="#">AV-224, "CONSULT Function"</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):
 

Perform diagnosis as per the following table.

# MULTI AV SYSTEM SYMPTOMS

[BOSE AUDIO WITHOUT NAVIGATION]

< SYMPTOM DIAGNOSIS >

Symptoms	Check items	Probable malfunction location	
Does not recognize cellular phone connection. (No connection is displayed on the display at the guide.)	Repeat the registration of cellular phone.	TEL adapter unit malfunction. Refer to <a href="#">AV-320, "Exploded View"</a> .	A
Hands-free phone cannot be established.	Both the reception and the speech cannot be performed	<ul style="list-style-type: none"> <li>Perform "Self diagnosis Result" of "MULTI AV" with CONSULT. Refer to <a href="#">AV-224, "CONSULT Function"</a>.</li> <li>No malfunction. TEL adapter unit malfunction. Refer to <a href="#">AV-320, "Exploded View"</a>.</li> <li>Malfunction is detected. Perform detected DTC diagnosis. Refer to <a href="#">AV-235, "DTC Index"</a>.</li> </ul>	B C
The other party's voice cannot be heard by hands-free phone.	The operation of the "☞" switch can be performed.	TEL voice signal circuit malfunction between TEL adapter unit and AV control unit.	D
	The operation of the "☞" switch cannot be performed.	Control signal circuit. Refer to <a href="#">AV-287, "Diagnosis Procedure"</a> .	E F
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	TEL adapter unit. Refer to <a href="#">AV-320, "Exploded View"</a> .	G
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to <a href="#">AV-285, "Diagnosis Procedure"</a> .	H
The system cannot be operated.	"SOURCE", "MENU UP", and "MENU DOWN" switches are operated. But "☞" switch is not operated.	<ul style="list-style-type: none"> <li>Check steering switch. Refer to <a href="#">AV-288, "Component Inspection"</a>.</li> <li>Malfunction is detected. Replace steering switch. Refer to <a href="#">ST-17, "Exploded View"</a>.</li> </ul>	I
	"SOURCE", "MENU UP", "MENU DOWN" and "☞" switches are not operated.	Steering switch signal A circuit malfunction. Refer to <a href="#">AV-288, "Diagnosis Procedure"</a> .	J
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to <a href="#">AV-292, "Diagnosis Procedure"</a> .	K

## RELATED TO RGB IMAGE

Symptoms	Check items	Possible malfunction location / Action to take	
RGB image is not shown.	There is malfunction in the CONSULT self-diagnosis result. Refer to <a href="#">AV-224, "CONSULT Function"</a> .	Perform detected DTC diagnosis. Refer to <a href="#">AV-235, "DTC Index"</a> .	L
	There is no malfunction in CONSULT self-diagnosis results. Refer to <a href="#">AV-224, "CONSULT Function"</a> .	Vertical synchronizing (VP) signal circuit. Refer to <a href="#">AV-282, "Diagnosis Procedure"</a> .	M
Color of RGB image is not proper.	Light blue (Cyan) tint.	RGB signal (R: red) circuit. Refer to <a href="#">AV-273, "Diagnosis Procedure"</a> .	AV
	Purple (Magenta) tint.	RGB signal (G: green) circuit. Refer to <a href="#">AV-274, "Diagnosis Procedure"</a> .	
	Screen looks yellowish.	RGB signal (B: blue) circuit. Refer to <a href="#">AV-275, "Diagnosis Procedure"</a> .	O
RGB screen is rolling.	—	RGB synchronizing signal circuit. Refer to <a href="#">AV-276, "Diagnosis Procedure"</a> .	P

## RELATED TO AUDIO

# MULTI AV SYSTEM SYMPTOMS

[BOSE AUDIO WITHOUT NAVIGATION]

< SYMPTOM DIAGNOSIS >

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to <a href="#">AV-283, "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-270, "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 (center, front right, front left, rear right, or rear left) 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>
Noise is mixed with audio.	Noise comes out from all speaker.	<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 (center, front right, front left, rear right, or rear left).	<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).	Poor connector connection of antenna or antenna feeder.
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> </ul>
Satellite radio is not received.	There is malfunction in the CONSULT self-diagnosis result. Refer to <a href="#">AV-224, "CONSULT Function"</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-235, "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-224, "CONSULT Function"</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-314, "Exploded View"</a>.</li> </ul>

## 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.



# MULTI AV SYSTEM SYMPTOMS

[BOSE AUDIO WITHOUT NAVIGATION]

< SYMPTOM DIAGNOSIS >

## 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-292, "Diagnosis Procedure"</a> .
Only specified switch cannot be operated.	<ul style="list-style-type: none"> <li>Check steering switch. Refer to <a href="#">AV-288, "Component Inspection"</a>.</li> <li>Malfunction is detected. Replace steering switch. Refer to <a href="#">ST-17, "Exploded View"</a>.</li> </ul>
"SOURCE", "MENU UP", "MENU DOWN" and "⏪ ⏩" switches are not operated.	Steering switch signal A circuit. Refer to <a href="#">AV-288, "Diagnosis Procedure"</a> .
"VOL UP", "VOL DOWN" and "⏮ ⏭" switches are not operated.	Steering switch signal B circuit. Refer to <a href="#">AV-290, "Diagnosis Procedure"</a> .

## RELATED TO CAMERA

### Trouble Diagnosis Chart by Symptom

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-278, "Diagnosis Procedure"</a>.</li> <li>Composite image signal circuit. Refer to <a href="#">AV-280, "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-301, "Exploded View"</a> .

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# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITHOUT NAVIGATION]

## NORMAL OPERATING CONDITION

### Description

INFOID:000000008163013

### 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.
The system consistently selects the wrong voicetag	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".
	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the "List Names" command.
	2. Replace one of the names being confused with a new name.

### RELATED TO AUDIO

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

#### NOTE:

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA, AAC, 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

[BOSE AUDIO WITHOUT NAVIGATION]

< SYMPTOM DIAGNOSIS >

Symptom	Cause and Counter measure	A
Cannot play	Check if the CD was inserted correctly.	A
	Check if the CD is scratched or dirty.	B
	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.	C
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.	D
	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.	E
	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.	F
	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.	G
	Check if the finalization process, such as session close and disc close, is done for the disc.	H
	Check if the CD is protected by copyright.	I
Discs recorded in live file system format are not supported. (For Microsoft Windows Vista, check the settings.)	J	
Poor sound quality	Check if the CD is scratched or dirty.	K
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.	L
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.	M
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.	N
Move immediately to the next song when playing	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.	O
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.	P
Poor reception only from a certain radio broadcast station.	Check incoming radio wave signal strength of applicable broadcast station.	Q
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.	R

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

**[BOSE AUDIO WITHOUT NAVIGATION]**

< SYMPTOM DIAGNOSIS >

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> <p><b>NOTE:</b></p> <p>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.</p>
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.

# AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## REMOVAL AND INSTALLATION

### AV CONTROL UNIT

#### Exploded View

INFOID:000000008163014

#### CAUTION:

- Before replacing AV control unit, perform "Read/Write Configuration" to save or print current vehicle specification. For details, refer to [AV-255, "Description"](#).
- Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF.

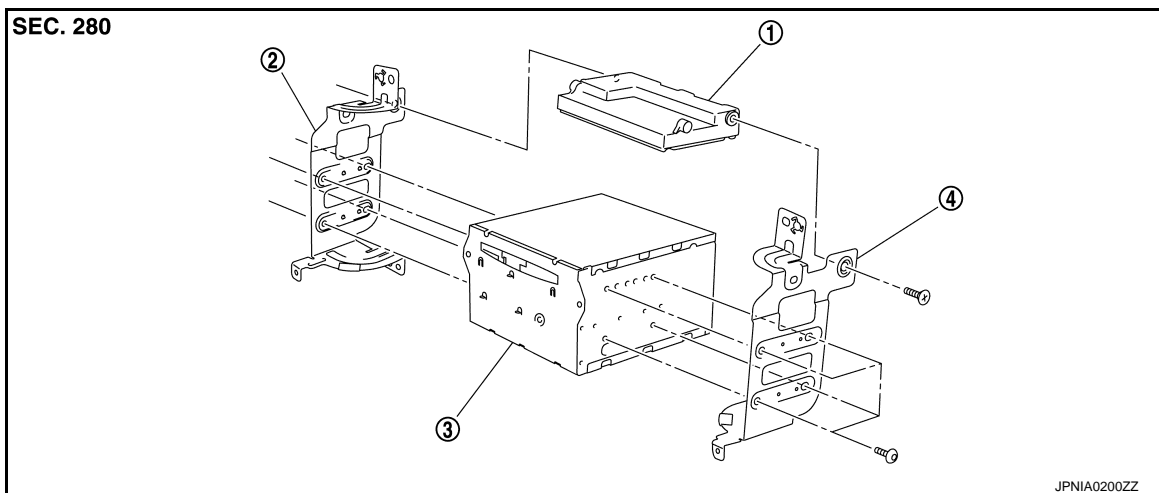
#### NOTE:

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.

#### REMOVAL

Refer to [IP-12, "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23, "M/T MODELS : Exploded View"](#) (M/T models).

#### DISASSEMBLY



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

#### Removal and Installation

INFOID:000000008163015

#### REMOVAL

#### CAUTION:

- Before replacing AV control unit, perform "Read/Write Configuration" to save or print current vehicle specification. For details, refer to [AV-255, "Work Procedure"](#).
- 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.

1. Remove display unit. Refer to [AV-303, "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

Install in 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.

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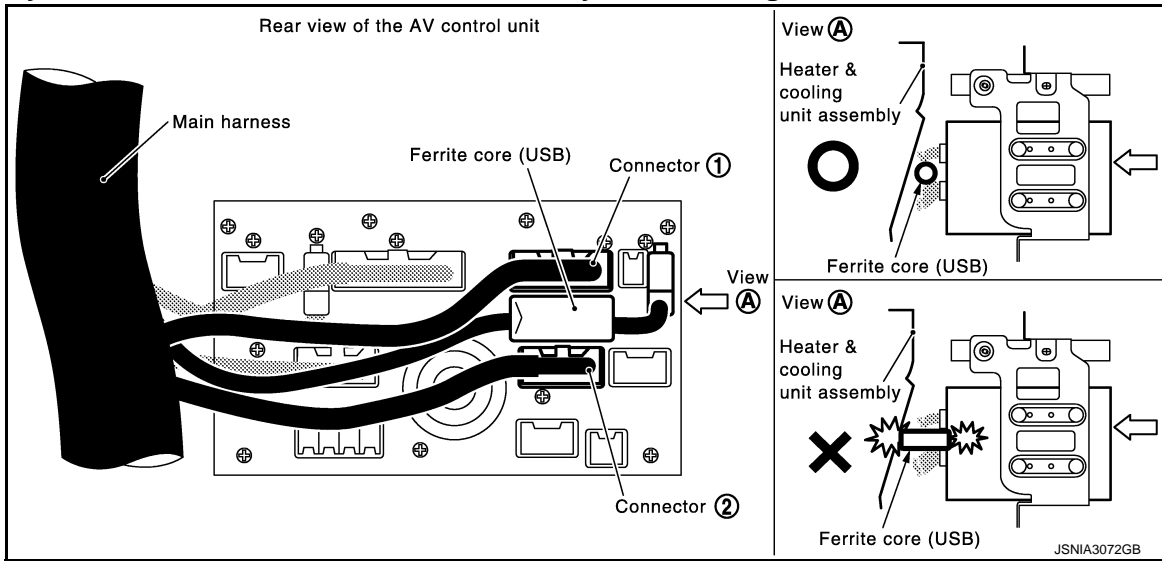
AV

# AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

- Be sure to perform "Read/Write Configuration" when replacing AV control unit. For details, refer to [AV-256, "Work Procedure"](#).
- Install AV control unit between connector (1) and connector (2) with the ferrite core (USB) orientated sideways to the vehicle. Incorrect installation may cause damage to the AV control unit.



# DISPLAY UNIT

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## DISPLAY UNIT

### Exploded View

INFOID:000000008163016

Refer to [IP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23. "M/T MODELS : Exploded View"](#) (M/T models).

### Removal and Installation

INFOID:000000008163017

#### REMOVAL

1. Remove cluster lid D. Refer to [IP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23. "M/T MODELS : Exploded View"](#) (M/T models).
2. Remove display unit with bracket as a single unit.

#### INSTALLATION

Install in the reverse order of removal.

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# DOOR SQUAWKER

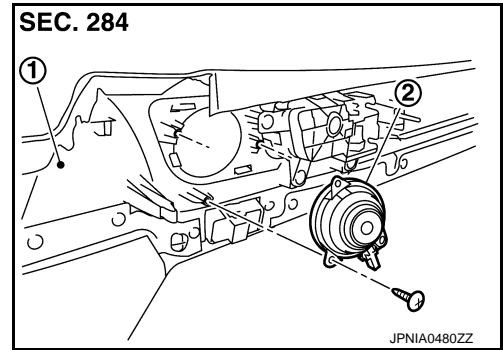
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## DOOR SQUAWKER

### Exploded View

INFOID:000000008163018



1. Door finisher
2. Door squawker

### Removal and Installation

INFOID:000000008163019

#### REMOVAL

1. Remove door finisher. Refer to [INT-12, "Exploded View"](#).
2. Remove door squawker from door finisher.

#### INSTALLATION

Install in the reverse order of removal.



# DOOR WOOFER

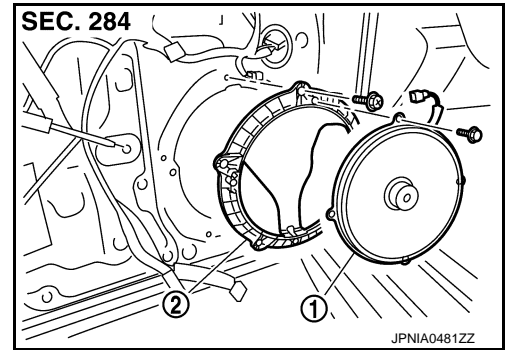
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## DOOR WOOFER

### Exploded View

INFOID:000000008163020



1. Door woofer
2. Woofer bracket

### Removal and Installation

INFOID:000000008163021

#### REMOVAL

1. Remove door finisher. Refer to [INT-12. "Exploded View"](#).
2. Remove door woofer from woofer bracket.

#### INSTALLATION

Install in the reverse order of removal.

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## REAR SPEAKER

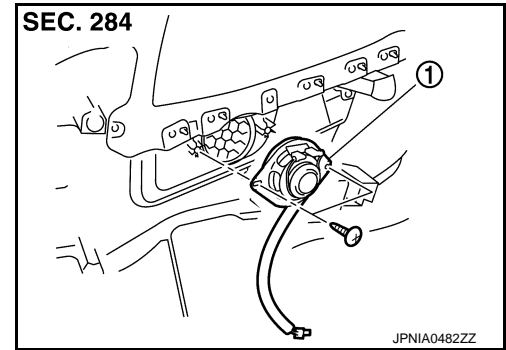
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

### REAR SPEAKER

#### Exploded View

INFOID:000000008163022



1. Rear speaker

#### Removal and Installation

INFOID:000000008163023

##### REMOVAL

1. Remove rear side finisher. Refer to [JNT-15. "Exploded View"](#).
2. Remove rear speaker from rear side finisher.

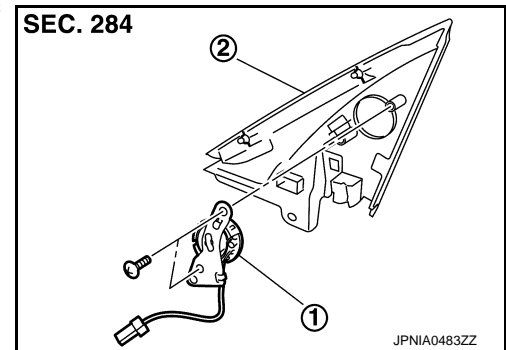
##### INSTALLATION

Install in the reverse order of removal.

## TWEETER

## Exploded View

INFOID:000000008163024



1. Tweeter
2. Corner cover

## Removal and Installation

INFOID:000000008163025

## REMOVAL

1. Remove corner cover. Refer to [MIR-35. "DOOR MIRROR ASSEMBLY : Exploded View"](#).
2. Remove tweeter from corner cover.

## INSTALLATION

Install in the reverse order of removal.

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## CENTER SPEAKER

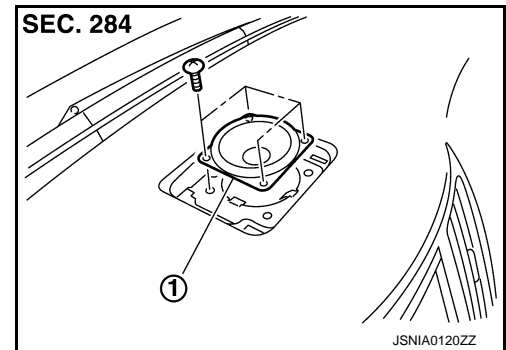
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

### CENTER SPEAKER

#### Exploded View

INFOID:000000008163026



1. Center speaker

#### Removal and Installation

INFOID:000000008163027

##### REMOVAL

1. Remove upper grille, and then remove center speaker. Refer to [IP-12, "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23, "M/T MODELS : Exploded View"](#) (M/T models).

##### INSTALLATION

Install in the reverse order of removal.

# REAR WOOFER

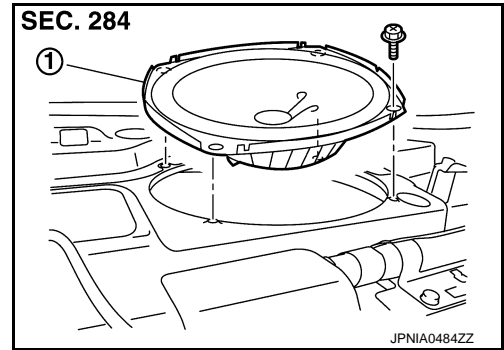
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## REAR WOOFER

### Exploded View

INFOID:000000008163028



1. Rear woofer

### Removal and Installation

INFOID:000000008163029

#### REMOVAL

1. Remove rear parcel shelf finisher. Refer to [JNT-19, "Exploded View"](#).
2. Remove rear woofer from rear parcel shelf.

#### INSTALLATION

Install in the reverse order of removal.

A  
B  
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# BOSE AMP.

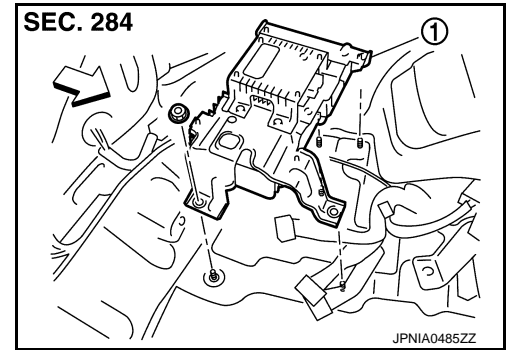
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## BOSE AMP.

### Exploded View

INFOID:000000008163030



1. BOSE amp.

←: Vehicle front

### Removal and Installation

INFOID:000000008163031

#### REMOVAL

1. Remove trunk floor spacer LH. Refer to [INT-29. "Exploded View"](#).
2. Remove BOSE amp. from trunk room LH.

#### INSTALLATION

Install in the reverse order of removal.

# WOOFER AMP.

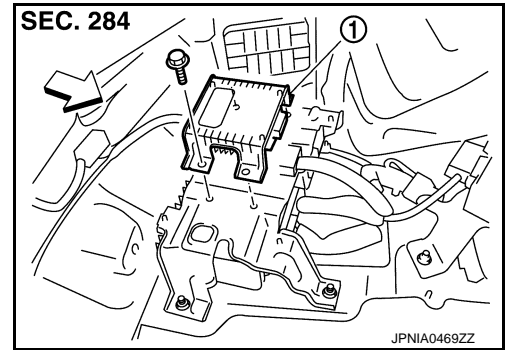
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## WOOFER AMP.

### Exploded View

INFOID:000000008163032



1. Woofer amp.

←: Vehicle front

### Removal and Installation

INFOID:000000008163033

#### REMOVAL

1. Remove trunk floor spacer LH. Refer to [INT-29, "Exploded View"](#).
2. Remove Woofer amp. from BOSE amp.

#### INSTALLATION

Install in the reverse order of removal.

A  
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## ANTENNA AMP.

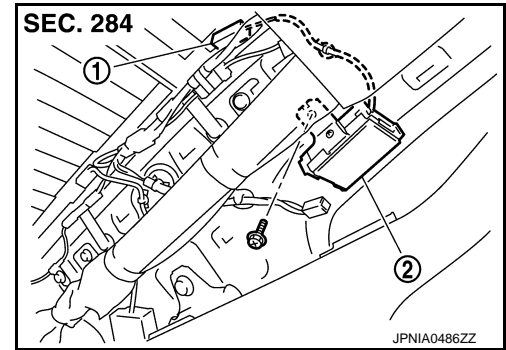
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

### ANTENNA AMP.

#### Exploded View

INFOID:000000008163034



1. AM-FM main connector
2. Antenna amp.

#### Removal and Installation

INFOID:000000008163035

##### REMOVAL

1. Remove back pillar garnish LH. Refer to [INT-15. "Exploded View"](#).
2. Remove antenna amp. from rear pillar LH.

##### INSTALLATION

Install in the reverse order of removal.



# SATELLITE RADIO TUNER

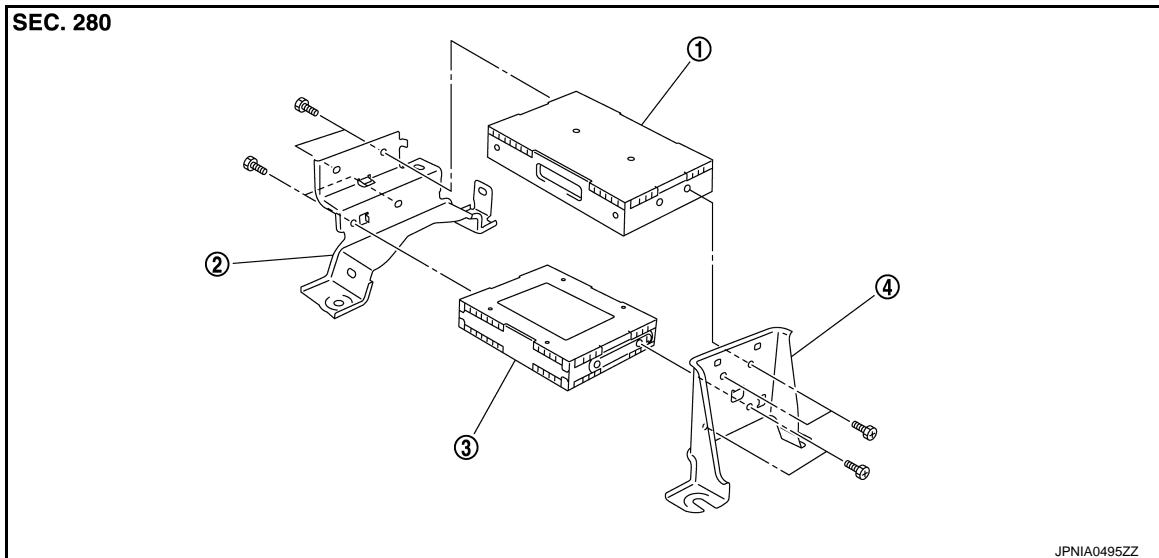
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## SATELLITE RADIO TUNER

### Exploded View

INFOID:000000008163036



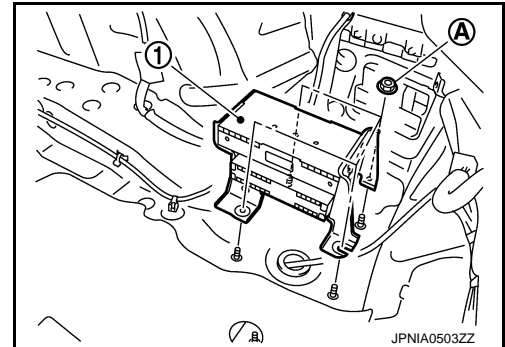
1. TEL adapter unit
2. Bracket (front)
3. Satellite radio tuner
4. Bracket (rear)

### Removal and Installation

INFOID:000000008163037

#### REMOVAL

1. Remove trunk floor spacer RH. Refer to [INT-29, "Exploded View"](#).
2. Remove nuts (A) from the trunk room RH, and remove TEL adapter unit and satellite radio tuner (1) from trunk room side.



#### INSTALLATION

Install in the reverse order of removal.

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# SATELLITE RADIO ANTENNA

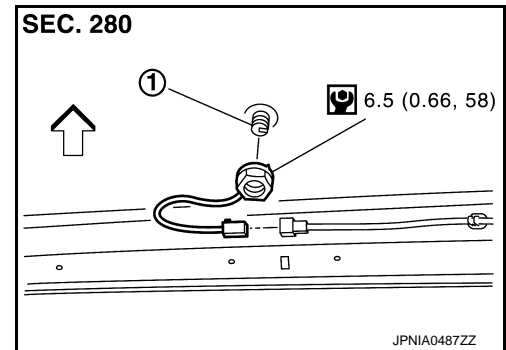
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## SATELLITE RADIO ANTENNA

### Exploded View

INFOID:000000008163038



1. Satellite radio antenna

⇐: Vehicle front

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

### Removal and Installation

INFOID:000000008163039

#### REMOVAL

1. Remove headlining assembly (rear) to secure work space between vehicle and headlining. Refer to [INT-23, "NORMAL ROOF : Exploded View"](#) [with normal roof] or [INT-26, "SUNROOF : Exploded View"](#) [with sunroof].
2. Remove nut, and then remove satellite radio antenna from roof panel.

#### INSTALLATION

Install in the reverse order of removal.

**Satellite radio antenna mounting nut** : 6.5 N·m (0.66 kg-m, 58 in-lb)

#### CAUTION:

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

# MULTIFUNCTION SWITCH

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## MULTIFUNCTION SWITCH

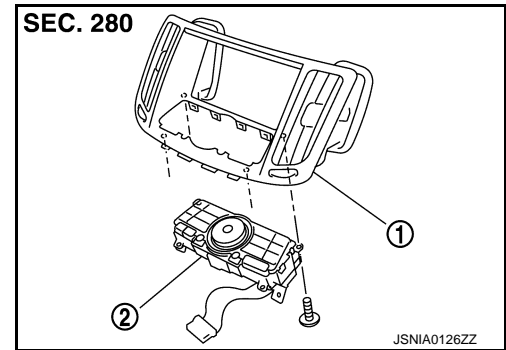
### Exploded View

INFOID:000000008163040

#### REMOVAL

Refer to [IP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23. "M/T MODELS : Exploded View"](#) (M/T models).

#### DISASSEMBLY



1. Center ventilator grille
2. Multifunction switch

### Removal and Installation

INFOID:000000008163041

#### REMOVAL

1. Remove cluster lid D. Refer to [IP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23. "M/T MODELS : Exploded View"](#) (M/T models).
2. Remove multifunction switch mounting screws.
3. Remove multifunction switch from center ventilator.

#### INSTALLATION

Install in the reverse order of removal.

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AV

# PRESET SWITCH

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## PRESET SWITCH

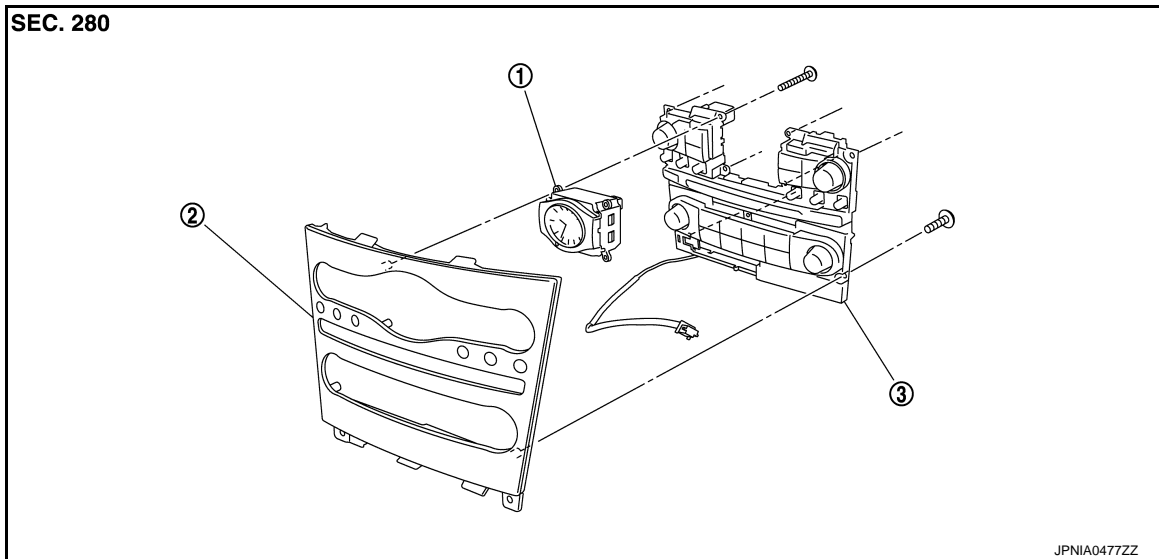
### Exploded View

INFOID:000000008163042

#### REMOVAL

Refer to [IP-12, "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23, "M/T MODELS : Exploded View"](#) (M/T models).

#### DISASSEMBLY



1. Clock

2. Cluster lid C

3. Preset switch

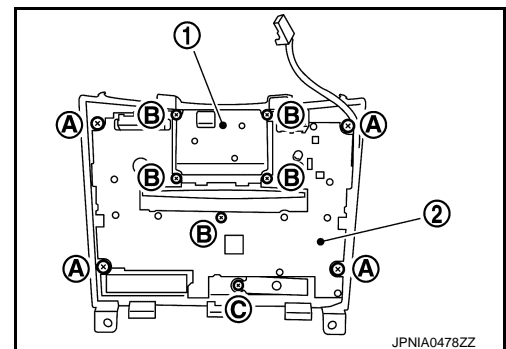
### Removal and Installation

INFOID:000000008163043

#### REMOVAL

1. Remove cluster lid C. Refer to [IP-12, "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23, "M/T MODELS : Exploded View"](#) (M/T models).
2. Remove preset switch screws (A), (B), and (C), and then remove preset switch (2) from cluster lid C.

1. Clock



#### INSTALLATION

Install in 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.

# STEERING SWITCH

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## STEERING SWITCH

### Exploded View

INFOID:000000008163044

Refer to [ST-17, "Exploded View"](#).

### Removal and Installation

INFOID:000000008163045

#### REMOVAL

Refer to [ST-17, "Removal and Installation"](#).

#### INSTALLATION

Install in the reverse order of removal.

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# USB CONNECTOR

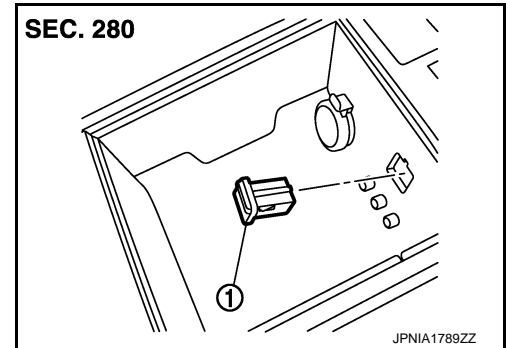
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## USB CONNECTOR

### Exploded View

INFOID:000000008163046



1. USB connector

### Removal and Installation

INFOID:000000008163047

#### REMOVAL

1. Remove center console. Refer to [IP-35. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-40. "M/T MODELS : Exploded View"](#) (M/T models).
2. Push the pawl from the back of center console to remove USB connector.

#### INSTALLATION

Install in the reverse order of removal.

# MICROPHONE

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## MICROPHONE

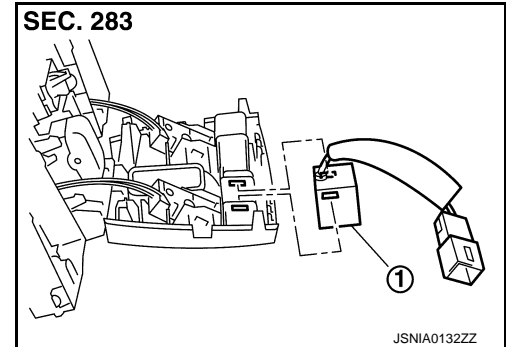
### Exploded View

INFOID:000000008163048

### REMOVAL

Refer to [INL-70, "Exploded View"](#).

### DISASSEMBLY



1. Microphone

### Removal and Installation

INFOID:000000008163049

### REMOVAL

1. Remove map lamp. Refer to [INL-70, "Exploded View"](#).
2. Remove microphone from map lamp.

### INSTALLATION

Install in the reverse order of removal.

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AV

# TEL ADAPTER UNIT

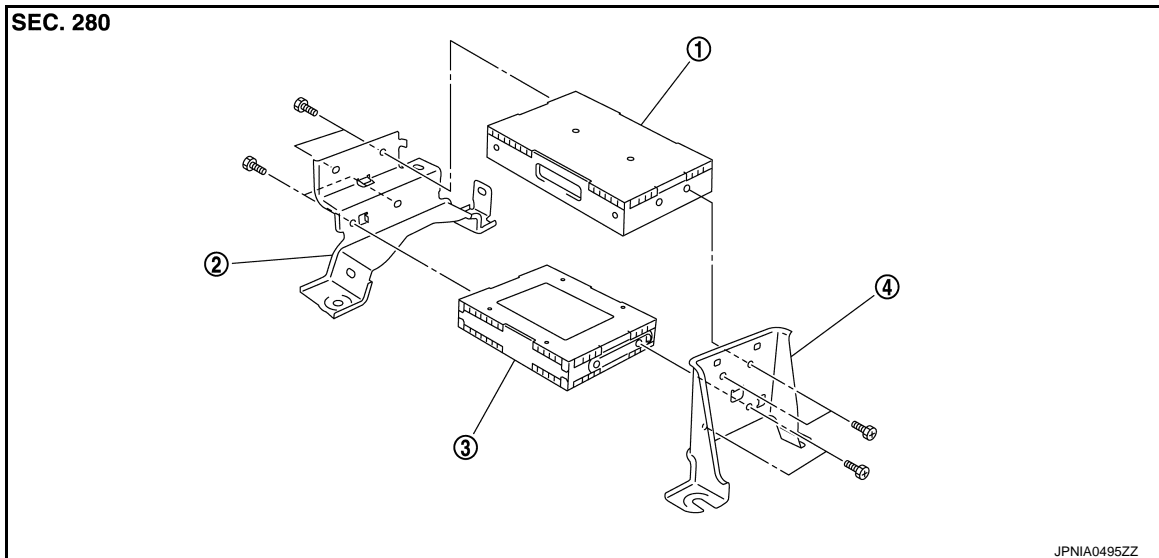
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## TEL ADAPTER UNIT

Exploded View

INFOID:000000008163050



1. TEL adapter unit

2. Bracket (front)

3. Satellite radio tuner

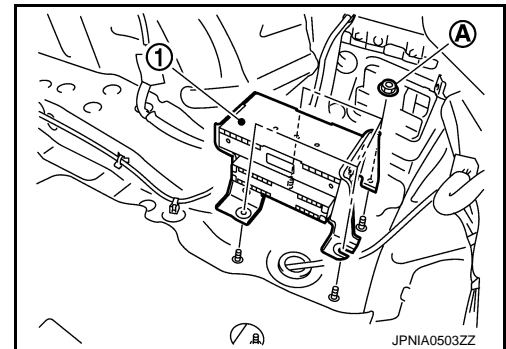
4. Bracket (rear)

## Removal and Installation

INFOID:000000008163051

### REMOVAL

1. Remove trunk floor spacer RH. Refer to [INT-29, "Exploded View"](#).
2. Remove nuts (A) from the trunk room RH, and remove TEL adapter unit and satellite radio tuner (1) from trunk room side.



### INSTALLATION

Install in the reverse order of removal.



## TEL ANTENNA

### Removal and Installation

INFOID:000000008163052

#### REMOVAL

1. Remove wheel house finisher RH, trunk floor spacer RH and trunk front finisher upper. Refer to [INT-29. "Exploded View"](#).
2. Remove rear parcel shelf finisher. Refer to [INT-19. "Exploded View"](#).
3. Remove rear side finisher RH. Refer to [INT-15. "Exploded View"](#).
4. Remove TEL antenna from vehicle.

#### INSTALLATION

Install in the reverse order of removal.

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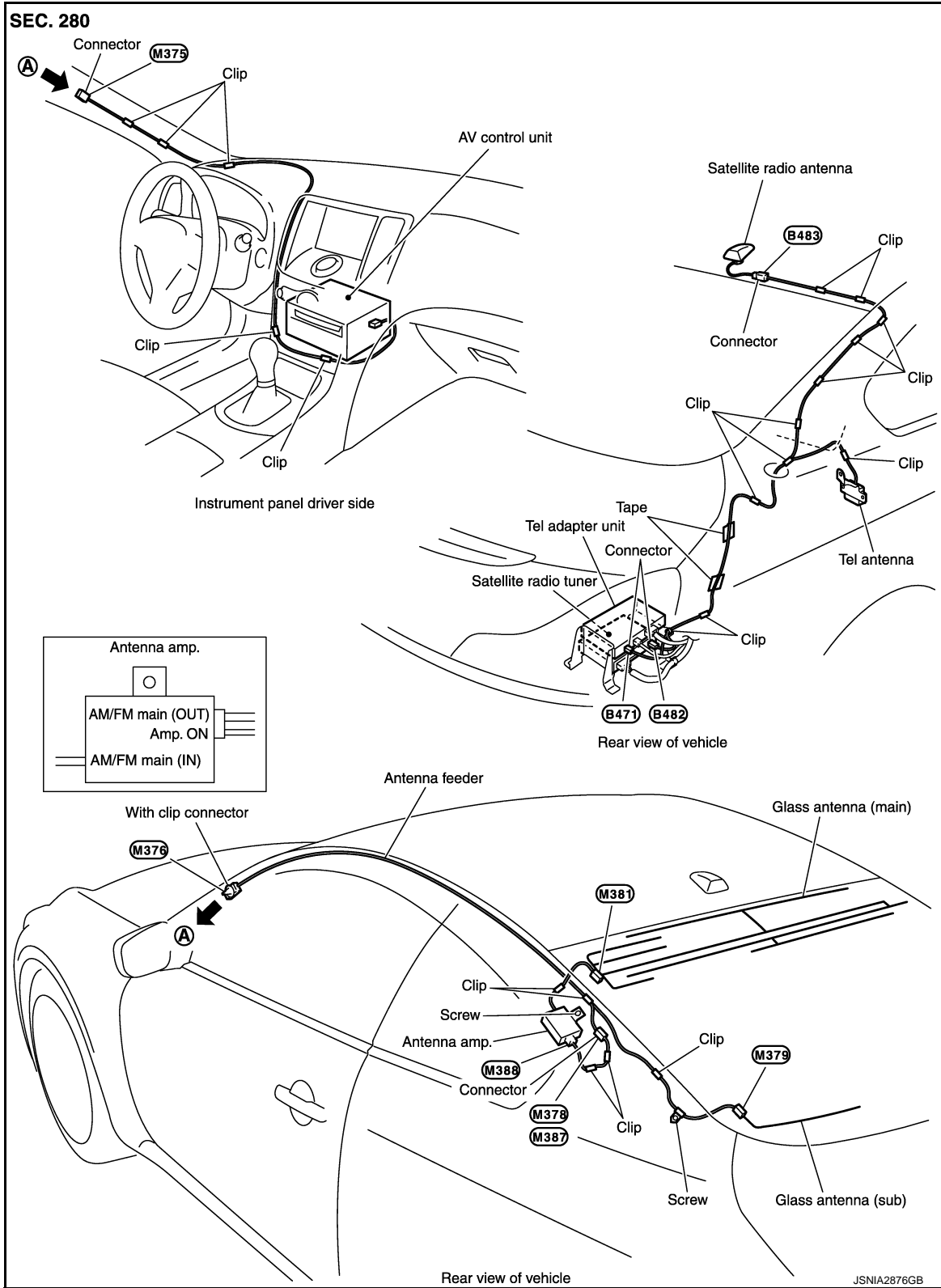
# TEL ANTENNA

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## Feeder Layout

INFOID:000000008163053



# REAR VIEW CAMERA

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## REAR VIEW CAMERA

### Exploded View

INFOID:000000008163054

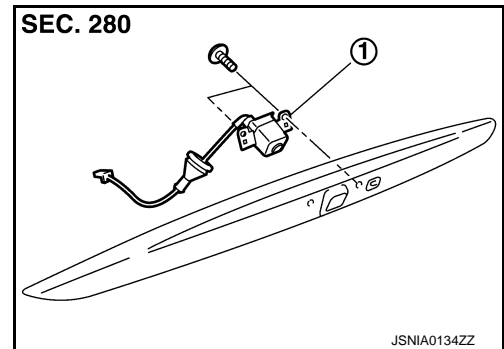
#### REMOVAL (WITHOUT REAR SPOILER)

Refer to [EXT-39, "TRUNK LID OUTER FINISHER : Exploded View"](#).

#### REMOVAL (WITH REAR SPOILER)

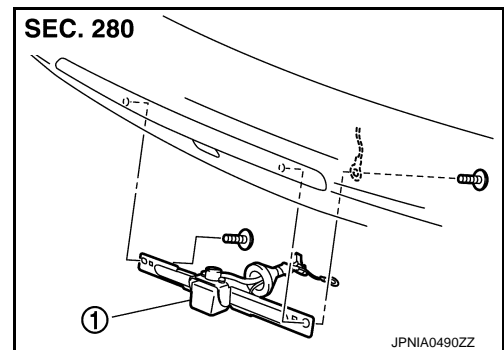
Refer to [EXT-43, "Exploded View"](#).

#### DISASSEMBLY (WITHOUT REAR SPOILER)



1. Rear view camera

#### DISASSEMBLY (WITH REAR SPOILER)



1. Rear view camera

## Removal and Installation

INFOID:000000008163055

### REMOVAL

#### Without rear spoiler

1. Remove trunk lid finisher outer. Refer to [EXT-39, "TRUNK LID OUTER FINISHER : Exploded View"](#).
2. Remove rear view camera from trunk lid finisher outer.

#### With rear spoiler

1. Remove rear spoiler. Refer to [EXT-43, "Exploded View"](#).
2. Remove rear view camera from rear spoiler.

### INSTALLATION

Install in the reverse order of removal.

#### NOTE:

Adjust the guide line position if the guide line position is shifted after installing the rear view camera. Refer to [AV-323, "Adjustment"](#).

### Adjustment

INFOID:000000008163056

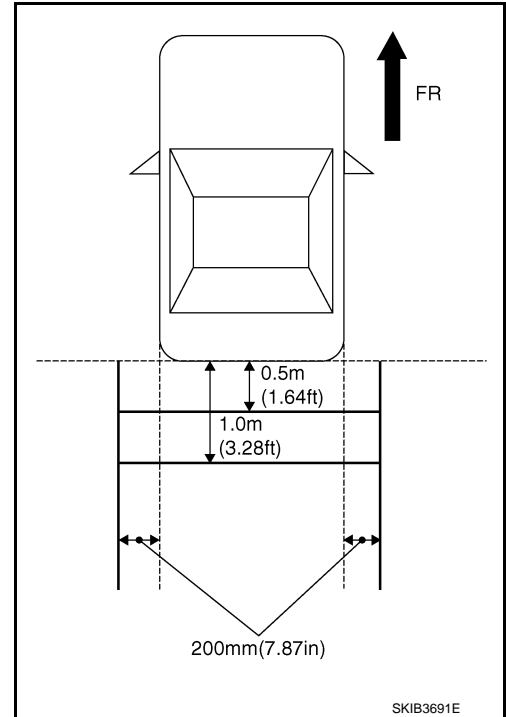
Adjust the guide line position if the guide line position is shifted after installing the rear view camera.

# REAR VIEW CAMERA

[BOSE AUDIO WITHOUT NAVIGATION]

## < REMOVAL AND INSTALLATION >

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 Guide Lines" mode of "Confirmation/Adjustment" mode.



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

**Selected pattern : 7**

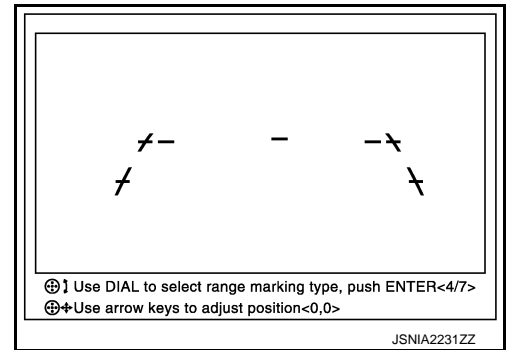
4. Make fine adjustment to the correction line of the rear of the vehicle with up/down/left/right switches so that its position is aligned with the guiding line. Press "OK" switch and record the adjusted guiding line position to the AV control unit.

**Up/Down adjustment range : 20° to 20°**

**Left/Right adjustment range : 20° to 20°**

### CAUTION:

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



# SONAR CONTROL UNIT

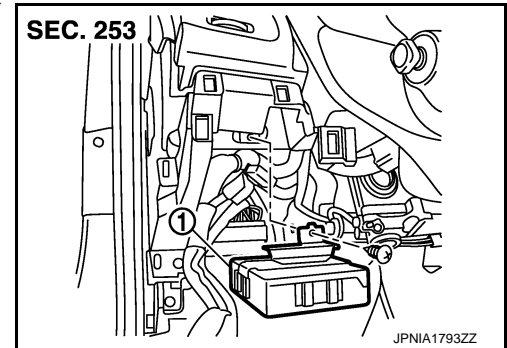
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## SONAR CONTROL UNIT

### Exploded View

INFOID:000000008163057



1. Sonar control unit

### Removal and Installation

INFOID:000000008163058

#### REMOVAL

1. Remove the instrument finisher A. Refer to [JP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [JP-23. "M/T MODELS : Exploded View"](#) (M/T models).
2. Remove sonar control unit screw, then disconnect sonar control unit connector and remove the sonar control unit.

#### INSTALLATION

Install in the reverse order of removal.

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AV

# STEERING ANGLE SENSOR

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## STEERING ANGLE SENSOR

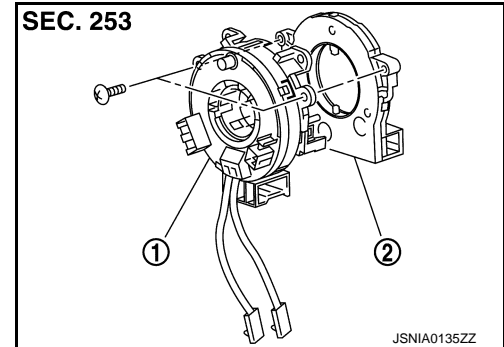
### Exploded View

INFOID:000000008163059

#### REMOVAL

Refer to [SR-14, "Exploded View"](#).

#### DISASSEMBLY



1. Spiral cable
2. Steering angle sensor

### Removal and Installation

INFOID:000000008163060

#### REMOVAL

1. Remove spiral cable.
2. Remove steering angle sensor from spiral cable.

#### INSTALLATION

1. Install in the reverse order of removal.
2. Perform 4WAS front actuator adjustment. Refer to [AV-326, "Adjustment"](#).

### Adjustment

INFOID:000000008163061

Perform 4WAS front actuator adjustment. Refer to [STC-25, "4WAS FRONT ACTUATOR NEUTRAL POSITION ADJUSTMENT : Description"](#).

# ANTENNA FEEDER

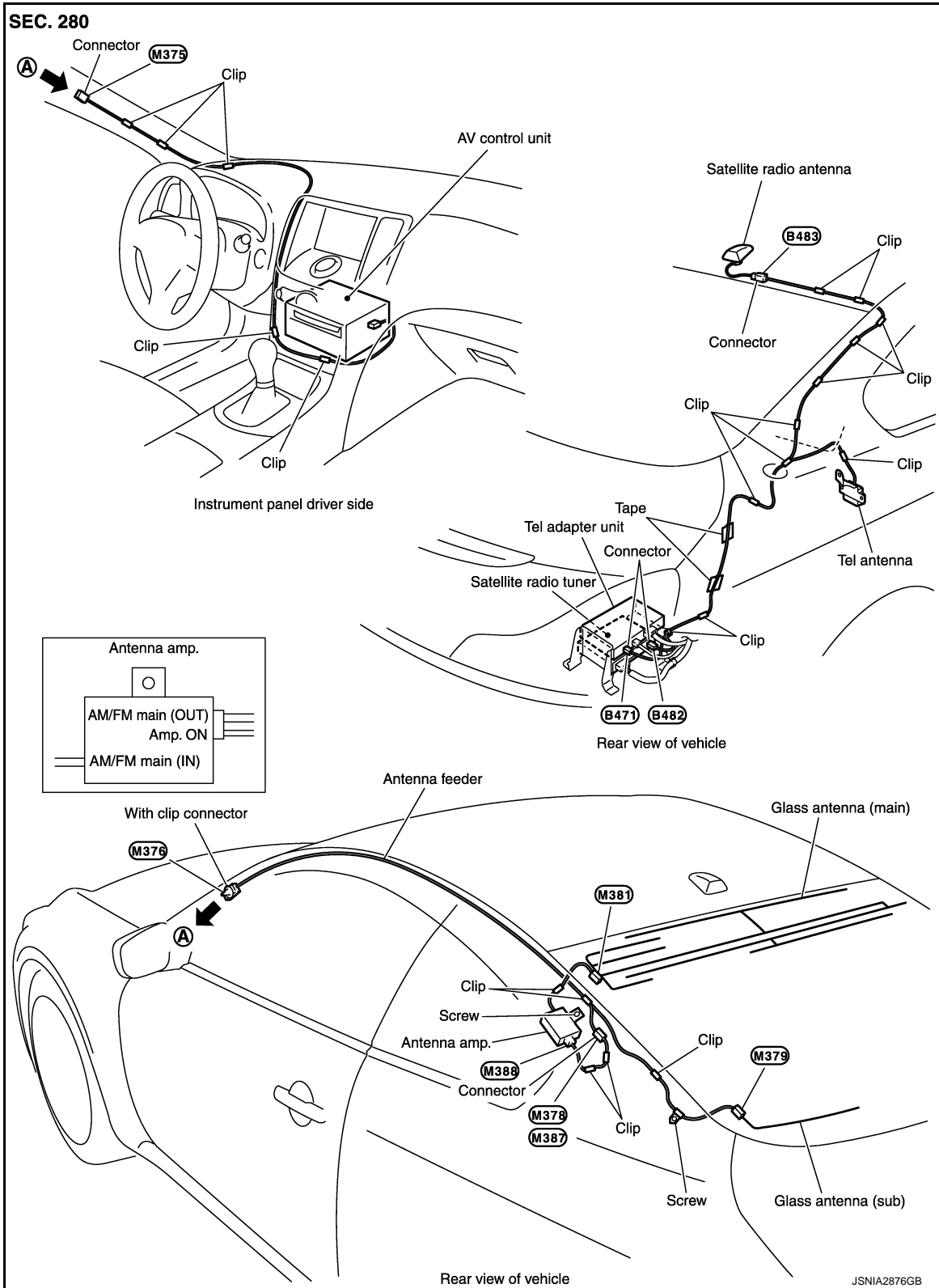
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITHOUT NAVIGATION]

## ANTENNA FEEDER

### Feeder Layout

INFOID:000000008163062



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## PRECAUTION

### PRECAUTIONS

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

INFOID:000000008163063

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 Battery Service

INFOID:000000008163064

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

#### Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit)

INFOID:000000008163065

**CAUTION:**

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.

#### Precaution for Trouble Diagnosis

INFOID:000000008163066

#### 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.



# PRECAUTIONS

< PRECAUTION >

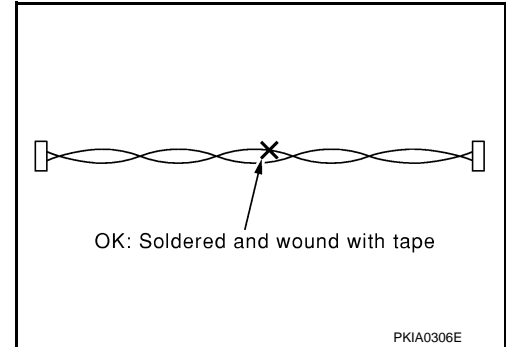
[BOSE AUDIO WITH NAVIGATION]

## Precaution for Harness Repair

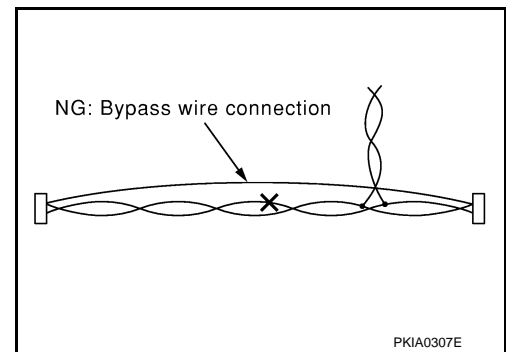
INFOID:000000008163067

### AV COMMUNICATION SYSTEM

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



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



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AV

# PREPARATION

< PREPARATION >

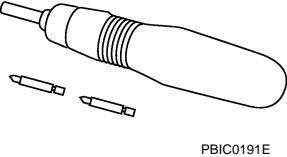
[BOSE AUDIO WITH NAVIGATION]

## PREPARATION

### PREPARATION

#### Commercial Service Tools

INFOID:000000008163068

Tool	Description
Power tool  PBIC0191E	Loosening screws

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

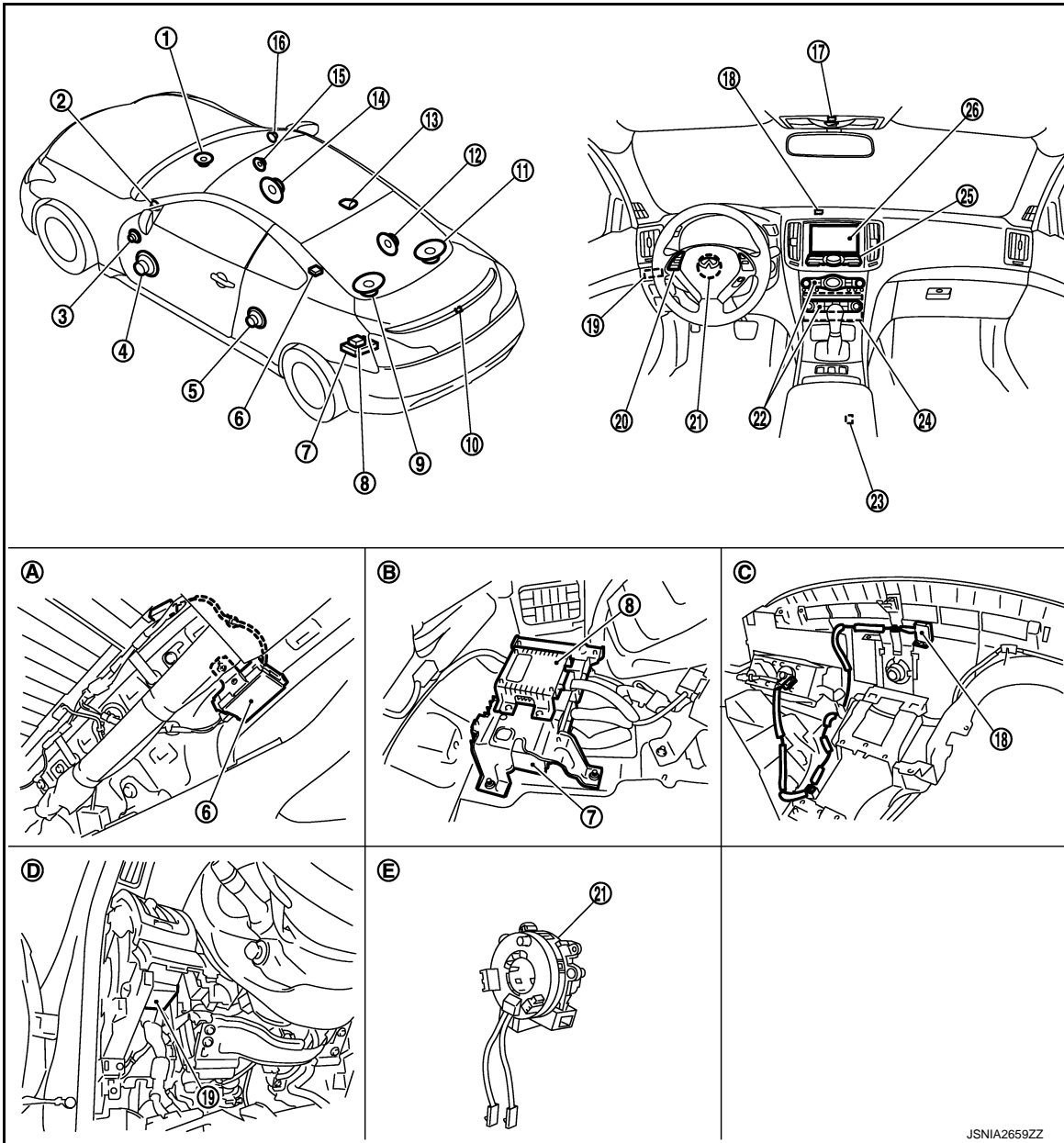
[BOSE AUDIO WITH NAVIGATION]

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000008163069



- |                             |                     |                           |
|-----------------------------|---------------------|---------------------------|
| 1. Center speaker           | 2. Tweeter LH       | 3. Door squawker LH       |
| 4. Door woofer LH           | 5. Rear speaker LH  | 6. Antenna amp.           |
| 7. BOSE amp.                | 8. Woofer amp.      | 9. Rear woofer LH         |
| 10. Rear view camera        | 11. Rear woofer RH  | 12. Rear speaker RH       |
| 13. Satellite radio antenna | 14. Door woofer RH  | 15. Door squawker RH      |
| 16. Tweeter RH              | 17. Microphone      | 18. GPS antenna           |
| 19. Sonar control unit      | 20. Steering switch | 21. Steering angle sensor |
| 22. Preset switch           | 23. USB connector   | 24. AV control unit       |
| 25. Multifunction switch    | 26. Display unit    |                           |

JSNIA2659ZZ

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# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

- |  |                                   |                               |
|--|-----------------------------------|-------------------------------|
| A. Within rear pillar finisher LH                  | B. Trunk room LH                  | C. Instrument panel rear side |
| D. Instrument driver lower panel removed condition | E. Spiral cable removed condition |                               |

## Component Description

INFOID:000000008163070

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.</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 is connected to the steering angle sensor and receives the steering angle sensor signal via CAN communication.</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 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>
Display unit	<ul style="list-style-type: none"> <li>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 rear view camera.</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 woofer amp. and each speaker.</li> <li>Input mode change signal from AV control unit.</li> </ul>
Woofer amp.	Inputs power (amp ON) and sound signal from BOSE amp., and outputs sound signal to rear woofer.
Door woofer	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs low range sound.</li> </ul>
Door squawker	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs mid range sound.</li> </ul>
Rear 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>
Tweeter	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs high range sound.</li> </ul>
Center 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 woofer	<ul style="list-style-type: none"> <li>Outputs sound signal from woofer 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, auxiliary input 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 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 display unit.</li> </ul>

## COMPONENT PARTS

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

Part name	Description
Steering angle sensor	It is connected to the AV control unit and transmits the steering angle sensor signal via CAN communication.
Sonar control unit	<ul style="list-style-type: none"> <li>• Controlled by AV communication transmitted from AV control unit.</li> <li>• Trouble diagnosis is supported with CONSULT (K-LINE).</li> </ul>
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 amp.	<ul style="list-style-type: none"> <li>• Radio signal received by glass antenna is amplified and transmitted to AV control unit.</li> <li>• Power (antenna amp. ON signal) is supplied from AV control unit.</li> </ul>
Satellite radio antenna	Satellite radio signal is received and transmitted to AV control unit.
USB connector	Image signal <sup>*1</sup> 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

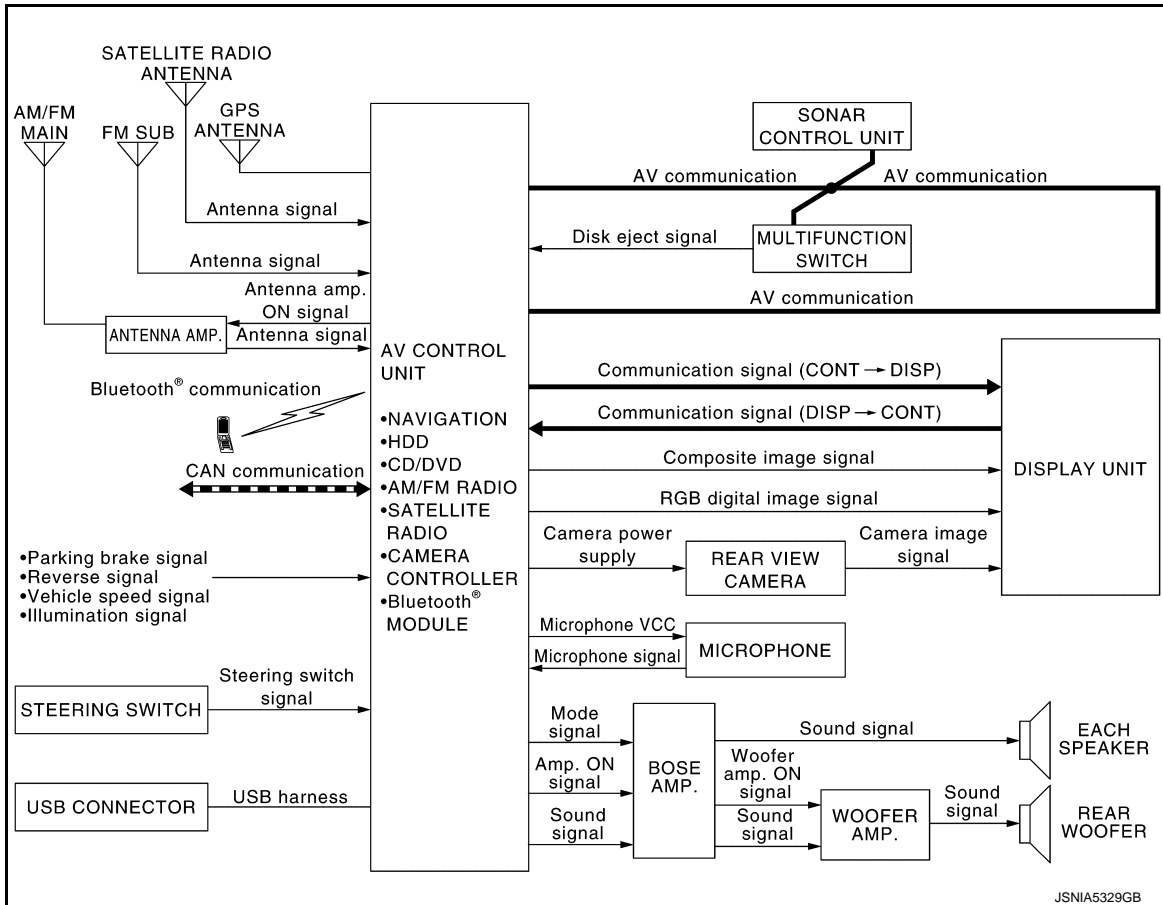
< SYSTEM DESCRIPTION >

SYSTEM

MULTI AV SYSTEM

MULTI AV SYSTEM : System Diagram

INFOID:000000008163071



JSNIA5329GB

**NOTE:**

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

MULTI AV SYSTEM : System Description

INFOID:000000008163072

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
Rear view monitor function
Sonar system
Vehicle information function

COMMUNICATION SIGNAL

# SYSTEM

## < SYSTEM DESCRIPTION >

## [BOSE AUDIO WITH NAVIGATION]

- 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.

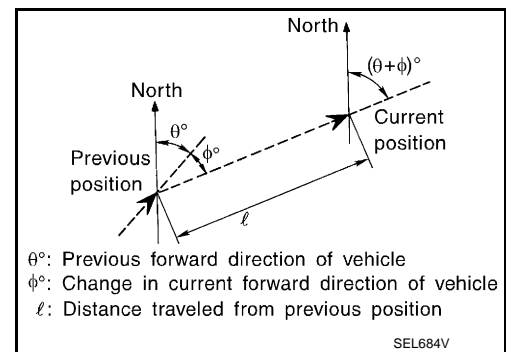
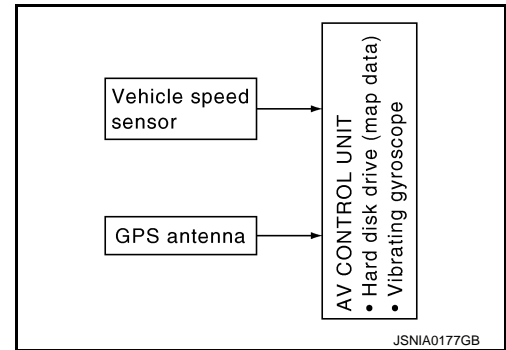
The current position is calculated by detecting the travel distance from the previous calculation point, and its direction change.

- 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.

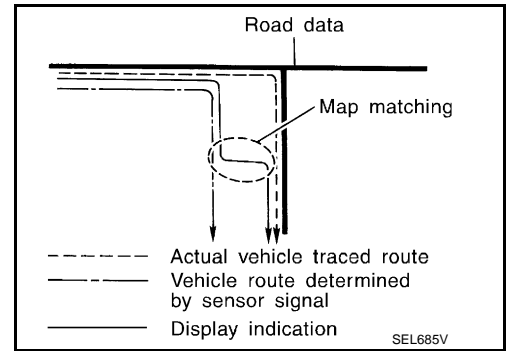
### Map-matching

# SYSTEM

## < SYSTEM DESCRIPTION >

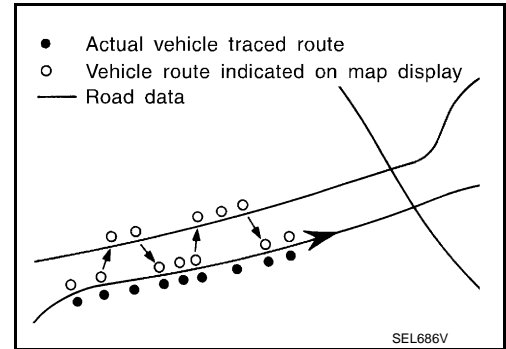
## [BOSE AUDIO WITH NAVIGATION]

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).

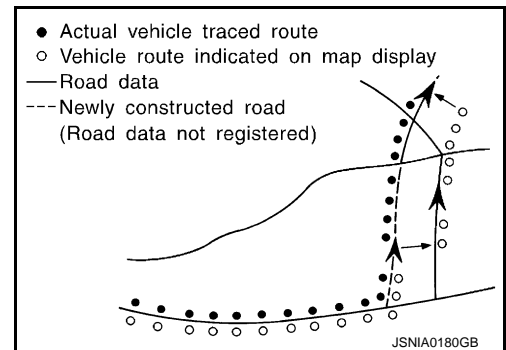


There is a possibility that the vehicle position may not be corrected in the following case, and when vehicle is driven over a certain distance or time in which GPS information is hard to receive. Correct manually the current location mark on the screen.

- 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.



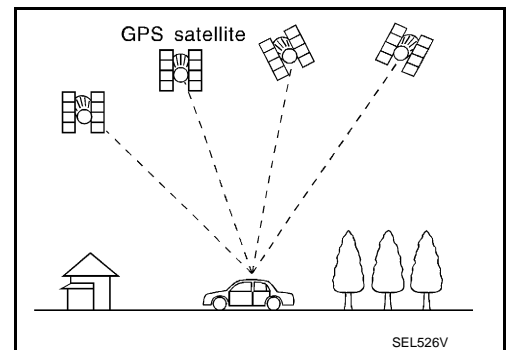
- Map-matching does not function correctly when road on which the vehicle is driving is new, etc. and not recorded in the map data. Also, map-matching does not function correctly when road pattern stored in the map data and the actual road pattern are different due to repair, etc. Therefore, the map-matching 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.



# SYSTEM

## < SYSTEM DESCRIPTION >

## [BOSE AUDIO WITH NAVIGATION]

- 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
CD
Bluetooth® audio
Music Box (Hard Disk Drive)*
Driver's Audio Stage

\*: For Mexico

### 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 glass 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 (For Mexico)

- 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.

# SYSTEM

## < SYSTEM DESCRIPTION >

## [BOSE AUDIO WITH NAVIGATION]

### Driver's Audio Stage

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

### DVD PLAY FUNCTION

- DVD is played by inserting DVD into the AV control unit.
- DVD image signals are transmitted to the display unit and DVD sound signals are transmitted to each speaker via BOSE amp.

### HANDS-FREE PHONE FUNCTION

- AV control unit includes hands-free phone function.
- Hands-free communication can be operated by connecting using Bluetooth® communication with cellular phone.
- Operation is performed by steering switch, and operating condition is indicated on display.
- Guide sound that is heard during operation is input from AV control unit to BOSE amp., and is output from front speaker.

### 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 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 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.

### 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 display unit when power is supplied from the AV control unit.

# SYSTEM

## < SYSTEM DESCRIPTION >

## [BOSE AUDIO WITH NAVIGATION]

- The AV control unit transmits a warning message, fixed guide lines, and predictive course lines to the display unit by RGB digital image signal. Rear view monitor images are displayed by combining the RGB digital image signal 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.

### SONAR SYSTEM

For further information about the sonar system, refer to [SN-7, "System Description"](#).

### 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.

### MULTI AV SYSTEM : Fail-Safe

INFOID:000000008163073

When the ambience 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 ambience 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 ambience 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.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

[BOSE AUDIO WITH NAVIGATION]

< SYSTEM DESCRIPTION >

## DIAGNOSIS SYSTEM (AV CONTROL UNIT)

### Description

INFOID:000000008163074

- 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 Function

INFOID:000000008163075

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

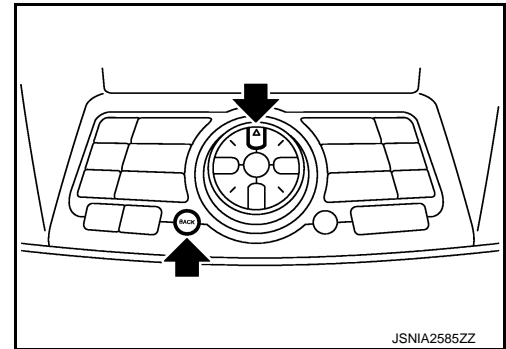
The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

##### 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.

### ON BOARD DIAGNOSIS ITEM

#### 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)

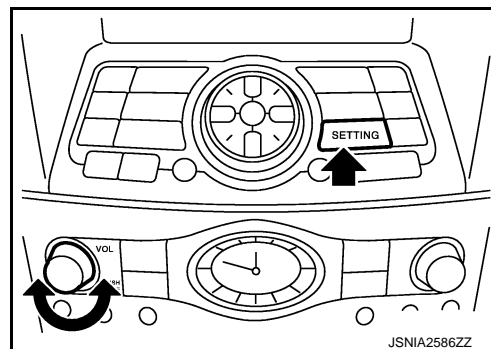
< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH 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.
		XM SAT Subscription Status	The XM NavTraffic subscription status can be checked.
	Error History	The system malfunction and the frequency when occurring in the past are displayed. When the malfunctioning item is selected, the time and place that the selected malfunction last occurred are displayed.	
	Synchronizer FES Clock	—	
	Speaker Test	The connection of a speaker can be confirmed by test tone.	
	Vehicle CAN Diagnosis	The transmitting/receiving of CAN communication can be monitored.	
	AV COMM Diagnosis	The communication condition of each unit of Multi AV system can be monitored.	
	Hands-free Phone	The received volume adjustment of hands-free phone, microphone speaker check, and erase memory can be performed.	
	Camera Cont.	The signal connected to camera control unit can be checked and the guiding line position that overlaps rear view camera image can be adjusted.	
	XM	XM NaviTrffic	Change Channel • Any necessary channels required to receive traffic information from the satellite radio system can be set. Change Application ID • Any application ID's required to receive traffic information from the satellite radio system can be set.
		XM NavWeather	
		XM CGS	
		Diag	
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.		

## METHOD OF STARTING

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.

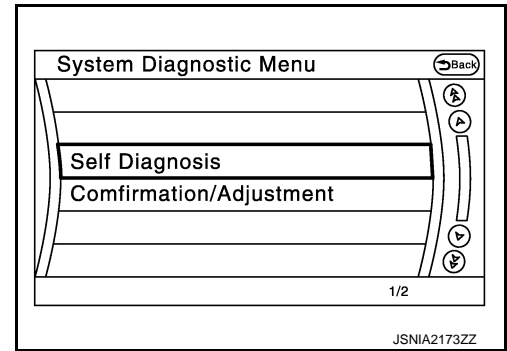


# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

[BOSE AUDIO WITH NAVIGATION]

## < SYSTEM DESCRIPTION >

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



## SELF-DIAGNOSIS MODE

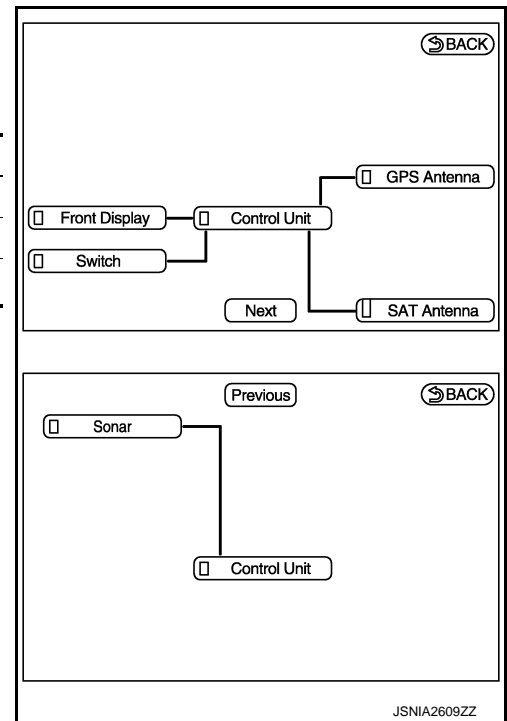
- Start the self-diagnosis function and select "Self Diagnosis".
  - Self-diagnosis subdivision screen is displayed, and the self-diagnosis mode starts.
  - The bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis.
- Diagnosis results are 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

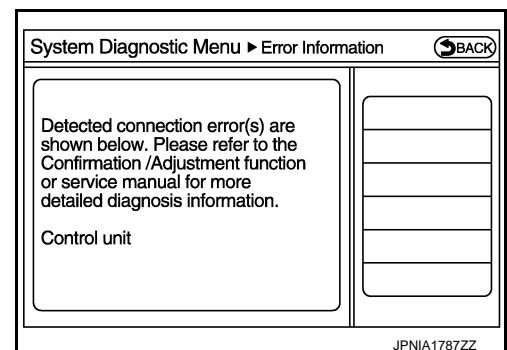
### NOTE:

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-442, "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.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

[BOSE AUDIO WITH NAVIGATION]

< SYSTEM DESCRIPTION >

## SELF-DIAGNOSIS RESULTS

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

Only Unit Part Is Displayed In Red.

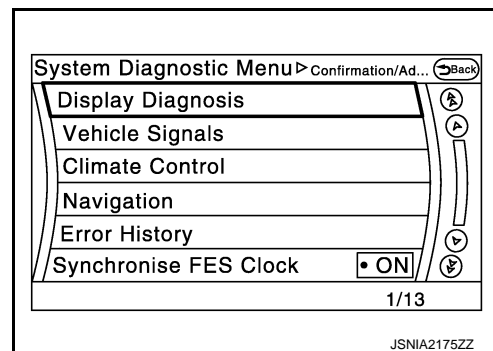
Screen switch	Description	Possible malfunction location / Action to take
Control Unit	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.

A Connecting Cable Between Units Is Displayed In Yellow.

Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control unit ↔ Front Display	Malfunction is detected in serial communication circuits between AV control unit and display unit.	Serial communication circuits between AV control unit and display unit.
Control unit ↔ GPS Antenna	GPS antenna connection malfunctions detected.	GPS antenna
Control unit ↔ SAT Antenna	Satellite radio antenna connection malfunction is detected.	Satellite radio antenna disconnection
Control unit ↔ Sonar	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>AV communication circuits between AV control unit and sonar control unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>Sonar control unit power supply and ground circuits.</li> <li>AV communication circuits between AV control unit and sonar control unit.</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.

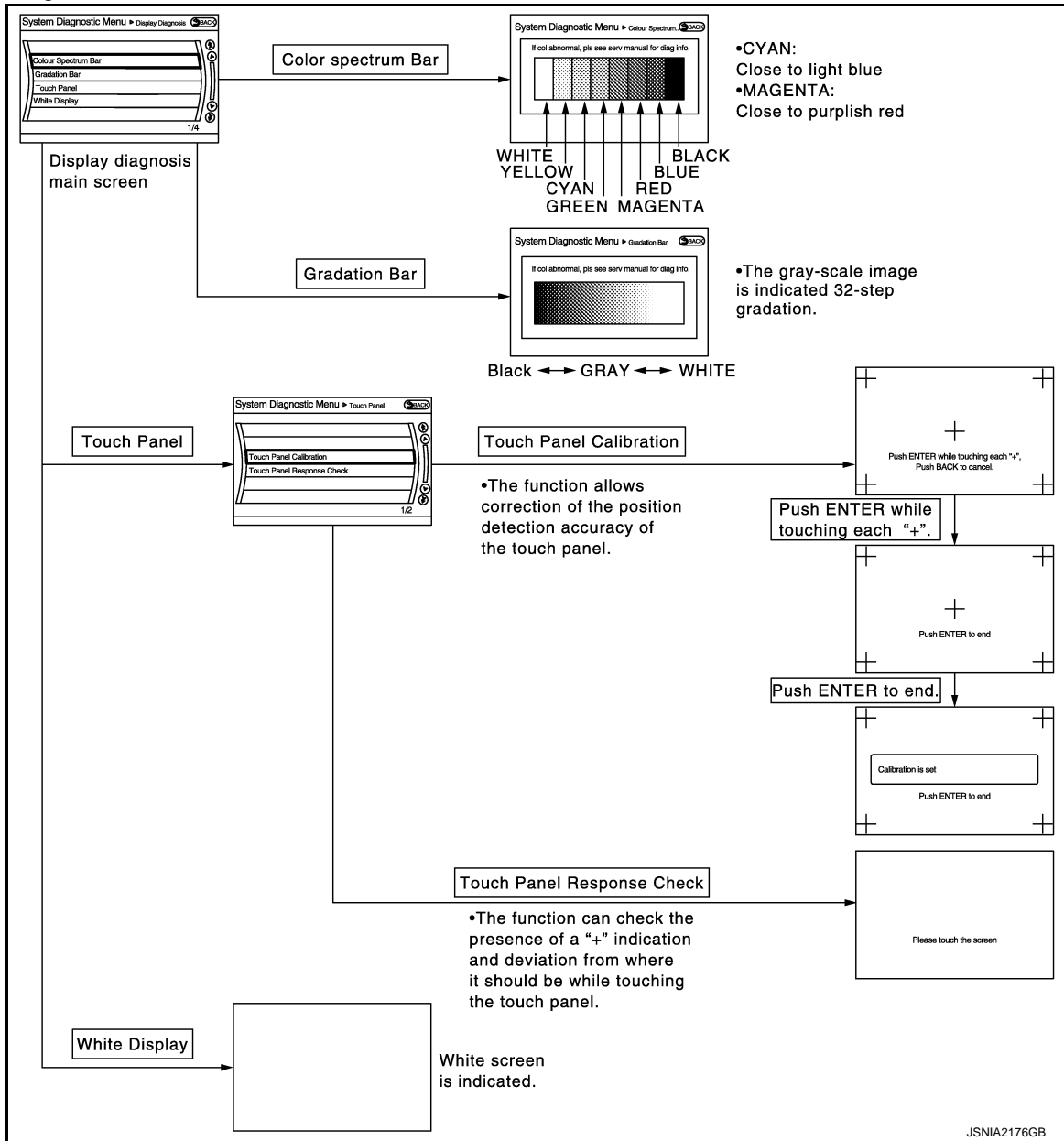


# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

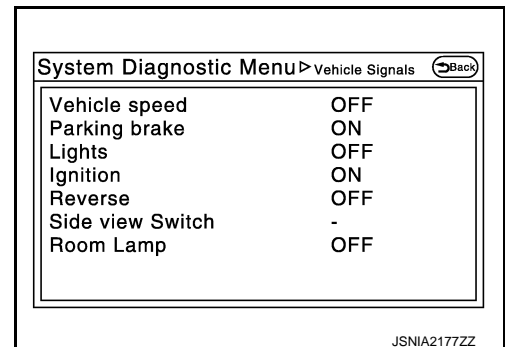
[BOSE AUDIO WITH NAVIGATION]

## 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 >

[BOSE AUDIO WITH 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	OFF	—	This item is displayed, but cannot be monitored.

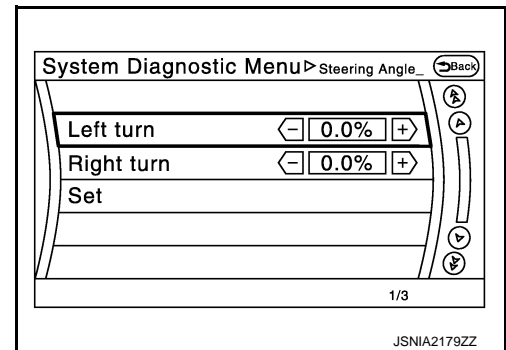
## Climate Control

Refer to "HEATER & AIR CONDITIONING CONTROL SYSTEM" for details.

## Navigation

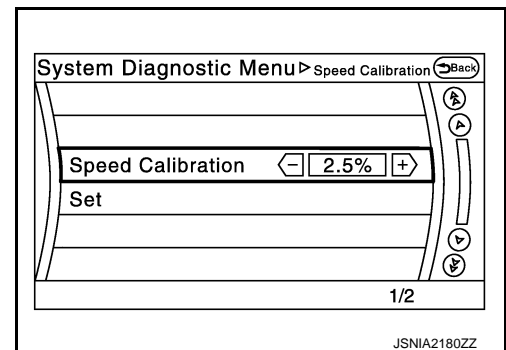
### STEERING ANGLE ADJUSTMENT

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.



### XM SAT SUBSCRIPTION STATUS

The XM NavTraffic subscription status can be checked.

### 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.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

[BOSE AUDIO WITH NAVIGATION]

## < SYSTEM DESCRIPTION >

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

- If there is a malfunction with the GPS antenna circuit board in the AV control unit, the correct date and time of occurrence may not be 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.

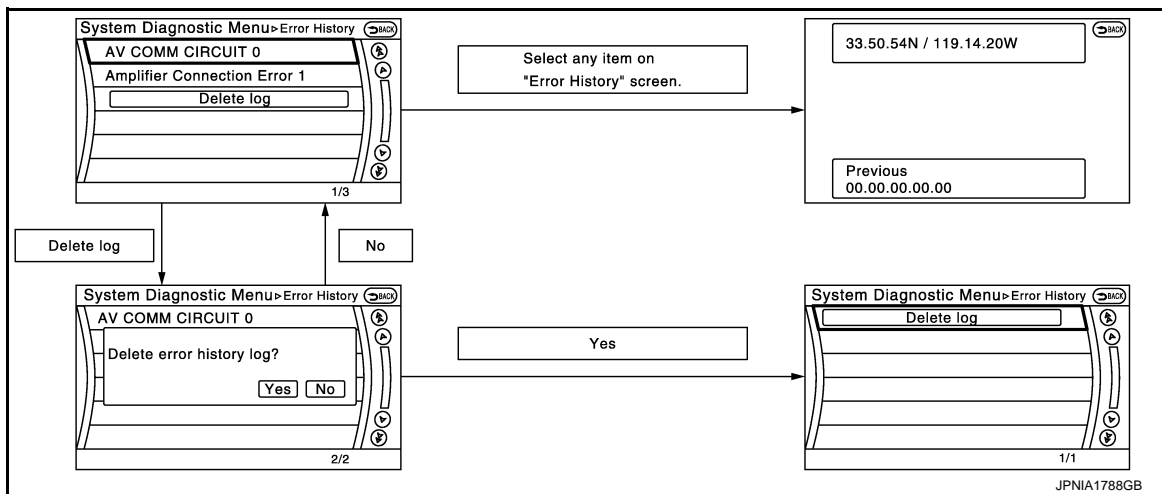
### Count up method A

- The counter resets to 0 if an error occurs when 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



### 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-352. "CONSULT Function"</a> .

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH 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. Refer to <a href="#">AV-442, "Exploded View"</a> .
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	
FLASH-ROM Error Of Control Unit	AV control unit malfunction is detected.	
Connection Of Gyro		
Connection of G Sensor		
CAN Controller Memory Error		
Bluetooth Module Connection Error		
Sub CPU Connection Error		
iPod 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> Refer to <a href="#">AV-442, "Exploded View"</a> .
DSP Communication Error		
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> Refer to <a href="#">AV-442, "Exploded View"</a> .
HDD Read Error		
HDD Write Error		
HDD Communication Error		
HDD Access Error		
GPS Communication Error	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly. Refer to <a href="#">AV-442, "Exploded View"</a> .
GPS ROM Error		
GPS RAM Error		
GPS RTC Error		
Unfinished configuration	The writing of configuration data is incomplete.	Write configuration data with CONSULT. Refer to <a href="#">AV-376, "Description"</a> .
USB Controller Communication Error	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.
DVD Mechanism Communication Error	AV control unit malfunction is detected.	<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> Refer to <a href="#">AV-442, "Exploded View"</a> .
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="#">BRC-9, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement"</a> .
Front Display Connection Error	When either one of the following items are detected: <ul style="list-style-type: none"> <li>display unit power supply and ground circuits are malfunctioning.</li> <li>communication circuits between AV control unit and display unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>Display unit power supply and ground circuits.</li> <li>Communication circuits between AV control unit and display unit.</li> </ul>
GPS Antenna Error	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.

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# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

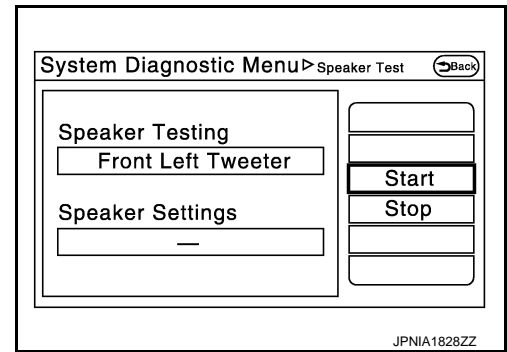
< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

Error item	Description	Possible malfunction factor/Action to take
XM Antenna Connection Error	Satellite radio antenna connection malfunction is detected.	Satellite radio antenna disconnection.
USB electric current Error	Detection of overcurrent in USB connector.	Check USB harness between the AV control unit and USB connector.
AM/FM antenna amplifier short to ground	Radio antenna amp. ON signal circuit malfunction is detected.	Radio antenna amp. ON signal circuit between AV control unit and antenna amp.
AM/FM antenna amplifier open		
Ext_Amp_ON output terminal short to ground	BOSE amp. ON signal circuit malfunction is detected.	BOSE amp. ON signal circuit between AV control unit and BOSE amp.
Ext_Amp_ON output terminal :open		
<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>Sonar Connection Error</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>AV communication circuits between AV control unit and sonar control unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>Sonar control unit power supply and ground circuits.</li> <li>AV communication circuits between AV control unit and sonar control unit.</li> </ul>
<ul style="list-style-type: none"> <li>AV COMM CIRCUIT</li> <li>Switches Connection Error</li> <li>Sonar Connection Error</li> </ul>	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

## Speaker Test

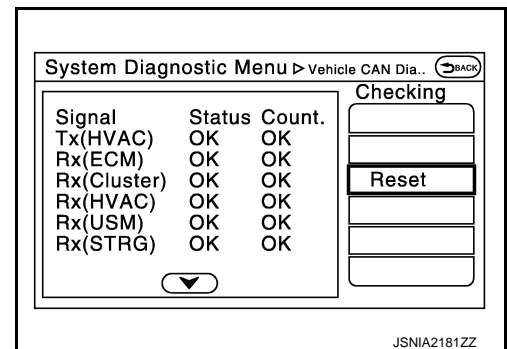
Select "SPEAKER DIAGNOSIS" to display the Speaker Diagnosis screen. Press "Start" to generate a test tone in a speaker. Press "Start" to generate a test tone in the next speaker. Press "Stop" to stop the test tones.



## Vehicle CAN Diagnosis

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

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



# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

[BOSE AUDIO WITH NAVIGATION]

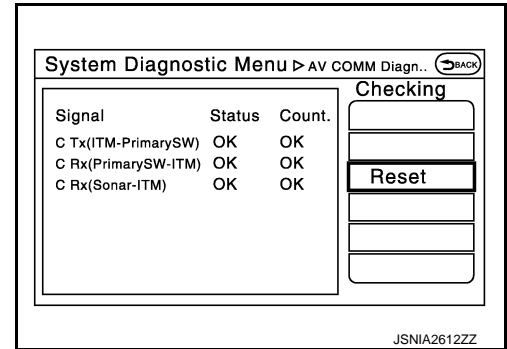
< SYSTEM DESCRIPTION >

**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.



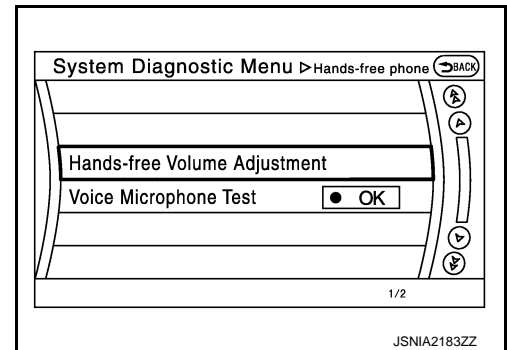
Items	Status (Current)	Counter (Past)
C Tx(ITM-PrimarySW)	OK / ???	OK / 0 - 39
C Rx(PrimarySW-ITM)	OK / ???	OK / 0 - 39
C Rx(Sonar-ITM)	OK / ???	OK / 0 - 39

**NOTE:**

“???” indicates UNKWN

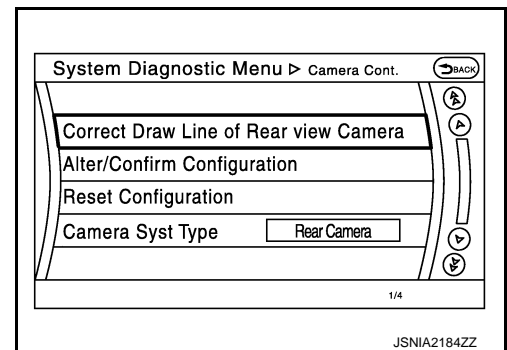
Hands-Free Phone

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



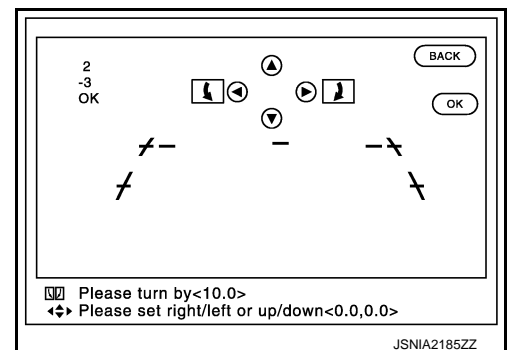
Camera Cont.

The four functions of “Correct Draw Line of Rear view Camera”, “Alter/Confirm Configuration”, “Reset Configuration” and “Camera Syst Type” are available.



Correct Draw Line of Rear view Camera

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



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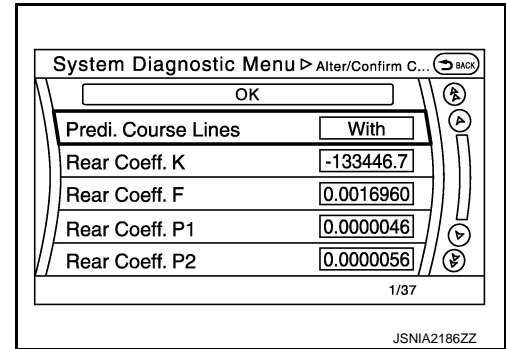
# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

[BOSE AUDIO WITH NAVIGATION]

## < SYSTEM DESCRIPTION >

### Alter/Confirm Configuration

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



### Configuration list

Setting item	Setting	Setting item	Setting
Predi. Course Lines	With	Wheelbase	2.8499999
Rear Coeff. K	-133446.7	Total Length	0.0000000
Rear Coeff. F	0.0016960	Steering Gear Ratio	13.715999 <sup>*1</sup>
Rear Coeff. P1	0.0000046		14.939999 <sup>*2</sup>
Rear Coeff. P2	0.0000056		16.884000 <sup>*3</sup>
Rear Coeff. C1	823.00000	Side Coeff. K	0.0000000
Rear Coeff. C2	480.00000	Side Coeff. F	0.0000000
Rear Coeff. D1	800.00000	Side Coeff. P1	0.0000000
Rear Coeff. D2	494.00000	Side Coeff. P2	0.0000000
Car Width	1.8228000	Side Coeff. C1	0.0000000
Rear Offset	0.0000000	Side Coeff. C2	0.0000000
Rear Height	0.9954350	Side Coeff. D1	0.0000000
Rear L/R Angle	0.0000000	Side Coeff. D2	0.0000000
Rear Up/Dn Angle	46.000000	Side Offset	0.0000000
Rear Roll Angle	0.0000000	Overall Height	0.0000000
Bumper Rear Dist.	0.1701450	Side L/R Angle	0.0000000
Bumper Rear Ax Dist	0.9601000	Side Up/Dn Angle	0.0000000
Steer. Max Angle	457.84008 <sup>*1</sup>	Side Roll Angle	0.0000000
	498.69720 <sup>*2</sup>	Side Front End Dist	0.0000000
	563.58789 <sup>*3</sup>	Total Width	0.0000000
Min. Turning Red.	5.5000000	—	—

- \*1: SPORT premium grade with 4WAS
- \*2: SPORT premium grade without 4WAS
- \*3: Except for above.

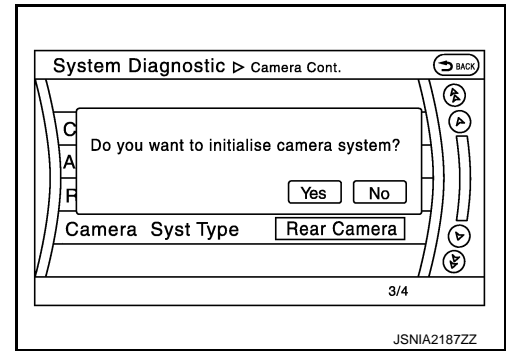
### Reset Configuration

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

## [BOSE AUDIO WITH NAVIGATION]

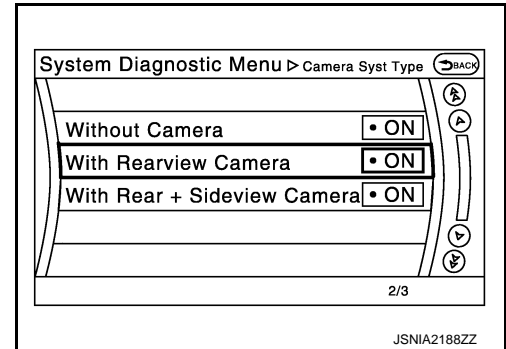
### < SYSTEM DESCRIPTION >

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



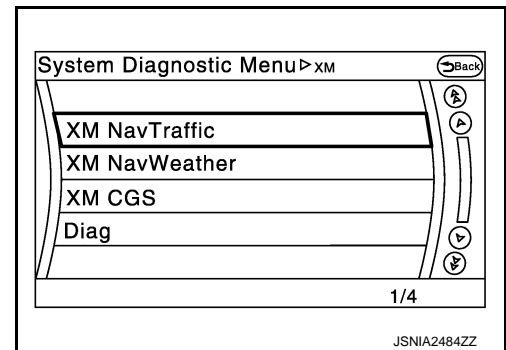
#### Camera Syst Type

- Type of camera system is selectable.



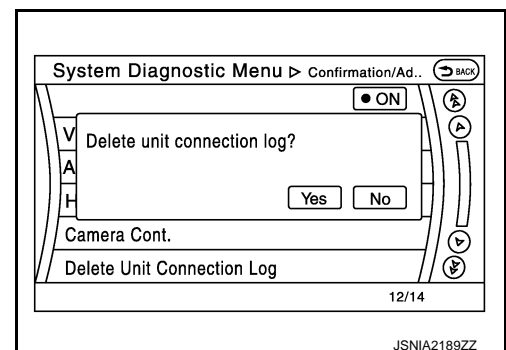
#### XM

- Change Channel
  - Any necessary channels required to receive traffic information from the satellite radio system can be set.
- Change Application ID
  - Any application ID'-s required to receive traffic information from the satellite radio system can be set.



#### Delete Unit Connection Log

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



#### Initialize Settings

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# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

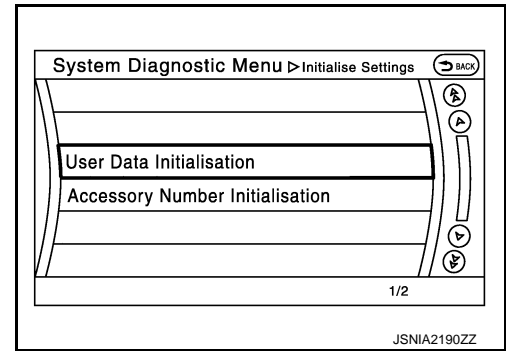
[BOSE AUDIO WITH NAVIGATION]

< SYSTEM DESCRIPTION >

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

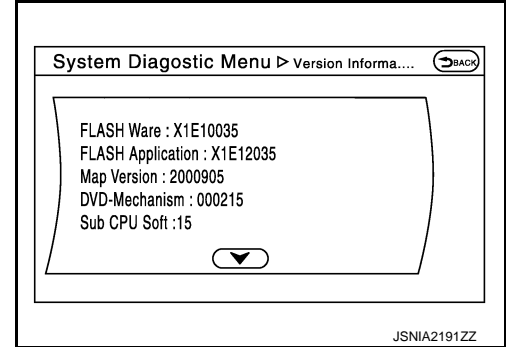
**CAUTION:**

- Never perform Accessory Number Initialization except when configuration is unsuccessful.
- Accessory Number Initialization requires configuration. For details, refer to [AV-377. "Description"](#).



Version Information

Version information of the AV control unit is displayed.



## CONSULT Function

INFOID:000000008163076

### APPLICATION ITEMS

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 >

[BOSE AUDIO WITH NAVIGATION]

Error item	Description	Possible malfunction factor/Action to take	A
CAN COMM CIRCUIT [U1000]	CAN communication malfunction is detected.	Refer to <a href="#">AV-379, "Diagnosis Procedure"</a> .	A
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.		B
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected.		C
Cont Unit [U1200]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to <a href="#">AV-442, "Exploded View"</a> .	D
GYRO NO CONN [U1201]			E
G-SENSOR NO CONN [U1202]			F
CAN CONT [U1216]			G
BLUETOOTH MODULE [U1217]			H
SUB CPU CONN [U1228]			I
iPod CERTIFICATION [U1229]			J
Built-in AUDIO CONN [U122E]			K
HDD CONN [U1218]			AV control unit malfunction is detected.
HDD READ [U1219]	H		
HDD WRITE [U121A]	I		
HDD COMM [U121B]	J		
HDD ACCESS [U121C]			K
GPS COMM [U1204]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly. Refer to <a href="#">AV-442, "Exploded View"</a> .	I
GPS ROM [U1205]			J
GPS RAM [U1206]			K
GPS RTC [U1207]			L
USB CONTROLLER [U1225]	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.	M
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> Refer to <a href="#">AV-442, "Exploded View"</a> .	L
DSP COMM [U121E]			M
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> Refer to <a href="#">AV-442, "Exploded View"</a> .	N
CONFIG UNFINISH [U122A]	The writing of configuration data is incomplete.	Write configuration data with CONSULT. Refer to <a href="#">AV-376, "Description"</a> .	O
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> .	P
FRONT DISP CONN [U1243]	When either one of the following items are detected: <ul style="list-style-type: none"> <li>display unit power supply and ground circuits are malfunctioning.</li> <li>communication circuits between AV control unit and display unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>Display unit power supply and ground circuits.</li> <li>Communication circuits between AV control unit and display unit.</li> </ul>	Q

AV

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

Error item	Description	Possible malfunction factor/Action to take
GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.
XM ANTENNA CONN [U1258]	Satellite radio antenna connection malfunction is detected.	Satellite radio antenna disconnection.
USB OVERCURRENT [U1263]	Detection of overcurrent in USB connector.	Check USB harness between the AV control unit and USB connector.
ANTENNA AMP TERMINAL [OPEN or SHORT] [U1264]	Radio antenna amp. ON signal circuit malfunction is detected.	Radio antenna amp. ON signal circuit between AV control unit and antenna amp.
AMP ON TERMINAL [GND-SHORT or VB-SHORT] [U1265]	BOSE amp. ON signal circuit malfunction is detected.	BOSE amp. ON signal circuit between AV control unit and BOSE amp.
<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>
<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>• AV communication circuits between AV control unit and sonar control unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Sonar control unit power supply and ground circuits.</li> <li>• AV communication circuits between AV control unit and sonar control unit.</li> </ul>
<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• SWITCH CONN [U1240]</li> <li>• SONAR CONN [U125C]</li> </ul>	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

## 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.

### 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		

## DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

Display Item	Display	Vehicle status	Remarks
SIDE VIEW SW	Off	—	This item is displayed, but cannot be monitored.
ROOM LAMP	Off	—	This item is displayed, but cannot be monitored.

### SELECTION FROM MENU

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

Item to be selected	Description
VHCL SPD SIG	The same as when "ALL SIGNALS" is selected.
PKB SIG	
ILLUM SIG	
IGN SIG	
REV SIG	
SIDE VIEW SW	
ROOM LAMP	

### WORK SUPPORT

Adjusts the neutral position of the steering angle sensor.

**CAUTION:**

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

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

### CONFIGURATION

Configuration has three functions as follows.

Function	Description
Read/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.

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AV

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

## ECU DIAGNOSIS INFORMATION

### AV CONTROL UNIT

#### Reference Value

INFOID:000000008163077

#### VALUES ON THE DIAGNOSIS TOOL

**NOTE:**

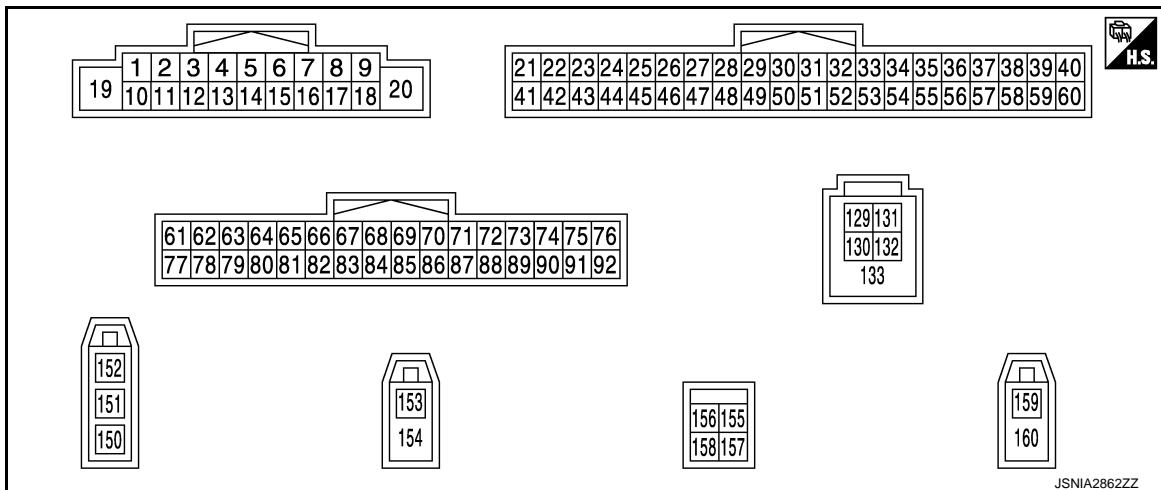
The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

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	—	Off
ROOM LAMP*	Ignition switch ON	—	Off

\*: This item is displayed, but cannot be monitored.

#### TERMINAL LAYOUT

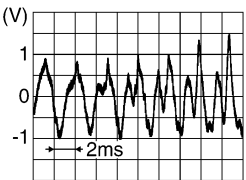
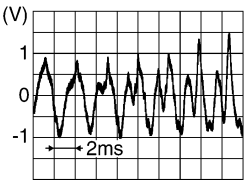

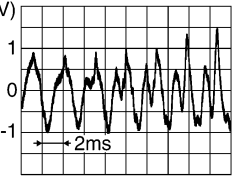
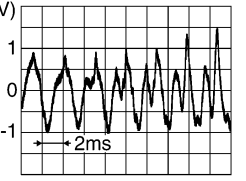


#### PHYSICAL VALUES

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (GR)	Ground	Amp. ON signal	Output	Ignition switch ON	—	10.0 V
2 (O)	3 (W)	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 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
10 (B)	—	Shield	—	—	—	—
11 (R)	12 (G)	Sound signal front RH	Output	Ignition switch ON	Sound output	 <small>SKIB3609E</small>
13 (BR)	14 (Y)	Sound signal rear RH	Output	Ignition switch ON	Sound output	 <small>SKIB3609E</small>



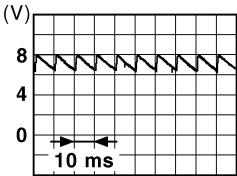
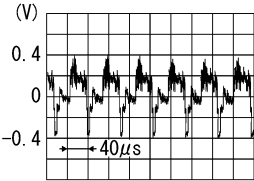
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AV

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

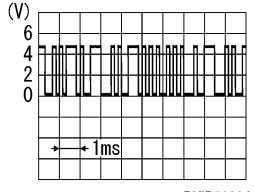
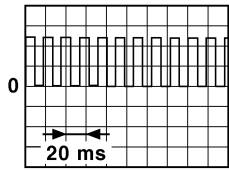
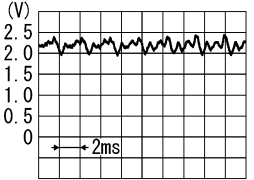
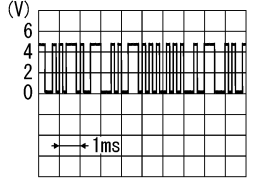
[BOSE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
16 (L)	15 (B)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	1.0 V
					Keep pressing  switch.	2.0 V
					Keep pressing  switch.	3.0 V
					Except for above.	5.0 V
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
20 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
22 (R)	Ground	Camera power supply	Output	Ignition switch ON	At rear view camera image is displayed.	6.0 V
					Except for above.	0 V
29 (V)	Ground	Disk eject signal	Input	Ignition switch ON	Pressing the eject switch.	0 V
					Except for above.	5.0 V
30 (SB)	Ground	Mode change signal	Output	Ignition switch ON	Driver's Audio Stage ON	0 V
					Driver's Audio Stage OFF	8.5 V
42 (B)	Ground	Camera ground	—	Ignition switch ON	—	0 V
49 (BR)	Ground	Switch ground	—	Ignition switch ON	—	0 V
65 (SB)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake is ON.	0 V
					Parking brake is OFF.	 <p style="text-align: right; font-size: small;">JSNIA0007GB</p>
67 (P)	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
68 (L)	Ground	Composite image signal	Output	Ignition switch ON	At DVD image is displayed.	 <p style="text-align: right; font-size: small;">SKIB2251J</p>
72 (G)	Ground	Microphone VCC	Output	Ignition switch ON	—	5.0 V

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
73 (P)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	 <p style="text-align: right; font-size: small;">PKIB5039J</p>
74 (P)	—	CAN-L	Input/ Output	—	—	—
75 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
76 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
79 (L)	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> The maximum voltage varies de- pending on the specification (destination unit).</p>  <p style="text-align: right; font-size: small;">JSNIA0012GB</p>
83	—	Shield	—	—	—	—
87 (R)	71	Microphone signal	Input	Ignition switch ON	Give a voice	 <p style="text-align: right; font-size: small;">PKIB5037J</p>
88	—	Shield	—	—	—	—
89 (L)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	 <p style="text-align: right; font-size: small;">PKIB5039J</p>
90 (L)	—	CAN-H	Input/ Output	—	—	—

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AV

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH 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	—	—	—
129 (G)	—	USB ground	—	—	—	—
130 (R)	—	USB D- signal	—	—	—	—
131 (W)	—	V BUS signal	—	—	—	—
132 (L)	—	USB D+ signal	—	—	—	—
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 ON	Not connected GPS antenna connector.	5.0 V
154	—	Shield	—	—	—	—
157	Ground	RGB digital image signal (-)	Output	Ignition switch ON	Not connected connector.	1.3 V
158	Ground	RGB digital image signal (+)	Output	Ignition switch ON	Not connected connector.	1.3 V
159	Ground	Satellite antenna signal	Input	Ignition switch ON	Not connected satellite antenna connector.	5.0 V
160	—	Shield	—	—	—	—

## Fail-Safe

INFOID:000000008163078

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



# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

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>• Aired 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:000000008163079

## SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	<a href="#">AV-379, "Diagnosis Procedure"</a>
U1010	CONTROL UNIT (CAN) [1010]	<a href="#">AV-380, "DTC Logic"</a>
U1200	Cont Unit [U1200]	<a href="#">AV-381, "DTC Logic"</a>
U1201	GYRO NO CONN [U1201]	<a href="#">AV-382, "DTC Logic"</a>
U1202	G-SENSOR NO CONN [U1202]	<a href="#">AV-383, "DTC Logic"</a>
U1204	GPS COMM [U1204]	<a href="#">AV-384, "Diagnosis Procedure"</a>
U1205	GPS ROM [U1205]	<a href="#">AV-385, "Diagnosis Procedure"</a>
U1206	GPS RAM [U1206]	<a href="#">AV-386, "Diagnosis Procedure"</a>
U1207	GPS RTC [U1207]	<a href="#">AV-387, "Diagnosis Procedure"</a>
U1216	CAN CONT [U1216]	<a href="#">AV-388, "DTC Logic"</a>
U1217	BLUETOOTH MODULE [U1217]	<a href="#">AV-389, "DTC Logic"</a>
U1218	HDD CONN [U1218]	<a href="#">AV-390, "DTC Logic"</a>
U1219	HDD READ [U1219]	<a href="#">AV-391, "DTC Logic"</a>
U121A	HDD WRITE [U121A]	<a href="#">AV-392, "DTC Logic"</a>
U121B	HDD COMM [U121B]	<a href="#">AV-393, "DTC Logic"</a>
U121C	HDD ACCESS [U121C]	<a href="#">AV-394, "DTC Logic"</a>
U121D	DSP CONN [U121D]	<a href="#">AV-395, "Diagnosis Procedure"</a>
U121E	DSP COMM [U121E]	<a href="#">AV-396, "Diagnosis Procedure"</a>
U1225	USB CONTROLLER [U1225]	<a href="#">AV-397, "DTC Logic"</a>
U1227	DVD COMM [U1227]	<a href="#">AV-398, "Diagnosis Procedure"</a>
U1228	SUB CPU CONN [U1228]	<a href="#">AV-399, "DTC Logic"</a>

## AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

DTC	Display item	Refer to
U1229	iPod CERTIFICATION [U1229]	<a href="#">AV-400, "DTC Logic"</a>
U122A	CONFIG UNFINISH [U122A]	<a href="#">AV-401, "Diagnosis Procedure"</a>
U122E	Built-in AUDIO CONN [U122E]	<a href="#">AV-402, "DTC Logic"</a>
U1232	ST ANGLE SEN CALIB [1232]	<a href="#">AV-403, "Diagnosis Procedure"</a>
U1243	FRONT DISP CONN [U1243]	<a href="#">AV-404, "Diagnosis Procedure"</a>
U1244	GPS ANTENNA CONN [U1244]	<a href="#">AV-406, "Diagnosis Procedure"</a>
U1258	XM ANTENNA CONN [U1258]	<a href="#">AV-407, "Diagnosis Procedure"</a>
U1263	USB OVERCURRENT [U1263]	<a href="#">AV-408, "Diagnosis Procedure"</a>
U1264	ANTENNA AMP TERMINAL [OPEN or SHORT] [U1264]	<a href="#">AV-409, "Diagnosis Procedure"</a>
U1265	AMP ON TERMINAL [GND-SHORT or VB-SHORT] [U1265]	<a href="#">AV-410, "Diagnosis Procedure"</a>
U1310	CONTROL UNIT (AV) [U1310]	<a href="#">AV-412, "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-411, "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-411, "Description"</a>
U1300 U1240 U125C	<ul style="list-style-type: none"> <li>• AV COMM CIRCUIT [U1300]</li> <li>• SWITCH CONN [U1240]</li> <li>• SONAR CONN [U125C]</li> </ul>	<a href="#">AV-411, "Description"</a>

# DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

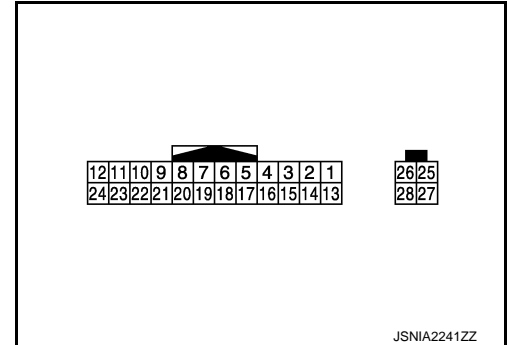
[BOSE AUDIO WITH NAVIGATION]

## DISPLAY UNIT

Reference Value

INFOID:000000008163080

TERMINAL LAYOUT



## PHYSICAL VALUES

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

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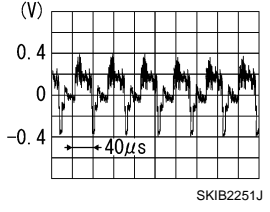
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# DISPLAY UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

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

# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

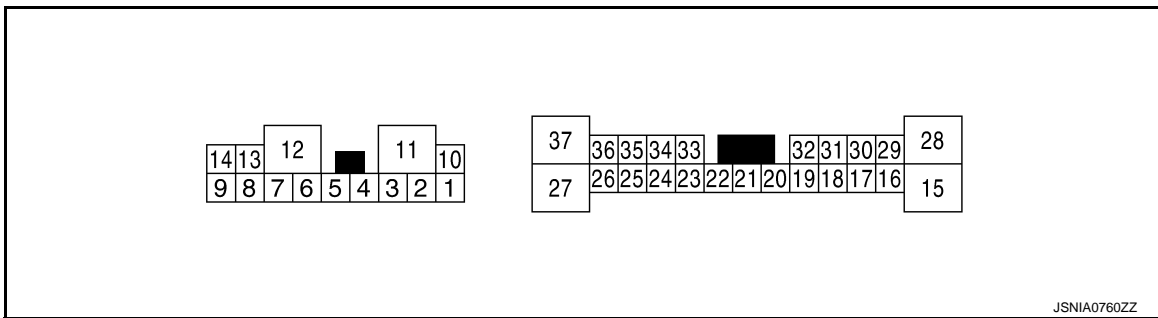
[BOSE AUDIO WITH NAVIGATION]

## BOSE AMP.

Reference Value

INFOID:000000008163081

### TERMINAL LAYOUT



### PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (L)	2 (W)	Sound signal front LH	Output	Ignition switch ON	Sound output	<p>SKIB3609E</p>
4 (V)	3 (LG)	Sound signal front RH	Output	Ignition switch ON	Sound output	<p>SKIB3609E</p>
5 (G)	6 (R)	Sound signal door woofer RH	Output	Ignition switch ON	Sound output	<p>SKIB3609E</p>
7 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
10 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
11 (GR)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

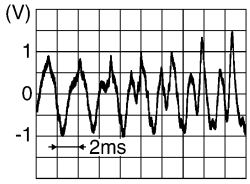
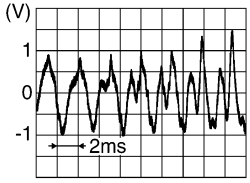
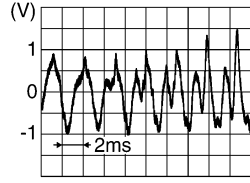
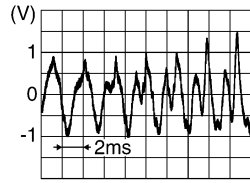
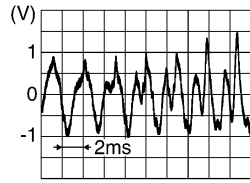
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AV

# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
14 (B)	9 (W)	Sound signal door woofer LH	Output	Ignition switch ON	Sound output	 <small>SKIB3609E</small>
16 (SB)	17 (V)	Sound signal rear woofer	Output	Ignition switch ON	Sound output	 <small>SKIB3609E</small>
18 (LG)	19 (Y)	Sound signal rear LH	Output	Ignition switch ON	Sound output	 <small>SKIB3609E</small>
20 (W)	Ground	Amp. ON signal	Input	Ignition switch ACC	—	10.0 V
21	—	Shield	—	—	—	—
22 (GR)	Ground	Woofer Amp. ON signal	Output	Ignition switch ACC	—	10.0 V
24 (V)	23 (SB)	Sound signal rear LH	Input	Ignition switch ON	Sound output	 <small>SKIB3609E</small>
26 (BR)	25 (Y)	Sound signal rear RH	Input	Ignition switch ON	Sound output	 <small>SKIB3609E</small>

# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
29 (L)	30 (BG)	Sound signal center speaker	Output	Ignition switch ON	Sound output	
31 (L)	32 (P)	Sound signal rear speaker RH	Output	Ignition switch ON	Sound output	
33 (R)	34 (G)	Sound signal front RH	Input	Ignition switch ON	Sound output	
35 (P)	36 (L)	Sound signal front LH	Input	Ignition switch ON	Sound output	
37 (SB)	Ground	Mode change signal	Input	Ignition switch ON	Driver's Audio Stage ON	0 V
				Ignition switch OFF	Driver's Audio Stage OFF	8.5 V

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
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## WIRING DIAGRAM

### BOSE AUDIO WITH NAVIGATION

#### Wiring Diagram

INFOID:000000008163082

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

**NOTE:**

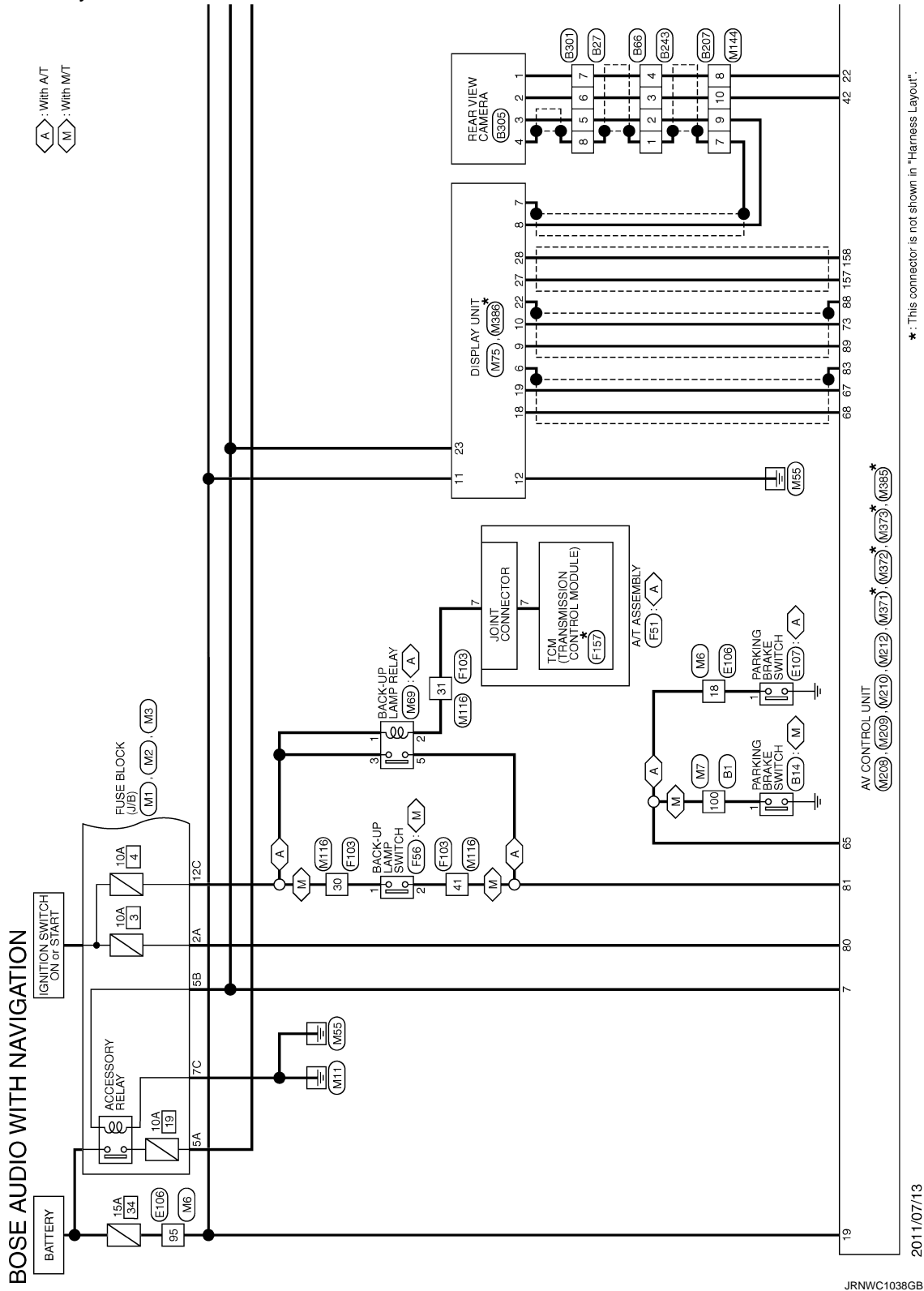


# BOSE AUDIO WITH NAVIGATION

## [BOSE AUDIO WITH NAVIGATION]

< WIRING DIAGRAM >

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



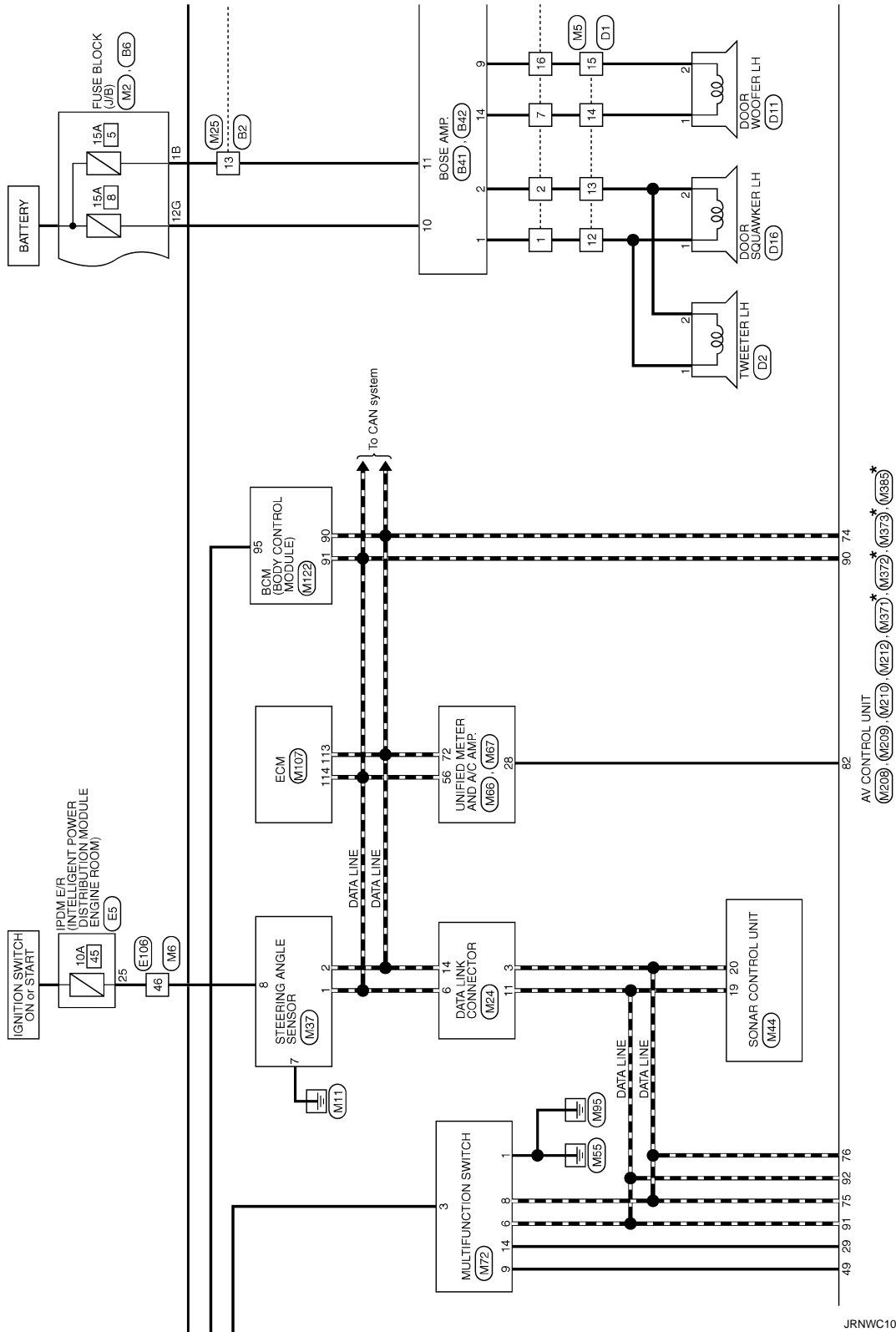
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# BOSE AUDIO WITH NAVIGATION

[BOSE AUDIO WITH NAVIGATION]

< WIRING DIAGRAM >



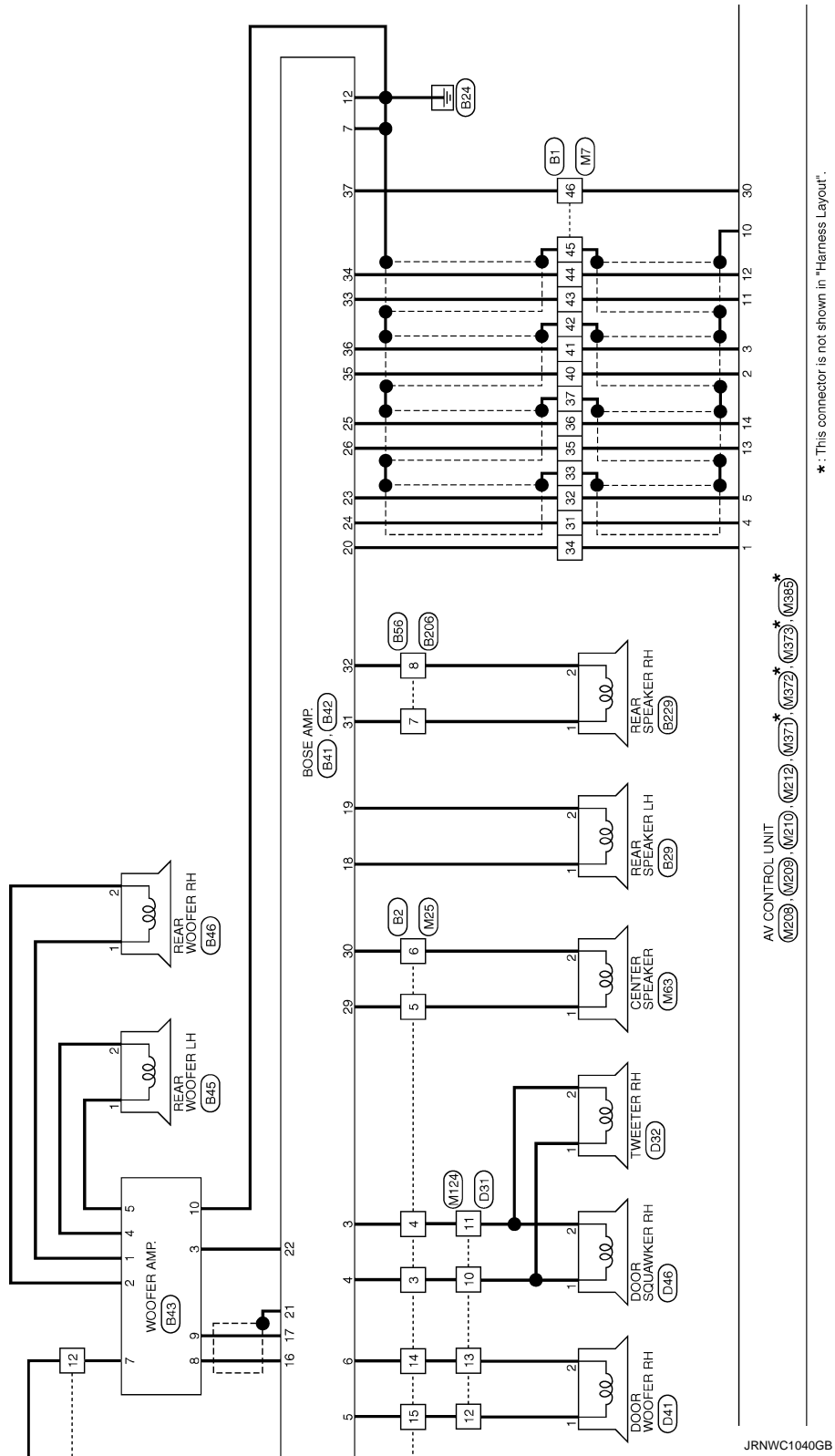
\*: This connector is not shown in "Harness Layout".

JRNWC1039GB

# BOSE AUDIO WITH NAVIGATION

## [BOSE AUDIO WITH NAVIGATION]

< WIRING DIAGRAM >



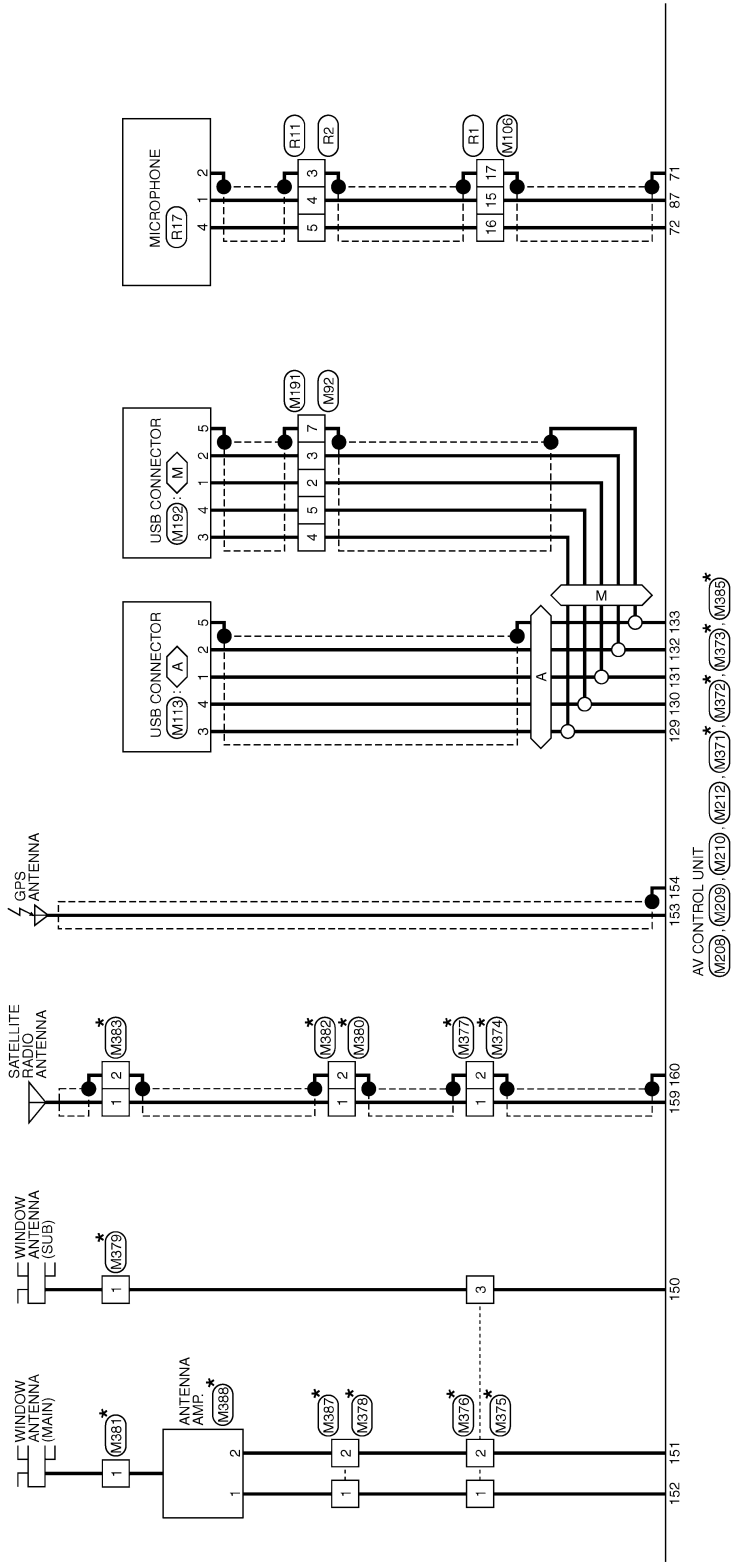
\*: This connector is not shown in "Harness Layout".

# BOSE AUDIO WITH NAVIGATION

## [BOSE AUDIO WITH NAVIGATION]

< WIRING DIAGRAM >

A : With AT  
M : With M/T



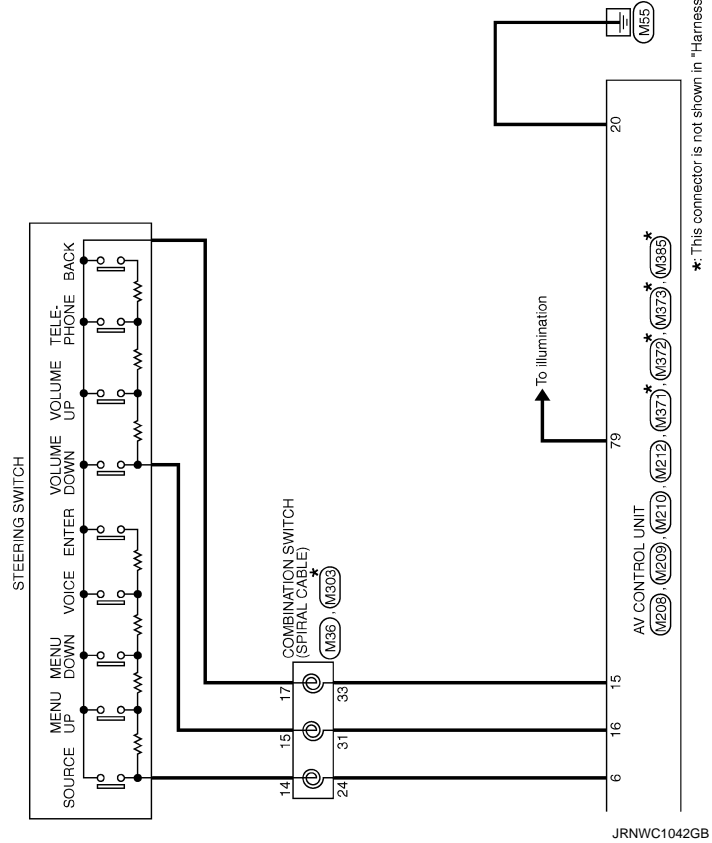
\*: This connector is not shown in "Harness Layout".

JRNWC1041GB

# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[BOSE AUDIO WITH NAVIGATION]



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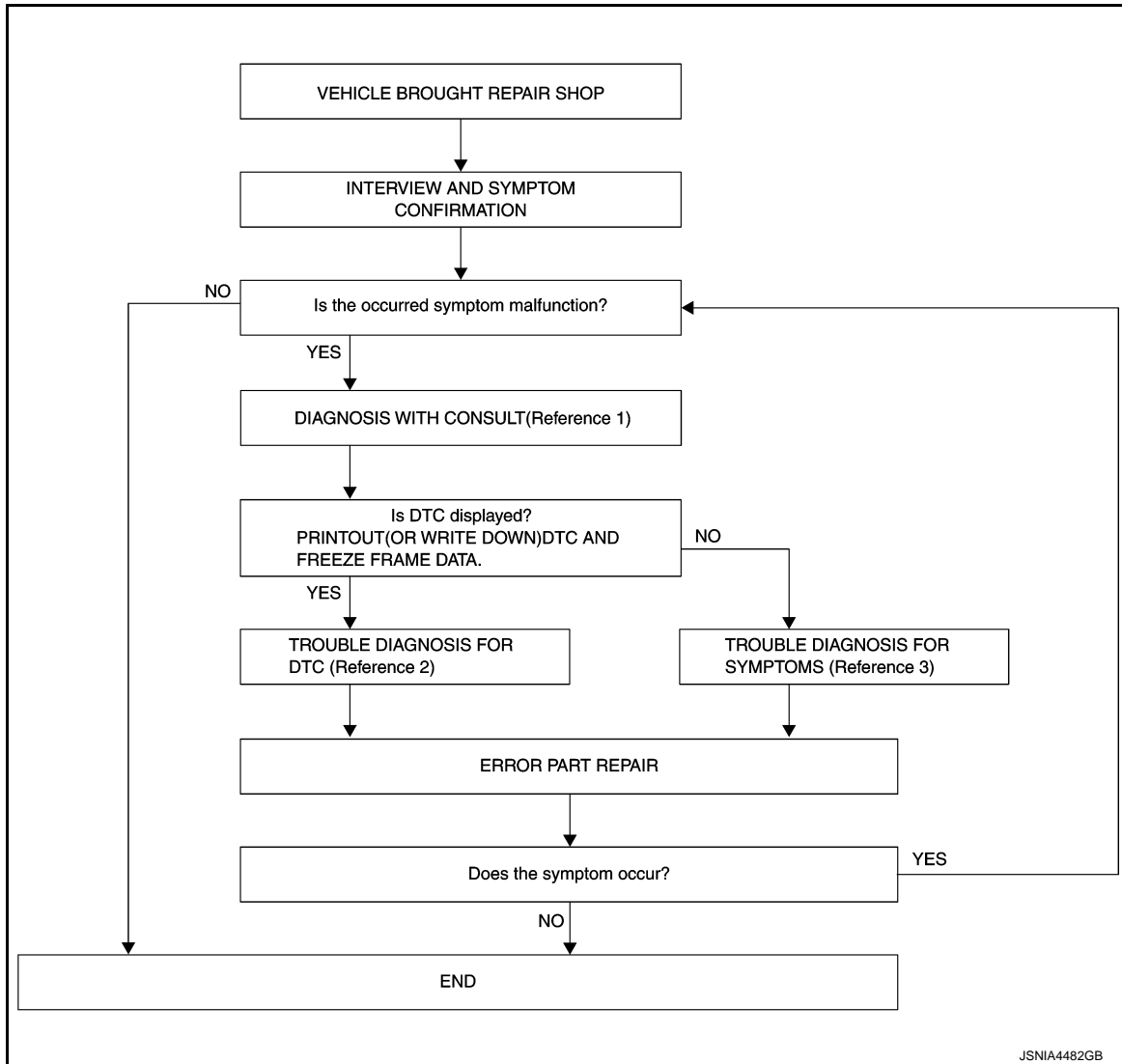
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

#### Work Flow

INFOID:000000008163083

#### OVERALL SEQUENCE



JSNIA4482GB

- Reference 1... Refer to [AV-352, "CONSULT Function"](#).
- Reference 2... Refer to [AV-361, "DTC Index"](#).
- Reference 3... Refer to [AV-430, "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

[BOSE AUDIO WITH NAVIGATION]

< BASIC INSPECTION >

1. Connect CONSULT and perform a self-diagnosis for "MULTI AV". Refer to [AV-352, "CONSULT Function"](#).

**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-361, "DTC Index"](#).

>> GO TO 5.

## 4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-430, "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

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AV

# ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT)

< BASIC INSPECTION >

[BOSE AUDIO WITH NAVIGATION]

## ADDITIONAL SERVICE WHEN REPLACING (AV CONTROL UNIT)

### Description

INFOID:000000008163084

#### BEFORE REPLACEMENT

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

#### 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.

### Work Procedure

INFOID:000000008273085

#### 1. SAVING VEHICLE SPECIFICATION

##### ⓐ CONSULT Configuration

Perform "Before Replace ECU" to save or print current vehicle specification. Refer to [AV-377, "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-442, "Exploded View"](#).

>> GO TO 3.

#### 3. WRITING VEHICLE SPECIFICATION

##### ⓐ CONSULT Configuration

Perform "After Replace ECU" or "Manual Configuration" to write vehicle specification. Refer to [AV-377, "Work Procedure"](#).

>> 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)

< BASIC INSPECTION >

[BOSE AUDIO WITH NAVIGATION]

## CONFIGURATION (AV CONTROL UNIT)

### Description

INFOID:000000008163086

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

### Work Procedure

INFOID:000000008163087

#### 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-377, "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 List

INFOID:000000008163088

##### 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.

# CONFIGURATION (AV CONTROL UNIT)

< BASIC INSPECTION >

[BOSE AUDIO WITH NAVIGATION]

MANUAL SETTING ITEM		NOTE
Items	Setting value	
STEERING	LHD	—
	RHD	—
GRADE	MODE 1	SPORT premium grade with 4WAS
	MODE 3	SPORT premium grade without 4WAS
	MODE 2	Except for above
4WAS	WITHOUT	—
	WITH	—
SOUND SYSTEM	BASE	—
	BOSE	—

# U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## DTC/CIRCUIT DIAGNOSIS

### U1000 CAN COMM CIRCUIT

#### Description

INFOID:000000008163089

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-25, "CAN Communication Signal Chart"](#).

#### DTC Logic

INFOID:000000008163090

#### 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:000000008163091

#### 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-16, "Trouble Diagnosis Procedure"](#).  
NO >> Refer to GI section. Refer to [GI-43, "Intermittent Incident"](#).

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# U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1010 CONTROL UNIT (CAN)

### DTC Logic

INFOID:000000008163092

### 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. Refer to <a href="#">AV-442, "Exploded View"</a> .

# U1200 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1200 AV CONTROL UNIT

### DTC Logic

INFOID:000000008163093

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. Refer to <a href="#">AV-442, "Exploded View"</a> .

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AV

# U1201 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1201 AV CONTROL UNIT

### DTC Logic

INFOID:000000008163094

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. Refer to <a href="#">AV-442. "Exploded View"</a> .

# U1202 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1202 AV CONTROL UNIT

### DTC Logic

INFOID:000000008163095

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. Refer to <a href="#">AV-442, "Exploded View"</a> .

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AV

# U1204 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1204 AV CONTROL UNIT

### Description

INFOID:000000008163096

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-442. "Exploded View"](#).

### DTC Logic

INFOID:000000008163097

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:000000008163098

#### 1. PERFORM THE SELF-DIAGNOSIS

1. Delete the "Self-Diagnosis Results" of "MULTI AV". 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-442. "Exploded View"](#).
- NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.



# U1205 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1205 AV CONTROL UNIT

### Description

INFOID:000000008163099

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-442. "Exploded View"](#).

### DTC Logic

INFOID:000000008163100

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:000000008163101

#### 1. PERFORM THE SELF-DIAGNOSIS

1. Delete the "Self-Diagnosis Results" of "MULTI AV". 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-442. "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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# U1206 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1206 AV CONTROL UNIT

### Description

INFOID:000000008163102

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-442. "Exploded View"](#).

### DTC Logic

INFOID:000000008163103

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:000000008163104

#### 1. PERFORM THE SELF-DIAGNOSIS

1. Delete the "Self-Diagnosis Results" of "MULTI AV". 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-442. "Exploded View"](#).
- NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

# U1207 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1207 AV CONTROL UNIT

### Description

INFOID:000000008163105

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-442. "Exploded View"](#).

### DTC Logic

INFOID:000000008163106

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:000000008163107

#### 1. PERFORM THE SELF-DIAGNOSIS

1. Delete the "Self-Diagnosis Results" of "MULTI AV". 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-442. "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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# U1216 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1216 AV CONTROL UNIT

### DTC Logic

INFOID:000000008163108

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. Refer to <a href="#">AV-442. "Exploded View"</a> .

# U1217 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1217 AV CONTROL UNIT

### DTC Logic

INFOID:000000008163109

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. Refer to <a href="#">AV-442, "Exploded View"</a> .

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# U1218 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1218 AV CONTROL UNIT

### DTC Logic

INFOID:000000008163110

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. Refer to <a href="#">AV-442, "Exploded View"</a>.</li></ul>

### Diagnosis Procedure

INFOID:00000000813608

#### 1. CHECK MUSIC BOX FUNCTION

##### Is music box function normal?

YES >> Malfunction may be detected transitory.

NO >> Replace AV control unit. Refer to [AV-442, "Exploded View"](#).

# U1219 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1219 AV CONTROL UNIT

### DTC Logic

INFOID:000000008163112

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. Refer to <a href="#">AV-442, "Exploded View"</a>.</li></ul>

### Diagnosis Procedure

INFOID:000000008813609

#### 1. CHECK MUSIC BOX FUNCTION

##### Is music box function normal?

- YES >> Malfunction may be detected transitory.  
NO >> Replace AV control unit. Refer to [AV-442, "Exploded View"](#).

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AV

# U121A AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U121A AV CONTROL UNIT

### DTC Logic

INFOID:000000008163114

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. Refer to <a href="#">AV-442, "Exploded View"</a>.</li></ul>

### Diagnosis Procedure

INFOID:00000000813610

#### 1. CHECK MUSIC BOX FUNCTION

##### Is music box function normal?

YES >> Malfunction may be detected transitory.

NO >> Replace AV control unit. Refer to [AV-442, "Exploded View"](#).



# U121B AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U121B AV CONTROL UNIT

### DTC Logic

INFOID:000000008163116

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. Refer to <a href="#">AV-442, "Exploded View"</a>.</li></ul>

### Diagnosis Procedure

INFOID:000000008813611

#### 1.CHECK MUSIC BOX FUNCTION

##### Is music box function normal?

- YES >> Malfunction may be detected transitory.  
NO >> Replace AV control unit. Refer to [AV-442, "Exploded View"](#).

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AV

# U121C AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U121C AV CONTROL UNIT

### DTC Logic

INFOID:000000008163118

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. Refer to <a href="#">AV-442, "Exploded View"</a>.</li></ul>

### Diagnosis Procedure

INFOID:00000000813612

#### 1. CHECK MUSIC BOX FUNCTION

##### Is music box function normal?

YES >> Malfunction may be detected transitory.

NO >> Replace AV control unit. Refer to [AV-442, "Exploded View"](#).

# U121D AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U121D AV CONTROL UNIT

### DTC Logic

INFOID:000000008163120

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. Refer to <a href="#">AV-442. "Exploded View"</a>.</li></ul>

### Diagnosis Procedure

INFOID:000000008163121

#### 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-442. "Exploded View"](#).

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AV

# U121E AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U121E AV CONTROL UNIT

### DTC Logic

INFOID:000000008163122

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. Refer to <a href="#">AV-442. "Exploded View"</a>.</li></ul>

### Diagnosis Procedure

INFOID:000000008163123

#### 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-442. "Exploded View"](#).

# U1225 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1225 AV CONTROL UNIT

### DTC Logic

INFOID:000000008163124

### 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.

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# U1227 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1227 AV CONTROL UNIT

### DTC Logic

INFOID:000000008163125

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. Refer to <a href="#">AV-442. "Exploded View"</a>.</li></ul>

### Diagnosis Procedure

INFOID:000000008163126

#### 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-442. "Exploded View"](#).

# U1228 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1228 AV CONTROL UNIT

### DTC Logic

INFOID:000000008163127

### 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. Refer to <a href="#">AV-442, "Exploded View"</a> .

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# U1229 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1229 AV CONTROL UNIT

### DTC Logic

INFOID:000000008163128

### 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. Refer to <a href="#">AV-442, "Exploded View"</a> .



# U122A AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U122A AV CONTROL UNIT

### DTC Logic

INFOID:000000008163129

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 "MULTI AV" of CONSULT.

### Diagnosis Procedure

INFOID:000000008163130

#### 1.PERFORM THE SELF-DIAGNOSIS

When U122A is detected, write configuration data with "MULTI AV" of CONSULT.

>> Write configuration data with "MULTI AV" of CONSULT. Refer to [AV-376, "Work Procedure"](#).

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# U122E AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U122E AV CONTROL UNIT

### DTC Logic

INFOID:000000008163131

### 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. Refer to <a href="#">AV-442, "Exploded View"</a> .

# U1232 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1232 STEERING ANGLE SENSOR

### DTC Logic

INFOID:000000008163132

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:000000008163133

#### 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 DISPLAY UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1243 DISPLAY UNIT

### DTC Logic

INFOID:000000008163134

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1243	FRONT DISP CONN [U1243]	When either one of the following items is detected: <ul style="list-style-type: none"><li>display unit power supply and ground circuit are malfunctioning.</li><li>communication circuit between AV control unit and display unit are malfunctioning.</li></ul>	<ul style="list-style-type: none"><li>Display unit power supply and ground circuit.</li><li>Communication circuit between AV control unit and display unit.</li></ul>

### Diagnosis Procedure

INFOID:000000008163135

#### 1. CHECK DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUIT

Check display unit power supply and ground circuit. Refer to [AV-413. "DISPLAY UNIT : Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair malfunctioning parts.

#### 2. CHECK CONTINUITY COMMUNICATION CIRCUIT

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

Display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M75	9	M210	89	Existed
	10		73	

- Check continuity between display unit harness connector and ground.

Display unit		Ground	Continuity
Connector	Terminals		
M75	9		Not existed
	10		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair harness or connector.

#### 3. CHECK COMMUNICATION SIGNAL

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

# U1243 DISPLAY UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M75	9	Ground	When adjusting display brightness.	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit. Refer to [AV-442. "Exploded View"](#).

## 4. CHECK COMMUNICATION SIGNAL

Check signal between display unit harness connector and ground.

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M75	10	Ground	When adjusting display brightness.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace display unit. Refer to [AV-444. "Exploded View"](#).

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AV

# U1244 GPS ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1244 GPS ANTENNA

### DTC Logic

INFOID:000000008163136

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1244	GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.

### Diagnosis Procedure

INFOID:000000008163137

#### 1. GPS ANTENNA CHECK

Visually check GPS antenna and antenna feeder.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair malfunctioning parts.

#### 2. CHECK AV CONTROL UNIT VOLTAGE

1. Disconnect GPS antenna connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit and ground.

(+)	(-)	Voltage (Approx.)
AV control unit		
Terminal		
153	Ground	5.0 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace AV control unit. Refer to [AV-442. "Exploded View"](#).

# U1258 SATELLITE RADIO ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1258 SATELLITE RADIO ANTENNA

### DTC Logic

INFOID:000000008163138

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:000000008163139

#### 1. SATELLITE RADIO ANTENNA CHECK

Visually check satellite radio antenna (antenna base) and antenna feeder.

Is the 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 and ground.

(+)	(-)	Voltage (Approx.)
AV control unit		
Terminal		
159	Ground	5.0 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace AV control unit. Refer to [AV-442. "Exploded View"](#).

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# U1263 USB

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1263 USB

### DTC Logic

INFOID:000000008163140

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:000000008163141

#### 1.CHECK USB HARNESS

Visually check USB harness.

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-442, "Exploded View"](#).
- NO >> Replace USB harness.



# U1264 ANTENNA AMP.

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1264 ANTENNA AMP.

### DTC Logic

INFOID:000000008163142

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1264	ANTENNA AMP TERMINAL [OPEN or SHORT] [U1264]	Radio antenna amp. ON circuit is open or shorted.	Check antenna amp. ON signal circuit between the AV control unit and antenna amp.

### Diagnosis Procedure

INFOID:000000008163143

#### 1. CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND ANTENNA AMP.

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

AV control unit		Antenna amp.		Continuity
Connector	Terminals	Connector	Terminals	
M371	152	M388	1	Existed

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

AV control unit		Ground	Continuity
Connector	Terminals		
M371	152		Not existed

Is the inspection result normal?

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

#### 2. CHECK VOLTAGE AV CONTROL UNIT

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

AV control unit		(-)	Voltage (Approx.)
Connector	Terminals		
M371	152	Ground	12.0 V

Is the inspection result normal?

- YES >> Replace antenna amp. Refer to [AV-453, "Exploded View"](#) .  
 NO >> Replace AV control unit. Refer to [AV-442, "Exploded View"](#) .

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# U1265 BOSE AMP.

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1265 BOSE AMP.

### DTC Logic

INFOID:000000008163144

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1265	AMP ON TERMINAL [GND-SHORT or VB-SHORT] [U1265]	BOSE amp. ON circuit is open or shorted.	Check BOSE amp. ON signal circuit between the AV control unit and BOSE amp.

### Diagnosis Procedure

INFOID:000000008163145

#### 1. CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND BOSE AMP.

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

AV control unit		BOSE amp.		Continuity
Connector	Terminals	Connector	Terminals	
M208	1	B41	20	Existed

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

AV control unit		Ground	Continuity
Connector	Terminals		
M208	1		Not existed

Is the inspection result normal?

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

#### 2. CHECK VOLTAGE AV CONTROL UNIT

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

(+)		(-)	Voltage (Approx.)
AV control unit			
Connector	Terminals		
M208	1	Ground	10.0 V

Is the inspection result normal?

- YES >> Replace BOSE amp. Refer to [AV-451, "Exploded View"](#)  
 NO >> Replace AV control unit. Refer to [AV-442, "Exploded View"](#).

# U1300 AV COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1300 AV COMM CIRCUIT

### Description

INFOID:000000008163146

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 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>AV communication circuits between AV control unit and sonar control unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>Sonar control unit power supply and ground circuits.</li> <li>AV communication circuits between AV control unit and sonar control unit.</li> </ul>
U1300 U1240 U125C	<ul style="list-style-type: none"> <li>AV COMM CIRCUIT [U1300]</li> <li>SWITCH CONN [U1240]</li> <li>SONAR CONN [U125C]</li> </ul>	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.

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# U1310 AV CONTROL UNIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1310 AV CONTROL UNIT

### DTC Logic

INFOID:000000008163147

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 AV control unit. If the malfunction occurs constantly. Refer to <a href="#">AV-442. "Exploded View"</a> .

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## POWER SUPPLY AND GROUND CIRCUIT

### AV CONTROL UNIT

#### AV CONTROL UNIT : Diagnosis Procedure

INFOID:000000008163148

#### 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 BATTERY 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

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between AV control unit and fuse.

#### 3.CHECK ACC POWER SUPPLY CIRCUIT

Check voltage between AV control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
ACC power supply	M208	7	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check harness between AV control unit and BCM.

#### 4.CHECK GROUND CIRCUIT

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

### DISPLAY UNIT

#### DISPLAY UNIT : Diagnosis Procedure

INFOID:000000008163149

#### 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	34

Is the inspection result normal?

YES >> GO TO 2.

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AV

# POWER SUPPLY AND GROUND CIRCUIT

[BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Be sure to eliminate cause of malfunction before installing new fuse.

## 2.CHECK BATTERY 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	M75	11	OFF	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between display unit and fuse.

## 3.CHECK ACC POWER SUPPLY CIRCUIT

Check voltage between display unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
ACC power supply	M75	23	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.

NO >> Check harness between display unit and BCM.

## 4.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	M75	12	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

## BOSE AMP.

### BOSE AMP. : Diagnosis Procedure

INFOID:000000008163150

## 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	5, 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	10, 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.

# POWER SUPPLY AND GROUND CIRCUIT

[BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

3. Check continuity between BOSE amp. harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B42	7, 12	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

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AV

# RGB DIGITAL IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## RGB DIGITAL IMAGE SIGNAL CIRCUIT

### Description

INFOID:000000008163151

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

### Diagnosis Procedure

INFOID:000000008163152

#### 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 display unit harness connector and AV control unit harness connector.

Display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M386	27	M385	157	Existed
	28		158	

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

Display unit		Ground	Continuity
Connector	Terminals		
M386	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 display unit harness connector and ground.

(+) Display unit		(-)	Condition	Voltage (Approx.)
Connector	Terminals			
M386	27	Ground	—	1.3 V
	28			

Is the inspection result normal?

YES >> Replace display unit. Refer to [AV-444, "Exploded View"](#).

NO >> Replace AV control unit. Refer to [AV-442, "Exploded View"](#).



# COMPOSITE IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## COMPOSITE IMAGE SIGNAL CIRCUIT

### Description

INFOID:000000008163153

AV control unit transmits the playback DVD image signal to the display unit.

### Diagnosis Procedure

INFOID:000000008163154

#### 1. CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

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

AV control unit		Display unit		Continuity
Connector	Terminal	Connector	Terminal	
M210	68	M75	18	Existed

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

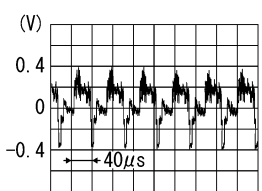
AV control unit		Ground	Continuity
Connector	Terminal		
M210	68		Not existed

Is the inspection result normal?

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

#### 2. CHECK COMPOSITE IMAGE SIGNAL

1. Connect AV control unit connector and 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 display unit. Refer to [AV-444, "Exploded View"](#).  
 NO >> Replace AV control unit. Refer to [AV-442, "Exploded View"](#).

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# DISK EJECT SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## DISK EJECT SIGNAL CIRCUIT

### Description

INFOID:000000008163155

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

### Diagnosis Procedure

INFOID:000000008163156

#### 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.

(+) AV control unit		(-)	Condition	Voltage (Approx.)
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-456, "Exploded View"](#).  
NO >> Replace AV control unit. Refer to [AV-442, "Exploded View"](#).

# MODE CHANGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## MODE CHANGE SIGNAL CIRCUIT

### Description

INFOID:000000008163157

- 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:000000008163158

#### 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.

AV control unit		BOSE amp.		Continuity
Connector	Terminal	Connector	Terminal	
M209	30	B41	37	Existed

4. Check continuity between BOSE amp. harness connector and ground.

BOSE amp.		Ground	Continuity
Connector	Terminal		
B41	37		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 and AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between BOSE amp. harness connector and ground.

(+) BOSE amp.		(-)	Condition	Voltage (Approx.)
Connector	Terminal			
B41	37	Ground	Driver's Audio Stage ON.	0 V
			Driver's Audio Stage OFF.	8.5 V

Is the inspection result normal?

- YES >> Replace BOSE amp. Refer to [AV-451, "Exploded View"](#).  
 NO >> Replace AV control unit. Refer to [AV-442, "Exploded View"](#).

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AV

# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## MICROPHONE SIGNAL CIRCUIT

### Description

INFOID:000000008163159

Supply power from AV control unit to microphone. The microphone transmits the sound/voice to the AV control unit.

### Diagnosis Procedure

INFOID:000000008163160

#### 1.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND MICROPHONE CIRCUIT

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

AV control unit		Microphone		Continuity
Connector	Terminals	Connector	Terminals	
M210	71	R17	2	Existed
	72		4	
	87		1	

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

AV control unit		Ground	Continuity
Connector	Terminals		
M210	72		Not existed
	87		

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2.CHECK VOLTAGE MICROPHONE VCC

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

(+)		(-)		Voltage (Approx.)
AV control unit		AV control unit		
Connector	Terminal	Connector	Terminal	
M210	72	M210	71	5.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace AV control unit. Refer to [AV-442. "Exploded View"](#).

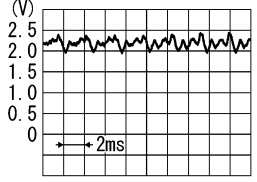
#### 3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.
2. Check signal between AV control unit harness connector.

# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH 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-442. "Exploded View"](#).
- NO >> Replace microphone. Refer to [AV-459. "Exploded View"](#).

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# CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## CAMERA IMAGE SIGNAL CIRCUIT

### Description

INFOID:000000008163161

- The AV control unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the display unit when power is supplied from the AV control unit.

### Diagnosis Procedure

INFOID:000000008163162

#### 1. CHECK CONTINUITY CAMERA POWER SUPPLY CIRCUIT

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

AV control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M209	22	B305	1	Existed

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

AV control unit		Ground	Continuity
Connector	Terminal		
M209	22		Not existed

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK VOLTAGE CAMERA POWER SUPPLY

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

(+)		(-)	Condition	Voltage (Approx.)
Connector	Terminal			
M209	22	Ground	Shift position is "R".	6.0 V

Is inspection result normal?

YES >> GO TO 3.

NO >> Replace AV control unit.

#### 3. CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

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

Display unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M75	8	B305	3	Existed

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

# CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Display unit		Ground	Continuity
Connector	Terminal		
M75	8		Not existed

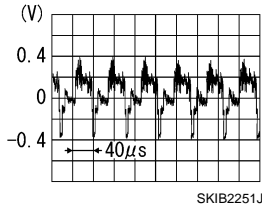
Is inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

## 4. CHECK CAMERA IMAGE SIGNAL

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

(+)		(-)	Condition	Reference value
Display unit				
Connector	Terminal			
M75	8	Ground	At rear view camera image is displayed.	

Is inspection result normal?

YES >> Replace display unit. Refer to [AV-444, "Exploded View"](#).

NO >> Replace rear view camera. Refer to [AV-462, "Exploded View"](#).

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AV

# STEERING SWITCH SIGNAL A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## STEERING SWITCH SIGNAL A CIRCUIT

### Description

INFOID:000000008163163

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:000000008163164

#### 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.

#### 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-442, "Exploded View"](#)

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-424, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [ST-17, "Exploded View"](#).

### Component Inspection

INFOID:000000008163165

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



# STEERING SWITCH SIGNAL A CIRCUIT

[BOSE AUDIO WITH NAVIGATION]

## < DTC/CIRCUIT DIAGNOSIS >

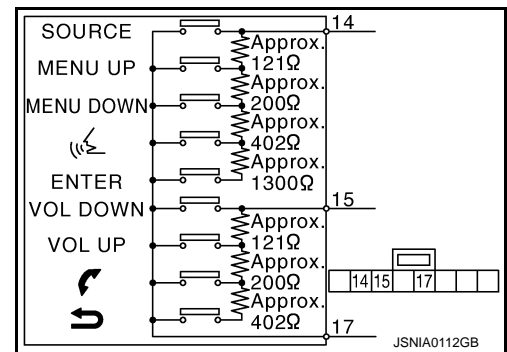
### Standard

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



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# STEERING SWITCH SIGNAL B CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## STEERING SWITCH SIGNAL B CIRCUIT

### Description

INFOID:000000008163166

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:000000008163167

#### 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.

#### 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-442. "Exploded View"](#).

#### 4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-426. "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [ST-17. "Exploded View"](#).

### Component Inspection

INFOID:000000008163168

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

# STEERING SWITCH SIGNAL B CIRCUIT

[BOSE AUDIO WITH NAVIGATION]

## < DTC/CIRCUIT DIAGNOSIS >

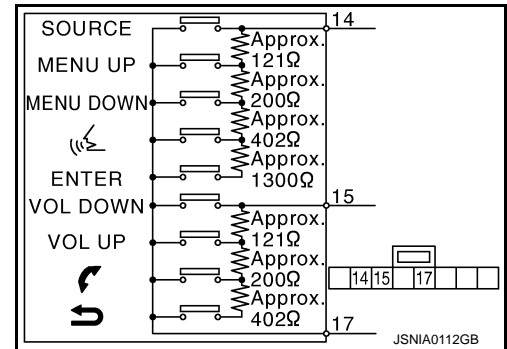
### Standard

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



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# STEERING SWITCH GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## STEERING SWITCH GROUND CIRCUIT

### Description

INFOID:000000008163169

Transmits the steering switch signal to AV control unit.

### Diagnosis Procedure

INFOID:000000008163170

#### 1. CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

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

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	15	M36	33	Existed

3. Connect AV control unit connector.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace spiral cable.

#### 3. CHECK GROUND CIRCUIT

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

AV control unit		Ground	Continuity
Connector	Terminal		
M208	15		Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace AV control unit. Refer to [AV-442, "Exploded View"](#)

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-428, "Component Inspection"](#).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace steering switch. Refer to [ST-17, "Exploded View"](#)

### Component Inspection

INFOID:000000008163171

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

# STEERING SWITCH GROUND CIRCUIT

[BOSE AUDIO WITH NAVIGATION]

## < DTC/CIRCUIT DIAGNOSIS >

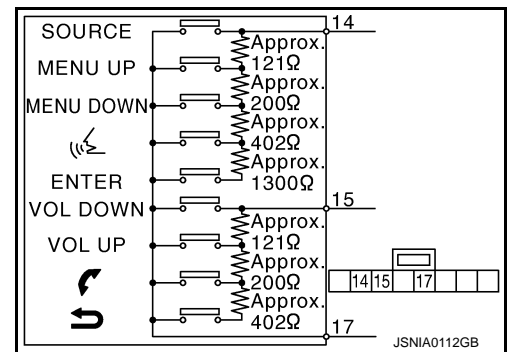
### Standard

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



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# MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## SYMPTOM DIAGNOSIS

### MULTI AV SYSTEM SYMPTOMS

#### Symptom Table

INFOID:000000008163172

#### 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-352, "CONSULT Function"</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-413, "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-340, "On Board Diagnosis Function"</a> .
Fuel economy display, vehicle setting operation is abnormal.	There is malfunction in the CONSULT "self-diagnosis result" of "MULTI AV". Refer to <a href="#">AV-352, "CONSULT Function"</a> .	Perform detected DTC diagnosis. Refer to <a href="#">AV-361, "DTC Index"</a> .
	There is no malfunction in the CONSULT "self-diagnosis results" of "MULTI AV". Refer to <a href="#">AV-352, "CONSULT Function"</a> .	Ignition 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-442, "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.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):





# MULTI AV SYSTEM SYMPTOMS

[BOSE AUDIO WITH NAVIGATION]

## < SYMPTOM DIAGNOSIS >

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.	
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-442, "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.	
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to <a href="#">AV-420, "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="#">ST-17, "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-426, "Diagnosis Procedure"</a> .
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to <a href="#">AV-428, "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.	
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-442, "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.	
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to <a href="#">AV-420, "Diagnosis Procedure"</a> .

## MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH 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="#">ST-17, "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-426, "Diagnosis Procedure"</a> .
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to <a href="#">AV-428, "Diagnosis Procedure"</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-416, "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-442, "Exploded View"</a> .
	Voice does not sound at "Voice Microphone Test" of Confirmation/Adjustment mode.	Microphone circuit malfunction. Refer to <a href="#">AV-420, "Diagnosis Procedure"</a> .
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="#">ST-17, "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-424, "Diagnosis Procedure"</a> .
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to <a href="#">AV-428, "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-418, "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-414, "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 (center, front right, front left, rear right, or rear left) 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>



# MULTI AV SYSTEM SYMPTOMS

[BOSE AUDIO WITH NAVIGATION]

< SYMPTOM DIAGNOSIS >

Symptoms	Check items	Probable malfunction location
Noise is mixed with audio.	Noise comes out from all speaker.	<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 (center, front right, front left, rear right, or rear left).	<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).	Poor connector connection of antenna or antenna feeder.
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> </ul>
Satellite radio is not received.	There is malfunction in the CONSULT self-diagnosis result. Refer to <a href="#">AV-352, "CONSULT Function"</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-361, "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-352, "CONSULT Function"</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-454, "Exploded View"</a>.</li> </ul>

## 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-418, "Diagnosis Procedure"</a> .
DVD image is not displayed.	—	Perform CONSULT self-diagnosis. Refer to <a href="#">AV-352, "CONSULT Function"</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-417, "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-414, "BOSE AMP. : Diagnosis Procedure"</a>.</li> </ul>
	Sound is not heard from rear woofer.	<ul style="list-style-type: none"> <li>Woofer power supply and ground circuit malfunction.</li> <li>Sound signal (rear 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.

## RELATED TO CAMERA

Trouble Diagnosis Chart by Symptom

# MULTI AV SYSTEM SYMPTOMS

[BOSE AUDIO WITH NAVIGATION]

< SYMPTOM DIAGNOSIS >

Symptoms	Check items	Probable malfunction location
Camera image is not shown. (Vehicle width and predictive course line are displayed.)	—	Camera image signal circuit. Refer to <a href="#">AV-422, "Diagnosis Procedure"</a> .
Camera image does not switch.	Select "Camera Cont." of Confirmation/ Adjustment mode, Reverse Sensor is not turned ON at "Connection Confirmation".	Reverse signal circuit malfunction.
	Select "Camera Cont." of Confirmation/ Adjustment mode, Reverse Sensor is turned ON at "Connection Confirmation".	AV control unit malfunction. Replace AV control unit. Refer to <a href="#">AV-442, "Exploded View"</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 STEERING SWITCH

Symptoms	Probable malfunction location
None of the steering switch operations work.	Steering switch ground circuit malfunction. Refer to <a href="#">AV-428, "Diagnosis Procedure"</a> .
Only specified switch cannot be operated.	Steering switch malfunction. Replace steering switch. Refer to <a href="#">ST-17, "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-424, "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-426, "Diagnosis Procedure"</a> .

# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## NORMAL OPERATING CONDITION

### Description

INFOID:000000008163173

**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 >

[BOSE AUDIO WITH 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 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 >

[BOSE AUDIO WITH NAVIGATION]

Symptom	Cause and Counter measure	
Cannot play	Check if the CD was inserted correctly.	A
	Check if the CD is scratched or dirty.	B
	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.	C
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.	D
	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.	E
	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.	F
	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.	G
	Check if the finalization process, such as session close and disc close, is done for the disc.	H
Poor sound quality	Check if the CD is scratched or dirty.	I
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.	J
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.	K
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.	L
Move immediately to the next song when playing	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.	M
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.	N
Poor reception only from a certain radio broadcast station.	Check incoming radio wave signal strength of applicable broadcast station.	O
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.	P

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 >

[BOSE AUDIO WITH 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).
	Check that there is no condensation inside the player.	Wait until the condensation evaporates (approximately one hour).
	DVD menu is displayed.	Select item to touch "ENTER".
	Insertion of a DVD with a different region code.	DVDs with a different region code can not be played. Check DVD.
	Some DVD softwares may not be played because not all DVD softwares fully comply in the standard.	This is not a malfunction.
Interruption during playback or flicker in the display	Check that the DVD has no scratches and dirt.	Errors may not be corrected depending on the size of scratches.
		Wipe and clean the dirt on the disc.
Subtitles not shown	Subtitle setting is OFF.	Set subtitle.
	Subtitle is not included in the software.	Check DVD.
Not played in set language	If a language is not included in the DVD, then the DVD is played in a recommended language.	Check DVD.
Not played with set subtitle	If a set subtitle is not included in the DVD, then the DVD is played with a recommended subtitle.	Check DVD.
Angle unchangeable	Plural angles are not recorded in the software.	Check if the DVD is multi-angle capable.
Unusual screen display	Display mode to the output aspect ratio for the DVD software is inappropriate.	Switch to the appropriate display mode.
Distortion in picture	In the process of fast-forward or fast-reverse.	This is not a malfunction.
Low sound quality	Check that the DVD has no scratches and dirt.	Wipe and clean the dirt on the disc.
Subtitle and language not selectable (not played with set subtitle or in set language)	The DVD is not multilanguage-capable.	The inclusion of the number of languages depends on DVD. Languages may be selectable on the Menu screen. Check DVD.
	The DVD has a priority language or setting.	If the DVD has a priority language or settings, then settings changed with this device are not reflected.
Playback time is indicated, but no sound comes out.	Playback of Mix mode Truck 1. (Mix mode: Format including Truck 1 with data other than music and Trucks from Truck 2 with music data.)	Play music data included in trucks from Truck 2.

### RELATED TO VEHICLE ICON

Symptom	Possible cause	Possible solution
Names of roads differ between Plan View and Birdview™.	This is because the quantity of the displayed information is reduced so that the screen does not become too crowded. There is also a chance that names of the roads may be displayed multiple times, and the names appearing on the screen may be different because of a processing procedure.	This is not a malfunction.
The vehicle icon is not displayed in the correct position.	The vehicle was transported after the ignition switch was pressed off, for example, by a ferry or car transporter.	Drive the vehicle for a while on a road where GPS signals can be received.
	The position and direction of the vehicle icon may be incorrect depending on the driving environments and the levels of positioning accuracy of the navigation system.	This is not a malfunction. Drive the vehicle for a while to automatically correct the position and direction of the vehicle icon.
When the vehicle is traveling on a new road, the vehicle icon is located on another road nearby.	Because the new road is not stored in the map data, the system automatically places the vehicle icon on the nearest road available.	Updated road information will be included in the next version of the map data.

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH 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 >

[BOSE AUDIO WITH 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 HANDS-FREE PHONE (EXCEPT FOR MEXICO)

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> <p><b>NOTE:</b></p> 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 HANDS-FREE PHONE (FOR MEXICO)



## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Symptom	Cause and Counter measure
Cannot use hands-free phone	<p>Customer will not be able to use a hands-free phone under the following conditions.</p> <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> <p><b>NOTE:</b></p> <p>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.</p>
The other party's voice cannot be heard by hands-free phone.	<p>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.</p>
Poor sound quality	<p>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.</p>

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AV

# AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## REMOVAL AND INSTALLATION

### AV CONTROL UNIT

#### Exploded View

INFOID:000000008163174

#### CAUTION:

- Before replacing AV control unit, perform "Read/Write Configuration" to save or print current vehicle specification. For details, refer to [AV-376. "Description"](#).
- Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF.

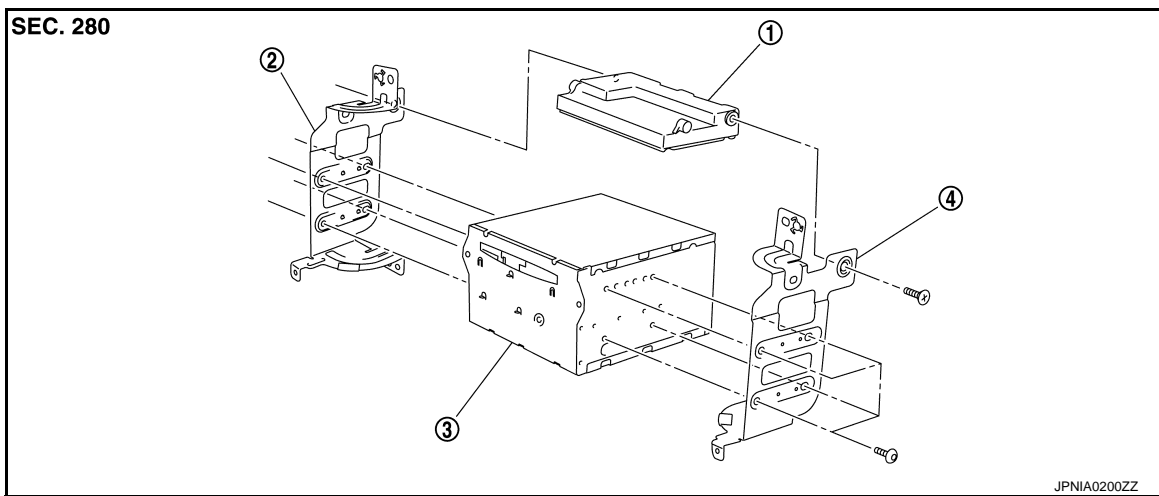
#### NOTE:

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.

#### REMOVAL

Refer to [IP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23. "M/T MODELS : Exploded View"](#) (M/T models).

#### DISASSEMBLY



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

#### Removal and Installation

INFOID:000000008163175

#### REMOVAL

#### CAUTION:

- Before replacing AV control unit, perform "Read/Write Configuration" to save or print current vehicle specification. For details, refer to [AV-376. "Work Procedure"](#).
- 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.

1. Remove display unit. Refer to [AV-444. "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

Install in the reverse order of removal.

#### CAUTION:

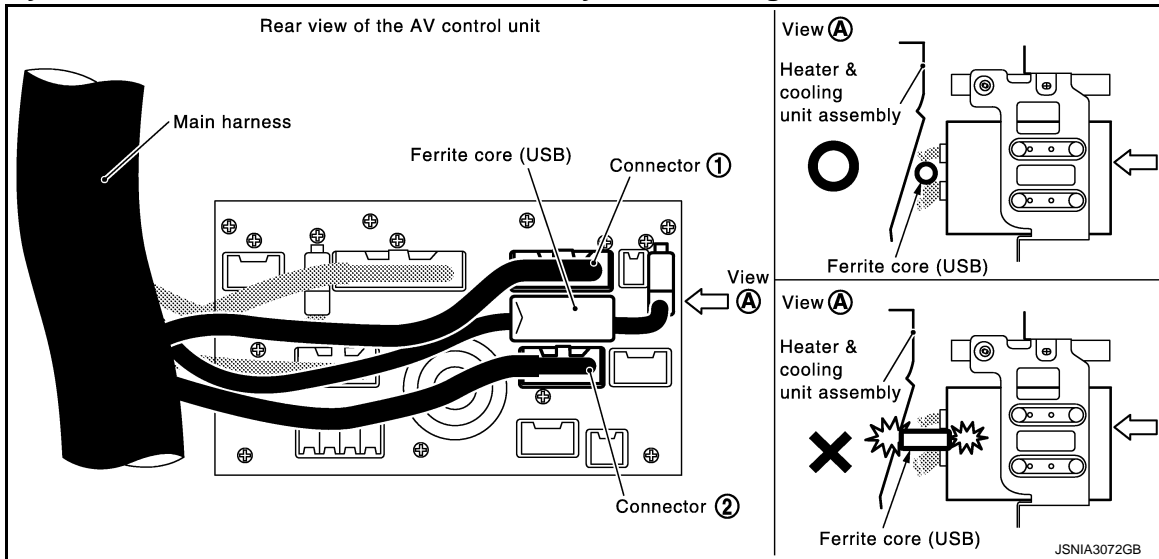
- Since AV control unit connector and unified meter and A/C amp. connector have the same form, be careful not to insert them wrongly.

# AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

- Be sure to perform “Read/Write Configuration” when replacing AV control unit. For details, refer to [AV-377, "Work Procedure"](#).
- Install AV control unit between connector (1) and connector (2) with the ferrite core (USB) orientated sideways to the vehicle. Incorrect installation may cause damage to the AV control unit.



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AV

## DISPLAY UNIT

### Exploded View

INFOID:000000008163176

Refer to [IP-12, "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23, "M/T MODELS : Exploded View"](#) (M/T models).

### Removal and Installation

INFOID:000000008163177

#### REMOVAL

1. Remove cluster lid D. Refer to [IP-12, "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23, "M/T MODELS : Exploded View"](#) (M/T models).
2. Remove display unit with bracket as a single unit.

#### INSTALLATION

Install in the reverse order of removal.

# DOOR SQUAWKER

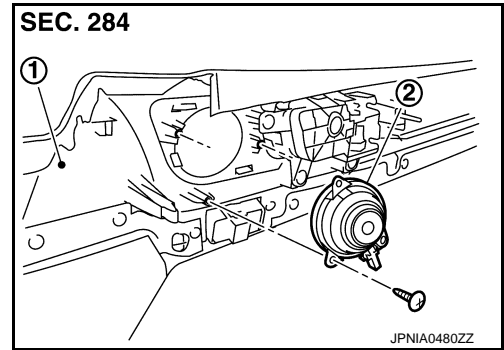
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## DOOR SQUAWKER

### Exploded View

INFOID:000000008163178



1. Door finisher
2. Door squawker

### Removal and Installation

INFOID:000000008163179

#### REMOVAL

1. Remove door finisher. Refer to [INT-12. "Exploded View"](#).
2. Remove door squawker from door finisher.

#### INSTALLATION

Install in the reverse order of removal.

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# DOOR WOOFER

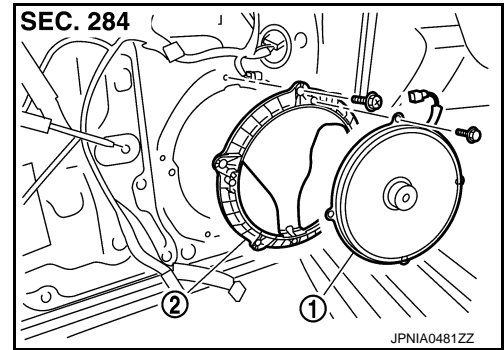
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## DOOR WOOFER

### Exploded View

INFOID:000000008163180



1. Door woofer
2. Woofer bracket

### Removal and Installation

INFOID:000000008163181

#### REMOVAL

1. Remove door finisher. Refer to [INT-12, "Exploded View"](#).
2. Remove door woofer from woofer bracket.

#### INSTALLATION

Install in the reverse order of removal.

# REAR SPEAKER

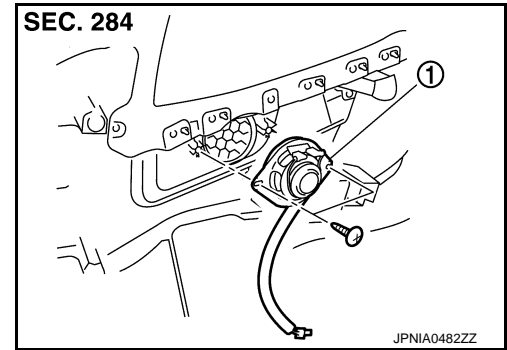
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## REAR SPEAKER

### Exploded View

INFOID:000000008163182



1. Rear speaker

### Removal and Installation

INFOID:000000008163183

#### REMOVAL

1. Remove rear side finisher. Refer to [INT-15. "Exploded View"](#).
2. Remove rear speaker from rear side finisher.

#### INSTALLATION

Install in the reverse order of removal.

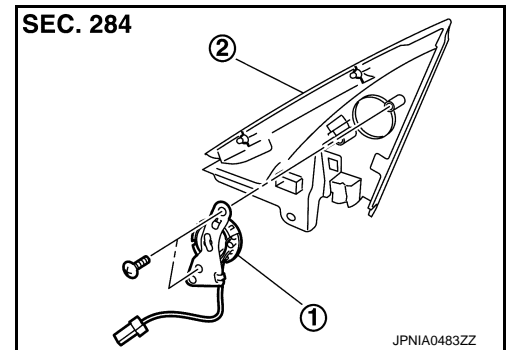
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## TWEETER

### Exploded View

INFOID:000000008163184



1. Tweeter
2. Corner cover

### Removal and Installation

INFOID:000000008163185

#### REMOVAL

1. Remove corner cover. Refer to [MIR-35. "DOOR MIRROR ASSEMBLY : Exploded View"](#).
2. Remove tweeter from corner cover.

#### INSTALLATION

Install in the reverse order of removal.



# CENTER SPEAKER

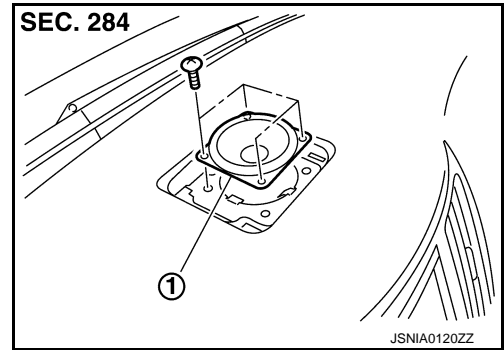
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## CENTER SPEAKER

### Exploded View

INFOID:000000008163186



1. Center speaker

### Removal and Installation

INFOID:000000008163187

#### REMOVAL

1. Remove upper grille, and then remove center speaker. Refer to [JP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [JP-23. "M/T MODELS : Exploded View"](#) (M/T models).

#### INSTALLATION

Install in the reverse order of removal.

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# REAR WOOFER

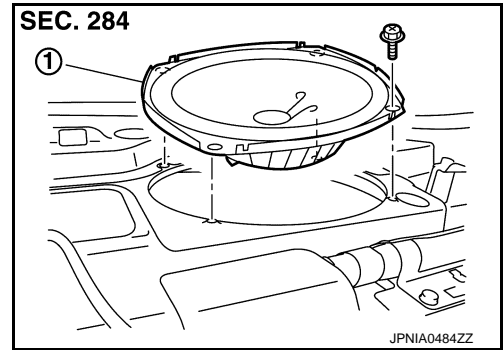
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## REAR WOOFER

Exploded View

INFOID:000000008163188



1. Rear woofer

### Removal and Installation

INFOID:000000008163189

#### REMOVAL

1. Remove rear parcel shelf finisher. Refer to [INT-19, "Exploded View"](#).
2. Remove rear woofer from rear parcel shelf.

#### INSTALLATION

Install in the reverse order of removal.

# BOSE AMP.

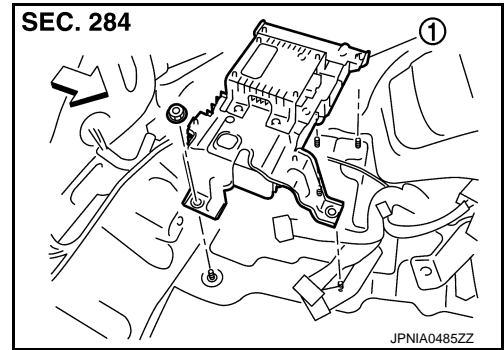
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## BOSE AMP.

### Exploded View

INFOID:000000008163190



1. BOSE amp.

←: Vehicle front

### Removal and Installation

INFOID:000000008163191

#### REMOVAL

1. Remove trunk floor spacer LH. Refer to [INT-29, "Exploded View"](#).
2. Remove BOSE amp. from trunk room LH.

#### INSTALLATION

Install in the reverse order of removal.

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# WOOFER AMP.

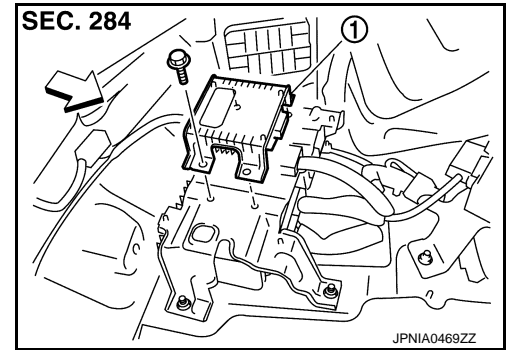
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## WOOFER AMP.

### Exploded View

INFOID:000000008163192



1. Woofer amp.

←: Vehicle front

### Removal and Installation

INFOID:000000008163193

#### REMOVAL

1. Remove trunk floor spacer LH. Refer to [INT-29, "Exploded View"](#).
2. Remove Woofer amp. from BOSE amp.

#### INSTALLATION

Install in the reverse order of removal.

# ANTENNA AMP.

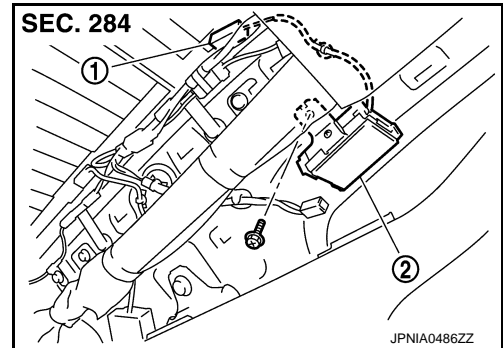
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## ANTENNA AMP.

### Exploded View

INFOID:000000008163194



1. AM-FM main connector
2. Antenna amp.

### Removal and Installation

INFOID:000000008163195

#### REMOVAL

1. Remove back pillar garnish LH. Refer to [INT-15. "Exploded View"](#).
2. Remove antenna amp. from rear pillar LH.

#### INSTALLATION

Install in the reverse order of removal.

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# SATELLITE RADIO ANTENNA

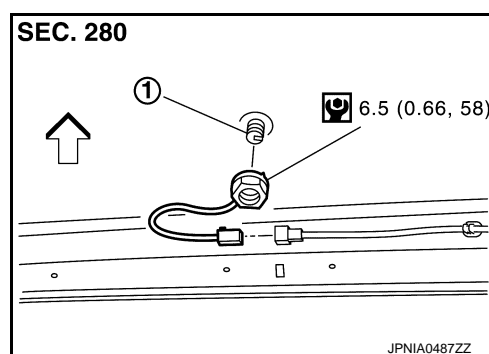
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## SATELLITE RADIO ANTENNA

### Exploded View

INFOID:000000008163196



1. Satellite radio antenna

↔: Vehicle front

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

### Removal and Installation

INFOID:000000008163197

#### REMOVAL

1. Remove headlining assembly (rear) to secure work space between vehicle and headlining. Refer to [INT-23, "NORMAL ROOF : Exploded View"](#) [with normal roof] or [INT-26, "SUNROOF : Exploded View"](#) [with sunroof].
2. Remove nut, and then remove satellite radio antenna from roof panel.

#### INSTALLATION

Install in the reverse order of removal.

**Satellite radio antenna mounting nut** : 6.5 N·m (0.66 kg-m, 58 in-lb)

#### CAUTION:

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

# MULTIFUNCTION SWITCH

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## MULTIFUNCTION SWITCH

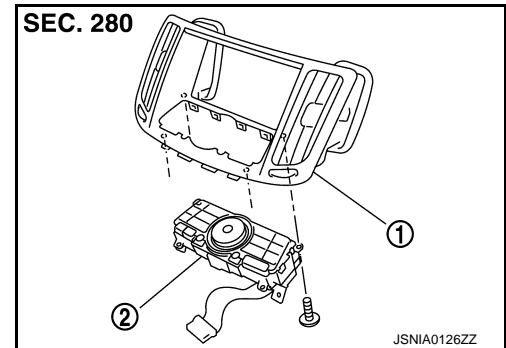
### Exploded View

INFOID:000000008163198

#### REMOVAL

Refer to [IP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23. "M/T MODELS : Exploded View"](#) (M/T models).

#### DISASSEMBLY



1. Center ventilator grille
2. Multifunction switch

### Removal and Installation

INFOID:000000008163199

#### REMOVAL

1. Remove cluster lid D. Refer to [IP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23. "M/T MODELS : Exploded View"](#) (M/T models).
2. Remove multifunction switch mounting screws.
3. Remove multifunction switch from center ventilator.

#### INSTALLATION

Install in the reverse order of removal.

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# PRESET SWITCH

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## PRESET SWITCH

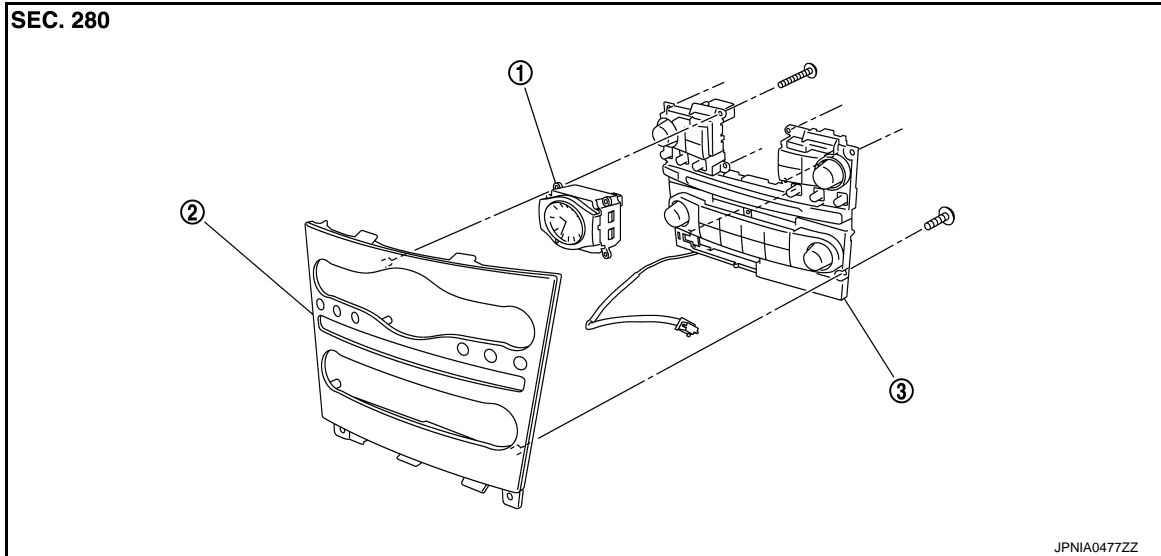
### Exploded View

INFOID:000000008163200

#### REMOVAL

Refer to [IP-12, "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23, "M/T MODELS : Exploded View"](#) (M/T models).

#### DISASSEMBLY



1. Clock

2. Cluster lid C

3. Preset switch

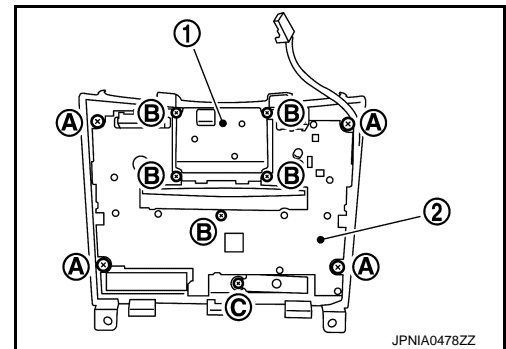
### Removal and Installation

INFOID:000000008163201

#### REMOVAL

1. Remove cluster lid C. Refer to [IP-12, "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23, "M/T MODELS : Exploded View"](#) (M/T models).
2. Remove preset switch screws (A), (B), and (C), and then remove preset switch (2) from cluster lid C.

1. Clock



#### INSTALLATION

Install in 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.



# STEERING SWITCH

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## STEERING SWITCH

### Exploded View

INFOID:000000008163202

Refer to [ST-17, "Exploded View"](#).

### Removal and Installation

INFOID:000000008163203

#### REMOVAL

Refer to [ST-17, "Removal and Installation"](#).

#### INSTALLATION

Install in the reverse order of removal.

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# USB CONNECTOR

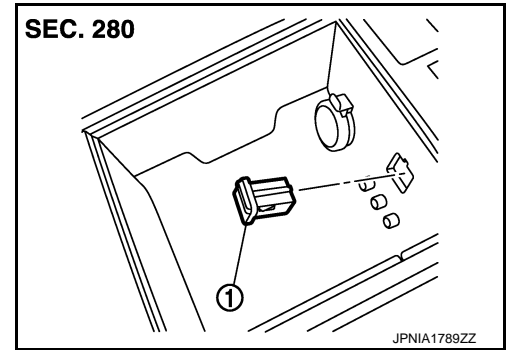
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## USB CONNECTOR

### Exploded View

INFOID:000000008163204



1. USB connector

### Removal and Installation

INFOID:000000008163205

#### REMOVAL

1. Remove center console. Refer to [IP-35. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-40. "M/T MODELS : Exploded View"](#) (M/T models).
2. Push the pawl from the back of center console to remove USB connector.

#### INSTALLATION

Install in the reverse order of removal.

# MICROPHONE

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## MICROPHONE

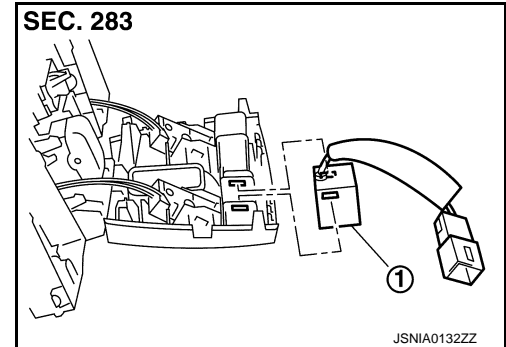
### Exploded View

INFOID:000000008163206

### REMOVAL

Refer to [INL-70, "Exploded View"](#).

### DISASSEMBLY



1. Microphone

### Removal and Installation

INFOID:000000008163207

### REMOVAL

1. Remove map lamp. Refer to [INL-70, "Exploded View"](#).
2. Remove microphone from map lamp.

### INSTALLATION

Install in the reverse order of removal.

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# GPS ANTENNA

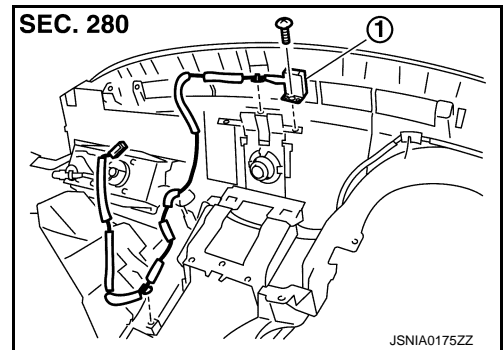
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## GPS ANTENNA

### Exploded View

INFOID:000000008163208



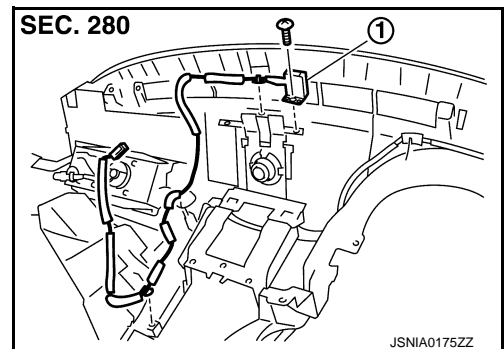
1. GPS antenna

### Removal and Installation

INFOID:000000008163209

#### REMOVAL

1. Remove instrument panel. Refer to [IP-12. "A/T MODELS : Exploded View"](#) (A/T models) or [IP-23. "M/T MODELS : Exploded View"](#) (M/T models).
2. Remove GPS antenna (1) from instrument panel.



#### INSTALLATION

Install in the reverse order of removal.

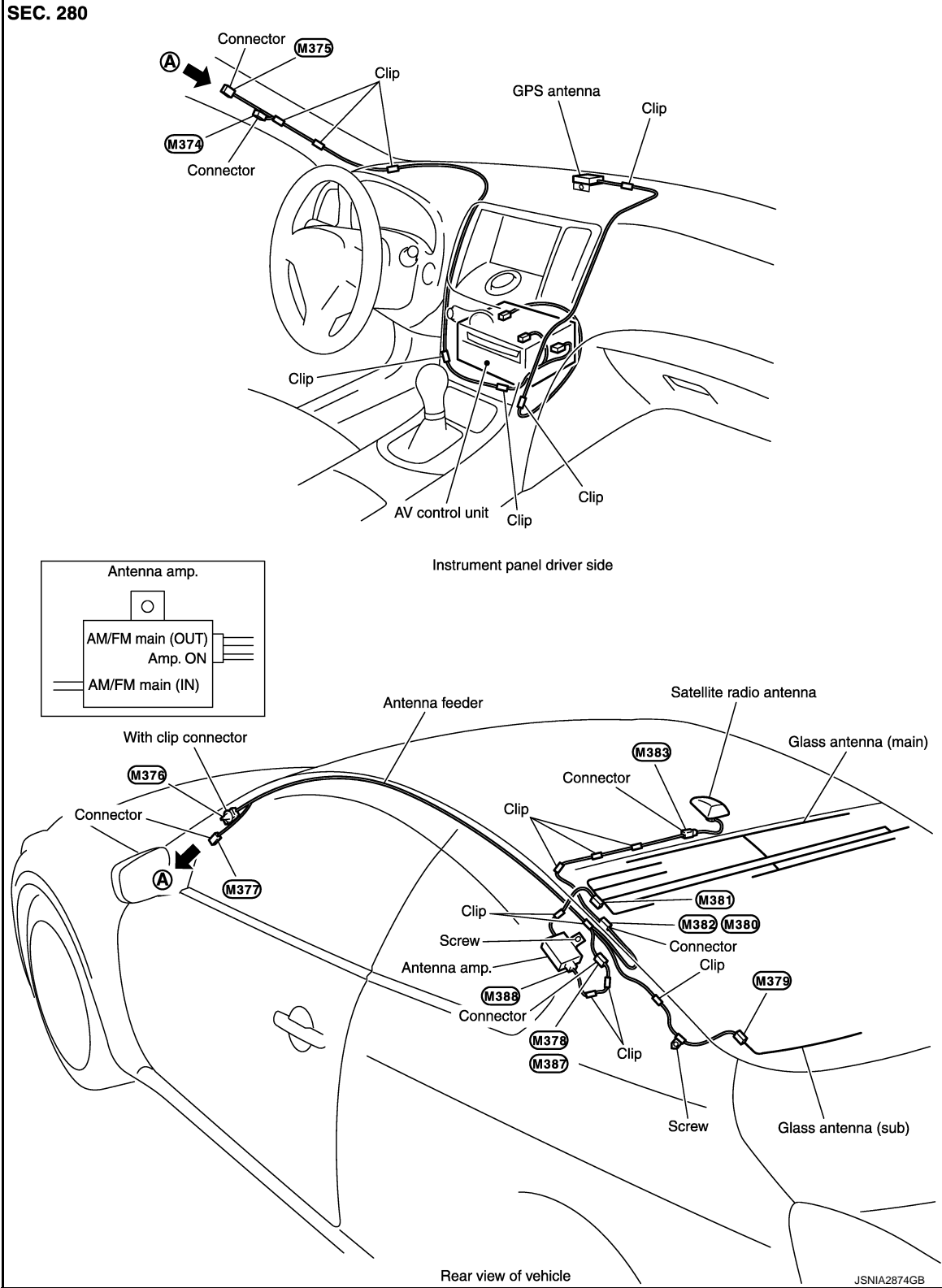
# GPS ANTENNA

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## Feeder Layout

INFOID:000000008163210



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# REAR VIEW CAMERA

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## REAR VIEW CAMERA

### Exploded View

INFOID:000000008163211

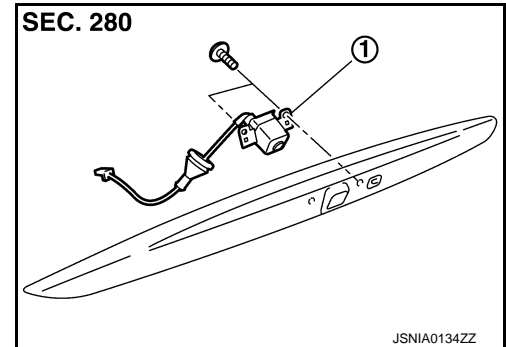
#### REMOVAL (WITHOUT REAR SPOILER)

Refer to [EXT-39, "TRUNK LID OUTER FINISHER : Exploded View"](#).

#### REMOVAL (WITH REAR SPOILER)

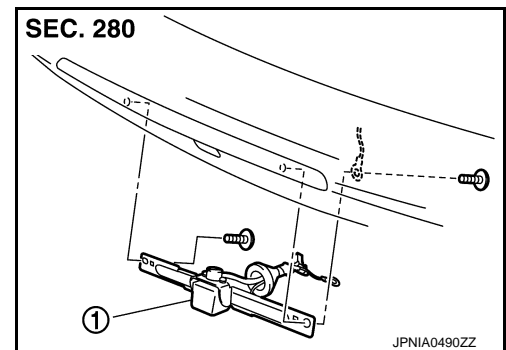
Refer to [EXT-43, "Exploded View"](#).

#### DISASSEMBLY (WITHOUT REAR SPOILER)



1. Rear view camera

#### DISASSEMBLY (WITH REAR SPOILER)



1. Rear view camera

## Removal and Installation

INFOID:000000008163212

### REMOVAL

Without rear spoiler

1. Remove trunk lid finisher outer. Refer to [EXT-39, "TRUNK LID OUTER FINISHER : Exploded View"](#).
2. Remove rear view camera from trunk lid finisher outer.

With rear spoiler

1. Remove rear spoiler. Refer to [EXT-43, "Exploded View"](#).
2. Remove rear view camera from rear spoiler.

### INSTALLATION

Install in the reverse order of removal.

#### NOTE:

Adjust the guide line position if the guide line position is shifted after installing the rear view camera. Refer to [AV-462, "Adjustment"](#).

### Adjustment

INFOID:000000008163213

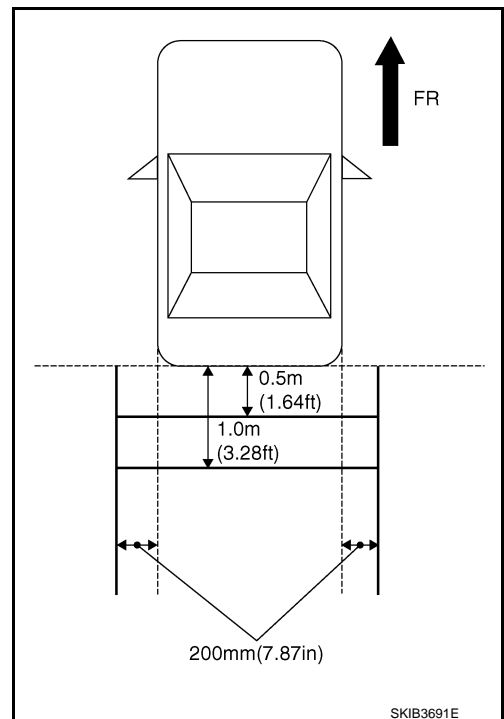
Adjust the guide line position if the guide line position is shifted after installing the rear view camera.

# REAR VIEW CAMERA

## < REMOVAL AND INSTALLATION >

## [BOSE AUDIO WITH NAVIGATION]

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.



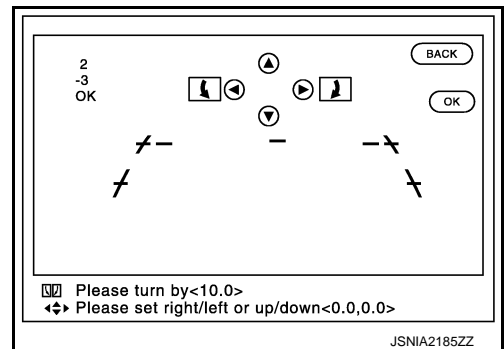
3. Rotate the center dial, and then select the guiding line pattern so that its angle is aligned with the correction line of the rear of the vehicle.

Selected pattern :  $-10^{\circ}$  to  $10^{\circ}$

4. Make fine adjustment to the correction line of the rear of the vehicle with up/down/left/right switches so that its position is aligned with the guiding line. Press "OK" switch and record the adjusted guiding line position to the camera control unit.

Up/Down adjustment range :  $-10^{\circ}$  to  $10^{\circ}$

Left/Right adjustment range :  $-10^{\circ}$  to  $10^{\circ}$



### CAUTION:

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

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# SONAR CONTROL UNIT

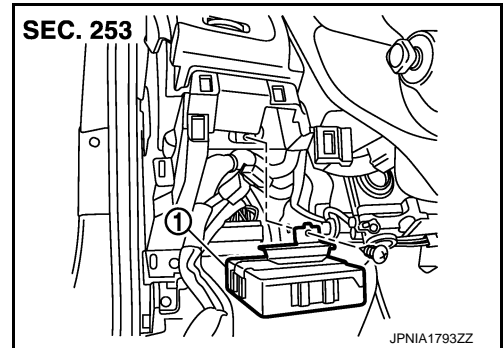
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## SONAR CONTROL UNIT

### Exploded View

INFOID:000000008163214



1. Sonar control unit

### Removal and Installation

INFOID:000000008163215

#### REMOVAL

1. Remove the instrument finisher A. Refer to [JP-12, "A/T MODELS : Exploded View"](#) (A/T models) or [JP-23, "M/T MODELS : Exploded View"](#) (M/T models).
2. Remove sonar control unit screw, then disconnect sonar control unit connector and remove the sonar control unit.

#### INSTALLATION

Install in the reverse order of removal.



# STEERING ANGLE SENSOR

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## STEERING ANGLE SENSOR

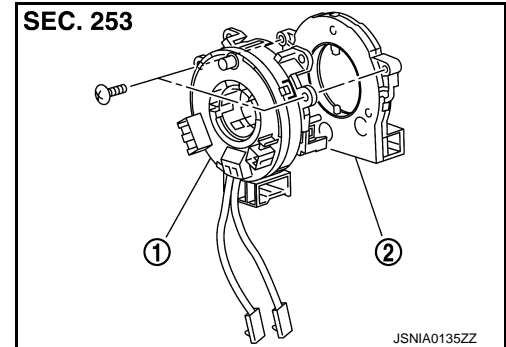
### Exploded View

INFOID:000000008163216

#### REMOVAL

Refer to [SR-14, "Exploded View"](#).

#### DISASSEMBLY



1. Spiral cable
2. Steering angle sensor

### Removal and Installation

INFOID:000000008163217

#### REMOVAL

1. Remove spiral cable.
2. Remove steering angle sensor from spiral cable.

#### INSTALLATION

1. Install in the reverse order of removal.
2. Perform 4WAS front actuator adjustment. Refer to [AV-465, "Adjustment"](#).

### Adjustment

INFOID:000000008163218

Perform 4WAS front actuator adjustment. Refer to [STC-25, "4WAS FRONT ACTUATOR NEUTRAL POSITION ADJUSTMENT : Description"](#).

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# ANTENNA FEEDER

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## ANTENNA FEEDER

### Feeder Layout

INFOID:000000008163219

