

SECTION **AV**

AUDIO, VISUAL & NAVIGATION SYSTEM

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PRECAUTION

PRECAUTIONS

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

INFOID:000000012250274

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

**WARNING:**

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

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

**WARNING:**

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

Cautions in Removing Battery Terminal, and AV Control Unit

INFOID:000000012193716

**CAUTION:**

Remove battery terminal, display control unit, 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 display control unit, and 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:000000012193717

M-CAN 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:000000012193718

AV COMMUNICATION SYSTEM

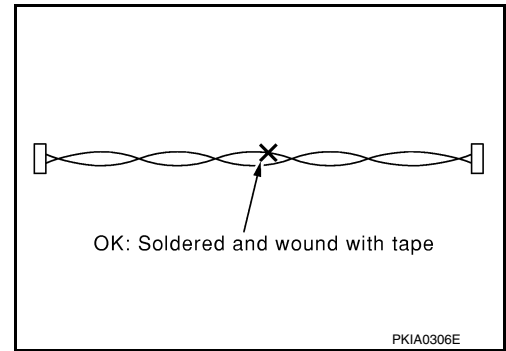
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# PRECAUTIONS

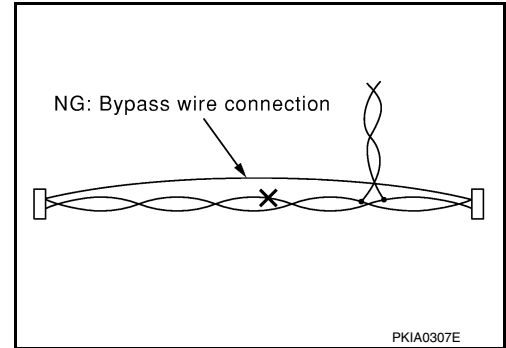
[MULTI AV SYSTEM]

## < 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.)



## Precaution for Work

INFOID:000000012193719

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:
  - Water soluble dirt:
    - Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
    - Then rub with a soft, dry cloth.
  - Oily dirt:
    - Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
    - Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
    - Then rub with a soft, dry cloth.
  - Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
  - For genuine leather seats, use a genuine leather seat cleaner.



# PREPARATION

< PREPARATION >

[MULTI AV SYSTEM]

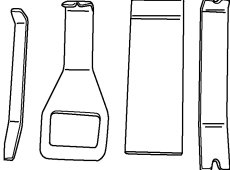
## PREPARATION

### PREPARATION

#### Special Service Tools


INFOID:0000000012193720

The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
— (J-46534) Trim Tool Set <div style="text-align: center;">  <p>AWJIA0483ZZ</p> </div>	Removing trim components

#### Commercial Service Tools

INFOID:0000000012193721

Tool name	Description
Power tool <div style="text-align: center;">  <p>PIIB1407E</p> </div>	Loosening nuts, screws and bolts

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# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[MULTI AV SYSTEM]

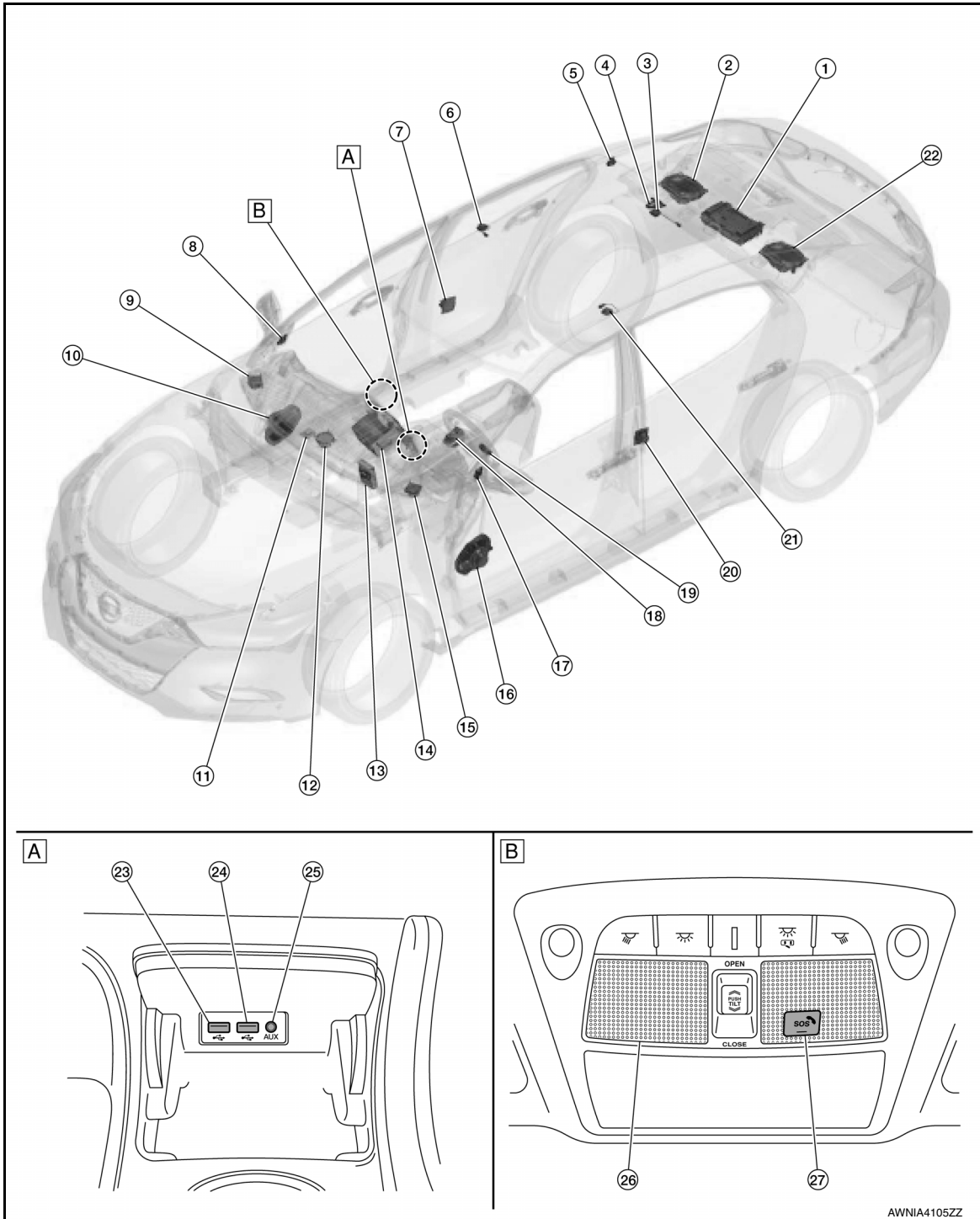
## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000012193722

#### WITH BOSE SYSTEM



A. View of instrument panel lower console

B. View of overhead console

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[MULTI AV SYSTEM]

No.	Component	Function
1.	BOSE speaker amp.	Refer to <a href="#">AV-14, "WITH BOSE SYSTEM : BOSE Amp."</a> .
2.	Rear subwoofer RH	Refer to <a href="#">AV-14, "WITH BOSE SYSTEM : Speaker"</a> .
3.	Rear microphone (active noise control)	Refer to <a href="#">AV-18, "Microphone (ANC/ASE)"</a> .
4.	Satellite Antenna	Refer to <a href="#">AV-18, "Antenna and Antenna Feeder"</a> .
5.	Antenna amp.	Refer to <a href="#">AV-18, "Antenna and Antenna Feeder"</a> .
6.	Front right microphone active noise control)	Refer to <a href="#">AV-18, "Microphone (ANC/ASE)"</a> .
7.	Rear door speaker RH	Refer to <a href="#">AV-14, "WITH BOSE SYSTEM : Speaker"</a>
8.	Door tweeter RH	Refer to <a href="#">AV-14, "WITH BOSE SYSTEM : Speaker"</a> .
9.	Tweeter RH	Refer to <a href="#">AV-14, "WITH BOSE SYSTEM : Speaker"</a> .
10.	Front door speaker RH	Refer to <a href="#">AV-14, "WITH BOSE SYSTEM : Speaker"</a> .
11.	GPS antenna	Refer to <a href="#">AV-18, "Antenna and Antenna Feeder"</a> .
12.	Center speaker	Refer to <a href="#">AV-14, "WITH BOSE SYSTEM : Speaker"</a> .
13.	TCU	Refer to <a href="#">AV-17, "TCU"</a> .
14.	AV control unit	Refer to <a href="#">AV-13, "AV Control Unit"</a> .
15.	Tweeter LH	Refer to <a href="#">AV-14, "WITH BOSE SYSTEM : Speaker"</a> .
16.	Front door speaker LH	Refer to <a href="#">AV-14, "WITH BOSE SYSTEM : Speaker"</a> .
17.	Door tweeter LH	Refer to <a href="#">AV-14, "WITH BOSE SYSTEM : Speaker"</a> .
18.	Multifunction switch	Refer to <a href="#">AV-14, "Multifunction Switch"</a> .
19.	Steering switches	Refer to <a href="#">AV-18, "Steering Switch"</a> .
20.	Rear door speaker LH	Refer to <a href="#">AV-14, "WITH BOSE SYSTEM : Speaker"</a> .
21.	Front left microphone active noise control)	Refer to <a href="#">AV-18, "Microphone (ANC/ASE)"</a> .
22.	Rear subwoofer LH	Refer to <a href="#">AV-14, "WITH BOSE SYSTEM : Speaker"</a> .
23.	USB interface-1	Refer to <a href="#">AV-14, "USB Interface"</a> .
24.	USB interface-2	Refer to <a href="#">AV-14, "USB Interface"</a> .
25.	AUX in jack	Refer to <a href="#">AV-14, "USB Interface"</a> .
26.	Microphone	Refer to <a href="#">AV-17, "Microphone (for Hands-free Phone/Voice Recognition)"</a> .
27.	Telematics switch	Refer to <a href="#">AV-18, "Telematics Switch"</a> .

WITHOUT BOSE SYSTEM

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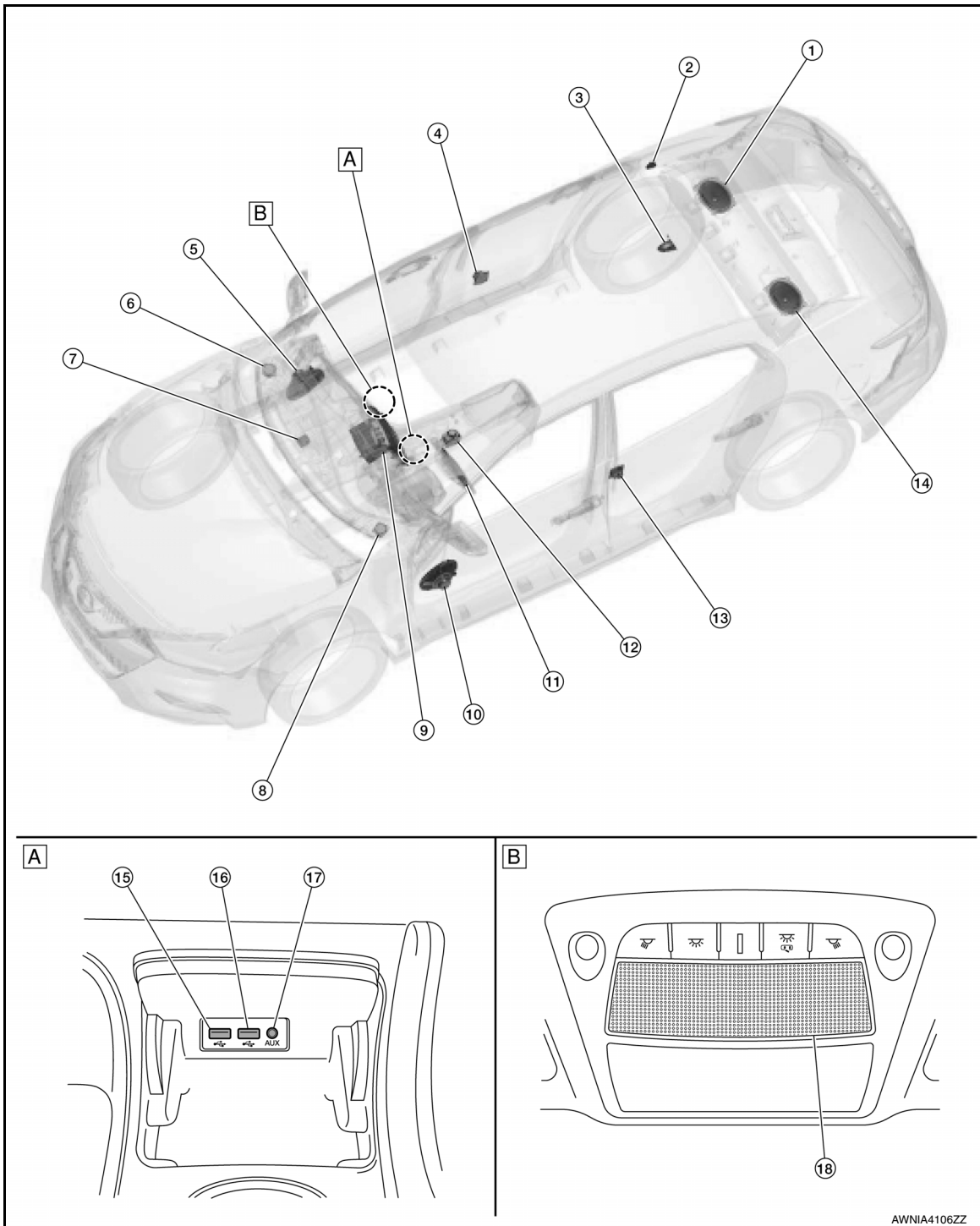
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# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[MULTI AV SYSTEM]



A. View of instrument panel lower console

B. View of overhead console

No.	Component	Function
1.	Rear speaker RH	Refer to <a href="#">AV-16, "WITHOUT BOSE SYSTEM : Speaker"</a> .
2.	Antenna amp.	Refer to <a href="#">AV-18, "Antenna and Antenna Feeder"</a> .
3.	Satellite antenna	Refer to <a href="#">AV-18, "Antenna and Antenna Feeder"</a> .
4.	Rear door speaker RH	Refer to <a href="#">AV-16, "WITHOUT BOSE SYSTEM : Speaker"</a> .
5.	Front door speaker RH	Refer to <a href="#">AV-16, "WITHOUT BOSE SYSTEM : Speaker"</a> .
6.	Tweeter RH	Refer to <a href="#">AV-16, "WITHOUT BOSE SYSTEM : Speaker"</a> .

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[MULTI AV SYSTEM]

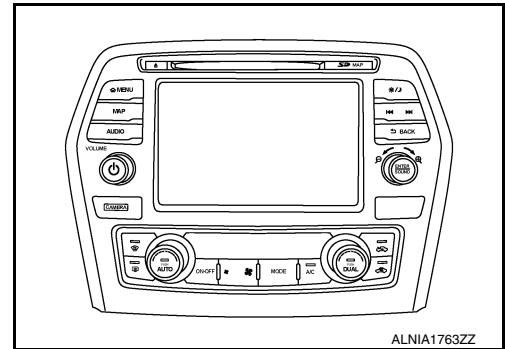
No.	Component	Function
7.	GPS antenna	Refer to <a href="#">AV-18, "Antenna and Antenna Feeder"</a> .
8.	Tweeter LH	Refer to <a href="#">AV-16, "WITHOUT BOSE SYSTEM : Speaker"</a> .
9.	AV control unit	Refer to <a href="#">AV-13, "AV Control Unit"</a> .
10.	Front door speaker RH	Refer to <a href="#">AV-14, "WITH BOSE SYSTEM : Speaker"</a> .
11.	Steering switch	Refer to <a href="#">AV-18, "Steering Switch"</a> .
12.	Multifunction switch	Refer to <a href="#">AV-14, "Multifunction Switch"</a> .
13.	Rear door speaker LH	Refer to <a href="#">AV-16, "WITHOUT BOSE SYSTEM : Speaker"</a> .
14.	Rear speaker LH	Refer to <a href="#">AV-16, "WITHOUT BOSE SYSTEM : Speaker"</a> .
15.	USB interface-1	Refer to <a href="#">AV-14, "USB Interface"</a> .
16.	USB interface-2	Refer to <a href="#">AV-14, "USB Interface"</a> .
17.	AUX in jack	Refer to <a href="#">AV-14, "USB Interface"</a> .
18.	Microphone	Refer to <a href="#">AV-17, "Microphone (for Hands-free Phone/Voice Recognition)"</a> .

## AV Control Unit

INFOID:000000012193723

### DESCRIPTION

- AV control unit is located in the center of the instrument panel.
- AV control unit controls the audio system of Multi AV system.
- AV control unit controls the navigation system of Multi AV system.
- AV control unit can store applications in the built-in memory by connecting a cell phone via Bluetooth® communication or USB communication.



### SPECIFICATION

Amplifier output (models without BOSE)		40 W × 4 ch
CD drive	Playable disc	CD-ROM (CD-DA)
		CD-R
		CD-RW
	Playable format	MP3
		WMA
		AAC
Text display function	ID3/WMA/AAC tag	Artist name
		Album title
		Song title

# COMPONENT PARTS

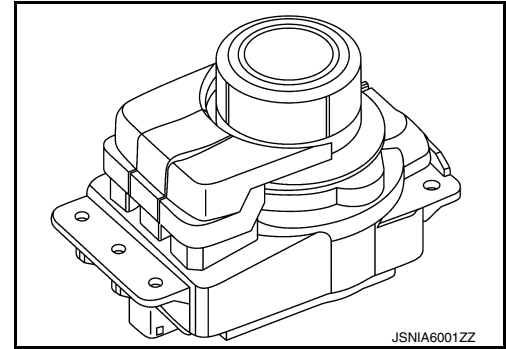
< SYSTEM DESCRIPTION >

[MULTI AV SYSTEM]

## Multifunction Switch

INFOID:000000012400179

- Multifunction switch is located on the center console.
  - Display of the AV control unit can be operated.
- NOTE:**  
Camera switch signal is transmitted to the AV control unit by way of the integral switch via hard wire.

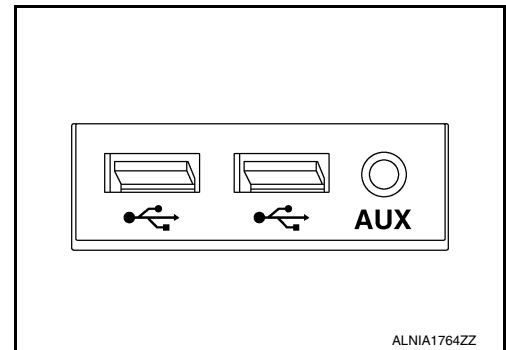


## USB Interface

INFOID:000000012193724

- Front USB interface is located in the lower instrument panel console box.
- USB interface supports the following input and is used by audio system and navigation system:

Interface
USB port
Audio jack

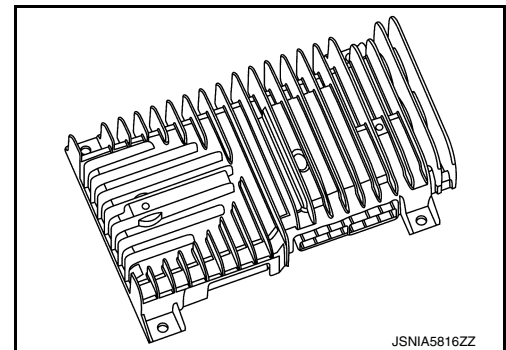


## WITH BOSE SYSTEM

### WITH BOSE SYSTEM : BOSE Amp.

INFOID:000000012193725

- BOSE amp. is located in the rear parcel shelf area.
- It receives sound signal from AV control unit and outputs sound signal to each speaker, tweeter, and subwoofers.



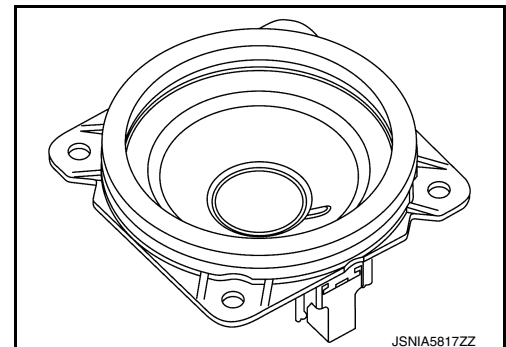
### WITH BOSE SYSTEM : Speaker

INFOID:000000012193726

#### TWEETER

- $\phi$ 2 in (5.08 cm) speaker is installed to the side of instrument panel.
- Sound signal is inputted from the BOSE speaker amp. to output high and mid range sound.

Maximum input	: 22.5 W
Rated input	: 7.5 W
Impedance	: 3.6 $\Omega$



## CENTER SPEAKER

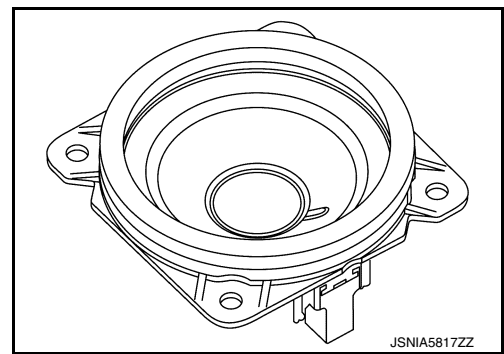
# COMPONENT PARTS

[MULTI AV SYSTEM]

## < SYSTEM DESCRIPTION >

- $\phi 3$  in (7.62 cm) speaker is installed to the center of instrument panel.
- Sound signal is inputted from the BOSE speaker amp. to output high and mid range sound.

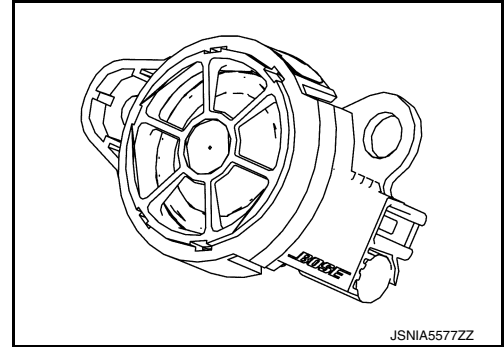
Maximum input : 22.5 W  
Rated input : 7.5 W  
Impedance : 3.6  $\Omega$



## DOOR TWEETER

- $\phi 1$  in (2.5 cm) speaker is installed to the front door sash inner cover.
- Sound signal is inputted from the BOSE speaker amp. to output high range sound.

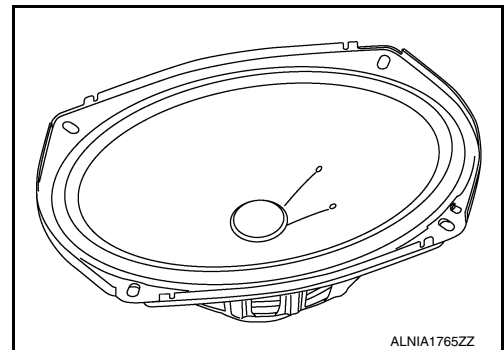
Maximum input : 22.5 W  
Rated input : 7.5 W  
Impedance : 3.6  $\Omega$



## FRONT DOOR SPEAKER

- $\phi 6 \times 9$  in (15.24 x 22.86 cm) speaker is installed to the lower portion of the front door.
- Sound signal is inputted from the BOSE speaker amp. to output low range sound.

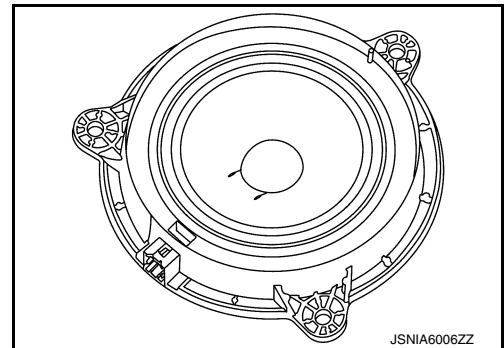
Maximum input : 22.5 W  
Rated input : 7.5 W  
Impedance : 3.6  $\Omega$



## REAR DOOR SPEAKER

- $\phi 3$  in (7.62 cm) speaker is installed to the bottom of the rear door.
- Sound signal is inputted from the BOSE speaker amp. to output high, mid and low range sound.

Maximum input : 21.6 W  
Rated input : 7.2 W  
Impedance : 3.7  $\Omega$



## REAR SUBWOOFERS

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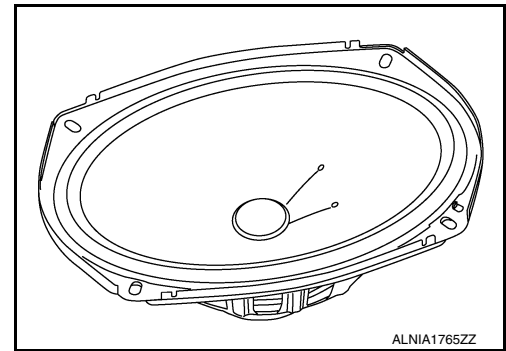
# COMPONENT PARTS

[MULTI AV SYSTEM]

## < SYSTEM DESCRIPTION >

- $\phi 6 \times 9$  in (15.24 x 22.86 cm) speakers are installed in the rear trunk area, under the rear parcel shelf.
- Sound signal is inputted from the BOSE speaker amp. to output low range sound.

Maximum input	: 40.5 W
Rated input	: 13.6 W
Impedance	: 1.0 $\Omega$



## WITHOUT BOSE SYSTEM

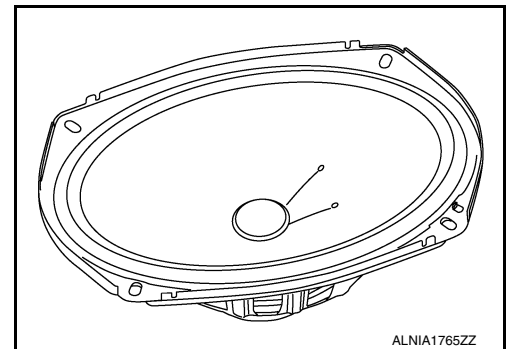
### WITHOUT BOSE SYSTEM : Speaker

INFOID:000000012193727

#### FRONT DOOR SPEAKER

- $\phi 6 \times 9$  in (15.24 x 22.86 cm) speaker is installed to the lower portion of the front door.
- Sound signal is inputted from the AV control unit to output low range sound.

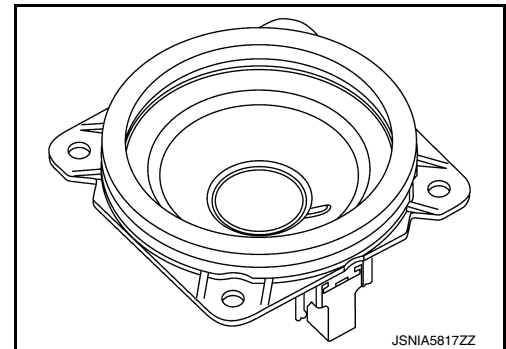
Maximum input	: 38.5 W
Rated input	: 12.9 W
Impedance	: 2.1 $\Omega$



#### TWEETER

- $\phi 2$  in (5.08 cm) speaker is installed to the side of instrument panel.
- Sound signal is inputted from the AV control unit to output high, and mid range sound.

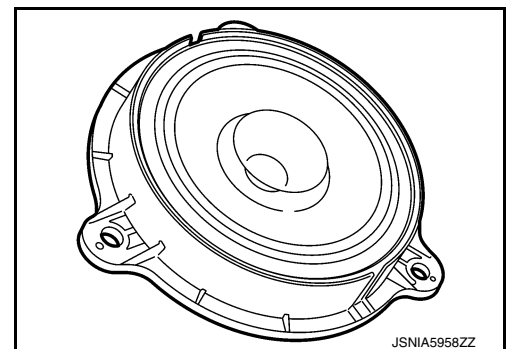
Maximum input	: 22.5 W
Rated input	: 7.5 W
Impedance	: 3.6 $\Omega$



#### REAR DOOR SPEAKER

- $\phi 3$  in (7.62 cm) speaker is installed to the bottom of the rear door.
- Sound signal is inputted from the AV control unit to output high mid and low range sound.

Maximum input	: 38.5 W
Rated input	: 12.9 W
Impedance	: 2.1 $\Omega$



#### REAR SPEAKER



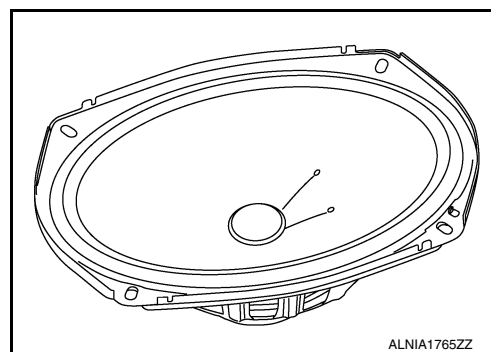
# COMPONENT PARTS

[MULTI AV SYSTEM]

## < SYSTEM DESCRIPTION >

- $\phi 6 \times 9$  in (15.24 x 22.86 cm) speaker is installed in the rear trunk area, under the rear parcel shelf.
- Sound signal is inputted from the AV control unit to output low range sound.

Maximum input	: 38.5 W
Rated input	: 12.9 W
Impedance	: 2.1 $\Omega$

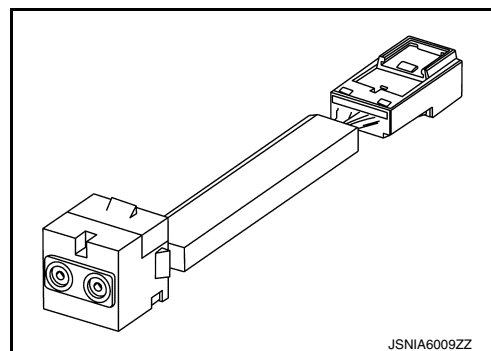


## Microphone (for Hands-free Phone/Voice Recognition)

INFOID:000000012400937

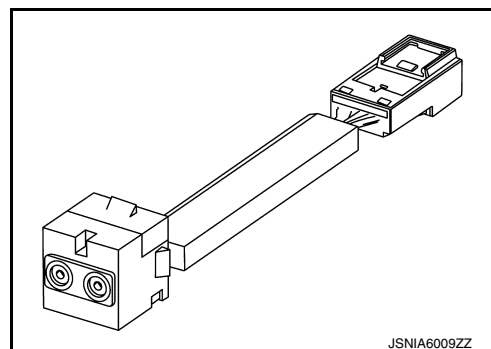
### WITH TELEMATICS SYSTEM

- Microphone is installed on the map lamp assembly.
- The microphone is used for the operation of the NISSANCONNECT<sup>SM</sup>, hands-free phone system, voice recognition function.
- The power is supplied from the TCU to the microphone, transmitting sound signals to the TCU at the during operation of the NISSANCONNECT<sup>SM</sup> system, hands-free phone communication, and voice recognition.



### WITHOUT TELEMATICS SYSTEM

- The microphone is installed on the map lamp assembly.
- The power is supplied from the AV control unit to the microphone, transmitting sound signals to the AV control unit at the during hands-free phone communication, or voice recognition.



INFOID:000000012378529

## TCU

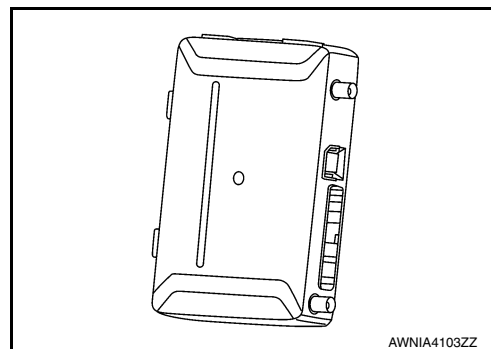
- TCU is abbreviation of Telematics Control Unit.
- It is installed on the instrument lower cover.
- A radio communication terminal and SIM card are built into the unit and data is sent and received in SMS<sup>\*1</sup>, DTMF tone signal and packet communication<sup>\*2</sup> with the NISSANCONNECT<sup>SM</sup> Data Center through the TEL antenna.

### NOTE:

\*1: SMS stands for Short Message Service. It is also referred to as Text Messaging, Short Mail, etc. It is the service that performs text based message communication.

\*2: Packet communication means a communication method that data are broken down into smaller chunks for communication. The split data is called a packet and this method improves the efficiency of the communication circuit.

- It is connected to the AV control unit with the USB harness for sound signal input/output and USB communication.
- VIN information necessary for the Telematics service is memorized.



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# COMPONENT PARTS

[MULTI AV SYSTEM]

## < SYSTEM DESCRIPTION >

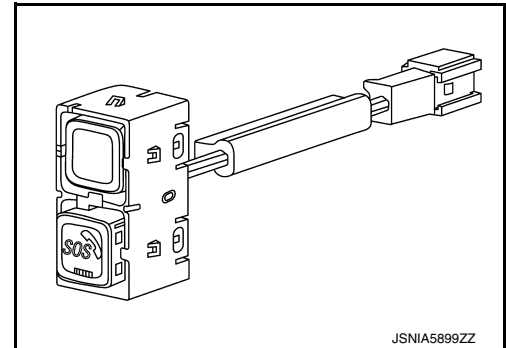
- It is connected to the air bag diagnosis sensor unit via CAN communication. TCU performs an emergency report when the air bag is inflated.
- Audio signals received during SOS/NISSANCONNECT<sup>SM</sup> Response Specialists call are transmitted from TCU to each speaker via the AV control unit.
- During the communication with NISSANCONNECT<sup>SM</sup> Data Center and Nissan Connection<sup>TM</sup> Response Center, TCU prohibit the use of Bluetooth<sup>®</sup> hands-free phone.

## Telematics Switch

INFOID:000000012378530

- The Telematics switch is located on the map lamp assembly.
- The Telematics switch is connected to TCU and transmits an operation signal.
- The state of LED (ON/Blink/OFF) shows the status of SOS call.

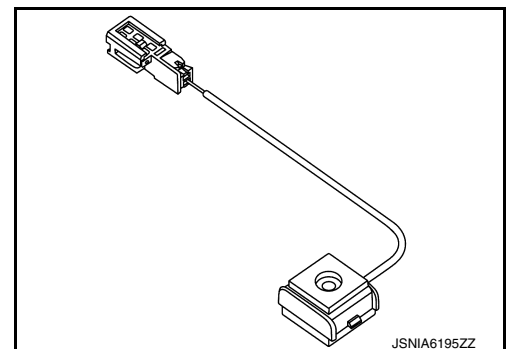
LED ON	:SOS Call available
LED Blink	:SOS Call in communication
LED OFF	:Out of service area or system error



## Microphone (ANC/ASE)

INFOID:000000012401420

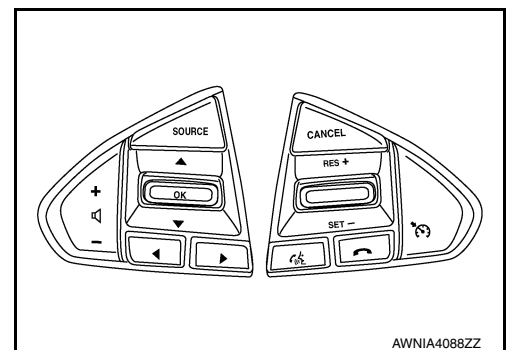
- Three microphones are installed in the headliner.
- These microphones are used for the active noise cancellation and active sound enhancement.
- The power is supplied from the BOSE amp. to the microphones.



## Steering Switch

INFOID:000000012193729

- Hands-free phone, navigation, and audio operations can be performed.
- This switch is connected to combination meter, and switch operation signal is transmitted to combination meter.
- Combination meter transmits steering switch signal to AV control unit via AV communication.



## Antenna and Antenna Feeder

INFOID:000000012193730

## GPS ANTENNA

# COMPONENT PARTS

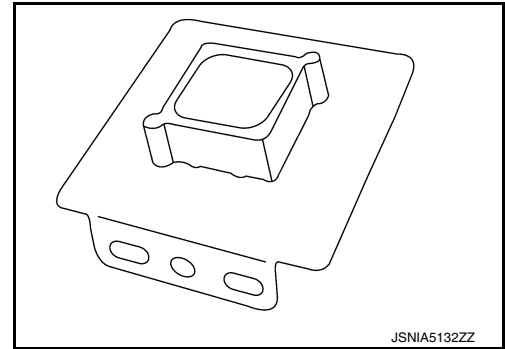
[MULTI AV SYSTEM]

## < SYSTEM DESCRIPTION >

- GPS antenna is installed in the instrument panel.
- Power is supplied from the AV control unit.
- This antenna amplifies radio waves received from the GPS satellite and transmits the GPS signal to the AV control unit.

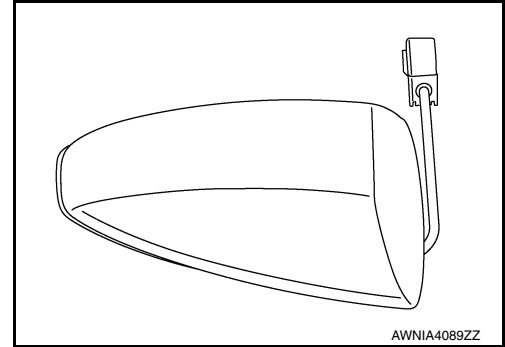
### NOTE:

An object on the instrument panel may cause the reception sensitivity to be decreased.



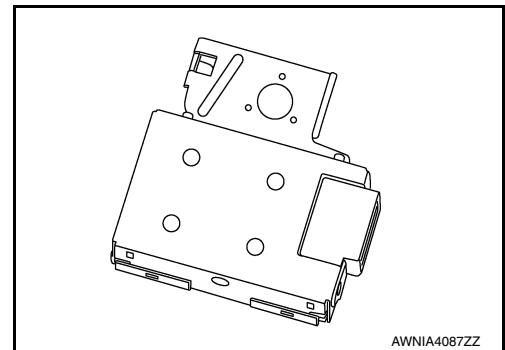
## SATELLITE ANTENNA

- Satellite radio antenna is installed to the rear center of the roof.
- Receives satellite radio waves and outputs them to AV control unit.

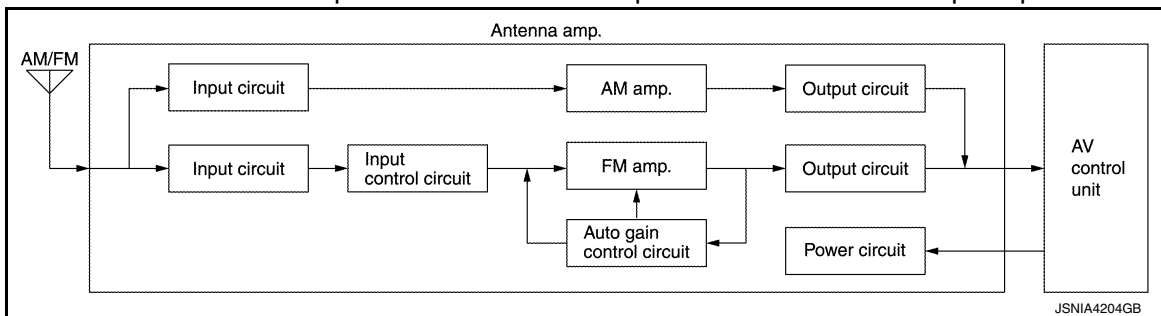


## ANTENNA AMP. AND RADIO ANTENNA

- Antenna amp. is located on the passenger side inner C-pillar.



- AM/FM radio main antenna and FM radio sub antenna are located on the rear window glass.
- The AM/FM radio main antenna path has an antenna amp. to obtain sufficient reception power.

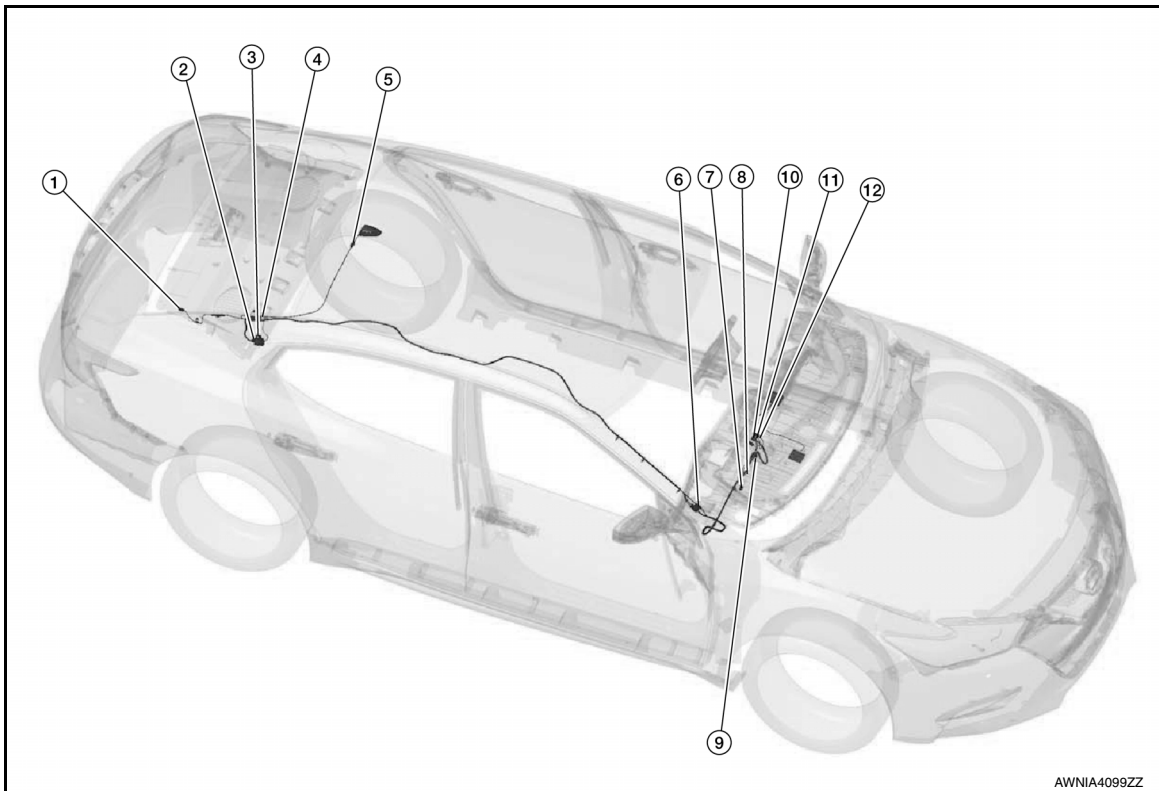


### CAUTION:

Affixing any mirror-type window films or metallic items (e.g. commercial antenna) on the rear window glass causes a reduction in the radio receiver sensitivity.

## ANTENNA FEEDER

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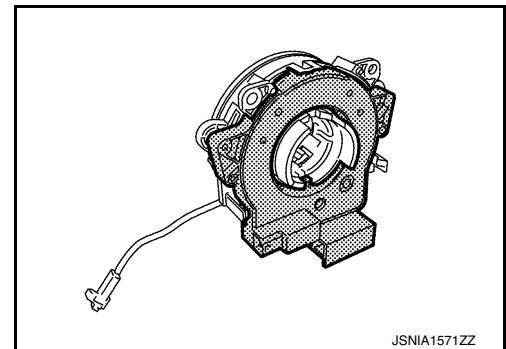
- |               |          |                           |
|---------------|----------|---------------------------|
| 1. R203       | 2. R202  | 3. Antenna amp.           |
| 4. R204, R205 | 5. R206  | 6. R200, R201, M198, M199 |
| 7. M195       | 8. M194  | 9. M196                   |
| 10. M166      | 11. M165 | 12. M167                  |

## Steering Angle Sensor

INFOID:000000012193731

### WITH AROUND VIEW MONITOR

- Steering angle sensor is installed to the spiral cable.
- Steering angle sensor sends the steering angle signal necessary for predictive course line of the front or rear view monitor to the around view monitor control unit via CAN communication.



JSNIA1571ZZ

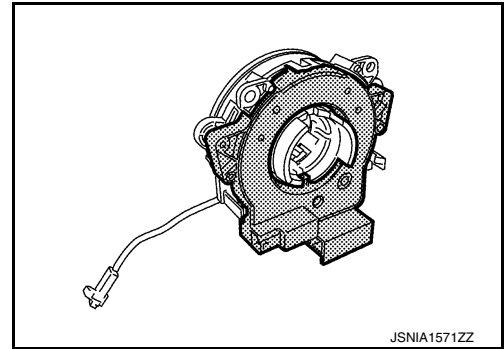
### WITHOUT AROUND VIEW MONITOR

# COMPONENT PARTS

## < SYSTEM DESCRIPTION >

- Steering angle sensor is installed to the spiral cable.
- Steering angle sensor sends the steering angle signal necessary for predictive course line of the rear view monitor to the AV control unit via CAN communication.

## [MULTI AV SYSTEM]



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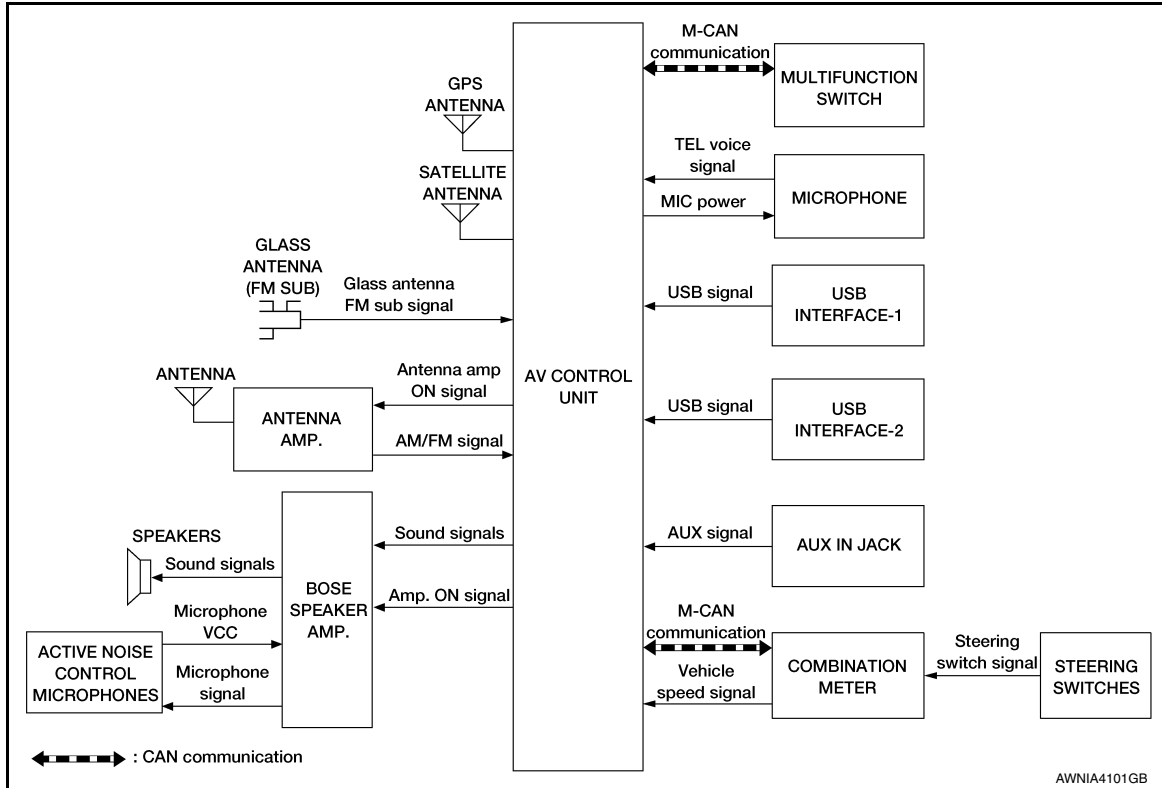
< SYSTEM DESCRIPTION >

## AUDIO SYSTEM WITH BOSE SYSTEM

### WITH BOSE SYSTEM : System Description

INFOID:000000012193732

#### SYSTEM DIAGRAM



#### DESCRIPTION

Refer to Owner's Manual for audio system operating instructions.

- Audio system consists of the following functions:

Function
Radio
CD
USB interface-1
USB interface-2
AUX in jack
Bluetooth® audio
Audio indicator

- Audio system is controlled by AV control unit, and BOSE amp.
- Audio system can be operated with steering switch.

#### AV CONTROL UNIT

##### AM/FM Radio

- Radio signal for AM/FM radio is received by the antenna line printed on rear window.
- There are main and sub lines for the print of antenna line. Main is used for AM and FM, and sub is used for FM.

**NOTE:**

For FM radio with FM diversity function, AV control unit selects from main or sub the antenna that receives the higher signal strength.

# AUDIO SYSTEM

[MULTI AV SYSTEM]

## < SYSTEM DESCRIPTION >

- Antenna amp. is connected to the main antenna line, which receives the antenna amp. ON signal from the AV control unit and transmits the antenna signal to the AV control unit after amplifying the signal received from the AM and FM antennas. A
- AV control unit transmits the sound signal to the BOSE amp. when the antenna signal is received from the antenna (main or sub). B
- BOSE amp. transmits the sound signal received from AV control unit to each speaker.

### Satellite Radio

- Satellite radio tuner is built into AV control unit. C
- Sound signal (satellite radio) is received by satellite radio antenna and is transmitted to AV control unit. AV control unit outputs sound signal to BOSE amp. The signal is also outputted from BOSE amp. to each speaker. D

### CD

AV control unit integrates the mechanism for reading the data stored in CD.

### Music playback

- When AV control unit reads the music data from CD, it transmits the sound signal to BOSE amp. E
- BOSE amp. transmits the sound signal received from AV control unit to each speaker.

### Display of artist, album and song title

- When AV control unit reads the text data from CD, it displays the text data (artist, album, and song title). F

### NOTE:

For the types of disc and music data format available for replay, refer to [AV-13. "AV Control Unit"](#). G

## USB INTERFACE

- USB interfaces are located in the lower instrument panel console. H
- When iPod® or USB memory is connected to the USB port, the USB interface transmits the music data and text data in iPod® or USB memory device to the AV control unit via USB communication.
- When the AV control unit transmits the sound signal from the AV control unit, it transmits the sound signal to BOSE amp. I
- BOSE amp. transmits the sound signal received from AV control unit to each speaker.
- When AV control unit receives the text data from USB interface, it displays the text data (artist, album, and song title) on the display. J

## AUX

- Auxiliary input jack is located in the lower instrument panel console. K
- Auxiliary input jack consist of the sound input terminal.
- When sound data is inputted into the sound input terminal, the AUX in jack transmits the AUX sound signal to the AV control unit.
- When AV control unit receives the AUX in jack sound signal, it transmits the sound signal to BOSE amp. L
- BOSE amp. transmits the sound signal received from AV control unit to each speaker.

## BLUETOOTH® AUDIO

- Bluetooth® module is integrated into the AV control unit. M
- Music data, artist, album, and song title in a portable audio device can be played/displayed via Bluetooth® communication.
- The AV control unit transmits the sound signal to the BOSE amp.
- BOSE amp. transmits the sound signal received from AV control unit to each speaker.
- When AV control unit receives the text data from a portable audio device via Bluetooth® communication, it displays the text data (artist, album, and song title) on the display. O
- For further information about Bluetooth® compliant profile, refer to [AV-13. "AV Control Unit"](#).

## AUDIO INDICATOR

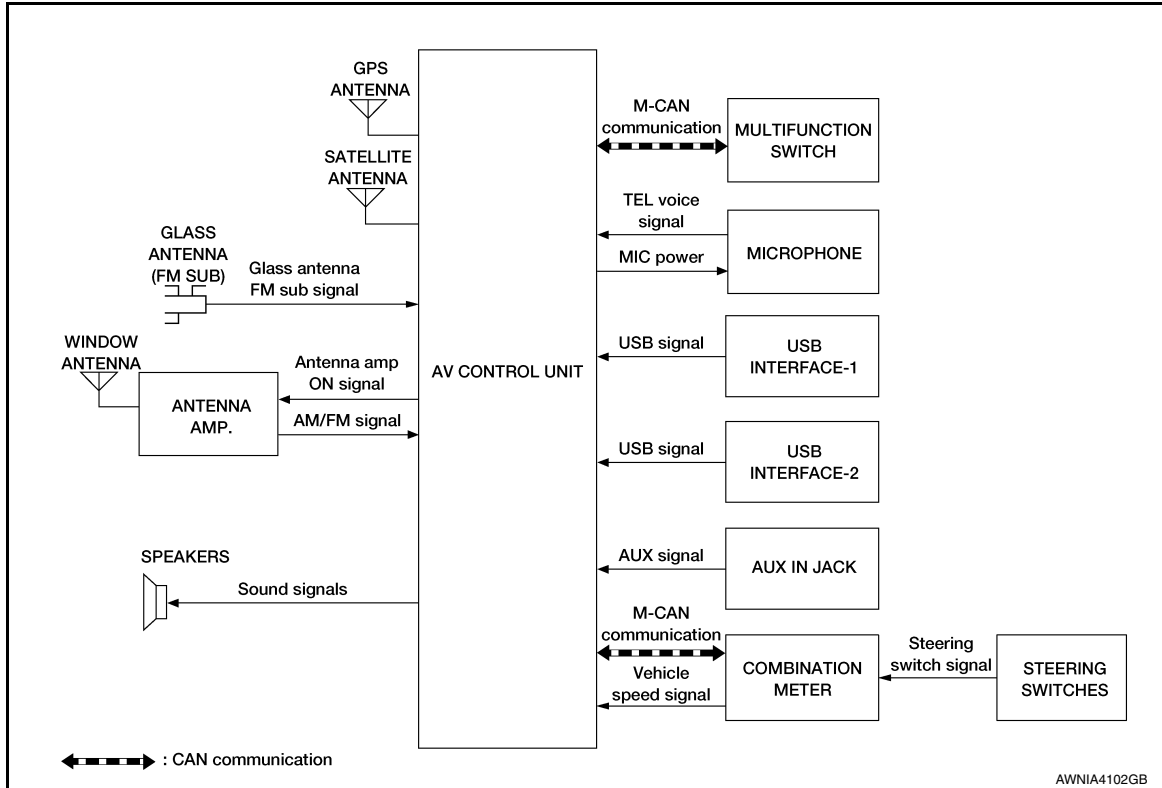
- The AV control unit transmits the meter display signal as the audio status to the combination meter via CAN communication. P
- When combination meter receives the meter display signal, the audio status is displayed on the information display in combination meter.

## WITHOUT BOSE SYSTEM

## WITHOUT BOSE SYSTEM : System Description

INFOID:000000012193733

### SYSTEM DIAGRAM



### AV Control Unit Input Signal (CAN Communication)

Transmit unit	Signal name
ABS actuator and electric unit (control unit)	Vehicle speed signal

### DESCRIPTION

Refer to Owner's Manual for audio system operating instructions.

- Audio system consists of the following functions:

Function
Radio
CD
USB interface-1
USB interface-2
AUX in jack
Speed Sensitive Volume
Audio indicator

- Audio system is controlled by the AV control unit.
- Audio system can be operated with steering switch.

### RADIO

#### AM/FM radio

- Radio signal for AM/FM radio is received by the antenna line printed on rear window.
- There are main and sub lines for the print of antenna line. Main is used for AM and FM, and sub is used for FM.

**NOTE:**



# AUDIO SYSTEM

## [MULTI AV SYSTEM]

### < SYSTEM DESCRIPTION >

For FM radio with FM diversity function, AV control unit selects from main or sub the antenna that receives the higher signal strength.

- Antenna amp. is connected to the main antenna line, which receives the antenna amp. ON signal from the AV control unit and transmits the antenna signal to the AV control unit after amplifying the AM or FM radio signal.
- AV control unit transmits the sound signal to each speaker when the antenna signal is received from the antenna (main or sub).

#### Satellite Radio

- Satellite radio tuner is built into AV control unit.
- Sound signal (satellite radio) is received by satellite radio antenna and is transmitted to AV control unit. AV control unit outputs sound signal to each speaker.

#### CD

AV control unit integrates the mechanism for reading the data stored in CD.

#### Music playback

- When AV control unit reads the music data from CD, it transmits the sound signal to each speaker.

#### Display of artist, album and song title

- When AV control unit reads the text data from CD, it displays the text data (artist, album, and song title).

#### **NOTE:**

For the types of disc and music data format available for replay, refer to [AV-13. "AV Control Unit"](#).

#### USB INTERFACE

- USB interfaces are located in front in the lower instrument panel console.
- When iPod® or USB memory is connected to the USB interface, the USB interface transmits the music data and text data in iPod® or USB memory device to the AV control unit via USB communication.
- The AV control unit transmits the sound signal to each speaker.
- When AV control unit receives the text data from external data input box, it displays the text data (artist, album, and song title) on the display.

#### AUX

- Auxiliary input jack is located in the lower instrument panel console.
- Auxiliary input jack consist of the sound input terminal.
- When sound data is inputted into the sound input terminal, the AUX in jack transmits the AUX sound signal to the AV control unit.
- When AV control unit receives the AUX sound signal, it transmits the sound signal to each speaker.

#### BLUETOOTH® AUDIO

- Bluetooth® module is integrated in the AV control unit.
- Music data, artist, album, and song title in a portable audio device can be played/displayed via Bluetooth® communication.
- The AV control unit transmits the sound signal to each speaker.
- When AV control unit receives the text data from a portable audio device via Bluetooth® communication, it displays the text data (artist, album, and song title) on the display.
- For further information about Bluetooth® compliant profile, refer to [AV-13. "AV Control Unit"](#).

#### SPEED SENSITIVE VOLUME

- AV control unit receives the vehicle speed signal from combination meter via CAN communication and transmits the vehicle speed signal to AV control unit via CAN communication.
- AV control unit determines the volume level according to the vehicle speed signal received and transmits the sound signal to each speaker.
- The AV control unit receives the vehicle speed signal from the combination meter and changes the sound volume in conjunction with the vehicle speed.
- The control level can be selected by the customer.

#### AUDIO INDICATOR

- The AV control unit sends the status of audio to the AV control unit via AV communication.
- The AV control unit transmits the meter display signal as the audio status to the combination meter via AV communication.
- When combination meter receives the meter display signal, the audio status is displayed on the information display in combination meter.

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AV

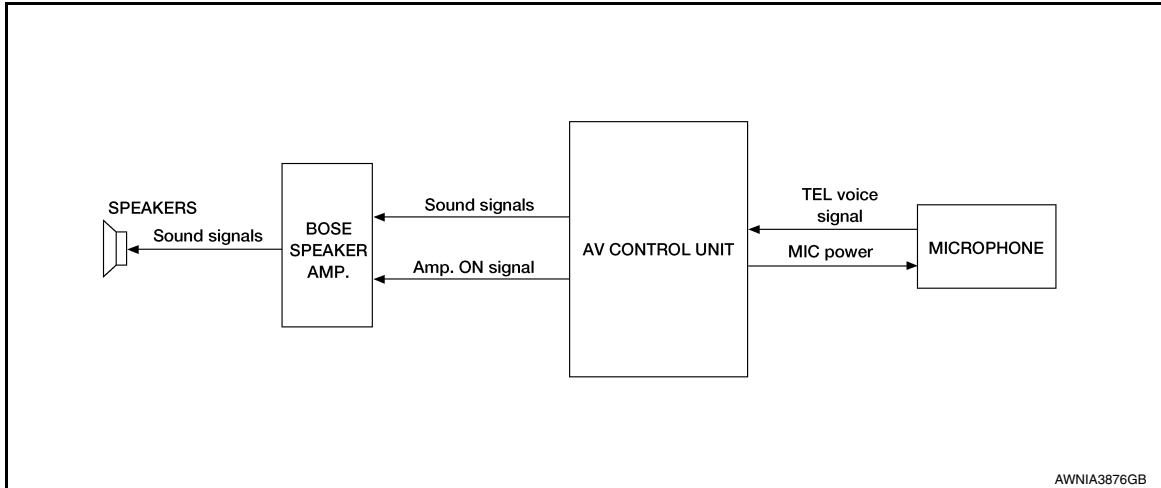
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## HANDS-FREE PHONE SYSTEM WITH BOSE SYSTEM

### WITH BOSE SYSTEM : System Description

INFOID:000000012193734

#### SYSTEM DIAGRAM



#### DESCRIPTION

- Refer to Owner's Manual for hands-free phone system operating instructions.
- For further information about Bluetooth® compliant profile, refer to [AV-13. "AV Control Unit"](#).
- Simply operating the steering switch without releasing hands from the steering wheel allows the driver to receive a phone call.
- When a Bluetooth® communication compliant phone is registered to the AV control unit, hands-free phone communication can be performed. Five units of Bluetooth® communication devices, including audio devices and cell phones, can be registered to the AV control unit.
- The content of the memory (telephone book) of the cellular phone can be recorded in the AV control unit.

#### When Receiving a Call

- When AV control unit receives the voice of the other party from a cell phone via Bluetooth® communication, it transmits the TEL voice signal to BOSE amp.
- BOSE amp. transmits the sound signal received from AV control unit to each speaker.

#### When a Call Is Originated

When AV control unit receives the microphone signal from microphone, it transmits the sound signal to a cell phone via Bluetooth® communication.

#### HANDS-FREE PHONE INDICATOR

- When a cell phone that is connected with the AV control unit via Bluetooth® communication receives a phone call, the incoming call is displayed on the information display in combination meter.
- When AV control unit recognizes an incoming call from a cell phone via Bluetooth® communication, it transmits the meter display signal to combination meter via AV communication.
- When combination meter receives the meter display signal, it displays the incoming call of cell phone on information display.
- When an incoming call is received, the driver can operate the steering switch to answer the phone.
- When steering switch is operated, the combination meter receives the steering switch signal, and then combination meter transmits the steering switch signal to the AV control unit via CAN communication.
- When AV control unit receives the steering switch signal, it activates the hands-free phone.

#### SMS INDICATOR

- When a cell phone that is connected with the AV control unit via Bluetooth® communication receives an SMS, the incoming SMS is displayed on the information display located in combination meter.
- The AV control unit transmits an SMS signal to the combination meter via CAN communication when receiving SMS from a cellular phone via Bluetooth® communication.

# HANDS-FREE PHONE SYSTEM

[MULTI AV SYSTEM]

## < SYSTEM DESCRIPTION >

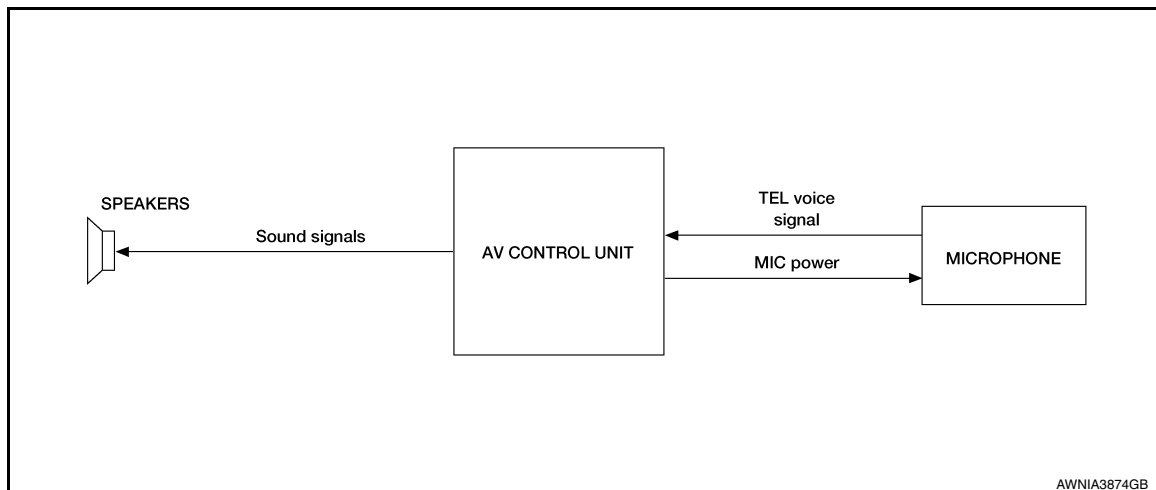
- The combination meter indicates the reception of SMS on the information display when receiving an SMS signal.
- When an SMS is received, the SMS can be confirmed by operating the steering switch.
- When steering switch is operated, the combination meter receives the steering switch signal, and then combination meter transmits the steering switch signal to the AV control unit via CAN communication.
- When AV control unit receives the steering switch signal, it transmits the SMS signal to combination meter via CAN communication.
- When combination meter receives the SMS signal, it displays SMS on information display.

## WITHOUT BOSE SYSTEM

### WITHOUT BOSE SYSTEM : System Description

INFOID:000000012193735

#### SYSTEM DIAGRAM



#### DESCRIPTION

- Refer to Owner's Manual for hands-free phone system operating instructions.
- For further information about Bluetooth® compliant profile, refer to [AV-13, "AV Control Unit"](#).
- Simply operating the steering switch without releasing hands from the steering wheel allows the driver to receive a phone call.
- When a Bluetooth® communication compliant phone is registered to the AV control unit, hands-free phone communication can be performed. Five units of Bluetooth® communication devices, including audio devices and cell phones, can be registered to the AV control unit.
- The content of the memory (telephone book) of the cellular phone can be recorded in the AV control unit.

#### When Receiving a Call

- When AV control unit receives the voice of the other party from a cell phone via Bluetooth® communication, it transmits the TEL voice signal to each speaker.

#### When a Call Is Originated

When AV control unit receives the microphone signal from microphone, it transmits the sound signal to a cell phone via Bluetooth® communication.

#### HANDS-FREE PHONE INDICATOR

- When a cell phone that is connected with the AV control unit via Bluetooth® communication receives a phone call, the incoming call is displayed on the information display in combination meter.
- When AV control unit recognizes an incoming call from a cell phone via Bluetooth® communication, it transmits the meter display signal to combination meter via CAN communication.
- When combination meter receives the meter display signal, it displays the incoming call of cell phone on information display.
- When an incoming call is received, the driver can operate the steering switch to answer the phone.
- When steering switch is operated, the combination meter receives the steering switch signal, and then combination meter transmits the steering switch signal to the AV control unit via CAN communication.
- When AV control unit receives the steering switch signal, it activates the hands-free phone.

#### SMS INDICATOR

## HANDS-FREE PHONE SYSTEM

< SYSTEM DESCRIPTION >

[MULTI AV SYSTEM]

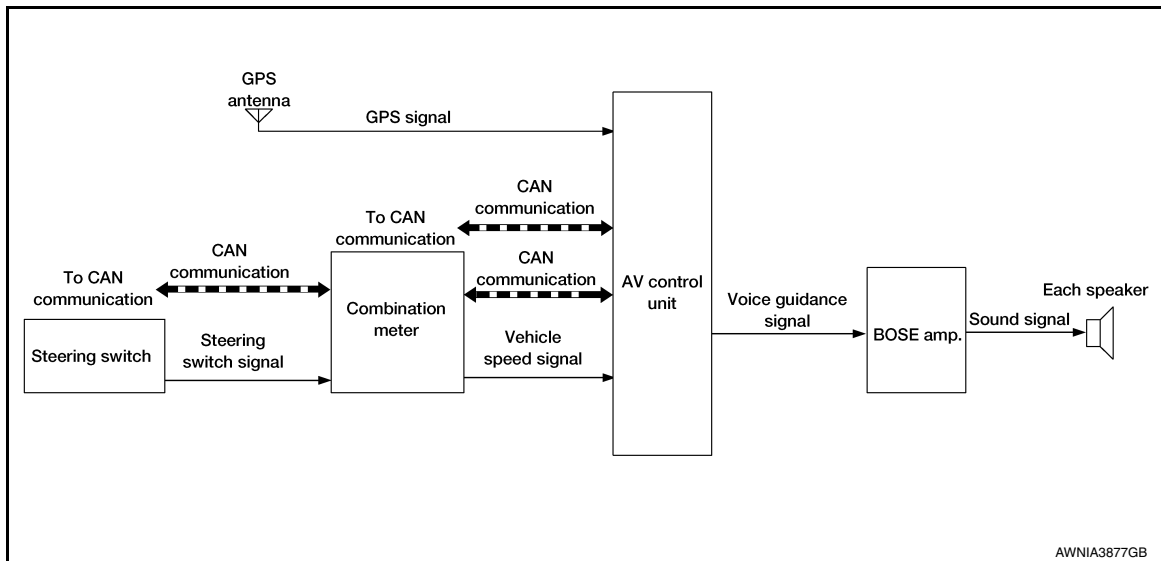
- When a cell phone that is connected with the AV control unit via Bluetooth® communication receives an SMS, the incoming SMS is displayed on the information display located in combination meter.
- The AV control unit transmits an SMS signal to the combination meter via CAN communication when receiving SMS from a cellular phone via Bluetooth® communication.
- The combination meter indicates the reception of SMS on the information display when receiving an SMS signal.
- When an SMS is received, the SMS can be confirmed by operating the steering switch.
- When steering switch is operated, the combination meter receives the steering switch signal, and then combination meter transmits the steering switch signal to the AV control unit via CAN communication.
- When AV control unit receives the steering switch signal, it transmits the SMS signal to combination meter via CAN communication.
- When combination meter receives the SMS signal, it displays SMS on information display.

## NAVIGATION SYSTEM

### System Description

INFOID:000000012193736

### SYSTEM DIAGRAM



AV Control Unit Input Signal (CAN Communication)

Transmit unit	Signal name
Combination meter	Parking brake switch signal
BCM	Shift position signal (Reverse signal)

### DESCRIPTION

- Refer to Owner's Manual for navigation system operating instructions.
- Navigation system can be operated with the AV control unit.
- Guidance voice is outputted from the AV control unit via BOSE amp. to the front speaker.
- AV control unit calculates the vehicle location based on the signals from GYRO (angle speed sensor), vehicle sensor, and GPS satellite as well as the map data from map SD card. It is displayed on display of the AV control unit.

### POSITION DETECTION PRINCIPLE

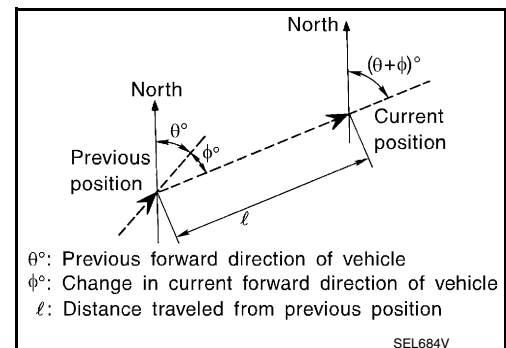
The navigation system periodically calculates the vehicle's current position according to the following three signals:

- Travel distance of the vehicle as determined by the vehicle speed sensor.
- Turning angle of the vehicle as determined by the gyroscope (angular velocity sensor).
- Direction of vehicle travel as 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 read from the map SD card (map-matching) and indicated on the screen as a vehicle mark. More accurate data is judged and used by comparing vehicle position detection results found of the GPS with the result by map-matching.

The current vehicle position will be calculated by detecting the distance the vehicle moved from the previous calculation point and its direction.

- Travel distance  
Travel distance calculations are based on the vehicle speed sensor input signal. Therefore, the calculation may become incorrect as the tires wear down. To prevent this, an automatic distance correction function has been adopted.
- Travel direction



# NAVIGATION SYSTEM

[MULTI AV SYSTEM]

## < SYSTEM DESCRIPTION >

Change in the travel direction of the vehicle is calculated by a gyroscope (angular velocity sensor) and a GPS antenna (GPS information). They have both advantages and disadvantages.

Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	Can detect the vehicle's turning angle quite accurately.	Direction errors may accumulate when vehicle is driven for long distances without stopping.
GPS antenna (GPS information)	Can detect the vehicle's travel direction (North/South/East/West).	Correct direction cannot be detected when vehicle speed is low.

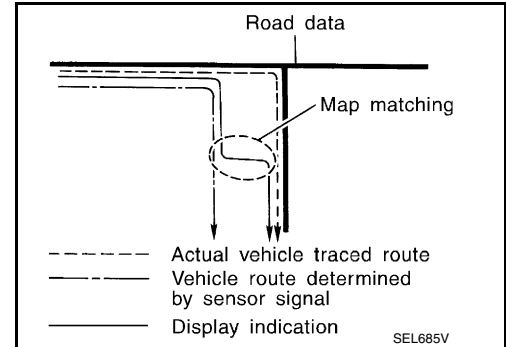
More accurate traveling direction is detected because priorities are set for the signals from these two devices according to the situation.

## MAP-MATCHING

Map-matching compares a current location detected by the method in the "Location Detection Principle" with the road map data from map SD card.

### NOTE:

The road map data is based on data stored in the map SD card.

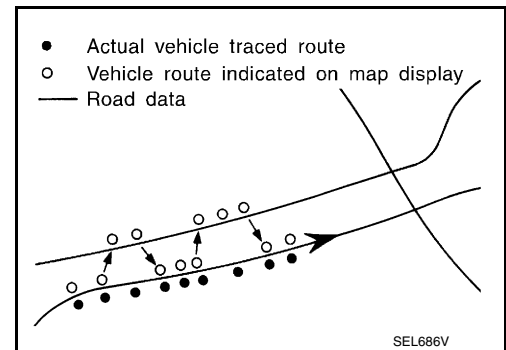


The vehicle position may not be corrected under the following circumstances and after driving for a certain time when GPS information is difficult to receive:

- In map-matching, alternative routes to reach the destination will be shown and prioritized after the road on which the vehicle is currently driven has been judged and the vehicle mark has been repositioned.

Alternative routes will be shown in different order of priority, and the incorrect road can be avoided if there is an error in distance and/or direction.

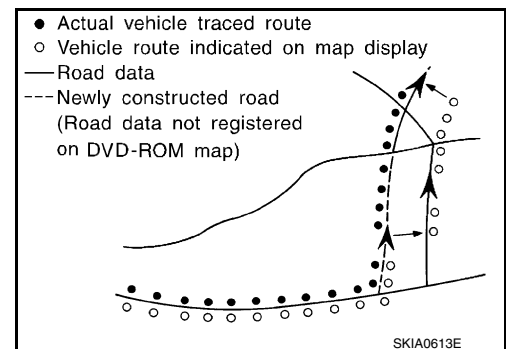
They are of the same priority if two roads are running in parallel. Therefore, the vehicle mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road.



- Map-matching does not function correctly when a road on which the vehicle is driving is new and not recorded in the map SD card or when road pattern stored in the map data and the actual road pattern are different due to repair.

The map-matching function may find another road and position the vehicle mark on it when driving on a road not present in the map. Then, the vehicle mark may change to it when 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 read from the map SD card 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)

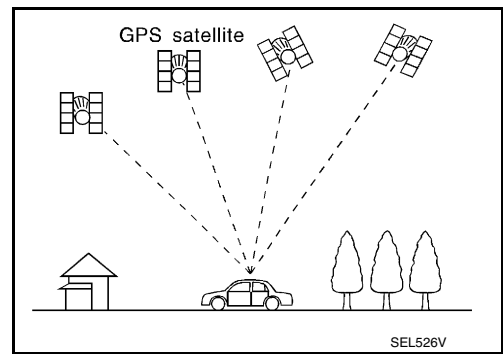
# NAVIGATION SYSTEM

## < SYSTEM DESCRIPTION >

[MULTI AV SYSTEM]

GPS (Global Positioning System) is developed for and is controlled by the U.S. 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 13,049 miles (21,000 km).

The receiver calculates the travel position in three dimensions (latitude/longitude/altitude) according to the time lag of the radio waves that four or more GPS satellites transmit (three-dimensional positioning). The GPS receiver calculates the travel position in two dimensions (latitude/longitude) with the previous altitude data if the GPS receiver receives only three radio waves (two-dimensional positioning). GPS position correction is not performed while stopping the vehicle.



Accuracy of the GPS will deteriorate under the following conditions:

- In two-dimensional positioning, GPS accuracy will deteriorate when altitude of the vehicle position changes.
- The position of GPS satellite affects GPS detection precision. The position detection may not be precisely performed.
- The position detection is not performed if GPS receiver does not receive radio waves from GPS satellites (inside a tunnel, parking in a building, under an elevated highway, etc.). GPS receiver may not receive radio waves from GPS satellites if any object is placed on the GPS antenna.

### NOTE:

- The detection result has an error of approximately 32.81 ft (10 mt) even with 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 U.S. Trace Control Center.

### NAVIGATION INDICATOR

- When the navigation system is ON, the AV control unit transmits a meter display signal to the combination meter via CAN communication.
- The combination meter displays a navigation status on the combination meter (in the information display) when receiving a navigation indicator signal.

### COMPASS

- AV control unit acquires direction information from GPS antenna.
- AV control unit transmits direction information to combination meter via CAN communication.
- When direction information is acquired, combination meter displays it on information display.

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AV

# TELEMATICS SYSTEM

< SYSTEM DESCRIPTION >

[MULTI AV SYSTEM]

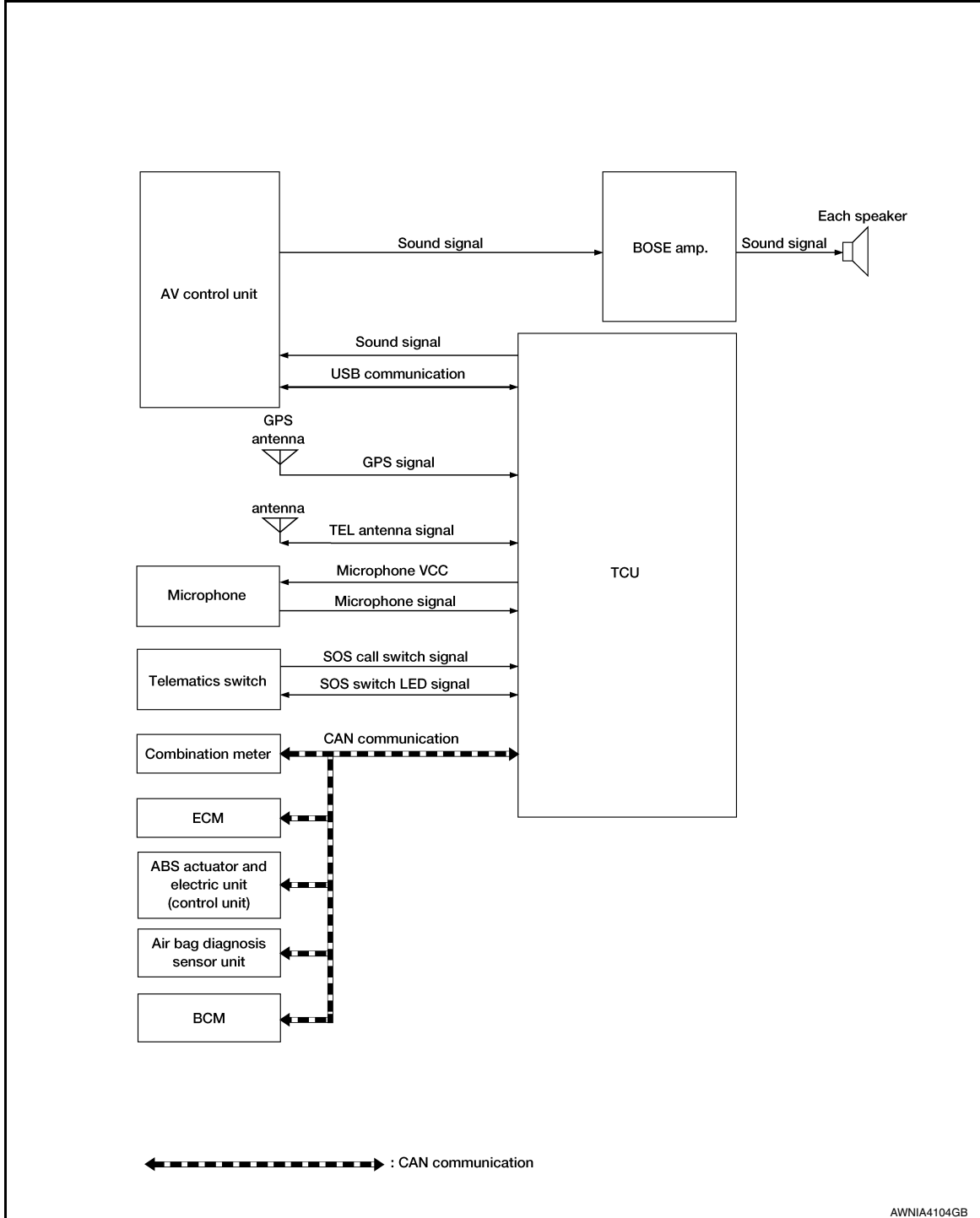
## TELEMATICS SYSTEM

## TELEMATICS SYSTEM

## TELEMATICS SYSTEM : System Description

INFOID:000000012379201

### SYSTEM DIAGRAM



TCU Input Signal (CAN Communication)

Transmit unit	Signal name
ABS actuator and electric unit (control unit)	ABS warning lamp signal
	VDC warning lamp signal



# TELEMATICS SYSTEM

[MULTI AV SYSTEM]

< SYSTEM DESCRIPTION >

Transmit unit	Signal name
BCM	Door switch signal
	Trunk switch signal
Combination meter	Brake warning lamp signal
Airbag diagnosis sensor unit	Car crash information signal
BCM	Door lock status signal
	Oil pressure switch signal
ECM	Malfunctioning indicator lamp signal
	Engine status signal

## DESCRIPTION

The telematics system interacts with the NISSANCONNECT<sup>SM</sup> data center using GPS and GSM/GPRS technologies. The telematics control unit (TCU) can send messages to and receive commands from the NISSANCONNECT<sup>SM</sup> data center. This allows the NISSANCONNECT<sup>SM</sup> data center to monitor the vehicle and obtain actual position coordinates and automatically detected events, as well as initiate certain services from outside the vehicle. In addition, the vehicle operator can initiate services from inside the vehicle.

### NOTE:

For additional information on the Telematics system, refer to the NAVIGATION SYSTEM OWNER'S MANUAL.

## TELEMATICS SYSTEM : Fail-safe

INFOID:000000012379203

If a malfunction occurs in the telematics system, TCU performs fail-safe activation according to the detected malfunction.

Detection item	Telematics system operation in fail-safe mode	DTC
CAN communication	<ul style="list-style-type: none"> <li>Telematics system does not function.</li> <li>Inform a NISSANCONNECT<sup>SM</sup> data center about abnormality.</li> </ul>	U1000
TEL antenna	<ul style="list-style-type: none"> <li>Telematics switch LED indicator turn OFF. (LED indicator turns ON 10 times when push the SOS call switch.)</li> <li>When operated a telematics system, inform that cannot be connected to the NISSANCONNECT<sup>SM</sup> data center.</li> </ul>	U1A07 U1A08
USB communication	<ul style="list-style-type: none"> <li>Telematics system does not function.</li> <li>Inform a NISSANCONNECT<sup>SM</sup> data center about abnormality.</li> </ul>	U1A05
TCU	Telematics system function stops.	U1A01
	<ul style="list-style-type: none"> <li>Telematics system function stops.</li> <li>When operated a telematics system, inform that cannot be connected to the NISSANCONNECT<sup>SM</sup> data center.</li> </ul>	U1A02
Telematics switch (SOS call switch)	<ul style="list-style-type: none"> <li>Telematics system does not function. (Only SOS call does not operate.)</li> <li>Telematics switch LED indicator turn OFF.</li> </ul>	U1A0E U1A0F
Microphone	<ul style="list-style-type: none"> <li>Transmit an own vehicle position to the NISSANCONNECT<sup>SM</sup> data center.</li> <li>Inform a NISSANCONNECT<sup>SM</sup> data center about abnormality.</li> </ul>	U1A0B U1A0C

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

[MULTI AV SYSTEM]

< SYSTEM DESCRIPTION >

## DIAGNOSIS SYSTEM (AV CONTROL UNIT)

### Description

INFOID:000000012193737

- The AV control unit diagnosis function starts 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:000000012193738

#### 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. 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 requires 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.</li> </ul>
Confirmation/ Adjustment	Display Diagnosis	The following check functions are available: <ul style="list-style-type: none"> <li>• Color tone check by color bar display, white display and black display</li> <li>• Light and shade check by gray scale display</li> <li>• Touch panel check</li> <li>• Sensor sensitivity settings</li> </ul>
	Vehicle Signals	Diagnosis of signals can be performed.
	Speaker Test	The connection of a speaker can be confirmed by test tone.
	ANC/ASC	Allows for testing and adjustment of the ANC/ASC system.
	Navigation *	The reception status of GPS can be confirmed. Display On/Off of the simulation menu of navigation.
	Error Location Display	The system malfunction is displayed. When the malfunctioning item is selected, the time and place that the selected malfunction last occurred are displayed.
	AV COMM Diagnosis	The communication condition of each unit of NISSANCONNECT <sup>SM</sup> can be monitored.
	Camera Control Unit	The signal connected to camera control unit can be checked and the guiding line position that overlaps rear view camera image can be adjusted.
	SXM	Displays the information related to satellite radio.
	Delete Unit Connection Log	Erases the connection history of unit and error history.
	Reset Settings	Initializes the default data.
	Version Information	Version information of the following items is displayed: <ul style="list-style-type: none"> <li>• AV control unit</li> <li>• BOSE amp.</li> <li>• Combination meter</li> <li>• Around view monitor control unit</li> </ul>
	Program Update	Version of the AV control unit can be updated.
Hands-free Phone	The received volume adjustment of hands-free phone and microphone speaker check can be performed.	

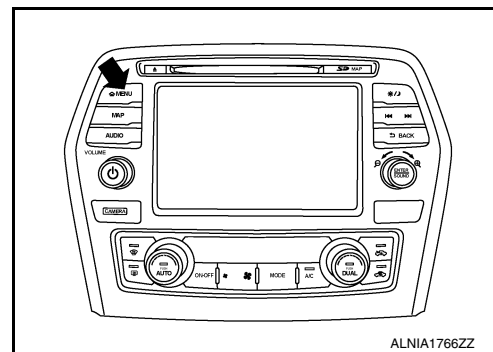
#### METHOD OF STARTING

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

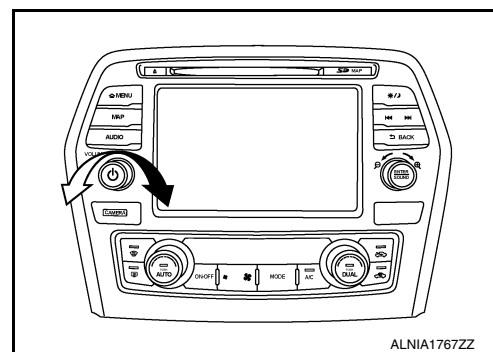
[MULTI AV SYSTEM]

## < SYSTEM DESCRIPTION >

1. Start the engine.
2. Turn the audio system OFF.
3. Press the MENU button.



4. While menu button is pressed rotate the volume encoder left, right, and left. On each rotation, it should be at least 7 clicks.



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

### NOTE:

When a diagnostic screen is not displayed, press the “MENU” switch. And then, restart from the procedure of Step 3.

### SELF-DIAGNOSIS MODE

1. Start the self-diagnosis function and select “Self Diagnosis”.
  - Self-diagnosis subdivision screen is displayed, and the self-diagnosis mode starts.
  - The bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis.
2. Diagnosis results are displayed after the self-diagnosis is completed. The unit names and the connection lines are color-coded according to the diagnostic results.

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

### NOTE:

Control Unit (AV control unit) and BOSE Amp. are 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-183, "Removal and Installation"](#).
- 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.

AV

## DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[MULTI AV SYSTEM]

### SELF-DIAGNOSIS RESULTS

Check the applicable display with 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
Audio Head Unit	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. Refer to <a href="#">AV-156, "AV CONTROL UNIT : Diagnosis Procedure"</a> . When detecting no malfunction in those components, replace AV control unit. Refer to <a href="#">AV-183, "Removal and Installation"</a> .
BOSE Amp.	When either one of the following items are detected: <ul style="list-style-type: none"> <li>• Sound signal circuits between BOSE amp. and each speaker are malfunctioning.</li> <li>• Sound signal circuits between BOSE amp. and either front or rear microphone are malfunctioning.</li> <li>• BOSE amp. malfunction is detected.</li> </ul>	<ul style="list-style-type: none"> <li>• Malfunctioning speaker circuits.</li> <li>• Malfunctioning front or rear microphone circuits.</li> <li>• Replace BOSE amp. Refer to <a href="#">AV-194, "Removal and Installation"</a>.</li> </ul>

Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control Unit ↔ Cluster	When either one of the following items are detected: <ul style="list-style-type: none"> <li>• Combination meter power supply and ground circuits are malfunctioning.</li> <li>• AV communication circuits between AV control unit and combination meter are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Combination meter power supply and ground circuits. Refer to <a href="#">MWI-50, "COMBINATION METER : Diagnosis Procedure"</a>.</li> <li>• AV communication circuits between AV control unit and combination meter are malfunctioning.</li> </ul>
Navigation unit ↔ GPS Antenna	GPS antenna connection malfunctions detected.	GPS antenna Refer to <a href="#">AV-116, "Diagnosis Procedure"</a> .
Audio Head Unit ↔ XM Antenna	Satellite antenna connection malfunctions detected.	Satellite antenna Refer to <a href="#">AV-117, "Diagnosis Procedure"</a> .

### 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. Touch the "MAP" to return to the initial "Confirmation/Adjustment Mode" screen.

Display Diagnosis

Confirmation of the AV control unit screen.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[MULTI AV SYSTEM]

Item	Description	
Display Settings	Color Spectrum Bar <ul style="list-style-type: none"> <li>• Display 8 colors of following bars:</li> <li>- White</li> <li>- Yellow</li> <li>- Cyan (Close to light blue)</li> <li>- Green</li> <li>- Magenta (Close to purplish red)</li> <li>- Red</li> <li>- Blue</li> <li>- Black</li> </ul>	
	Gradation Bar	Display 32 gradation gray-scale image to a screen.
	White Display	Display white screen.
Touch Panel Response Check	<ul style="list-style-type: none"> <li>• The function can check the presence of a circle indication and deviation from where it should be while touching the touch panel. If you hit Map button you will be taken to a trace screen. Here you can check the function of continuous gesture on the screen. To back out of screen hit the map button.</li> </ul>	
Touch Panel Calibration	<ul style="list-style-type: none"> <li>• Allows you to recalibrate the touch screen panel.</li> </ul>	

## Vehicle Signals

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

### AV control unit

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 pressed	Changes in indication may be delayed. This is normal.
	OFF	Parking brake is released	
Lights Signal	ON	Headlamp switch is ON.	Changes in indication may be delayed. This is normal.
	OFF	Headlamp switch is OFF.	
Ignition Signal	ON	Ignition switch ON.	—
	OFF	Ignition switch in ACC position.	
Reverse Signal	ON	Shift the selector lever to "R" position.	Changes in indication may be delayed. This is normal.
	OFF	Shift the selector lever to a position other than "R" position.	

## Speaker Test

Select "Speaker Test" to display the speaker diagnosis screen. Touch "Start" to generate a test tone in a speaker. Touch "Next" to generate a test tone in the next speaker. Touch "End" to stop the test tones.

### ANC/ASC

Select Confirmation/Adjustment to access ANC/ASC settings

Item	Description
### Speaker test	Left Front Tweeter <ul style="list-style-type: none"> <li>• Start-Next</li> <li>• Stop</li> </ul>
	Front Center <ul style="list-style-type: none"> <li>• Start-Next</li> <li>• Stop</li> </ul>
	Right Front Tweeter <ul style="list-style-type: none"> <li>• Start-Next</li> <li>• Stop</li> </ul>
	R-PSHELF R-WOOFER <ul style="list-style-type: none"> <li>• Start-Next</li> <li>• Stop</li> </ul>

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[MULTI AV SYSTEM]

	Item	Description
ANC/ASC	Status	Displays software version for ANC, ASC, and Config Results
	Setting	Allows user to enable/disable ANC/ASC after connection diagnosis
	Connection diagnosis	Displays the status of each signal acquisition route
	Active test	Outputs the test tone imitating ANC ON/OFF. Active test function will be available after the connection diagnosis.

## Navigation

Item	Description
Sensor Information	The reception status of GPS can be confirmed.

## Error Location Display

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

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

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

- Place of the error occurrence is represented by the longitude and latitude 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 up-and-down manner.

## 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	Applicable DTC	Reference
CAN COMM CIRCUIT	U1000	<a href="#">AV-109</a>
CONTROL UNIT (CAN)	U1010	<a href="#">AV-111</a>
Mismatched configuration data stored	U1223	<a href="#">AV-112</a>
Amplifier temperature error	U1231	<a href="#">AV-113</a>
Steer. Angle Sensor calibration	U1232	<a href="#">AV-114</a>
GPS Antenna error	U1244	<a href="#">AV-116</a>
XM Antenna connection error : open	U1258	<a href="#">AV-117</a>
XM Antenna connection error : short		
Cluster connection error	U1267	<a href="#">AV-119</a>
Confirm user connection unit	U12B7	<a href="#">AV-121</a>
Radio Antenna error : open	U12BE	<a href="#">AV-122</a>
Radio Antenna error : short		

## CAN COMM Diagnosis

### CAN COMM Monitor

- 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)
CMF Send Switch	OK / UNKW	OK / 0 – 39 / —
CMF Receive Bose AMP	OK / UNKW	OK / 0 – 39 / —

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[MULTI AV SYSTEM]

Items	Status (Current)	Counter (Past)
CMF Receive AVM	OK / UNKW	OK / 0 – 39 / —
CMF Receive Meter	OK / UNKW	OK / 0 – 39 / —
CMF Receive Audio	OK / UNKW	OK / 0 – 39 / —

Camera Cont.

Item	Description
Correct Draw Line of Rear View Camera	The guiding lines in the rear view monitor can be adjusted.
Check/Change Configuration	Displays the current configuration data. <b>NOTE:</b> Refer to the following list for the items of the configuration adjustment function:
Reset Configuration	Initializes the camera system configuration.
Camera System Type	Sets the type of camera that is connected.

Configuration list

Setting item	Setting (Default value)	
	Direct adaptive steering models	Vehicle speed sensitive P/S models
Predictive Course Lines	With SBW	Without SBW
Rear Coeff. K	1.37847	1.37847
Rear Coeff. F	0.0394	0.0394
Rear Coeff. P1	-0.24463	-0.24463
Rear Coeff. P2	0.07005	0.07005
Rear Coeff. C1	-0.00608	-0.00608
Rear Coeff. C2	-0.00001	-0.00001
Rear Coeff. D1	130.6	130.6
Rear Coeff. D2	-35	-35
Car Width	1822.9	1822.9
Rear Offset	3835.175	3835.175
Rear Height	581.589	581.589
Rear L/R Angle	0	0
Rear Up/Dn Angle	0	0
Rear Roll Angle	0	0
Bumper Rear Dist.	0	0
Bumper Rear Ax Dist	0	0
Max. Steering Angle	31.56	31.56
Min. Turning Radius	1	1.47
Wheelbase	2850	2850
Total Length	4792	4792
Steering Gear Ratio	0.032	0.047
Tot.Width With Mirrors	0	0

SXM

SXM Mode Diagnosis

Item	Description
Diagnostic Mode Display	Display adjustment items to test satellite radio function.
External Diagnostic Mode	Set in external diagnostic mode.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[MULTI AV SYSTEM]

## 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.)

## Reset Settings

Item	Description
Reset User Data	Initializes the AV control unit.
Reset Configuration	Initializes the configuration data.

## Version Information

Version information of each control unit and switch is displayed.

## Program Update

Version of the AV control unit can be updated.

## Hands-Free Phone

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

Item	Description
HF Vol. Adjustment	The reception volume can be set in three steps: "Low", "Standard" and "High".
Voice Microphone Test	The microphone audio can be directly connected to the speakers to perform a microphone test.
Onload model ID	Displays the on board unit ID.

## CONSULT Function

INFOID:000000012193739

## APPLICATION ITEMS

CONSULT performs the following functions via the communication with the AV control unit:

Diagnosis mode	Description
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 inputted to the AV control unit can be performed.
Work support	Steering angle sensor can be adjusted.
ECU Identification	The part number of AV control unit can be checked.
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>

## 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, are detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.
- Refer to [AV-109, "Diagnosis Procedure"](#).

## Freeze Frame Data (FFD)

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

Item name	Display content
ODO/TRIP METER (km)	Total driving distance (odometer value) upon DTC detection is displayed.
TOTAL DISTANCE (km)	

## DATA MONITOR

### NOTE:

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



# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[MULTI AV SYSTEM]

- 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 switch is ON.	—	
	Off	Either of the following conditions: <ul style="list-style-type: none"> <li>• Light switch is OFF.</li> <li>• Expose the auto light optical sensor to light when the light switch is ON.</li> </ul>		
IGN SIG	On	Ignition switch ON.		
	Off	Ignition switch in ACC position.		
REV SIG	On	Selector lever is in R position.		Changes in indication may be delayed. This is normal.
	Off	Selector lever is in any position other than R.		

## WORK SUPPORT

Adjust 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. Refer to [BRC-248, "Work Procedure"](#).**

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

## ECU IDENTIFICATION

The part number of AV control unit is displayed.

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AV

## DIAGNOSIS SYSTEM (TCU)

### CONSULT Function

INFOID:000000012477108

#### **CAUTION:**

**After disconnecting the CONSULT vehicle interface (VI) from the data link connector, the ignition must be cycled OFF → ON (for at least 5 seconds) → OFF. If this step is not performed, the BCM may not go to “sleep mode”, potentially causing a discharged battery and a no-start condition.**

#### CONSULT FUNCTIONS

CONSULT performs the following functions via communication with the TCU.

Direct Diagnostic Mode	Description
Ecu Identification	The AV control unit part number is displayed.
Self Diagnostic Result	The AV control unit self diagnostic results are displayed.
Data Monitor	The AV control unit input/output data is displayed in real time.
Work support	The settings for AV control unit functions can be changed.
CAN Diag Support Mntr	<ul style="list-style-type: none"> <li>• The result of transmit/receive diagnosis of AV communication is displayed.</li> <li>• The result of transmit/receive diagnosis of CAN communication is displayed.</li> </ul>

#### ECU IDENTIFICATION

The part number of TCU is displayed.

#### SELF DIAGNOSTIC RESULT

Refer to [AV-56. "DTC Index"](#).

#### DATA MONITOR

Monitor Item [Unit]	Description
HF TYPE [NO BT/]	HF type is displayed.
AUDIO UNIT TYPE [NAVI/]	AV control unit type is displayed.
CALL SWITCH TYPE [SOS/]	Call switch type is displayed.
SPEAKER TYPE [INDRCT/]	Speaker type is displayed.
ZONE [USA/]	Vehicle zone is displayed.
CHANNEL [NISSAN/]	Vehicle channel is displayed.
CAN COMM [GEN.3/]	Communication generation type is displayed.
K-LINE [DISABLE/]	K-line communication status is displayed.
AV COMM [ENABLE/]	AV communication status is displayed.
VEHICLE TYPE [ENG/]	Vehicle type is displayed.
ECHO CANCEL [TYPE 1/]	Echo cancel type is displayed.
NOISE CANCEL [TYPE 1/]	Noise cancel type is displayed.
TCU STANDBY TIME [2DAYS/14DAYS/30DAYS]	TCU standby time is displayed.
SENSOR ANGLE X [4.0/]	Sensor angle X is displayed.
SENSOR ANGLE Y [4.0/]	Sensor angle Y is displayed.
SENSOR ANGLE Z [4.0/]	Sensor angle Z is displayed.
SVTB [DISABLE/]	SVTB status is displayed.
REMOTE DOOR LOCK [DISABLE/]	Remote door lock status is displayed.
REMOTE START [DISABLE/]	Remote start status is displayed.
NAD OUTPUT STATUS [On/Off]	TCU activation is displayed.
ACN COMM SEQUENCE LOG [1–255]	ACN communication sequence log is displayed.
SOS COMM SEQUENCE LOG [1–10]	SOS communication sequence log is displayed.
SOS SW [OFF/]	SOS switch status is displayed.

# DIAGNOSIS SYSTEM (TCU)

[MULTI AV SYSTEM]

< SYSTEM DESCRIPTION >

## WORK SUPPORT

Conditions	Description
SAVE VIN DATA	VIN data saved in TCU is stored in CONSULT.
TCU ACTIVATE SETTING	Off: TCU activation Off.
	On: TCU activation On.
WRITE VIN (SAVED DATA)	VIN data from SAVE VIN DATA can be written to new TCU.
WRITE VIN (MANUAL INPUT)	VIN data can be manually written to new TCU.

## CAN DIAG SUPPORT MNTR

Refer to [LAN-14, "CAN Diagnostic Support Monitor"](#).

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AV

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV SYSTEM]

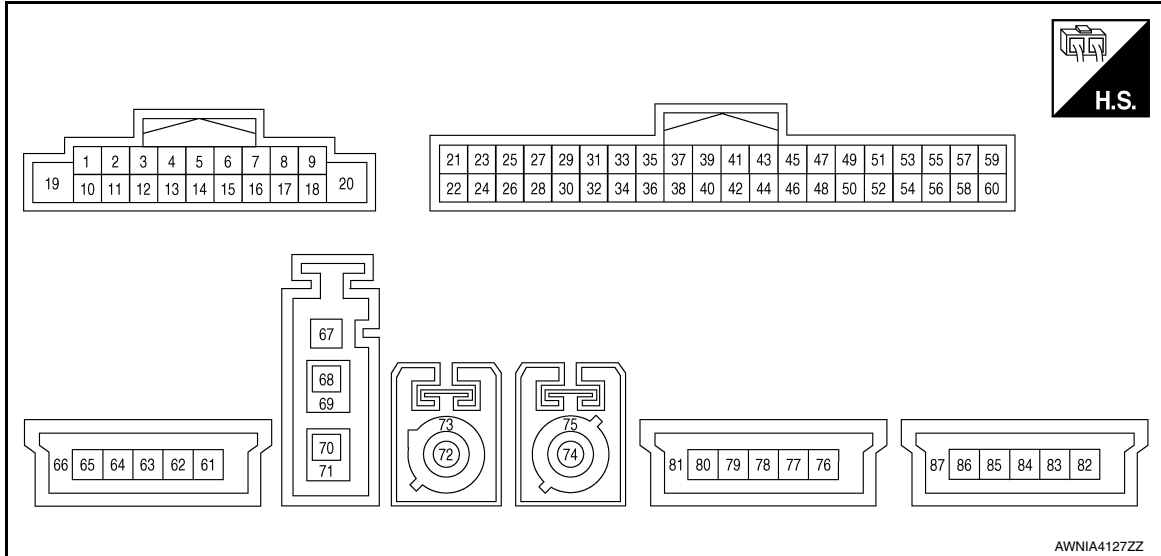
## ECU DIAGNOSIS INFORMATION

### AV CONTROL UNIT

Reference Value

INFOID:0000000012193740

#### TERMINAL LAYOUT



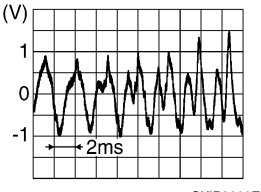
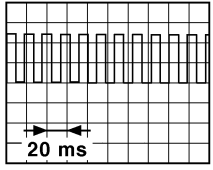
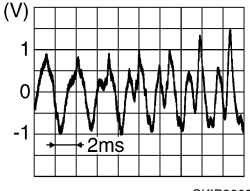
#### PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
2 (G)	3 (R)	Sound signal front LH (+)	Output	[Ignition switch ON] • Sound output	<p>SKIB3609E</p>
3 (R)	—	Sound signal front LH (-)	—	—	—
4 (B)	5 (W)	Sound signal rear (+)	Output	[Ignition switch ON] • Sound output	<p>SKIB3609E</p>
5 (W)	—	Sound signal rear (-)	—	—	—
7 (P)	Ground	ACC power supply	Input	[Ignition switch ACC]	Battery voltage
9 (R)	8 (GR)	Illumination control signal	Input	Headlamps ON	Battery voltage
10 (Shield)	—	Pre-amp. shield	—	—	—

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV SYSTEM]

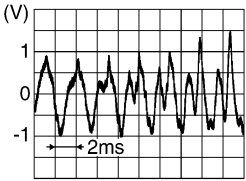
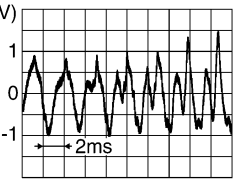
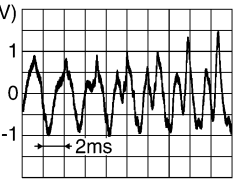
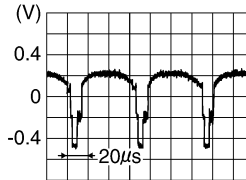
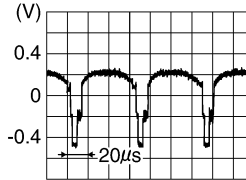
Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
11 (B)	12 (W)	Sound signal front RH (+)	Output	[Ignition switch ON] • Sound output	
12 (W)	—	Sound signal front RH (-)	—	—	—
19 (Y)	Ground	Battery power supply	Input	—	Battery voltage
21 (LG)	—	M-CAN low TRM	Input/ output	—	—
22 (SB)	—	M-CAN high TRM	Input/ output	—	—
23 (LG)	—	M-CAN low	Input/ output	—	—
24 (SB)	—	M-CAN high	Input/ output	—	—
25 (P)	—	CAN low	Input/ output	—	—
26 (L)	—	CAN high	Input/ output	—	—
28 (BG)	Ground	Vehicle speed signal (8-pulse)	Input	[Ignition switch ON] • When vehicle speed is approx. 40 km/h (25 MPH)	<p><b>NOTE:</b> The maximum voltage varies depending on the specification (destination unit).</p> 
30 (G)	—	Reverse signal	Input	Selector lever in R (reverse)	Battery voltage
				Selector lever in any position other than R (reverse)	0 V
31 (BG)	Ground	Ignition power supply	Input	[Ignition switch ON]	Battery voltage
32 (P)	—	MR output	Input	—	—
38 (Shield)	—	Microphone shield	—	—	—
39 (W)	40 (B)	Microphone signal	Output	While speaking into the microphone	

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# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV SYSTEM]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
46 (B)	48 (Shield)	Microphone signal	Input	While speaking into the microphone	 <small>SKIB3609E</small>
47 (B)	—	Microphone power supply	—	—	5 V
48 (Shield)	—	Microphone signal ground	—	—	—
49 (W)	51 (B)	AUX in jack sound signal LH	Input	[Ignition switch ON] • Sound output	 <small>SKIB3609E</small>
50 (R)	51 (B)	AUX in jack sound signal RH	Input	[Ignition switch ON] • Sound output	 <small>SKIB3609E</small>
51 (B)	—	AUX in jack sound signal ground	—	—	—
52 (Shield)	—	Aux in jack shield	—	—	—
57 (R)	Ground	Camera power supply	Output	[Ignition switch ON]	6.2 V
58 (B)	Ground	Camera ground	—	Ignition switch ON	0 V
59 (W)	58 (B)	Camera image signal (with rear view camera)	Input	[Ignition switch ON] • Image is displayed.	 <small>SKIB0827E</small>
59 (B)	58 (B)	Camera image signal (with around view camera)	Input	[Ignition switch ON] • Image is displayed.	 <small>SKIB0827E</small>
60 (Shield)	—	Camera shield	—	—	—

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[MULTI AV SYSTEM]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)	
+	-	Signal name	Input/ Output			
61 (B)	—	V BUS signal	—	—	—	A
63 (G)	—	USB D- signal	—	—	—	B
64 (W)	—	USB D+ signal	—	—	—	C
65 (R)	—	USB ground	—	—	—	D
66 (Shield)	—	USB shield	—	—	—	E
67 (B)	Ground	Antenna amp. ON signal	Output	AV control unit ON, FM-AM selected	Battery voltage	
68 (B)	—	AM-FM main	Input	—	—	F
69 (Shield)	—	AM-FM ground	—	—	—	G
70 (B)	—	FM sub	Input	—	—	H
71 (Shield)	—	FM sub ground	—	—	—	
72 (B)	Ground	Satellite radio antenna signal	Input	[Ignition switch ON] • Not connected satellite antenna connector	5.0 V	I
73 (Shield)	—	Satellite radio antenna shield	—	—	—	J
74 (B)	Ground	GPS antenna signal	Input	[Ignition switch ON] • Not connected GPS antenna con- nector	5.0 V	K
75 (Shield)	—	GPS antenna shield	—	—	—	L
76 (B)	—	V BUS signal	—	—	—	
78 (G)	—	USB D- signal	—	—	—	M
79 (W)	—	USB D+ signal	—	—	—	
80 (R)	—	USB ground	—	—	—	AV
81 (Shield)	—	USB shield	—	—	—	
82 (B)	—	V BUS signal	—	—	—	O
84 (G)	—	USB D- signal	—	—	—	P
85 (W)	—	USB D+ signal	—	—	—	
86 (R)	—	USB ground	—	—	—	
87 (Shield)	—	USB shield	—	—	—	

# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

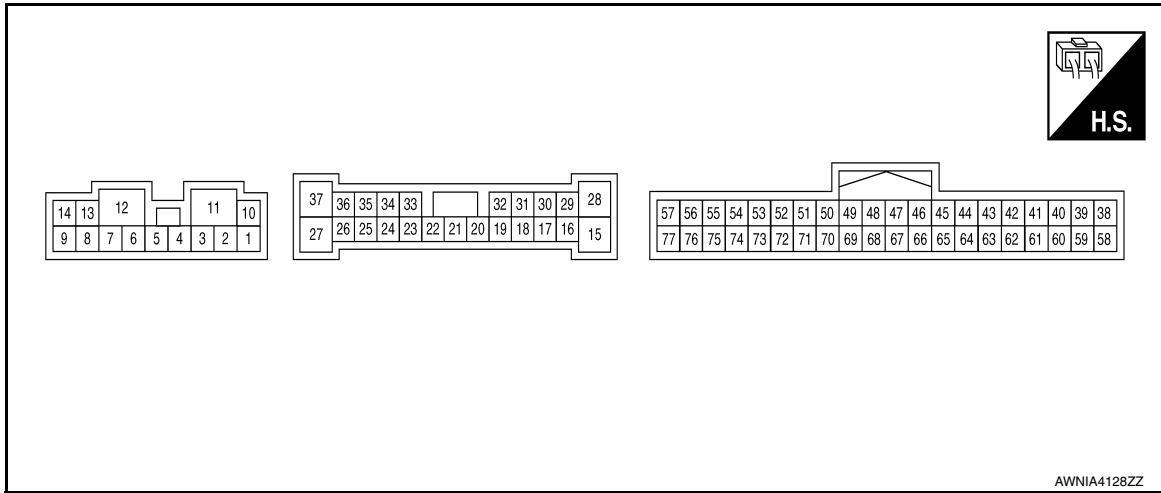
[MULTI AV SYSTEM]

## BOSE AMP.

### Reference Value

INFOID:000000012377487

### TERMINAL LAYOUT



### PHYSICAL VALUES

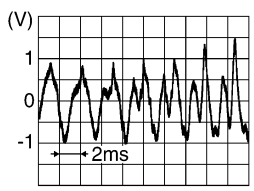
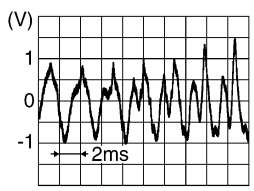
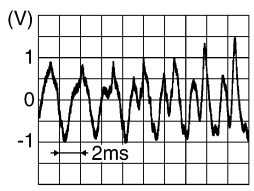
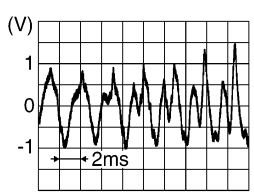
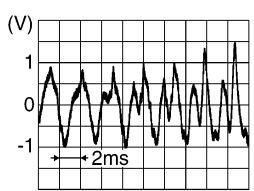
Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
1 (W)	2 (G)	Sound signal rear subwoofer RH (+)	Output	[Ignition switch ON] • Sound output	<p style="text-align: right;">SKIB3609E</p>
2 (G)	—	Sound signal rear subwoofer RH (-)	—	—	—
3 (P)	4 (BG)	Sound signal front door speaker RH (+)	Output	[Ignition switch ON] • Sound output	<p style="text-align: right;">SKIB3609E</p>
4 (BG)	—	Sound signal front door speaker RH (-)	—	—	—
5 (W)	6 (G)	Sound signal rear subwoofer LH (+)	Output	[Ignition switch ON] • Sound output	<p style="text-align: right;">SKIB3609E</p>
6 (G)	—	Sound signal rear subwoofer LH (-)	—	—	—



# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

[MULTI AV SYSTEM]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
7 (GR)	—	Ground	—	[Ignition switch ON]	0 V
8 (W)	—	Sound signal door speaker LH (-)	—	—	—
10 (SB)	7 (GR)	Battery power supply	Input	[Ignition switch OFF]	Battery voltage
11 (G)	7 (GR)	Battery power supply	Input	[Ignition switch OFF]	Battery voltage
12 (GR)	—	Ground	—	[Ignition switch ON]	0 V
13 (P)	8 (W)	Sound signal front door speaker LH (+)	Output	[Ignition switch ON] • Sound output	 SKIB3609E
16 (P)	29 (R)	Tweeter LH (+)	Output	[Ignition switch ON] • Sound output	 SKIB3609E
17 (P)	18 (R)	Sound signal center speaker (+)	Output	[Ignition switch ON] • Sound output	 SKIB3609E
18 (R)	—	Sound signal center speaker (-)	—	—	—
19 (W)	32 (BG)	Sound signal door tweeter (+)	Output	[Ignition switch ON] • Sound output	 SKIB3609E
22 (LG)	33 (Y)	Sound signal rear door speaker LH (+)	Output	[Ignition switch ON] • Sound output	 SKIB3609E

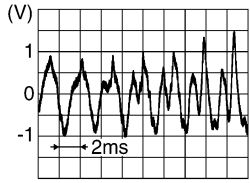
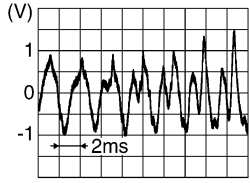
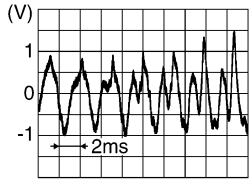
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AV

# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

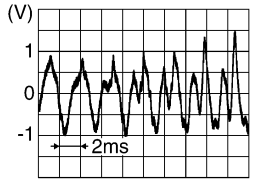
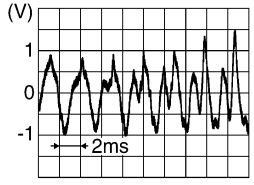
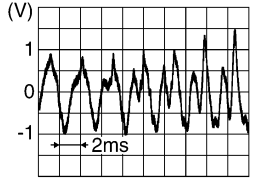
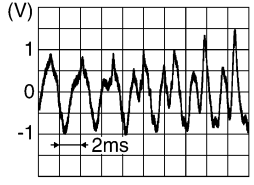
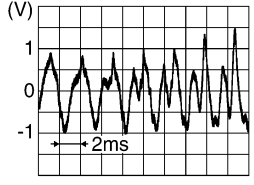
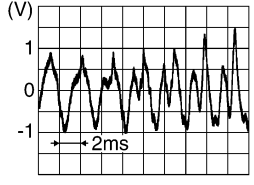
[MULTI AV SYSTEM]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
23 (G)	34 (W)	Sound signal rear door speaker RH (+)	Output	[Ignition switch ON] • Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
24 (G)	35 (R)	Sound signal door tweeter LH (+)	Output	[Ignition switch ON] • Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
29 (R)	—	Tweeter LH (-)	—	—	—
30 (W)	—	Tweeter RH (-)	—	—	—
31 (G)	30 (W)	Tweeter RH (+)	Output	[Ignition switch ON] • Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
32 (BG)	—	Sound signal door tweeter RH (-)	—	—	—
33 (Y)	—	Sound signal rear door speaker LH (-)	—	—	—
34 (W)	—	Sound signal rear door speaker RH (-)	—	—	—
35 (R)	—	Sound signal door tweeter LH (-)	—	—	—
40 (L)	—	Sound signal door tweeter LH (-)	—	—	—
41 (W)	—	Voice guidance signal (-)	—	—	—
42 (R)	—	Sound signal LH (-)	—	—	—
43 (W)	—	Sound signal RH (-)	—	—	—
48 (B)	—	Rear microphone signal (-)	—	—	—
49 (G)	—	Front left microphone signal (-)	—	—	—
51 (W)	—	M-CAN low	Input/ Output	—	—
52 (W)	—	M-CAN low	Input/ Output	—	—

# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

[MULTI AV SYSTEM]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
53 (P)	7 (GR)	Ignition power supply	Input	[Ignition switch ON or ACC]	Battery voltage
60 (Y)	40 (L)	Front right microphone signal (+)	Input	[Ignition switch ON] • When inputting interior sound	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
61 (B)	41 (W)	Voice guidance signal (+)	Input	[Ignition switch ON] • Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
62 (G)	42 (R)	Sound signal LH (+)	Output	[Ignition switch ON] • Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
63 (B)	43 (W)	Sound signal RH (+)	Output	[Ignition switch ON] • Sound output	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
68 (LG)	48 (B)	Rear microphone signal (+)	Input	[Ignition switch ON] • When inputting interior sound	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
69 (R)	49 (G)	Front left microphone signal (+)	Input	[Ignition switch ON] • When inputting interior sound	 <p style="text-align: right; font-size: small;">SKIB3609E</p>
71 (B)	—	M-CAN high	Input/ Output	—	—
72 (B)	—	M-CAN high	Input/ Output	—	—

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AV

# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

[MULTI AV SYSTEM]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
73 (W)	7 (GR)	Step lamp signal	Input	[Ignition switch ON] • When opened any doors.	0 V
				[Ignition switch ON] • When closed all doors.	12.0 V
75 (BG)	7 (GR)	Engine speed signal	Input	[Engine running] • Idle speed	
76 (Shield)	—	M-CAN shield	Input/ Output	—	—

# TCU

< ECU DIAGNOSIS INFORMATION >

[MULTI AV SYSTEM]

## TCU

### Reference Value

INFOID:000000012372822

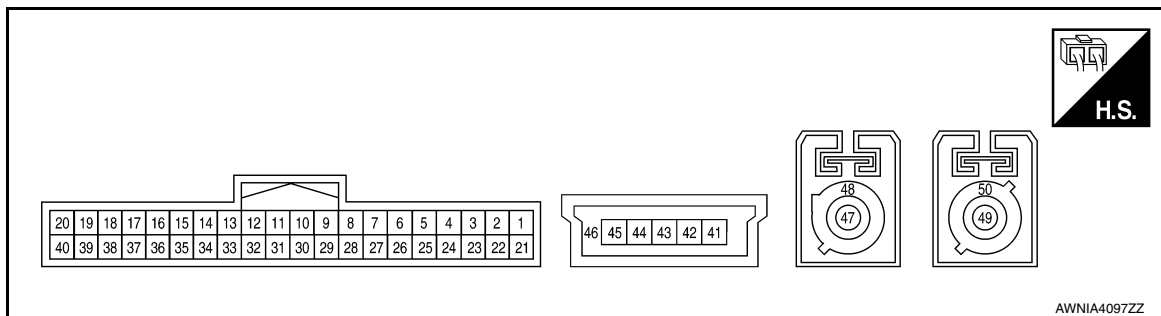
### VALUES ON THE DIAGNOSIS TOOL

**NOTE:**

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

Monitor Item	Condition	Value/Status
ECHO CANCEL	This item is displayed, but cannot be monitored.	type1
		type2
		type3
		type4
NOISE CANCEL	This item is displayed, but cannot be monitored.	type1
		type2
		type3
		type4
TCU STANDBY TIME	Set at 14 days (default)	14DAYS
	Set at 2 days	2DAYS
	Set at 30 days	30DAYS
	No setting	NON
NAD OUTPUT STATUS	When TCU activation is ON	On
	When TCU activation is OFF	Off
ACN COMM SEQUENCE LOG	—	—
SOS COMM SEQUENCE LOG	—	—

### TERMINAL LAYOUT



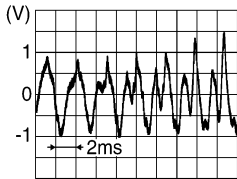
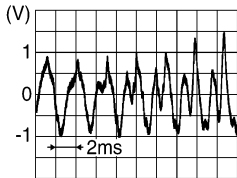
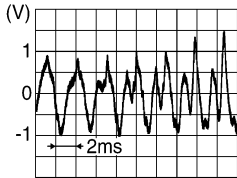
### PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/Output		
1 (W)	29 (B)	Battery power supply	Input	[Ignition switch OFF]	Battery Voltage
2 (P)	29 (B)	ACC power supply	Input	[Ignition switch ACC]	12 V
3 (P)	29 (B)	ACC output	Output	[Ignition switch ACC]	12 V

# TCU

< ECU DIAGNOSIS INFORMATION >

[MULTI AV SYSTEM]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
5 (R)	28 (B)	SOS switch LED signal	Input	[Ignition switch ACC] • When not illuminated LED lamp of SOS switch	12 V
				[Ignition switch ACC] • When illuminated LED lamp of SOS switch	0 V
6 (L)	—	CAN high	Input/ Output	—	—
7 (P)	—	CAN low	Input/ Output	—	—
10 (BG)	29 (B)	Ignition signal	Input	[Ignition switch ON]	12 V
11 (Shield)	—	Shield	—	—	—
12 (B)	11 (Shield)	Microphone signal	Output	[Ignition switch ACC] • When inputting interior sound	 <small>SKIB3609E</small>
16 (Shield)	—	Microphone shield	—	—	—
17 (W)	16 (Shield)	Microphone signal	Input	[Ignition switch ACC] • When inputting interior sound	 <small>SKIB3609E</small>
18 (B)	16 (Shield)	Microphone VCC	Input	[Ignition switch ACC]	5 V
26 (SB)	—	M-CAN high	Input/ Output	—	—
27 (LG)	—	M-CAN low	Input/ Output	—	—
28 (B)	Ground	Ground	—	[Ignition switch ON]	0 V
29 (B)	Ground	Ground	—	[Ignition switch ON]	0 V
31 (W)	32 (B)	Sound signal (+)	Output	[Ignition switch ACC] • When inputting interior sound	 <small>SKIB3609E</small>
32 (B)	—	Sound signal (-)	—	—	—

# TCU

< ECU DIAGNOSIS INFORMATION >

[MULTI AV SYSTEM]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
37 (BG)	28 (B)	SOS call switch signal	Input	[Ignition switch ACC] • When pressing SOS switch	0 V
				[Ignition switch ACC] • Except for above	5 V
41 (B)	—	USB V BUS signal	Input	[Ignition switch ON]	—
43 (G)	—	USB D- signal	Input/ Output	[Ignition switch ON]	—
44 (W)	—	USB D+ signal	Input/ Output	[Ignition switch ON]	—
45 (R)	—	USB ground	—	—	—
46 (Shield)	—	Shield	—	—	—
47 (B)	Ground	TEL antenna signal	Input	Not connected TEL antenna connector.	2.8 V
48 (Shield)	—	Shield	—	—	—
49 (B)	Ground	GPS antenna signal	Input	Not connected GPS antenna connector.	2.8 V
50 (Shield)	—	Shield	—	—	—

## Fail-safe

INFOID:0000000012372823

If a malfunction occurs in the telematics system, TCU performs fail-safe activation according to the detected malfunction.

Detection item	Telematics system operation in fail-safe mode	DTC
CAN communication	<ul style="list-style-type: none"> <li>Telematics system does not function.</li> <li>Inform a INFINITI CONNECTION data center about abnormality.</li> </ul>	U1000
TEL antenna	<ul style="list-style-type: none"> <li>Telematics switch LED indicator turn OFF. (LED indicator turns ON 10 times when push the SOS call switch.)</li> <li>When operated a telematics system, inform that cannot be connected to the INFINITI CONNECTION data center.</li> </ul>	U1A07 U1A08
USB communication	<ul style="list-style-type: none"> <li>Telematics system does not function.</li> <li>Inform a INFINITI CONNECTION data center about abnormality.</li> </ul>	U1A05
TCU	Telematics system function stops.	U1A01
	<ul style="list-style-type: none"> <li>Telematics system function stops.</li> <li>When operated a telematics system, inform that cannot be connected to the INFINITI CONNECTION data center.</li> </ul>	U1A02
Telematics switch (SOS call switch)	<ul style="list-style-type: none"> <li>Telematics system does not function. (Only SOS call does not operate.)</li> <li>Telematics switch LED indicator turn OFF.</li> </ul>	U1A0E U1A0F
Microphone	<ul style="list-style-type: none"> <li>Transmit an own vehicle position to the INFINITI CONNECTION data center.</li> <li>Inform a INFINITI CONNECTION data center about abnormality.</li> </ul>	U1A0B U1A0C

## DTC Inspection Priority Chart

INFOID:0000000012372824

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

# TCU

< ECU DIAGNOSIS INFORMATION >

[MULTI AV SYSTEM]

Priority	Detected items (DTC)
1	U1A04: VIN UNFINISHED
2	<ul style="list-style-type: none"> <li>U1000: CAN COMM CIRCUIT</li> </ul>
3	<ul style="list-style-type: none"> <li>U1A01: INTERNAL ERROR (TCU)</li> <li>U1A02: TEL COMMUNICATION MODULE</li> <li>U1A05: USB COMM</li> <li>U1A07: TEL ANTENNA SHORT</li> <li>U1A08: TEL ANTENNA NO CONN</li> <li>U1A0B: MIC IN CONN</li> <li>U1A0C: MIC OUT CONN</li> <li>U1A0E: SOS SWITCH ON STUCK</li> <li>U1A0F: SOS SWITCH NO CONN</li> </ul>

## DTC Index

INFOID:000000012372825

DTC	CONSULT display	Reference
U1000	CAN COMM CIRC	<a href="#">AV-109, "DTC Description"</a>
U1A01	INTERNAL ERROR (TCU)	<a href="#">AV-124, "DTC Description"</a>
U1A02	TEL COMMUNICATION MODULE	<a href="#">AV-125, "DTC Description"</a>
U1A05	USB COMM	<a href="#">AV-126, "DTC Description"</a>
U1A07	TEL ANTENNA SHORT	<a href="#">AV-128, "DTC Description"</a>
U1A08	TEL ANTENNA NO CONN	<a href="#">AV-129, "DTC Description"</a>
U1A0B	MIC IN CONN	<a href="#">AV-131, "DTC Description"</a>
U1A0C	MIC OUT CONN	<a href="#">AV-133, "DTC Description"</a>
U1A0E	SOS SWITCH ON STUCK	<a href="#">AV-135, "DTC Description"</a>
U1A0F	SOS SWITCH NO CONN	<a href="#">AV-137, "DTC Description"</a>



# MULTI AV (WITHOUT BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

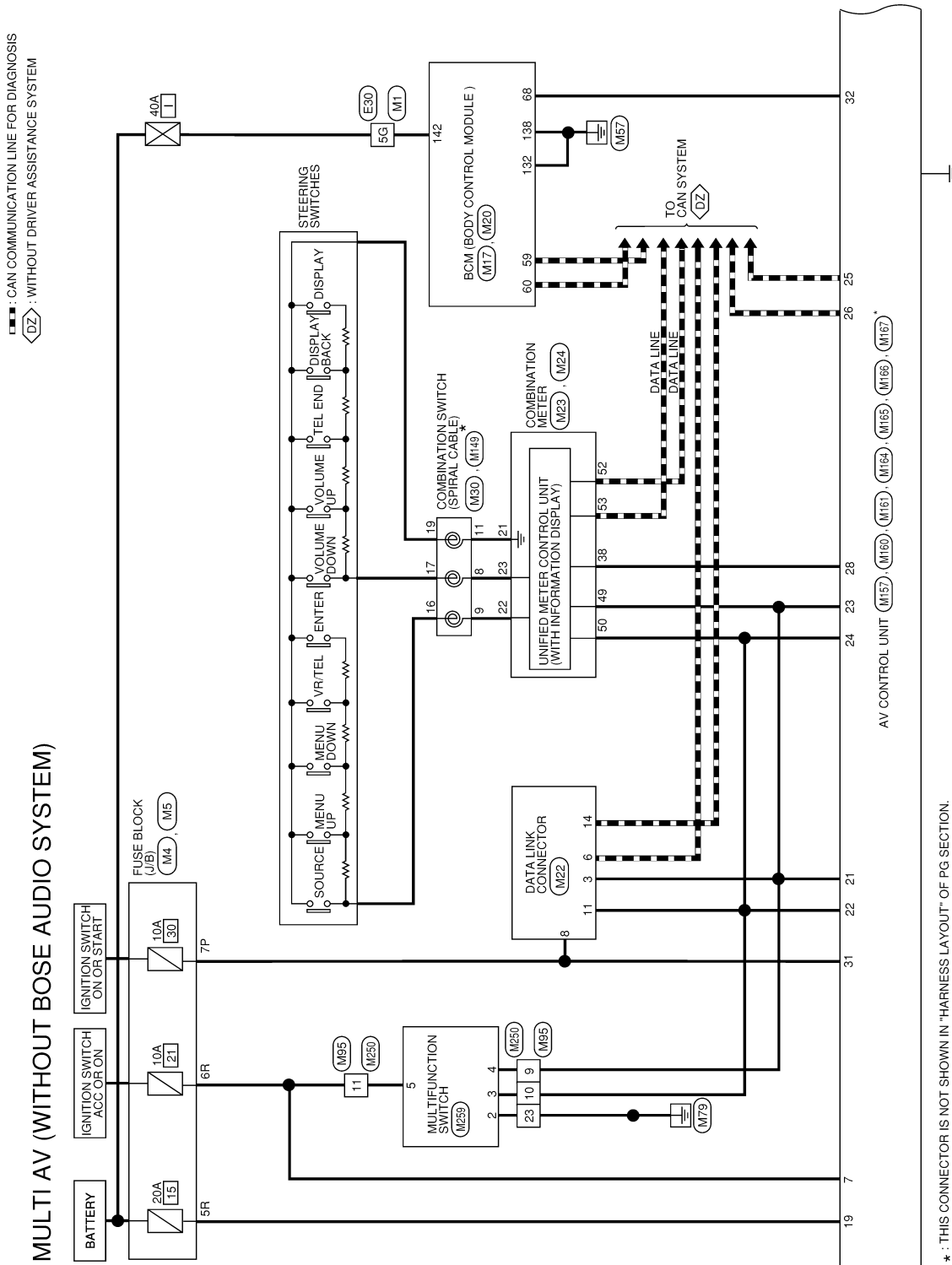
[MULTI AV SYSTEM]

## WIRING DIAGRAM

### MULTI AV (WITHOUT BOSE AUDIO SYSTEM)

#### Wiring Diagram

INFOID:0000000012193742



AANWA1369GB

\* : THIS CONNECTOR IS NOT SHOWN IN "HARNES LAYOUT" OF PG SECTION.

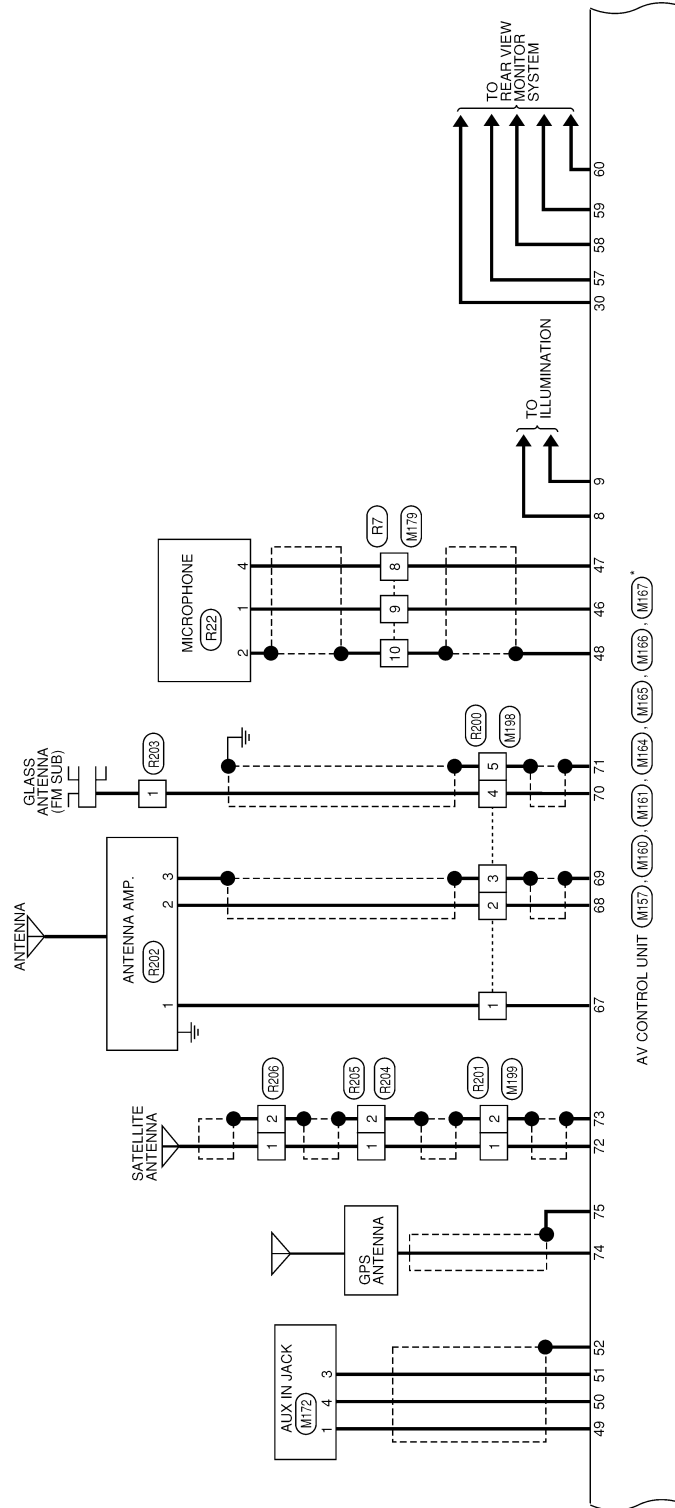
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AV

# MULTI AV (WITHOUT BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]

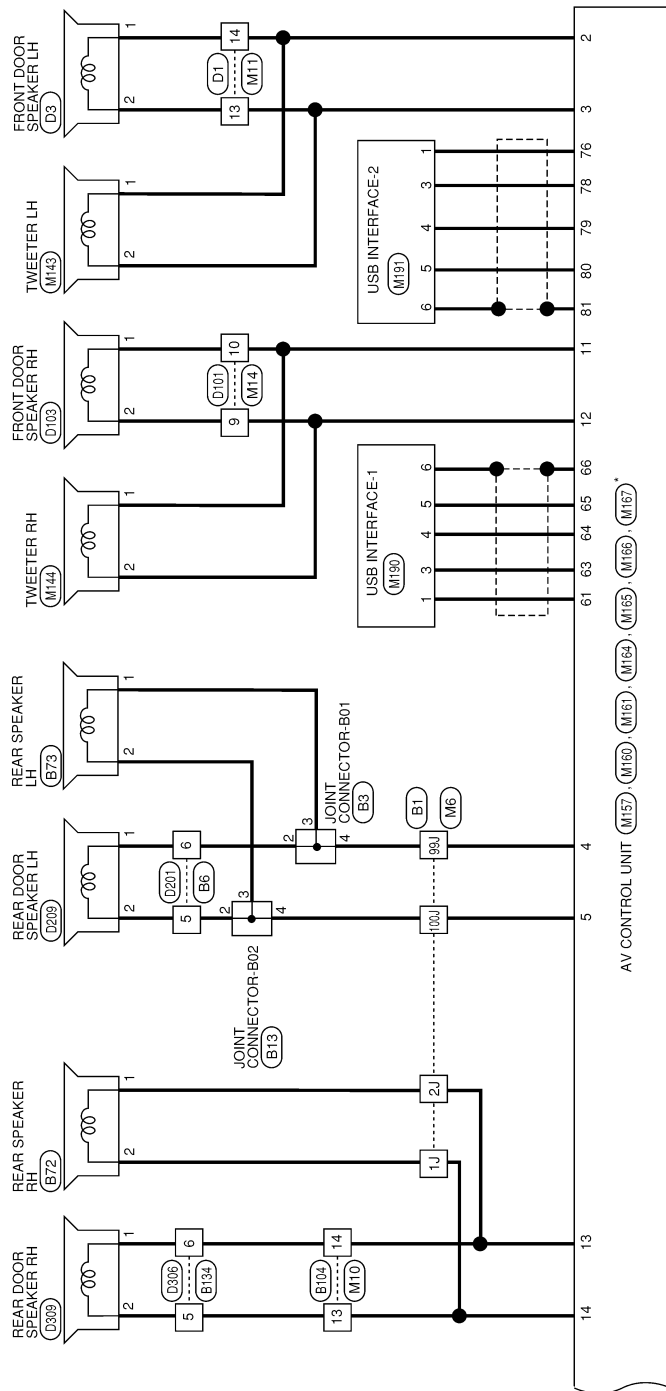


AANWA1380GB

# MULTI AV (WITHOUT BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]



AANWA1381GB

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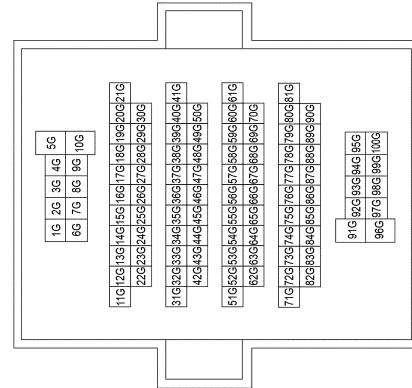
# MULTI AV (WITHOUT BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]

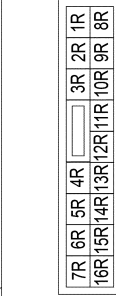
## MULTI AV (WITHOUT BOSE AUDIO SYSTEM) CONNECTORS

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4
Connector Color	WHITE



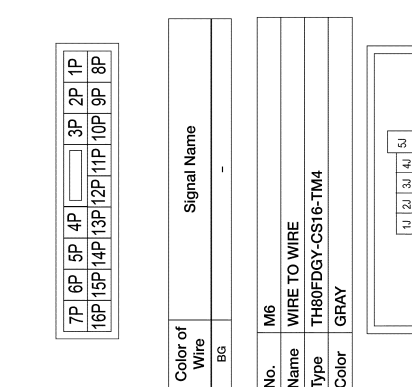
Terminal No.	5G	Color of Wire	W	Signal Name	-
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Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FBR-CS
Connector Color	BROWN



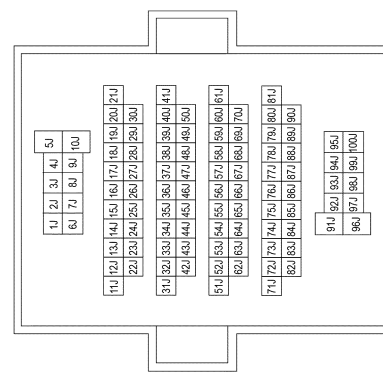
Terminal No.	5R	Color of Wire	G	Signal Name	-
6R	P				

Connector No.	M5
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
Connector Color	WHITE



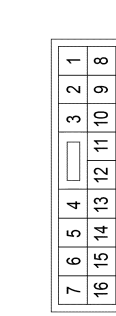
Terminal No.	7P	Color of Wire	BG	Signal Name	-
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Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80FDGY-CS16-TM4
Connector Color	GRAY



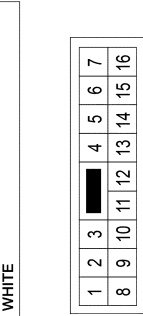
Terminal No.	1J	Color of Wire	W	Signal Name	-
2J	G				
96J	LG				
100J	Y				

Connector No.	M10
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS
Connector Color	WHITE



Terminal No.	13	Color of Wire	W	Signal Name	-
14	G				

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	NS16MM-CS
Connector Color	WHITE




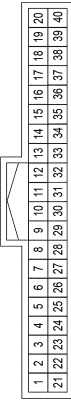
Terminal No.	13	Color of Wire	W	Signal Name	-
14	G				

# MULTI AV (WITHOUT BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >



[MULTI AV SYSTEM]

Connector No.	M24
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
21	W	GND (STRG SW INPUT)
22	P	STRG SW (INPUT1)
23	G	STRG SW (INPUT2)
38	BG	SPEED 8P/R OUT

Connector No.	M30
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Type	TK08FGY-1V
Connector Color	GRAY


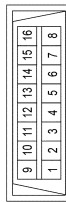



Terminal No.	Color of Wire	Signal Name
8	G	-
9	P	-
11	W	-

60	L	CAN-H
68	P	M/R OUTPUT


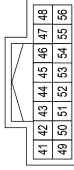
  

Connector No.	M22
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW
Connector Color	WHITE


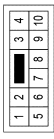
Terminal No.	Color of Wire	Signal Name
3	LG	-
6	L	-
8	BG	-
11	SB	-
14	P	-

Connector No.	M23
Connector Name	COMBINATION METER
Connector Type	TH16FW-NH
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
49	LG	M-CAN (LOW)
50	SB	M-CAN (HI)
52	P	CAN-L
53	L	CAN-H

Connector No.	M14
Connector Name	WIRE TO WIRE
Connector Type	NS10MW-CS
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
9	SB	- (WITHOUT BOSE)
10	BG	- (WITH BOSE)
10	P	-

Connector No.	M17
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	FEA09FW-FHA6-SA
Connector Color	WHITE




Terminal No.	Color of Wire	Signal Name
132	B	GND2
138	B	GND1
142	W	BAT-POWER F/L

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH
Connector Color	BLACK

Terminal No.	Color of Wire	Signal Name
59	P	CAN-L

AANIA3974GB

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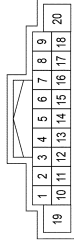
AV

# MULTI AV (WITHOUT BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]

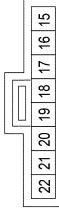
Connector No.	M160
Connector Name	AV CONTROL UNIT (WITHOUT BOSE AUDIO SYSTEM)
Connector Type	NH18FW-CS2
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	-	-
2	G	FR.LH.SP+
3	W	FR.LH.SP-
4	LG	RR.LH.SP+
5	Y	RR.LH.SP-
6	-	-
7	P	ACC
8	GR	ILL.CONT
9	R	ILL.+
10	SHIELD	SHIELD
11	P	FR.RH.SP+
12	SB	FR.RH.SP-
13	G	RR.RH.SP+
14	W	RR.RH.SP-
15	-	-
16	-	-
17	-	-
18	-	-
19	G	BAT
20	-	-

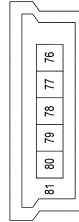
2	SB	-(WITHOUT BOSE)
2	BG	-(WITH BOSE)

Connector No.	M149
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Type	TK08FGY-X
Connector Color	GRAY



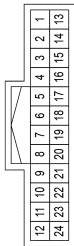
Terminal No.	Color of Wire	Signal Name
16	Y	-
17	G	-
19	L	-

Connector No.	M157
Connector Name	AV CONTROL UNIT
Connector Type	USCAR30-MD-M
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
76	B	VBUS
77	-	-
78	G	D-
79	W	D+
80	R	GND
81	SHIELD	SHIELD

Connector No.	M95
Connector Name	WIPE TO WIPE
Connector Type	TH24FW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
9	LG	-
10	SB	-
11	P	-
23	B	-

Connector No.	M143
Connector Name	TWEETER LH
Connector Type	TK02FBR
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	G	-
2	W	-

Connector No.	M144
Connector Name	TWEETER RH
Connector Type	TK02FBR
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	P	-

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# MULTI AV (WITHOUT BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]

Connector No.	M166
Connector Name	AV CONTROL UNIT
Connector Type	FAKRA CODE H 4003
Connector Color	PINK



Terminal No.	Color of Wire	Signal Name
72	B	XM_MAIN
73	SHIELD	XM_SHIELD

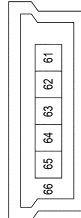
Connector No.	M167
Connector Name	AV CONTROL UNIT
Connector Type	3FA1ANC5J-C02W0
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
74	B	GPS ANT
75	SHIELD	GPS SHIELD

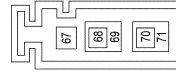
59	W	CAMERA_COMP+
60	SHIELD	CAMERA_SHIELD

Connector No.	M164
Connector Name	AV CONTROL UNIT
Connector Type	USCAR30-MA-M
Connector Color	BLACK



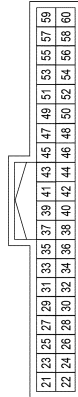
Terminal No.	Color of Wire	Signal Name
61	B	VBUS
62	-	-
63	G	D-
64	W	D+
65	R	GND
66	SHIELD	SHIELD

Connector No.	M165
Connector Name	AV CONTROL UNIT
Connector Type	GT13SH-2/1S-HU
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
67	B	ANTENNA +B
68	B	ANT_MAIN
69	SHIELD	SHIELD
70	B	ANT_SUB
71	SHIELD	SHIELD

Connector No.	M161
Connector Name	AV CONTROL UNIT (WITHOUT BOSE AUDIO SYSTEM)
Connector Type	TH40FW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
21	LG	M-CAN_L_TRM
22	SB	M-CAN_H_TRM
23	LG	M-CAN_L
24	SB	M-CAN_H
25	P	CAN-L
26	L	CAN-H
27	-	-
28	BG	SPEED
29	-	-
30	G	REVERSE
31	BG	IGN
32	P	MR_OUTPUT
33	-	-
34	-	-
35	-	-
36	-	-
37	-	-
38	SHIELD	AUDIO HU OUT SHIELD
39	W	AUDIO HU OUT +
40	B	AUDIO HU OUT -
41	-	-
42	-	-
43	-	-
44	-	-
45	-	-
46	W	MIC_SIG
47	B	MIC_VCC
48	SHIELD	MIC_GND
49	W	AUX_AUDIO_L
50	R	AUX_AUDIO_R
51	B	AUX_AUDIO_GND
52	SHIELD	AUX_SHIELD
53	-	-
54	-	-
55	-	-
56	-	-
57	R	CAMERA_V+
58	B	CAMERA_GND

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AV

# MULTI AV (WITHOUT BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

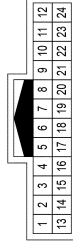
[MULTI AV SYSTEM]

Connector No.	M199
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1S-HU (A)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	B	-
2	SHIELD	-

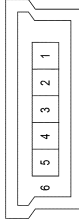
Connector No.	M250
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
9	LG	-
10	GB	-
11	P	-
23	B	-

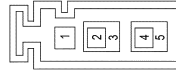
3	G	-
4	W	-
5	R	-
6	SHIELD	-

Connector No.	M191
Connector Name	USB INTERFACE-2
Connector Type	USCAR30-MD-M
Connector Color	LIGHT GREEN



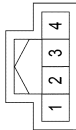
Terminal No.	Color of Wire	Signal Name
1	B	-
3	G	-
4	W	-
5	R	-
6	SHIELD	-

Connector No.	M198
Connector Name	WIRE TO WIRE
Connector Type	GT13SH-2/1S-HU
Connector Color	GRAY



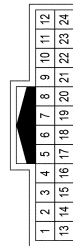
Terminal No.	Color of Wire	Signal Name
1	B	-
2	B	-
3	SHIELD	-
4	B	-
5	SHIELD	-

Connector No.	M172
Connector Name	AUX IN JACK
Connector Type	TH04FW-NH
Connector Color	WHITE



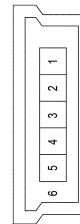
Terminal No.	Color of Wire	Signal Name
1	W	-
3	B	-
4	R	-

Connector No.	M179
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
8	B	-
9	W	-
10	SHIELD	-

Connector No.	M190
Connector Name	USB INTERFACE-1
Connector Type	USCAR30-MA-M
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	-

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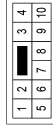


# MULTI AV (WITHOUT BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

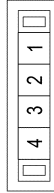
[MULTI AV SYSTEM]

Connector No.	B6
Connector Name	WIRE TO WIRE
Connector Type	NS10MW-CS
Connector Color	WHITE



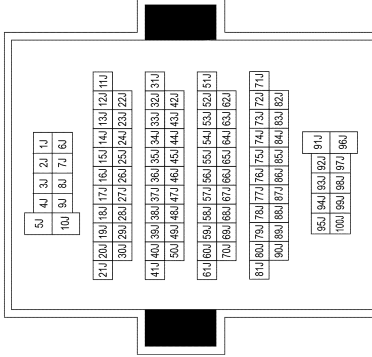
Terminal No.	Color of Wire	Signal Name
5	Y	-
6	LG	-

Connector No.	B13
Connector Name	JOINT CONNECTOR-B02
Connector Type	TK04FW-J
Connector Color	WHITE



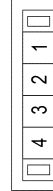
Terminal No.	Color of Wire	Signal Name
2	Y	-
3	G	-
4	Y	-

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80MDGY-CS16-TM4
Connector Color	GRAY



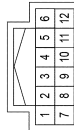
Terminal No.	Color of Wire	Signal Name
1J	G	-
2J	W	-
99J	LG	-
100J	Y	-

Connector No.	B3
Connector Name	JOINT CONNECTOR-B01
Connector Type	TK04FW-J
Connector Color	WHITE



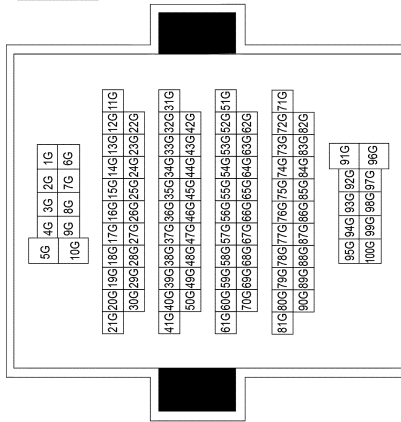
Terminal No.	Color of Wire	Signal Name
2	LG	-
3	W	-
4	LG	-

Connector No.	M259
Connector Name	MULTIFUNCTION SWITCH
Connector Type	TH12FW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	B	-
3	SB	-
4	LG	-
5	P	-

Connector No.	E30
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
5G	P	-

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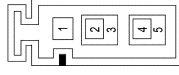
AV

# MULTI AV (WITHOUT BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]

4	G	-
Connector No.	R200	
Connector Name	WIRE TO WIRE	
Connector Type	GT13SCN-2/1PP-HU	
Connector Color	GRAY	



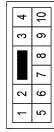
Terminal No.	Color of Wire	Signal Name
1	B	-
2	B	-
3	SHIELD	-
4	B	-
5	SHIELD	-

Connector No.	R201
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1PP-HU (A)
Connector Color	BROWN



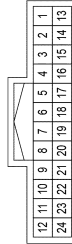
Terminal No.	Color of Wire	Signal Name
1	B	-
2	SHIELD	-

Connector No.	B134
Connector Name	WIRE TO WIRE
Connector Type	NS10MW-CS
Connector Color	WHITE



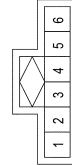
Terminal No.	Color of Wire	Signal Name
5	W	-
6	G	-

Connector No.	R7
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
8	G	-
9	V	-
10	SHIELD	-

Connector No.	R22
Connector Name	MICROPHONE
Connector Type	A06FW
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	V	-
2	SHIELD	-

Connector No.	B72
Connector Name	REAR SPEAKER RH
Connector Type	NS02FW-CS
Connector Color	WHITE



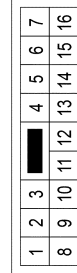
Terminal No.	Color of Wire	Signal Name
1	W	-
2	G	-

Connector No.	B73
Connector Name	REAR SPEAKER LH
Connector Type	NS02FW-CS
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	W	-
2	G	-

Connector No.	B104
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
13	W	-
14	G	-

AANIA3979GB

# MULTI AV (WITHOUT BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]

14	G	-
Connector No.	D3	
Connector Name	FRONT DOOR SPEAKER LH	
Connector Type	NS02FW-CS	
Connector Color	WHITE	



Terminal No.	Color of Wire	Signal Name
1	G	
2	R	- (WITHOUT BOSE AUDIO SYSTEM)
2	W	- (WITH BOSE AUDIO SYSTEM)

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Type	NS10FW-CS
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
9	R	- (WITHOUT BOSE AUDIO SYSTEM)
9	W	- (WITH BOSE AUDIO SYSTEM)
10	G	

Connector No.	R205
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1S-HU (A)
Connector Color	BROWN



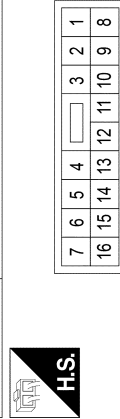
Terminal No.	Color of Wire	Signal Name
1	B	
2	SHIELD	

Connector No.	R206
Connector Name	SATELLITE ANTENNA
Connector Type	GT16C-1PP-HU (B)
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
1	B	
2	SHIELD	

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
13	R	- (WITHOUT BOSE AUDIO SYSTEM)
13	W	- (WITH BOSE AUDIO SYSTEM)

Connector No.	R202
Connector Name	ANTENNA AMP.
Connector Type	GT13SC-1/1S-HU
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	B	
2	B	
3	SHIELD	

Connector No.	R203
Connector Name	GLASS ANTENNA (FM SUB)
Connector Type	P01FB-A
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	

Connector No.	R204
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1PP-HU (A)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	B	
2	SHIELD	

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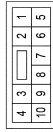
AV

# MULTI AV (WITHOUT BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]

2	V	-
Connector No.	D306	
Connector Name	WIRE TO WIRE	
Connector Type	NS10FW-CS	
Connector Color	WHITE	



Terminal No.	Color of Wire	Signal Name
5	V	-
6	LG	-

Connector No.	D309	
Connector Name	REAR DOOR SPEAKER RH (WITHOUT BOSE AUDIO SYSTEM)	
Connector Type	TK02FBR	
Connector Color	BROWN	



Terminal No.	Color of Wire	Signal Name
1	LG	-
2	V	-

Connector No.	D103	
Connector Name	FRONT DOOR SPEAKER RH	
Connector Type	NS02FW-CS	
Connector Color	WHITE	



Terminal No.	Color of Wire	Signal Name
1	G	-
2	R	- (WITHOUT BOSE AUDIO SYSTEM)
2	W	- (WITH BOSE AUDIO SYSTEM)

Connector No.	D201	
Connector Name	WIRE TO WIRE	
Connector Type	NS10FW-CS	
Connector Color	WHITE	



Terminal No.	Color of Wire	Signal Name
5	V	-
6	LG	-

Connector No.	D209	
Connector Name	REAR DOOR SPEAKER LH (WITHOUT BOSE AUDIO SYSTEM)	
Connector Type	TK02FBR	
Connector Color	BROWN	



Terminal No.	Color of Wire	Signal Name
1	LG	-

AANIA3981GB

# MULTI AV (WITH BOSE AUDIO SYSTEM)

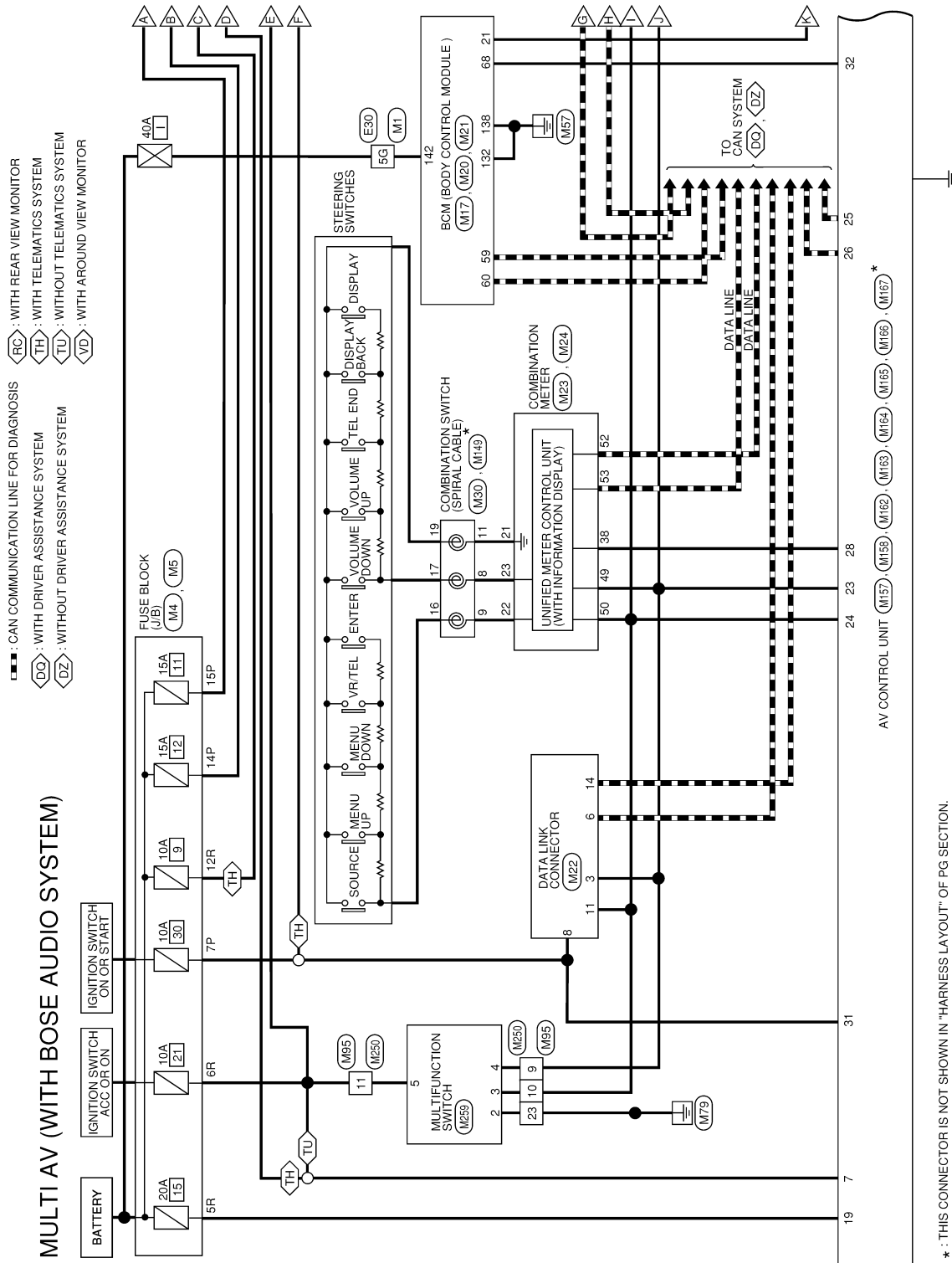
< WIRING DIAGRAM >

[MULTI AV SYSTEM]

## MULTI AV (WITH BOSE AUDIO SYSTEM)

### Wiring Diagram

INFOID:000000012193743



AANWA1370GB

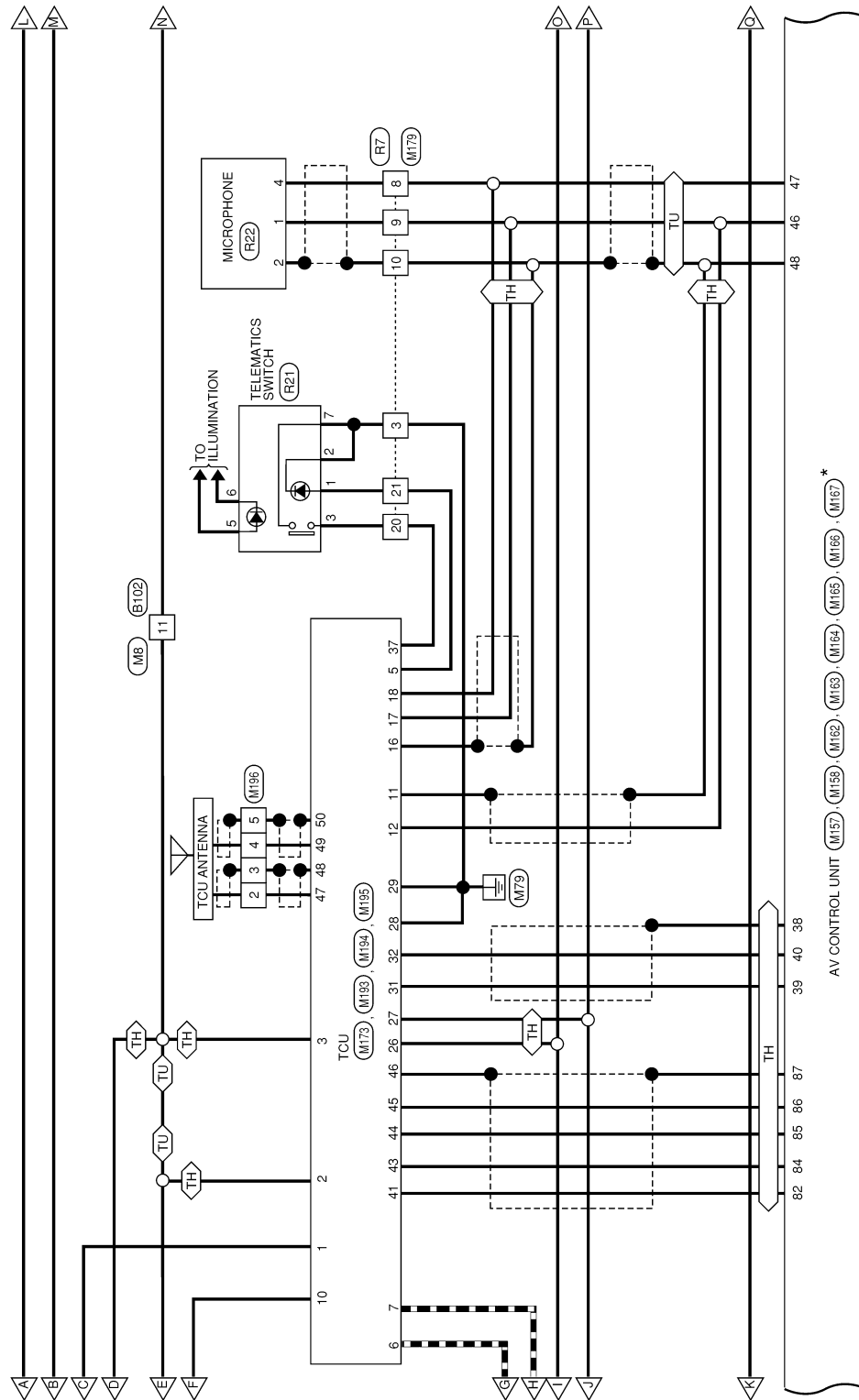
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AV

# MULTI AV (WITH BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]

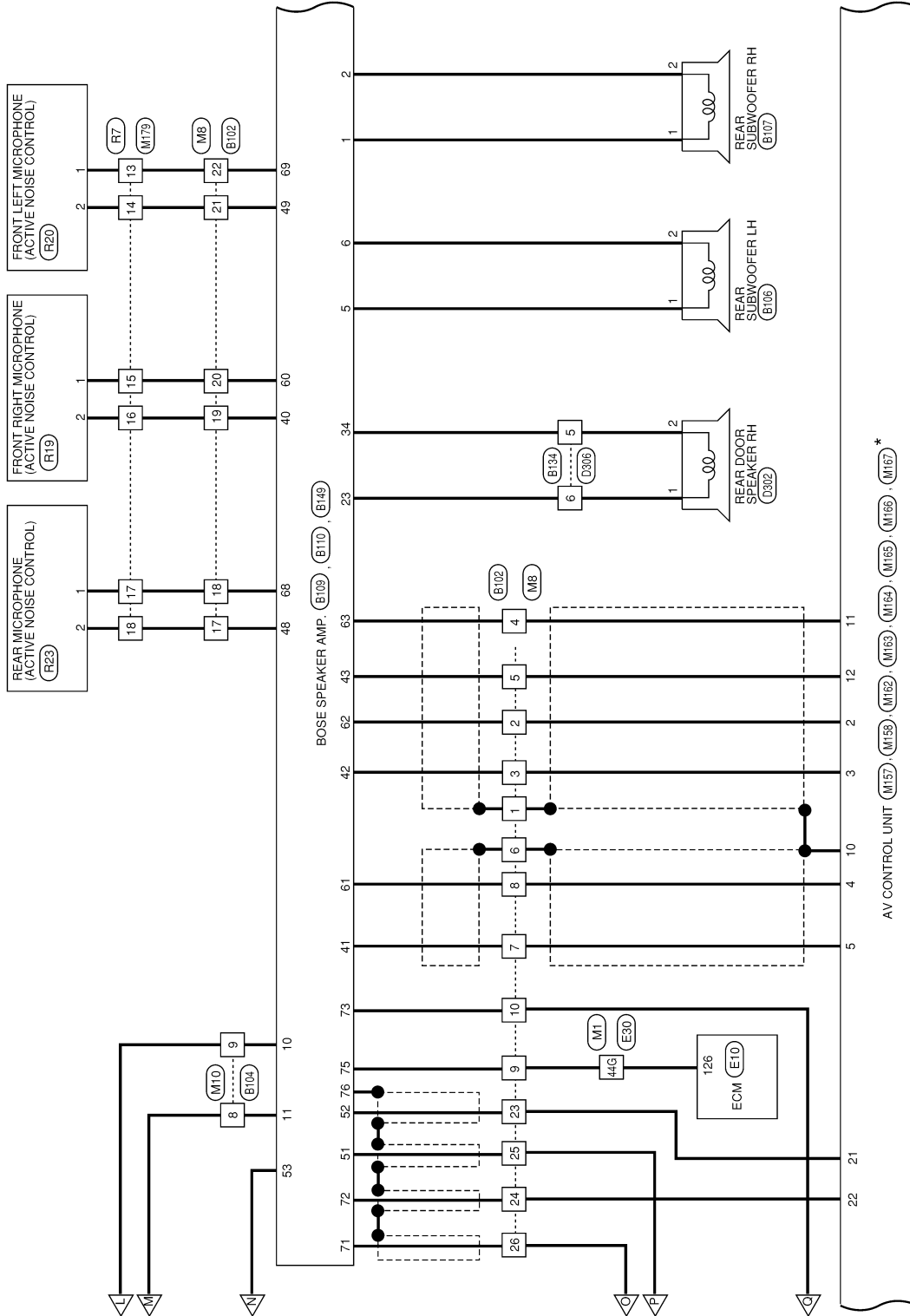


AANWA1383GB

# MULTI AV (WITH BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]



AANWA1384GB

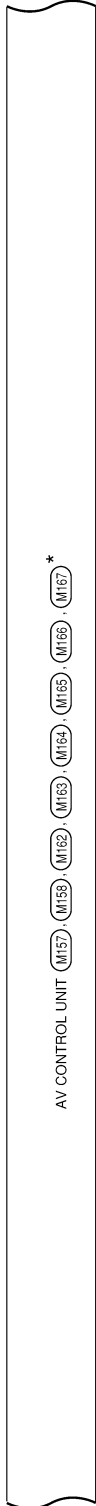
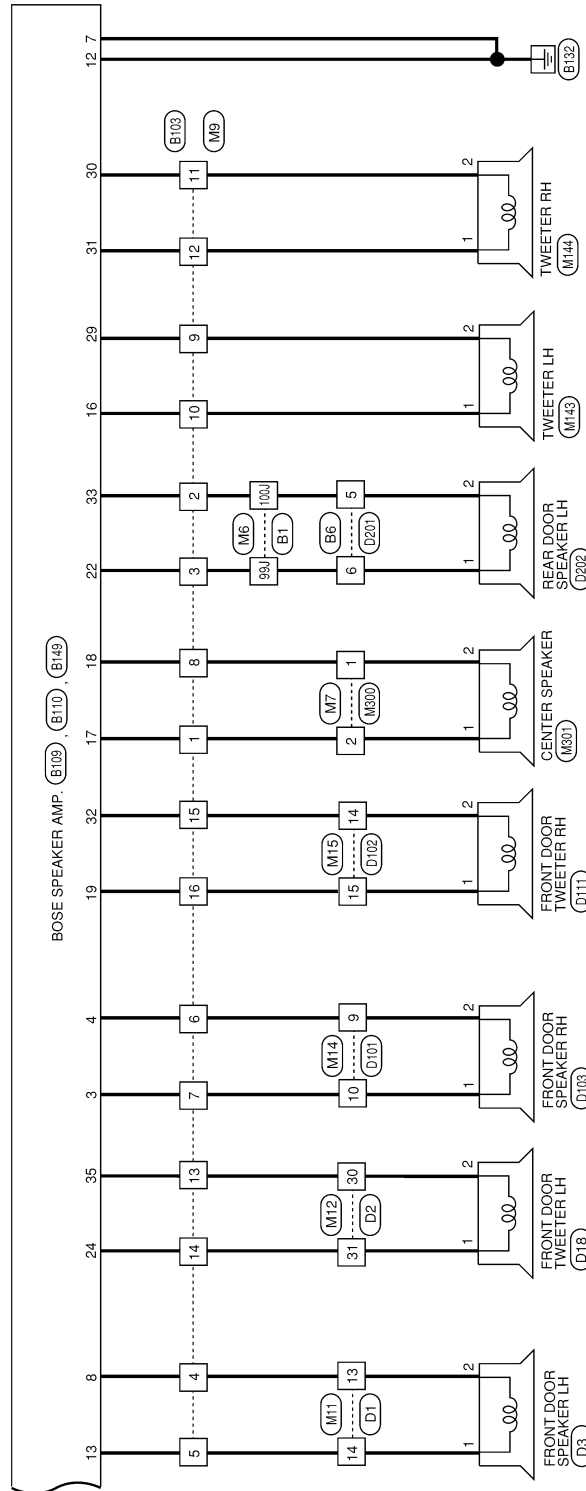
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AV

# MULTI AV (WITH BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]



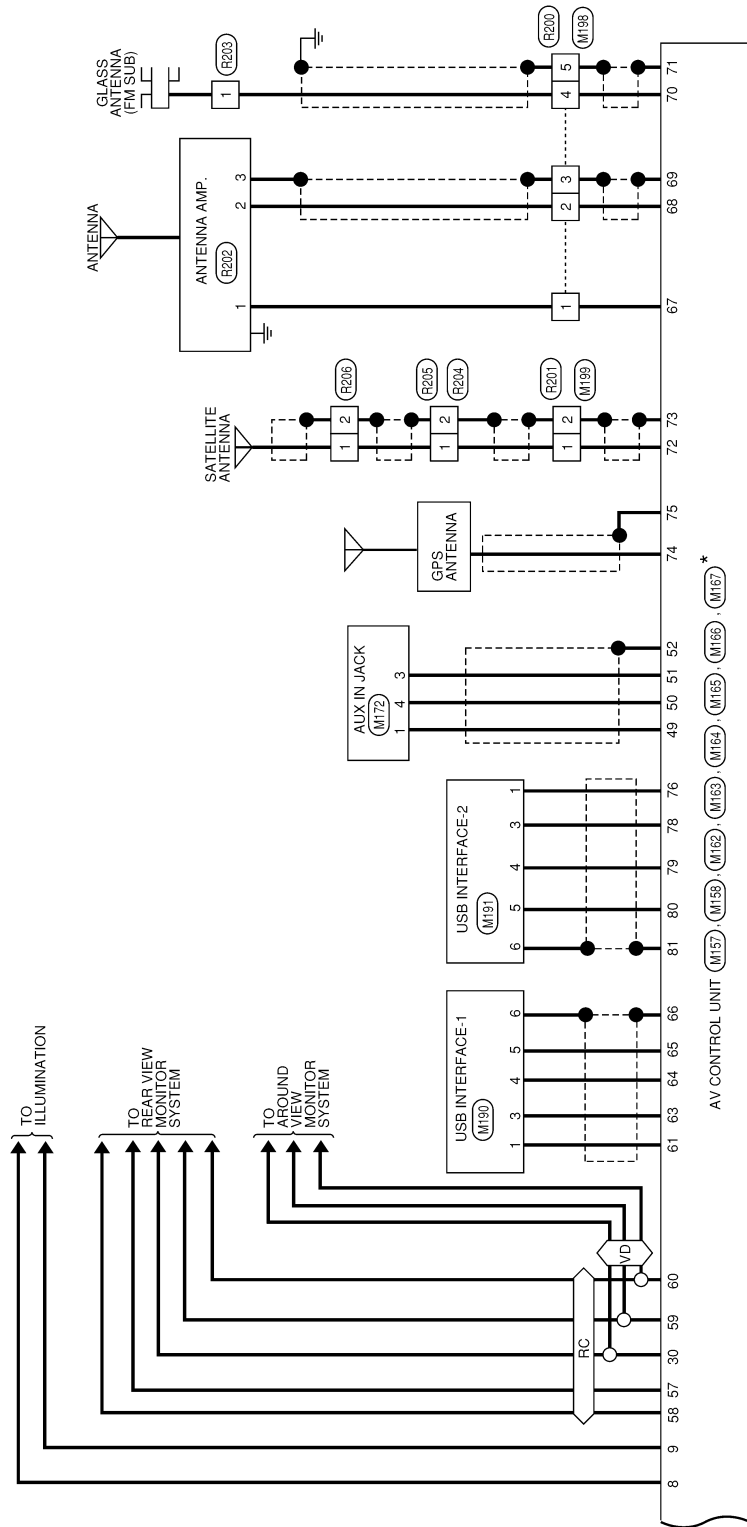
AANWA1385GB



# MULTI AV (WITH BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]



AANWA1386GB

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AV

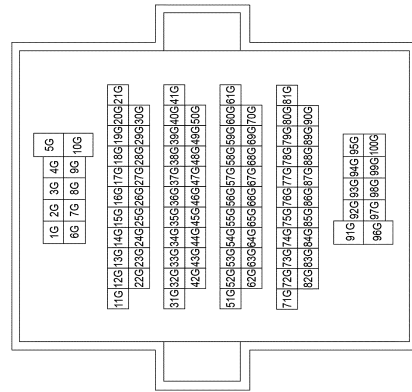
# MULTI AV (WITH BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]

## MULTI AV (WITH BOSE AUDIO SYSTEM) CONNECTORS

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4
Connector Color	WHITE



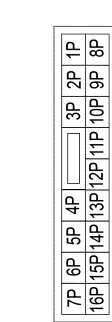
Terminal No.	Color of Wire	Signal Name
5G	W	-
44G	G	-

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FBR-CS
Connector Color	BROWN



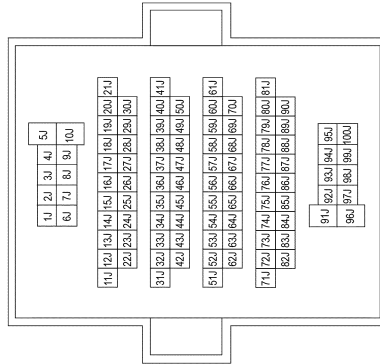
Terminal No.	Color of Wire	Signal Name
5R	G	-
6R	P	-
12R	W	-

Connector No.	M5
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7P	BG	-
14P	G	-
15P	SB	-

Connector No.	M6
Connector Name	WIRE TO WIRE
Connector Type	TH80FDGY-CS16-TM4
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
96J	LG	-
100J	Y	-

Connector No.	M7
Connector Name	WIRE TO WIRE
Connector Type	NS02MW-CS
Connector Color	WHITE





Terminal No.	Color of Wire	Signal Name
1	R	-
2	P	-

# MULTI AV (WITH BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >


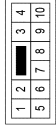
[MULTI AV SYSTEM]

Connector No.	M12
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-NH
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
30	R	-
31	G	-


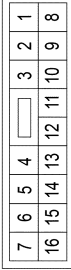
Connector No.	M14
Connector Name	WIRE TO WIRE
Connector Type	NS10MW-CS
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
9	SB	-(WITHOUT BOSE)
9	BG	-(WITH BOSE)
10	P	-


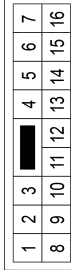
3	LG	-
4	W	-
5	G	-
6	BG	-
7	P	-
8	R	-
9	W	-
10	G	-
11	BG	-
12	P	-
13	R	-
14	G	-
15	BG	-
16	W	-

Connector No.	M10
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS
Connector Color	WHITE


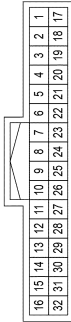
Terminal No.	Color of Wire	Signal Name
8	G	-
9	SB	-

Connector No.	M11
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS
Connector Color	WHITE


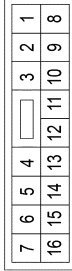
Terminal No.	Color of Wire	Signal Name
13	W	-
14	G	-

Connector No.	M8
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
1	SHIELD	-
2	G	-
3	R	-
4	B	-
5	W	-
6	SHIELD	-
7	W	-
8	B	-
9	G	-
10	W	-
11	P	-
17	B	-
18	LG	-
19	L	-
20	Y	-
21	G	-
22	R	-
23	LG	-
24	SB	-
25	LG	-
26	SB	-

Connector No.	M9
Connector Name	WIRE TO WIRE
Connector Type	NS16FBR-CS
Connector Color	BROWN

Terminal No.	Color of Wire	Signal Name
1	P	-
2	Y	-

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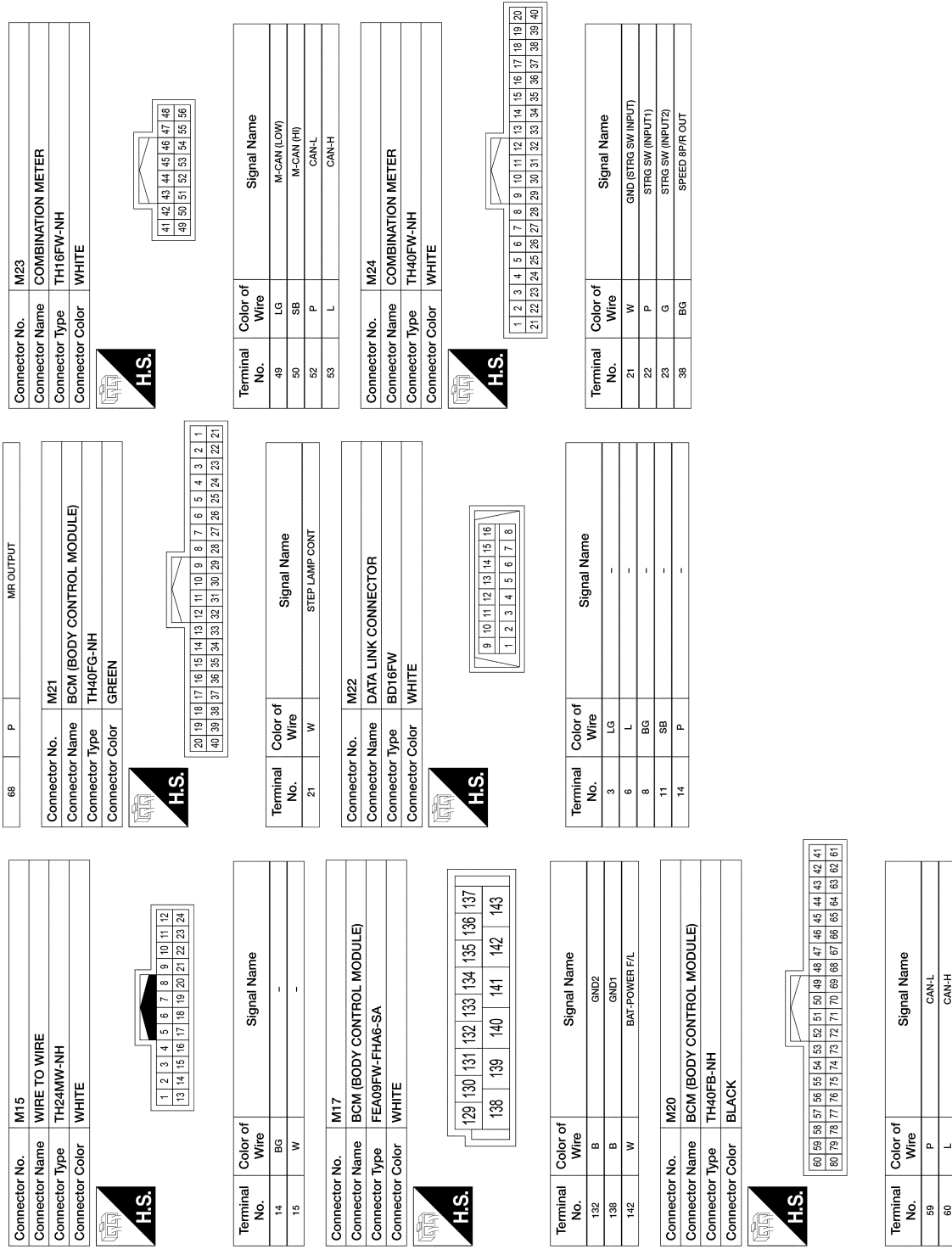
A  
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M  
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P



# MULTI AV (WITH BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]



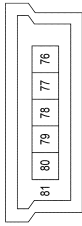
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# MULTI AV (WITH BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]

Connector No.	M157
Connector Name	AV CONTROL UNIT
Connector Type	USCAR30-MD-M
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
76	B	VBUS
77	-	-
78	G	D-
79	W	D+
80	R	GND
81	SHIELD	SHIELD

Connector No.	M158
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Type	USCAR30-MD-M
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
82	B	VBUS
83	-	-
84	G	D-
85	W	D+
86	R	GND
87	SHIELD	SHIELD

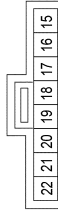
1	G
2	W

Connector No.	M144
Connector Name	TWEETER RH
Connector Type	TK02FBR
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	P	-
2	SB	-(WITHOUT BOSE)
2	BG	-(WITH BOSE)

Connector No.	M149
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Type	TK08FGY-X
Connector Color	GRAY



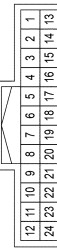
Terminal No.	Color of Wire	Signal Name
16	Y	-
17	G	-
19	L	-

Connector No.	M30
Connector Name	COMBINATION SWITCH (SPIRAL CABLE)
Connector Type	TK08FGY-1V
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
8	G	-
9	P	-
11	W	-

Connector No.	M95
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
9	LG	-
10	SB	-
11	P	-
23	B	-

Connector No.	M143
Connector Name	TWEETER LH
Connector Type	TK02FBR
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
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A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

AV

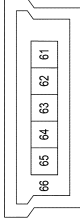
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# MULTI AV (WITH BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

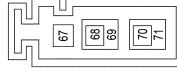
[MULTI AV SYSTEM]

Connector No.	M164
Connector Name	AV CONTROL UNIT
Connector Type	USCAR30-MA-M
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
61	B	VBUS
62	-	-
63	G	D-
64	W	D+
65	R	GND
66	SHIELD	SHIELD

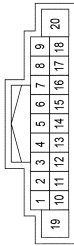
Connector No.	M165
Connector Name	AV CONTROL UNIT
Connector Type	GT13SH-2/1S-HU
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
67	B	ANTENNA +B
68	B	ANT MAIN
69	SHIELD	SHIELD
70	B	ANT SUB
71	SHIELD	SHIELD

22	SB	M-CAN_H TRM
23	LG	M-CAN_L
24	SB	M-CAN_H
25	P	CAN-L
26	L	CAN-H
27	-	-
28	BG	SPEED
29	-	-
30	G	REVERSE
31	BG	IGN
32	P	MR_OUTPUT
33	-	-
34	-	-
35	-	-
36	-	-
37	-	-
38	SHIELD	AUDIO HU OUT SHIELD
39	W	AUDIO HU OUT +
40	B	AUDIO HU OUT -
41	-	-
42	-	-
43	-	-
44	-	-
45	-	-
46	B	MIC_SIG (WITH TELEMATICS SYSTEM)
46	W	MIC_SIG (WITHOUT TELEMATICS SYSTEM)
47	B	MIC_VOC (WITHOUT TELEMATICS SYSTEM)
48	SHIELD	MIC_GND
49	W	AUX_AUDIO_L
50	R	AUX_AUDIO_R
51	B	AUX_AUDIO_GND
52	SHIELD	AUX_SHIELD
53	-	-
54	-	-
55	-	-
56	-	-
57	R	CAMERA_V+
58	B	CAMERA_GND
59	B	CAMERA_COMP+ (WITH AROUND VIEW CAMERA)
59	W	CAMERA_COMP- (WITH REAR VIEW CAMERA)
60	SHIELD	CAMERA_SHIELD

Connector No.	M162
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Type	NH18FW-CS2
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	-	-
2	G	FR_LH_PRE+
3	R	FR_LH_PRE-
4	B	GUIDE+
5	W	GUIDE-
6	-	-
7	P	ACC
8	GR	ILL_CONT
9	R	ILL_+
10	SHIELD	SHIELD
11	B	FR_RH_PRE+
12	W	FR_RH_PRE-
13	-	-
14	-	-
15	-	-
16	-	-
17	-	-
18	-	-
19	G	BAT
20	-	-

Connector No.	M163
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Type	TH40FW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
21	LG	M-CAN_L_TRM

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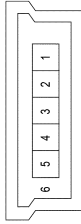
# MULTI AV (WITH BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]

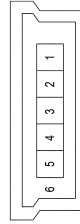
9	W	-
10	SHIELD	-
13	R	-
14	G	-
15	Y	-
16	L	-
17	LG	-
18	B	-
20	BG	-
21	R	-

Connector No.	M190
Connector Name	USB INTERFACE-1
Connector Type	USCAR30-MA-M
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	-
3	G	-
4	W	-
5	R	-
6	SHIELD	-

Connector No.	M191
Connector Name	USB INTERFACE-2
Connector Type	USCAR30-MD-M
Connector Color	LIGHT GREEN



Terminal No.	Color of Wire	Signal Name
1	B	-
3	G	-
4	W	-
5	R	-
6	SHIELD	-

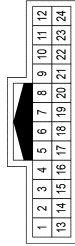
4	R	-
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Connector No.	M173
Connector Name	TCU
Connector Type	TH40FB-NH
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	W	B+
2	P	ACC
3	P	ACC OUT
5	R	LED A
6	L	CAN-H
7	P	CAN-L
10	BG	IGN
11	SHIELD	MIC OUT GND
12	B	MIC OUT SIG
16	SHIELD	MIC GND
17	W	MIC SIG
18	B	MIC VCC
26	SB	M-CAN H
27	LG	M-CAN L
28	B	GND
29	B	GND
31	W	AUDIO HU OUT+
32	B	AUDIO HU OUT-
37	BG	ECALL SW

Connector No.	M179
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	B	-
8	B	-

Connector No.	M166
Connector Name	AV CONTROL UNIT
Connector Type	FAKRA CODE H 4003
Connector Color	PINK



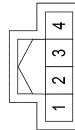
Terminal No.	Color of Wire	Signal Name
72	B	XM_MAIN
73	SHIELD	XM_SHIELD

Connector No.	M167
Connector Name	AV CONTROL UNIT
Connector Type	3FA1ANCSJ-C02W0
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
74	B	GPS ANT
75	SHIELD	GPS SHIELD

Connector No.	M172
Connector Name	AUX IN JACK
Connector Type	TH04FW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	W	-
3	B	-

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A  
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L  
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P

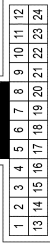
AV

# MULTI AV (WITH BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

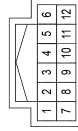
[MULTI AV SYSTEM]

Connector No.	M250
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
9	LG	-
10	SB	-
11	P	-
23	B	-

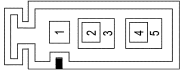
Connector No.	M259
Connector Name	MULTIFUNCTION SWITCH
Connector Type	TH12FW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2	B	-
3	SB	-
4	LG	-
5	P	-

49	B	GPS ANT
50	SHIELD	GPS SHIELD

Connector No.	M196
Connector Name	TCU ANTENNA
Connector Type	GT13SCN-2/1PP-HU
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
2	B	-
3	SHIELD	-
4	B	-
5	SHIELD	-

Connector No.	M199
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1S-HU (A)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	B	-
2	SHIELD	-

Connector No.	M193
Connector Name	TCU
Connector Type	USCAR30-MD-M
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
41	B	VBUS
43	G	D-
44	W	D+
45	R	GND
46	SHIELD	SHIELD

Connector No.	M194
Connector Name	TCU
Connector Type	FAKRA CODE H 4003
Connector Color	PINK



Terminal No.	Color of Wire	Signal Name
47	B	GSM ANT
48	SHIELD	GSM SHIELD

Connector No.	M195
Connector Name	TCU
Connector Type	3FA1ANCSJ-C02W0
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name

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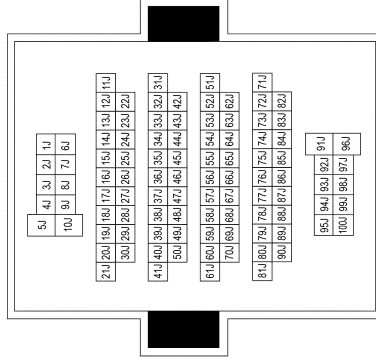


# MULTI AV (WITH BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80MDGY-CS16-TM4
Connector Color	GRAY



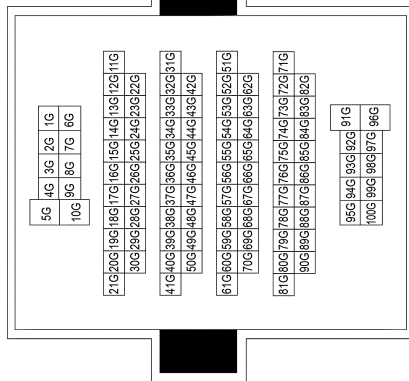
Terminal No.	Color of Wire	Signal Name
98J	LG	-
100J	Y	-

Connector No.	B6
Connector Name	WIRE TO WIRE
Connector Type	NS10MM-CS
Connector Color	WHITE



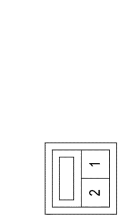
Terminal No.	Color of Wire	Signal Name
5	Y	-
6	LG	-

Connector No.	E30
Connector Name	WIRE TO WIRE
Connector Type	TH80MMW-CS16-TM4
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
5G	P	-
44G	R	-

Connector No.	M300
Connector Name	WIRE TO WIRE
Connector Type	NS02FW-CS
Connector Color	WHITE



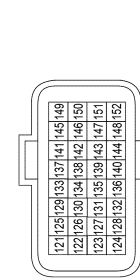
Terminal No.	Color of Wire	Signal Name
1	R	-
2	P	-

Connector No.	M301
Connector Name	CENTER SPEAKER
Connector Type	TH02FW
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	P	-
2	R	-

Connector No.	E10
Connector Name	ECM
Connector Type	RH24FB-RZ8-L-LH
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
126	R	ENGINE SPEED OUTPUT SIGNAL

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M  
N  
O  
P



# MULTI AV (WITH BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

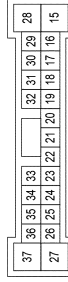
[MULTI AV SYSTEM]

Connector No.	B107
Connector Name	REAR SUBWOOFER RH (WITH BOSE AUDIO SYSTEM)
Connector Type	NS02FW-CS
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	W	-
2	G	-

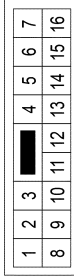
Connector No.	B109
Connector Name	BOSE SPEAKER AMP.
Connector Type	SCA19FBR-SG44
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
16	P	-
17	P	-
18	R	-
19	W	-
22	LG	-
23	G	-
24	G	-
29	R	-
30	W	-
31	G	-
32	BG	-
33	Y	-
34	W	-
35	R	-

3	LG	-
4	W	-
5	P	-
6	BG	-
7	P	-
8	R	-
9	R	-
10	P	-
11	W	-
12	G	-
13	R	-
14	G	-
15	BG	-
16	W	-

Connector No.	B104
Connector Name	WIRE TO WIRE
Connector Type	NS16MW-CS
Connector Color	WHITE



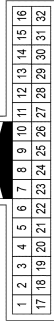
Terminal No.	Color of Wire	Signal Name
8	G	-
9	SB	-

Connector No.	B106
Connector Name	REAR SUBWOOFER RH (WITH BOSE AUDIO SYSTEM)
Connector Type	NS02FW-CS
Connector Color	WHITE



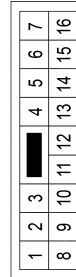
Terminal No.	Color of Wire	Signal Name
1	W	-
2	G	-

Connector No.	B102
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	SHIELD	-
2	G	-
3	R	-
4	B	-
5	W	-
6	SHIELD	-
7	W	-
8	B	-
9	BG	-
10	W	-
11	P	-
17	B	-
18	LG	-
19	L	-
20	Y	-
21	G	-
22	R	-
23	W	-
24	B	-
25	W	-
26	B	-

Connector No.	B103
Connector Name	WIRE TO WIRE
Connector Type	NS16MBR-CS
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	P	-
2	Y	-

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# MULTI AV (WITH BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]

10	SHIELD	-
13	R	-
14	G	-
15	Y	-
16	L	-
17	LG	-
18	B	-
20	Y	-
21	W	-

Connector No.	R19
Connector Name	FRONT RIGHT MICROPHONE (ACTIVE NOISE CONTROL)
Connector Type	TK02FBR
Connector Color	BROWN



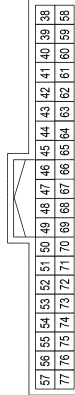
Terminal No.	Color of Wire	Signal Name
1	Y	-
2	L	-

Connector No.	R20
Connector Name	FRONT LEFT MICROPHONE (ACTIVE NOISE CONTROL)
Connector Type	TK02FBR
Connector Color	BROWN



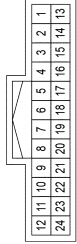
Terminal No.	Color of Wire	Signal Name
1	R	-
2	G	-

Connector No.	B149
Connector Name	BOSE SPEAKER AMP.
Connector Type	TH40FW-NH
Connector Color	WHITE



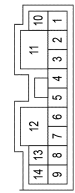
Terminal No.	Color of Wire	Signal Name
40	L	-
41	W	-
42	R	-
43	W	-
48	B	-
49	G	-
51	W	-
52	W	-
53	P	-
60	Y	-
61	B	-
62	G	-
63	B	-
68	LG	-
69	R	-
71	B	-
72	B	-
73	W	-
75	BG	-
76	SHIELD	-

Connector No.	R7
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH
Connector Color	WHITE



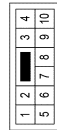
Terminal No.	Color of Wire	Signal Name
3	B	-
8	G	-
9	V	-

Connector No.	B110
Connector Name	BOSE SPEAKER AMP.
Connector Type	SGA12FBR-SJA2
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	W	-
2	G	-
3	P	-
4	BG	-
5	W	-
6	G	-
7	GR	-
8	W	-
10	SB	-
11	G	-
12	GR	-
13	P	-

Connector No.	B134
Connector Name	WIRE TO WIRE
Connector Type	NS10MW-CS
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
5	W	-
6	G	-

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AV

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# MULTI AV (WITH BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]

3	SHIELD	-
Connector No.	R203	
Connector Name	GLASS ANTENNA (FM SUB)	
Connector Type	P01FB-A	
Connector Color	BLACK	



Terminal No.	Color of Wire	Signal Name
1	B	-

Connector No.	R204
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1PP-HU (A)
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	B	-
2	SHIELD	-

Connector No.	R23
Connector Name	REAR MICROPHONE (ACTIVE NOISE CONTROL)
Connector Type	TK02FBR
Connector Color	BROWN



Terminal No.	Color of Wire	Signal Name
1	LG	-
2	B	-

Connector No.	R201
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1PP-HU (A)
Connector Color	BROWN



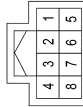
Terminal No.	Color of Wire	Signal Name
1	B	-
2	SHIELD	-

Connector No.	R202
Connector Name	ANTENNA AMP.
Connector Type	GT13SC-1/1S-HU
Connector Color	GRAY



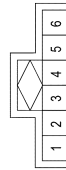
Terminal No.	Color of Wire	Signal Name
1	B	-
2	B	-

Connector No.	R21
Connector Name	TELEMATICS SWITCH
Connector Type	TH08FW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	W	-
2	B	-
3	Y	-
5	P	-
6	GR	-
7	B	-

Connector No.	R22
Connector Name	MICROPHONE
Connector Type	A06FW
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	V	-
2	SHIELD	-
4	G	-

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# MULTI AV (WITH BOSE AUDIO SYSTEM)

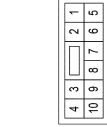
< WIRING DIAGRAM >

[MULTI AV SYSTEM]

1	G	-
2	W	-

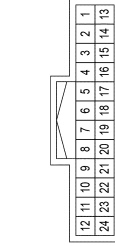
  

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Type	NS10FW-CS
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
9	R	- (WITHOUT BOSE AUDIO SYSTEM)
9	W	- (WITH BOSE AUDIO SYSTEM)
10	G	-

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH
Connector Color	WHITE

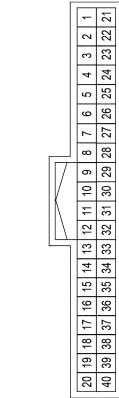


Terminal No.	Color of Wire	Signal Name
14	BG	-
15	W	-

14	G	-
----	---	---

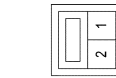
  

Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
30	W	-
31	G	-

Connector No.	D3
Connector Name	FRONT DOOR SPEAKER LH
Connector Type	NS02FW-CS
Connector Color	WHITE



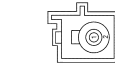
Terminal No.	Color of Wire	Signal Name
1	G	-
2	R	- (WITHOUT BOSE AUDIO SYSTEM)
2	W	- (WITH BOSE AUDIO SYSTEM)

Connector No.	D18
Connector Name	FRONT DOOR TWEETER LH
Connector Type	TK02FBR
Connector Color	BROWN



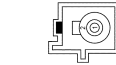
Terminal No.	Color of Wire	Signal Name

Connector No.	R205
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1S-HU (A)
Connector Color	BROWN



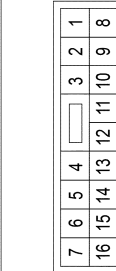
Terminal No.	Color of Wire	Signal Name
1	B	-
2	SHIELD	-

Connector No.	R206
Connector Name	SATELLITE ANTENNA
Connector Type	GT16C-1PP-HU (B)
Connector Color	GREEN



Terminal No.	Color of Wire	Signal Name
1	B	-
2	SHIELD	-

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
13	R	- (WITHOUT BOSE AUDIO SYSTEM)
13	W	- (WITH BOSE AUDIO SYSTEM)

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P

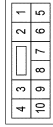
AV

# MULTI AV (WITH BOSE AUDIO SYSTEM)

< WIRING DIAGRAM >

[MULTI AV SYSTEM]

Connector No.	D306
Connector Name	WIRE TO WIRE
Connector Type	NS10FW-CS
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
5	V	-
6	LG	-

6	LG	-
Connector No.	D202	REAR DOOR SPEAKER LH (WITH BOSE AUDIO SYSTEM)
Connector Name	TH02FW	
Connector Type	WHITE	



Terminal No.	Color of Wire	Signal Name
1	LG	-
2	V	-

Connector No.	D302	REAR DOOR SPEAKER RH (WITH BOSE AUDIO SYSTEM)
Connector Name	TH02FW	
Connector Type	WHITE	



Terminal No.	Color of Wire	Signal Name
1	LG	-
2	V	-

Connector No.	D103	FRONT DOOR SPEAKER RH
Connector Name	NS02FW-CS	
Connector Type	WHITE	



Terminal No.	Color of Wire	Signal Name
1	G	-
2	R	- (WITHOUT BOSE AUDIO SYSTEM)
	W	- (WITH BOSE AUDIO SYSTEM)

Connector No.	D111	FRONT DOOR TWEETER RH
Connector Name	TK02FBR	
Connector Type	BROWN	



Terminal No.	Color of Wire	Signal Name
1	W	-
2	BG	-

Connector No.	D201	WIRE TO WIRE
Connector Name	NS10FW-CS	
Connector Type	WHITE	



Terminal No.	Color of Wire	Signal Name
5	V	-

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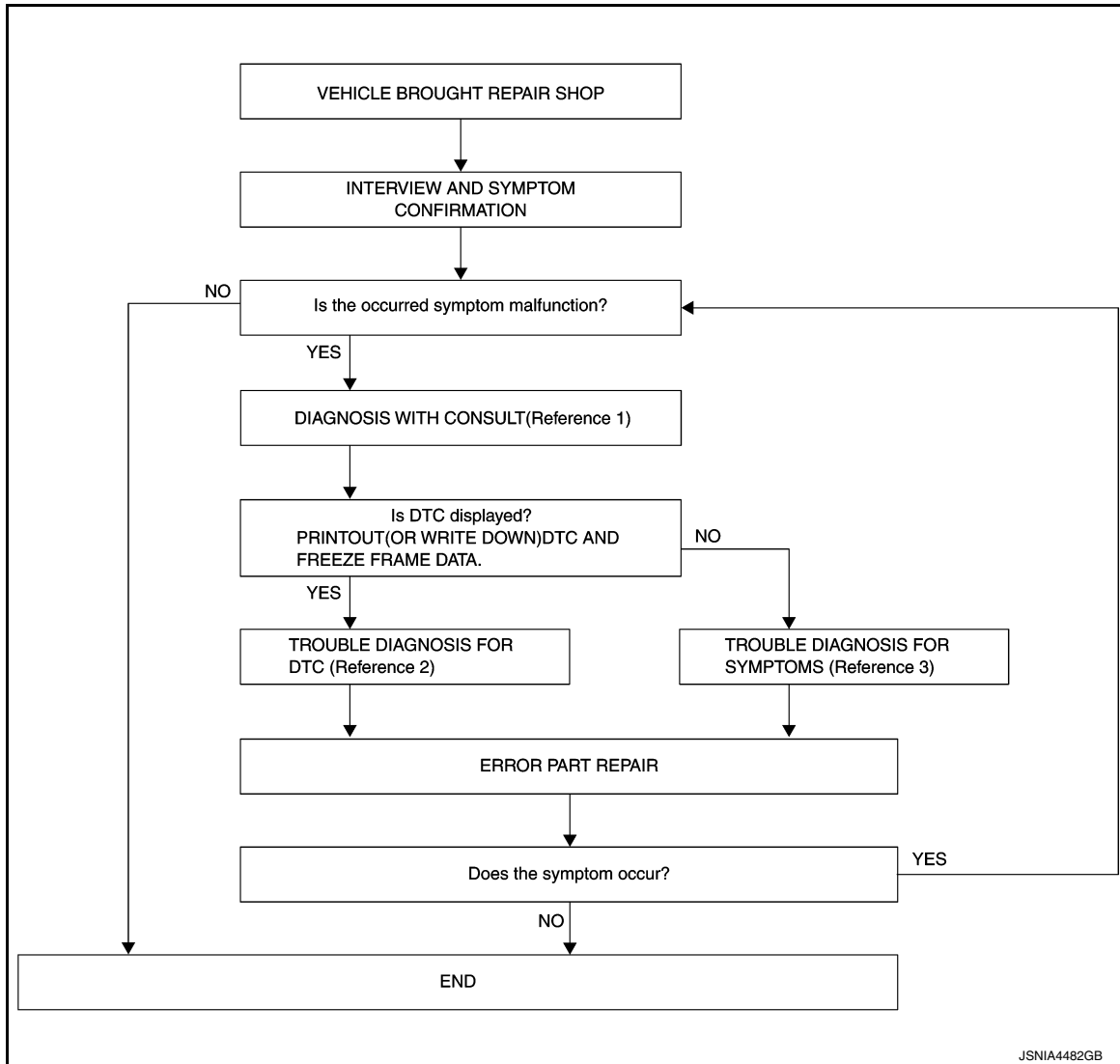
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

#### Work Flow

INFOID:000000012193744

#### OVERALL SEQUENCE



- Reference 1: Refer to [AV-40. "CONSULT Function"](#).
- Reference 2: Refer to [AV-40. "CONSULT Function"](#).
- Reference 3: Refer to [AV-174. "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 a malfunction?

YES >> GO TO 2.

NO >> Inspection End.

##### 2. DIAGNOSIS WITH CONSULT

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# DIAGNOSIS AND REPAIR WORKFLOW

[MULTI AV SYSTEM]

## < BASIC INSPECTION >

1. Connect CONSULT and perform a "Self Diagnostic Result" for "MULTI AV". Refer to [AV-40, "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 (FFD).

Is DTC displayed?

YES >> GO TO 3.

NO >> GO TO 4.

## 3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the "Self Diagnostic Result".
2. Perform the relevant diagnosis referring to the DTC Index. Refer to [AV-40, "CONSULT Function"](#).

>> GO TO 5.

## 4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-174, "Symptom Table"](#).

>> GO TO 5.

## 5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a "Self Diagnostic Result" 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 Diagnostic Result".

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 >

[MULTI AV SYSTEM]

## ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT

### Description

INFOID:000000012402915

#### BEFORE REPLACEMENT

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

#### NOTE:

If "READ CONFIGURATION" can not be used, use the "WRITE CONFIGURATION - Manual selection" after replacing AV control unit.

#### AFTER REPLACEMENT

#### CAUTION:

When replacing AV control unit, always perform "WRITE CONFIGURATION" with CONSULT.

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

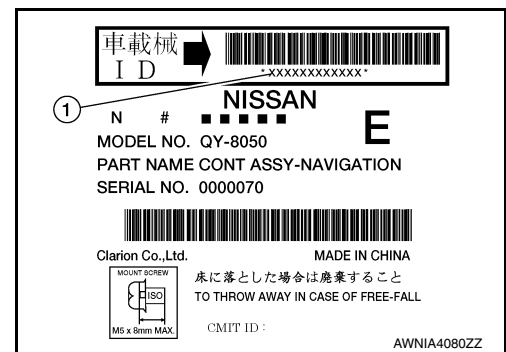
### Work Procedure

INFOID:000000012402916

#### 1. WRITE DOWN THE REGISTRATION CODE FROM THE NEW / REPLACEMENT AV CONTROL UNIT

On the replacement AV control unit's label, locate and write down the registration code (1).

>> GO TO 2.



#### 2. SAVING VEHICLE SPECIFICATION (AV CONTROL UNIT)

##### CONSULT Configuration

Perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to [LAN-10, "Description"](#).

#### NOTE:

If "READ CONFIGURATION" can not be used, use the "WRITE CONFIGURATION - Manual selection" after replacing AV control unit.

>> GO TO 3.

#### 3. REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to [AV-183, "Removal and Installation"](#).

>> GO TO 4.

#### 4. CHECK REPLACEMENT AV CONTROL UNIT'S CONFIGURATION.

1. Place the radio into Self Diagnostic mode. Refer to [AV-34, "On Board Diagnosis Function"](#).
2. Select "Confirmation/Adjustment".
3. Select "Version Information".
4. If the "" matches the "ITM Part Number", GO TO 5.
5. If the "" does not match the "ITM Part Number", perform the "Factory Configuration Data Initialisation" from the "Initialise Settings" menu under "Confirmation/Adjustment" to clear the factory configuration data.

>> GO TO 5.

## ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT

< BASIC INSPECTION >

[MULTI AV SYSTEM]

---

### 5. WRITING VEHICLE SPECIFICATION (AV CONTROL UNIT)

---

#### CONSULT Configuration

Perform "WRITE CONFIGURATION - Config file" or "WRITE CONFIGURATION - Manual selection" to write vehicle specification. Refer to [AV-94, "Work Procedure"](#).

>> GO TO 6.

### 6. CLEAR DTC'S AND CHECK AV SYSTEM OPERATION.

---

1. Perform a " Self Diagnostic Result" for "MULTI AV" with CONSULT.
2. Clear any DTC's in Multi AV.
3. Verify operation of Multi AV system.

>> GO TO 7.

### 7. REGISTER THE REPLACEMENT AV CONTROL UNIT.

---

Perform AV control unit registration. Refer to [AV-89, "Work Procedure"](#).

>> Work End.

# ADDITIONAL SERVICE WHEN REPLACING TCU

< BASIC INSPECTION >

[MULTI AV SYSTEM]

## ADDITIONAL SERVICE WHEN REPLACING TCU

### Description

INFOID:000000012471699

When TCU is replaced, TCU activation operation is required. Refer to [AV-91, "Work Procedure"](#).

### Preparation before activation operation

- Subscribe to telematics service
- Preregister user ID and password (can be performed from owner homepage)

### Work Procedure

INFOID:000000012471700

#### 1. TURN TCU OFF

##### ⓂCONSULT Work support

1. Select TCU ACTIVATE SETTING, then Start.
2. Select Start, then select Off to turn OFF the TCU.
3. Select End to return to the Work support Test Item screen.
4. Select TCU ACTIVATE SETTING, then Start.
5. Select Start, and confirm that Off is displayed in the Current status field.
6. Select End to return to the Work support Test Item screen.

>> GO TO 2.

#### 2. SAVE VIN DATA

##### NOTE:

If the VIN data cannot be saved, it will have to be entered manually later in this procedure.

##### ⓂCONSULT Work support

1. Select SAVE VIN DATA, then Start.
2. Select Start to save the VIN data.
3. Select End to return to the Work support Test Item screen.

>> GO TO 3.

#### 3. REMOVE TCU

Remove the TCU. Refer to [AV-201, "Removal and Installation"](#).

>> GO TO 4.

#### 4. RECORD TCU PART LABEL INFORMATION

##### NOTICE:

Steps 4 and 5 must be performed after the original TCU has been removed from the vehicle and before the replacement TCU is installed.

Collect, record and have the following information ready:

- VIN.
- International Mobile Equipment Identity (IMEI) number of the original TCU. Located on the TCU part label.
- International Mobile Equipment Identity (IMEI) number of the replacement TCU. Located on the TCU part label.
- Serial number of the replacement TCU. Located on the TCU part label.

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AV

## ADDITIONAL SERVICE WHEN REPLACING TCU

< BASIC INSPECTION >

[MULTI AV SYSTEM]



>> GO TO 5.

### 5. INSTALL TCU

Install the TCU. Refer to [AV-201. "Removal and Installation"](#).

>> GO TO 6.

### 6. VIN DATA

Was the VIN data saved during step 2?

- YES >> GO TO 7.
- NO >> GO TO 8.

### 7. WRITE VIN DATA

 CONSULT Work support

1. Select WRITE VIN DATA, then Start.
2. Select Start.
3. After the data writing has been completed, select End to return to the Work support Test Item screen.

>> GO TO 10.

### 8. MANUALLY ENTER VIN DATA

 CONSULT Work support

1. Select VIN REGISTRATION.
2. Enter the VIN number in the VIN (1ST TIME) field.
3. Enter the VIN number in the VIN (2ND TIME) field.
4. Select Start.
5. After the VIN registration has been completed, select End to return to the Work support Test Item screen.

>> GO TO 10.

### 9. REGISTER INTELLIGENT KEYS

For initialization and registration of Intelligent Keys, refer to CONSULT Immobilizer mode and follow the on-screen instructions.

>> GO TO 10.

### 10. CONTACT SIRIUSXM CALL CENTER

**NOTICE:**

## ADDITIONAL SERVICE WHEN REPLACING TCU

< BASIC INSPECTION >

[MULTI AV SYSTEM]

This step must be performed to activate the replacement TCU. If this step is not performed, the TCU will not be able to communicate with the NissanConnect<sup>SM</sup> Data Center.

1. Call the SiriusXM call center. You will be asked for your name, dealer name, and the information collected in step 4. The call center agent will deactivate the original TCU and activate the replacement TCU.
2. Wait for the SiriusXM Call center agent to call back, confirming TCU registration.

**NOTE:**

This step may take 1–2 hours.

>> GO TO 11.

### 11. TURN TCU ON

1. Turn ignition switch ON.
2. Press the hazard warning flasher switch and leave ON.
3. Turn ignition switch OFF.
4. Press and hold the telematics switch for more than 10 seconds.
5. After releasing the telematics switch, turn ignition switch ON.
6. Confirm the telematics switch LED indicator is turned ON.
7. Press the hazard warning flasher switch to turn OFF.

>> GO TO 12.

### 12. CONFIRM TELEMATICS OPERATION

Press the headset icon on the map screen to initiate a call.

Is the voice menu heard?

- YES >> Work End.  
NO >> GO TO 10.

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AV

## CONFIGURATION (AV CONTROL UNIT)

### Description

INFOID:000000012193747

Vehicle specification needs to be written with CONSULT because it is not written after replacing AV control unit.

Configuration has three functions as follows.

Function	Description	
Read / Write Configuration	Before Replace ECU	<ul style="list-style-type: none"> <li>Reads the vehicle configuration of current AV control unit.</li> <li>Saves the read vehicle configuration.</li> </ul>
	After Replace ECU	Writes the vehicle configuration with saved data.
Manual Configuration	Writes the vehicle configuration with manual selection.	

**NOTE:**

Manual setting item: Items which need selection by vehicle specifications

Automatic setting item: Items which are written in automatically (Setting cannot be changed)

For some models and specifications, the automatic setting item may not be displayed.

**CAUTION:**

**When replacing AV control unit, always perform “Re/programming, Configuration” with CONSULT. If not performed, AV control unit will not operate normally.**

- Complete the procedure of “Read / Write Configuration” in order.
- Configuration is different for each vehicle model. Confirm configuration of each vehicle model.
- Never perform “Read / Write Configuration” except for new AV control unit.
- If you set incorrect “Read / Write Configuration”, the AV control unit may not operate properly.

### Work Procedure

INFOID:000000012193748

#### 1. WRITING MODE SELECTION

ⓅCONSULT Configuration

Select “Re/programming, Configuration” of MULTI AV.

When writing saved data>>GO TO 2.

When writing manually>>GO TO 3.

#### 2. PERFORM “AFTER REPLACE ECU” OF “READ / WRITE CONFIGURATION”

ⓅCONSULT Configuration

Perform “After Replace ECU” of “Read / Write Configuration”.

>> WORK END

#### 3. PERFORM “MANUAL CONFIGURATION”

ⓅCONSULT Configuration

1. Select “Manual Configuration”.
2. Identify the correct model and configuration list. Refer to [AV-95, "Configuration list"](#).
3. Confirm and/or change setting value for each item.

**CAUTION:**

**Thoroughly read and understand the vehicle specification. ECU control may not operate normally if the setting is not correct.**

**NOTE:**

If items are not displayed, touch “Next”. Refer to [AV-95, "Configuration list"](#) for written items and setting value.

4. Touch “Next”.
5. Touch “OK”.

**CAUTION:**

**Make sure to select “OK” even if the indicated configuration of brand new AV control unit is the same as the desired configuration. If “OK” is not selected, configuration will not be complete.**

6. Check that the configuration has been successfully written and touch “End”.

# CONFIGURATION (AV CONTROL UNIT)

< BASIC INSPECTION >

[MULTI AV SYSTEM]

>> GO TO 4.

## 4. OPERATION CHECK

Confirm that the AV control unit operates normally.

>> WORK END

### Configuration list

INFOID:000000012193749

#### CAUTION:

- Thoroughly read and understand the vehicle specification. ECU control may not operate normally if the setting is not correct.
- The “setting value” of this vehicle is as follows: Never select any other value than the setting value shown below. (If there is only 1 item in “setting value” that means that item is the only choice for this certain vehicle.)

SETTING ITEM		NOTE
Items	Setting value	
SOUND SYSTEM	BASE	Without BOSE audio system
	BOSE	With BOSE audio system
CAMERA SYSTEM	NONE/AVM	With around view monitor system
	REAR	With rear view monitor system
ENGINE TYPE	NORMAL	Except HEV models
	HYBRID	HEV models
DRIVE SYSTEM	FF TYPE 4WD	HEV models (AWD)
	FF TYPE	HEV models (FWD)
	WITHOUT	Except HEV models
TELEMATICS	WITH	With telematics system
	WITHOUT	Without telematics system

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AV

# B1F01 ENGINE SPEED SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## DTC/CIRCUIT DIAGNOSIS

### B1F01 ENGINE SPEED SIGNAL

#### DTC Description

INFOID:000000012466913

#### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
B1F01	ENG SPEED SIG ERROR (Engine speed signal error)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	–
		Threshold	–
		Diagnosis delay time	30 seconds or more

#### POSSIBLE CAUSE

- Harness or connectors (Engine speed signal circuit)
- BOSE amp.
- ECM

#### FAIL-SAFE

Active noise control and active sound control function are deactivated

#### DTC CONFIRMATION PROCEDURE

##### 1. CHECK DTC PRIORITY

If B1F01 is displayed with DTC U1000 or U1010, first perform the confirmation procedure (trouble diagnosis) for DTC U1000 or U1010.

##### Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
- U1000: Refer to [AV-109, "DTC Description"](#).
  - U1010: Refer to [AV-111, "DTC Description"](#).
- NO >> GO TO 2.

##### 2. PERFORM DTC CONFIRMATION PROCEDURE

###### With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Start engine and wait at least 30 seconds.
4. Select "Self Diagnostic Result" mode of "MULTI AV" using CONSULT.
5. Check DTC.

##### Is DTC B1F01 detected?

- YES >> Proceed to [AV-96, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

#### Diagnosis Procedure

INFOID:000000012466914

##### 1. CHECK SELF-DIAGNOSTIC RESULT OF ECM

###### With CONSULT

Check "Self Diagnostic Result" of "ENGINE" using CONSULT.

##### Is any DTC detected?

- YES >> Perform trouble diagnosis for detected DTC.
- NO >> GO TO 2.

##### 2. CHECK HARNESS CONTINUITY BETWEEN BOSE AMP. AND ECM

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector B149 and ECM harness connector E10.



# B1F01 ENGINE SPEED SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

3. Check the continuity between BOSE amp. harness connector B149 and ECM harness connector E10.

BOSE amp.		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B149	75	E10	126	Yes

Is inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

## 3.CHECK HARNESS CONTINUITY BETWEEN BOSE SPEAKER AMP. AND GROUND

Check the continuity between BOSE speaker amp. harness connector B149 and ground.

BOSE amp.		Ground	Continuity
Connector	Terminal		
B149	75		No

Is inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning parts.

## 4.CHECK VOLTAGE BETWEEN BOSE SPEAKER AMP. AND GROUND

Check the voltage between BOSE speaker amp. harness connector B149 and ground.

Terminals		Voltage (Approx.)
(+)		
BOSE speaker amp.		
Connector	Terminal	
B149	75	Ground 0 V

Is inspection result normal?

YES >> Replace BOSE speaker amp. Refer to [AV-194, "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

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AV

# B1F02 DOOR STATUS SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## B1F02 DOOR STATUS SIGNAL

### DTC Description

INFOID:000000012466915

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
B1F02	DOOR STATUS SIG ERROR (Door status signal error)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	–
		Threshold	–
		Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

- Harness or connectors (Door signal circuit)
- BOSE amp.
- BCM

### FAIL-SAFE

Active noise control and active sound control function are deactivated

### DTC CONFIRMATION PROCEDURE

#### 1. CHECK DTC PRIORITY

If B1F02 is displayed with DTC U1000 or U1010, first perform the confirmation procedure (trouble diagnosis) for DTC U1000 or U1010.

#### Is applicable DTC detected?

- YES >> Perform diagnosis of applicable.
- U1000: Refer to [AV-111, "DTC Description"](#).
  - U1010: Refer to [AV-111, "DTC Description"](#).
- NO >> GO TO 2.

#### 2. PERFORM DTC CONFIRMATION PROCEDURE

##### Ⓟ With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON.
4. Open the driver's door and wait at least 2 seconds or more.
5. Select "Self Diagnostic Result" mode of "MULTI AV" using CONSULT.
6. Check DTC.

#### Is DTC B1F02 detected?

- YES >> Proceed to [AV-98, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012466916

#### 1. CHECK SELF-DIAGNOSTIC RESULT OF BCM

##### Ⓟ With CONSULT

Check "Self Diagnostic Result" of "BCM" using CONSULT.

#### Is any DTC detected?

- YES >> Perform trouble diagnosis for detected DTC. Refer to [BCS-53, "DTC Index"](#).
- NO >> GO TO 2.

#### 2. CHECK HARNESS CONTINUITY BETWEEN BOSE SPEAKER AMP. AND BCM

1. Turn ignition switch OFF.
2. Disconnect BOSE speaker amp. harness connector B149 and BCM harness connector M21.

# B1F02 DOOR STATUS SIGNAL

[MULTI AV SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

3. Check the continuity between BOSE speaker amp. harness connector B149 and BCM harness connector M21.

BOSE speaker amp.		BCM		Continuity
Connector	Terminal	Connector	Terminal	
B149	73	M21	21	Yes

Is inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

### 3.CHECK HARNESS CONTINUITY BETWEEN BOSE SPEAKER AMP. AND GROUND

Check the continuity between BOSE speaker amp. harness connector B149 and ground.

BOSE speaker mp.		Ground	Continuity
Connector	Terminal		
B149	73		No

Is inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning parts.

### 4.CHECK VOLTAGE BETWEEN BOSE SPEAKER AMP. AND GROUND

Check the voltage between BOSE speaker amp. harness connector B149 and ground.

Terminals		Voltage (Approx.)
BOSE speaker amp.		
(+)		(-)
Connector	Terminal	
B149	73	Ground
		0 V

Is inspection result normal?

YES >> Replace BOSE speaker amp. Refer to [AV-194, "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

AV

# B1F0B, B1F0C, B1F0D, B1F0E ANC MIC1 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## B1F0B, B1F0C, B1F0D, B1F0E ANC MIC1 CIRCUIT

### DTC Logic

INFOID:000000012476275

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
B1F0B	ANC MIC1 DISCONNECTED (Front left microphone open)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	Front left microphone circuit is open (terminal 69 or 49)
		Threshold	Front left microphone circuit is open
		Diagnosis delay time	30 seconds or more
B1F0C	ANC MIC1 SHORT (Front left microphone short)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	Front left microphone circuit is shorted (terminal 69 or 49)
		Threshold	Front left microphone circuit is shorted
		Diagnosis delay time	30 seconds or more
B1F0D	ANC MIC1 SHORT TO POWER (Front left microphone high)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	Front left microphone circuit is shorted to power (terminal 69 or 49)
		Threshold	Front left microphone circuit is shorted to power
		Diagnosis delay time	30 seconds or more
B1F0E	ANC MIC1 SHORT TO GND (Front left microphone low)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	Front left microphone circuit is shorted to ground (terminal 69 or 49)
		Threshold	Front left microphone circuit is shorted to ground
		Diagnosis delay time	30 seconds or more

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### Ⓢ With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "ANC" using CONSULT.
5. Check DTC.

##### Is DTC B1F0B, B1F0C, B1F0D or B1F0E detected?

YES >> Proceed to [AV-100, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012476276

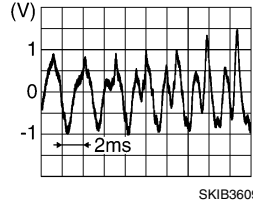
#### 1. CHECK FRONT LEFT MICROPHONE SIGNAL

1. Turn ignition switch ON.
2. Check the signal between BOSE amp. harness connector B149 as per the following condition.

# B1F0B, B1F0C, B1F0D, B1F0E ANC MIC1 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

BOSE amp.			Condition	Reference value
Connector	Terminals			
	(+)	(-)		
Terminal				
B149	69	49	When inputting interior sound	 <p style="text-align: right; font-size: small;">SKIB3609E</p>

Is the inspection result normal?

- YES >> Replace BOSE amp. Refer to [AV-194, "Removal and Installation"](#).  
 NO >> GO TO 2.

## 2. CHECK VOLTAGE BETWEEN BOSE SPEAKER AMP. AND GROUND

- Turn ignition switch OFF.
- Disconnect BOSE speaker amp. harness connector B149.
- Turn ignition switch ON.
- Check the voltage between BOSE speaker amp. harness connector B149 and ground.

Terminals			Voltage (Approx.)
(+)		(-)	
BOSE speaker amp.			
Connector	Terminal	Ground	
B149	69		Ground
	49		

Is the inspection result normal?

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

## 3. CHECK FRONT LEFT MICROPHONE SIGNAL CIRCUIT FOR OPEN

- Turn ignition switch OFF.
- Disconnect front left microphone (active noise control) harness connector R20.
- Check the continuity between BOSE speaker amp. harness connector B149 and front left microphone (active noise control) harness connector R20.

BOSE speaker amp.		Front left microphone (active noise control)		Continuity
Connector	Terminal	Connector	Terminal	
B149	69	R20	1	Yes
	49		2	

Is the inspection result normal?

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

## 4. CHECK FRONT LEFT MICROPHONE SIGNAL CIRCUIT FOR SHORT

- Check the continuity between BOSE speaker amp. harness connector B149 and ground.

# B1F0B, B1F0C, B1F0D, B1F0E ANC MIC1 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

BOSE speaker amp.		Ground	Continuity
Connector	Terminal		
B149	69		No
	49		

2. Check the continuity between BOSE speaker amp. harness connector B149 terminals.

BOSE speaker amp.			Continuity
Connector	Terminals		
B149	69	49	No

Is the inspection result normal?

- YES >> Replace front left microphone (active noise control). Refer to [AV-200. "Removal and Installation - Front"](#).
- NO >> Repair harness or connector.

# B1F10, B1F11, B1F12, B1F13 ANC MIC2 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## B1F10, B1F11, B1F12, B1F13 ANC MIC2 CIRCUIT

### DTC Logic

INFOID:000000012476277

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
B1F10	ANC MIC2 DISCONNECTED (Front right microphone open)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	Front right microphone circuit is open (terminal 60 or 40)
		Threshold	Front right microphone circuit is open
		Diagnosis delay time	30 seconds or more
B1F11	ANC MIC2 SHORT (Front right microphone short)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	Front right microphone circuit is shorted (terminal 60 or 40)
		Threshold	Front right microphone circuit is shorted
		Diagnosis delay time	30 seconds or more
B1F12	ANC MIC2 SHORT TO POWER (Front right microphone high)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	Front right microphone circuit is shorted to power (terminal 60 or 40)
		Threshold	Front right microphone circuit is shorted to power
		Diagnosis delay time	30 seconds or more
B1F13	ANC MIC2 SHORT TO GND (Front right microphone low)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	Front right microphone circuit is shorted to ground (terminal 60 or 40)
		Threshold	Front right microphone circuit is shorted to ground
		Diagnosis delay time	30 seconds or more

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### Ⓜ With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "ANC" using CONSULT.
5. Check DTC.

##### Is DTC B1F10, B1F11, B1F12 or B1F13 detected?

YES >> Proceed to [AV-103, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012476278

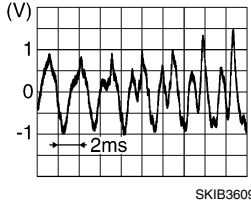
#### 1. CHECK FRONT RIGHT MICROPHONE SIGNAL

1. Turn ignition switch ON.
2. Check the signal between BOSE speaker amp. harness connector B149 as per the following condition.

# B1F10, B1F11, B1F12, B1F13 ANC MIC2 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

BOSE speaker amp.			Condition	Reference value
Connector	Terminals			
	(+)	(-)		
Terminal				
B149	60	40	When inputting interior sound	 <p>SKIB3609E</p>

Is the inspection result normal?

- YES >> Replace BOSE amp. Refer to [AV-194, "Removal and Installation"](#).  
 NO >> GO TO 2.

## 2. CHECK VOLTAGE BETWEEN BOSE SPEAKER AMP. AND GROUND

- Turn ignition switch OFF.
- Disconnect BOSE speaker amp. harness connector B149.
- Turn ignition switch ON.
- Check the voltage between BOSE speaker amp. harness connector B149 and ground.

Terminals			Voltage (Approx.)
(+)		(-)	
Connector	Terminal		
BOSE speaker amp.			Ground
B149	60	40	
	0 V		

Is the inspection result normal?

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

## 3. CHECK FRONT RIGHT MICROPHONE SIGNAL CIRCUIT FOR OPEN

- Turn ignition switch OFF.
- Disconnect front left microphone (active noise control) harness connector R19.
- Check the continuity between BOSE speaker amp. harness connector B149 and front right microphone (active noise control) harness connector R19.

BOSE speaker amp.		Front right microphone (active noise control)		Continuity
Connector	Terminal	Connector	Terminal	
B149	60	R19	1	Yes
	40		2	

Is the inspection result normal?

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

## 4. CHECK FRONT RIGHT MICROPHONE SIGNAL CIRCUIT FOR SHORT

- Check the continuity between BOSE speaker amp. harness connector B149 and ground.



# B1F10, B1F11, B1F12, B1F13 ANC MIC2 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

BOSE speaker amp.		Ground	Continuity
Connector	Terminal		
B149	60		No
	40		

2. Check the continuity between BOSE speaker amp. harness connector B149 terminals.

BOSE speaker amp.			Continuity
Connector	Terminals		
B149	60	40	No

Is the inspection result normal?

YES >> Replace front right microphone (active noise control). Refer to [AV-200. "Removal and Installation - Front"](#).

NO >> Repair harness or connector.

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AV

# B1F15, B1F16, B1F17, B1F18 ANC MIC3 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## B1F15, B1F16, B1F17, B1F18 ANC MIC3 CIRCUIT

### DTC Logic

INFOID:000000012476279

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
B1F15	ANC MIC1 DISCONNECTED (Rear microphone open)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	Rear microphone circuit is open (terminal 68 or 48)
		Threshold	Rear microphone circuit is open
		Diagnosis delay time	30 seconds or more
B1F16	ANC MIC1 SHORT (Rear microphone short)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	Rear microphone circuit is shorted (terminal 68 or 48)
		Threshold	Rear microphone circuit is shorted
		Diagnosis delay time	30 seconds or more
B1F17	ANC MIC1 SHORT TO POWER (Rear microphone high)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	Rear microphone circuit is shorted to power (terminal 68 or 48)
		Threshold	Rear microphone circuit is shorted to power
		Diagnosis delay time	30 seconds or more
B1F18	ANC MIC1 SHORT TO GND (Rear microphone low)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	Rear microphone circuit is shorted to ground (terminal 68 or 48)
		Threshold	Rear microphone circuit is shorted to ground
		Diagnosis delay time	30 seconds or more

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### Ⓜ With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "ANC" using CONSULT.
5. Check DTC.

##### Is DTC B1F15, B1F16, B1F17 or B1F18 detected?

- YES >> Proceed to [AV-106, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012476280

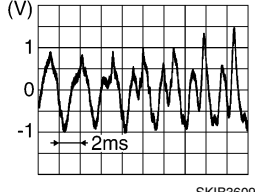
#### 1. CHECK REAR MICROPHONE SIGNAL

1. Turn ignition switch ON.
2. Check the signal between BOSE speaker amp. harness connector B149 as per the following condition.

# B1F15, B1F16, B1F17, B1F18 ANC MIC3 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

BOSE speaker amp.			Condition	Reference value
Connector	Terminals			
	(+)	(-)		
Terminal				
B149	68	48	When inputting interior sound	 <small>SKI3609E</small>

Is the inspection result normal?

- YES >> Replace BOSE speaker amp. Refer to [AV-194, "Removal and Installation"](#).  
 NO >> GO TO 2.

## 2. CHECK VOLTAGE BETWEEN BOSE SPEAKER AMP. AND GROUND

- Turn ignition switch OFF.
- Disconnect BOSE speaker amp. harness connector B149.
- Turn ignition switch ON.
- Check the voltage between BOSE speaker amp. harness connector B149 and ground.

Terminals			Voltage (Approx.)
(+)		(-)	
Connector	Terminal		
B149	68	Ground	0 V
	48		

Is the inspection result normal?

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

## 3. CHECK REAR MICROPHONE SIGNAL CIRCUIT FOR OPEN

- Turn ignition switch OFF.
- Disconnect rear microphone (active noise control) harness connector R23.
- Check the continuity between BOSE speaker amp. harness connector B149 and rear microphone (active noise control) harness connector R23.

BOSE speaker amp.		Front left microphone (active noise control)		Continuity
Connector	Terminal	Connector	Terminal	
B149	68	R23	1	Yes
	48		2	

Is the inspection result normal?

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

## 4. CHECK REAR MICROPHONE SIGNAL CIRCUIT FOR SHORT

- Check the continuity between BOSE speaker amp. harness connector B149 and ground.

# B1F15, B1F16, B1F17, B1F18 ANC MIC3 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

BOSE speaker amp.		Ground	Continuity
Connector	Terminal		
B149	68		No
	48		

2. Check the continuity between BOSE speaker amp. harness connector B149 terminals.

BOSE speaker amp.			Continuity
Connector	Terminals		
B149	68	48	No

Is the inspection result normal?

- YES >> Replace rear microphone (active noise control). Refer to [AV-200. "Removal and Installation - Rear"](#).
- NO >> Repair harness or connector.

## U1000 CAN COMM CIRCUIT

### DTC Description

INFOID:000000012193750

#### DESCRIPTION

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-32, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

#### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	Signal (terminal)
U1000	CAN COMM CIRCUIT (CAN COMM CIRCUIT)	When ignition switch is ON.	–
		–	–
		–	–
		2 seconds or more	–

#### POSSIBLE CAUSE

CAN communication system

#### FAIL-SAFE

The system using the CAN communication signal from control unit which cannot communicate does not function

#### DTC CONFIRMATION PROCEDURE

##### 1. CHECK DTC PRIORITY

If DTC U1000 is displayed with DTC U1223, first perform the confirmation procedure (trouble diagnosis) for DTC U1223.

Is applicable DTC detected?

- YES >> Perform diagnosis of applicable DTC. Refer to [AV-112, "DTC Description"](#).
- NO >> GO TO 2.

##### 2. PERFORM DTC CONFIRMATION PROCEDURE

###### CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "MULTI AV".
5. Check DTC.

Is DTC U1000 detected?

- YES >> Proceed to [AV-109, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

#### Diagnosis Procedure

INFOID:000000012193751

##### 1. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

###### CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to [AV-109, "DTC Description"](#).

## U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

---

Is DTC detected again?

- YES >> Perform the trouble diagnosis for CAN communication system. Refer to [LAN-17, "Trouble Diagnosis Flow Chart"](#).
- NO >> Inspection End.

## U1010 CONTROL UNIT (CAN)

### DTC Description

INFOID:000000012193752

#### DESCRIPTION

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-32, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

#### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1010	CONTROL UNIT (CAN) [Control unit (CAN)]	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	-
		Threshold	-
		Diagnosis delay time	30 seconds or more

#### POSSIBLE CAUSE

CAN communication system

#### FAIL-SAFE

The system using the CAN communication signal does not function

#### DTC CONFIRMATION PROCEDURE

##### 1. PRECONDITIONING

1. Turn ignition switch OFF and wait at least 30 seconds.
2. Turn ignition switch ON.
3. Turn ignition switch OFF and wait at least 30 seconds.

>> GO TO 2.

##### 2. PERFORM DTC CONFIRMATION PROCEDURE

###### CONSULT

1. Turn ignition switch ON and wait at least 30 seconds or more.
2. Select "Self Diagnostic Result" mode of "MULTI AV".
3. Check DTC.

###### Is DTC U1010 detected?

- YES >> Proceed to [AV-111, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

#### Diagnosis Procedure

INFOID:000000012193753

##### 1. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

###### CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to [AV-111, "DTC Description"](#).

###### Is DTC U1010 detected again?

- YES >> Replace AV control unit. Refer to [AV-183, "Removal and Installation"](#).
- NO >> Inspection End.

## U1223 CONFIG UNFINISH

### DTC Description

INFOID:000000012193754

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1223	CONFIG UNFINISH (Configuration unfinish)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	-
		Threshold	-
		Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

Configuration is incomplete

### FAIL-SAFE

A function of AV control unit becomes mismatched with a vehicle specification and destination

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

#### Ⓜ CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "MULTI AV".
5. Check DTC.

#### Is DTC U1223 detected?

- YES >> Proceed to [AV-112, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012193755

#### 1. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

#### Ⓜ CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to [AV-112, "DTC Description"](#).

#### Is DTC U1223 detected again?

- YES >> Perform configuration of AV control unit. Refer to [AV-94, "Work Procedure"](#).
- NO >> Inspection End.



U1231 BOSE AMP.

DTC Description

INFOID:000000012193756

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	When ignition switch is ON.
U1231	AMP TEMP (Amp temperature)	Signal (terminal)	-
		Threshold	-
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- BOSE amp. temperature is high
- BOSE amp.

FAIL-SAFE

BOSE system does not function

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "MULTI AV".
5. Check DTC.

Is DTC U1231 detected?

- YES >> Proceed to [AV-113, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012193757

1. CHECK AROUND BOSE AMP.

Check whether there is any factor which causes a temperature rise near BOSE amp.

Was there any factor?

- YES >> GO TO 2.
- NO >> Remove factor.

2. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to [AV-113, "DTC Description"](#).

Is DTC U1231 detected again?

- YES >> Replace BOSE amp. Refer to [AV-194, "Removal and Installation"](#).
- NO >> Inspection End.

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# U1232 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## U1232 STEERING ANGLE SENSOR

### DTC Description

INFOID:000000012193758

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1232	ST ANGLE SEN CALIB (Steering angle sensor calibration)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	–
		Threshold	–
		Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

- Neutral position adjustment of the steering angle sensor is incomplete
- Steering angle sensor

### FAIL-SAFE

Predictive course line is not displayed

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "MULTI AV".
5. Check DTC.

##### Is DTC U1232 detected?

- YES >> Proceed to [AV-114, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012193759

#### 1. ADJUST NEUTRAL POSITION OF STEERING ANGLE SENSOR

Adjust the steering angle sensor neutral position on ABS actuator and electrical unit (control unit) side. Refer to [BRC-248, "Work Procedure"](#).

##### NOTE:

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

>> GO TO 2.

#### 2. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to [AV-114, "DTC Description"](#).

##### Is DTC U1232 detected again?

- YES >> Replace steering angle sensor. Refer to [BRC-370, "Removal and Installation"](#).
- NO >> Inspection End.

## U1234 AV CONTROL UNIT

### DTC Description

INFOID:000000012193760

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1234	AV CONTROL UNIT (AV control unit)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	-
		Threshold	-
		Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

AV control unit

### FAIL-SAFE

As an example:

- Sound is not output by a speaker
- CD is not played
- Radio does not operate

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "MULTI AV".
5. Check DTC.

##### Is DTC U1234 detected?

- YES >> Proceed to [AV-115, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012193761

#### 1. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

##### CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to [AV-115, "DTC Description"](#).

##### Is DTC U1234 detected again?

- YES >> Replace AV control unit. Refer to [AV-183, "Removal and Installation"](#).
- NO >> Inspection End.

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# U1244 GPS ANTENNA CONN

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## U1244 GPS ANTENNA CONN

### DTC Description

INFOID:000000012193762

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1244	GPS ANTENNA CONN (GPS antenna connection error)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	–
		Threshold	–
		Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

- GPS antenna is not connected
- GPS antenna

### FAIL-SAFE

The vehicle positions on a navigation screen differ

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "MULTI AV".
5. Check DTC.

#### Is DTC U1244 detected?

- YES >> Proceed to [AV-116. "Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: Refer to [GI-41. "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012193763

#### 1. CHECK GPS ANTENNA HARNESS CONNECTOR

1. Turn ignition switch OFF.
2. Visually check GPS antenna connection.

#### Is the inspection result normal?

- YES >> Replace GPS antenna. Refer to [AV-198. "Removal and Installation"](#).  
NO >> Repair connection of GPS antenna to NAVI control unit.

# U1258 SATELLITE RADIO ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## U1258 SATELLITE RADIO ANTENNA

### DTC Description

INFOID:000000012193764

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
U1258	XM ANTENNA CONN (Satellite radio antenna connection error)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Satellite radio antenna circuit is shorted to ground (terminal 74)
			Threshold	Satellite radio antenna circuit is shorted to ground
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Satellite antenna signal is open (terminal 74)
			Threshold	Satellite radio antenna circuit is open
			Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

- Satellite radio antenna is not connected
- Harness or connector (Satellite radio antenna circuit is open or short)

### FAIL-SAFE

Satellite radio is not received

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### ⓂCONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "MULTI AV".
5. Check DTC.

##### Is DTC U1258 detected?

- YES >> Proceed to [AV-117, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012193765

#### 1. CHECK SATELLITE RADIO ANTENNA HARNESS CONNECTOR

1. Turn ignition switch OFF.
2. Visually check satellite radio antenna and antenna feeder.

##### Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Repair or replace malfunctioning parts.

#### 2. CHECK SATELLITE RADIO ANTENNA HARNESS CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit harness connector M167.
3. Check the continuity between AV control unit harness connector M167 and ground.

# U1258 SATELLITE RADIO ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

Terminal			Continuity
(+)	(-)		
AV control unit			
Connector	Terminal		
M167	74	Ground	No

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

## 3. CHECK AV CONTROL UNIT VOLTAGE

1. Turn ignition switch ON.
2. Check the voltage between AV control unit M167 and ground.

Terminal			Voltage (Approx.)
(+)	(-)		
AV control unit			
Connector	Terminal		
M167	74	Ground	5.0 V

Is the inspection result normal?

YES >> Replace satellite radio antenna. Refer to [AV-196, "Removal and Installation"](#).

NO >> Replace AV control unit. Refer to [AV-183, "Removal and Installation"](#).

## U1267 METER CONN

### DTC Description

INFOID:000000012193766

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1267	METER CONN (Combination meter connection error)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	AV control unit CAN circuits (terminals 21 and 41)
		Threshold	CAN communication circuits between AV control unit and combination meter are malfunctioning
		Diagnosis delay time	30 seconds or more

**NOTE:**

DTC U1267 is displayed with DTC U1300.

### POSSIBLE CAUSE

- Combination meter
- AV communication circuit is open

### FAIL-SAFE

- Audio information is not displayed by the information display in the combination meter
- Navigation indicator is not displayed by the information display in the combination meter
- Steering switch does not operate

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

**CONSULT**

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "MULTI AV".
5. Check DTC.

Is DTC U1267 detected?

- YES >> Proceed to [AV-119, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012193767

#### 1. CHECK COMBINATION METER POWER SUPPLY AND GROUND CIRCUIT

Check combination meter power supply and ground circuit. Refer to [MWI-50, "COMBINATION METER : Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Repair or replace malfunctioning parts.

#### 2. CHECK M-CAN COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit harness connector M163 and combination meter harness connector M23.
3. Check the continuity between AV control unit harness connector M163 and combination meter harness connector M23.

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AV

## U1267 METER CONN

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

AV control unit		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
M163	23	M23	49	Yes
	24		50	

Is the inspection result normal?

YES >> Replace combination meter. Refer to [MWI-68, "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.



U12B7 USB CONN

DTC Description

INFOID:000000012193768

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	When ignition switch is ON.
U12B7	USB CONN (USB connection error)	Signal (terminal)	-
		Threshold	-
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- AV control unit
- USB harness is not connected

FAIL-SAFE

Audio equipment which is connected to USB does not operate

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Connect audio apparatuses, etc., to USB port.
5. Select "Self Diagnostic Result" mode of "MULTI AV".
6. Check DTC.

Is DTC U12B7 detected?

- YES >> Proceed to [AV-121, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012193769

1. CHECK DTC (1)

CONSULT

1. Remove connected audio apparatus from USB port.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON.
4. Erase DTC.
5. Turn ignition switch OFF and wait at least 30 seconds.
6. Turn ignition switch ON and wait at least 30 seconds or more.
7. Check "Self Diagnostic Result" of "MULTI AV".

Is any DTC detected?

- YES >> Replace AV control unit. Refer to [AV-183, "Removal and Installation"](#).
- NO >> GO TO 2.

2. CHECK DTC (2)

1. Connect audio apparatus to USB port again.
2. Check "Self Diagnostic Result" mode of "MULTI AV".

Is DTC U12B7 detected?

- YES >> Abnormality of audio apparatus connected to USB port.
- NO >> Inspection End.

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# U12BE RADIO ANTENNA CONN

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## U12BE RADIO ANTENNA CONN

### DTC Description

INFOID:000000012193770

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
U12BE	RADIO ANTENNA CONN (Radio antenna connection error)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Radio antenna signal is shorted to ground (terminal 68)
			Threshold	Radio antenna circuit is shorted to ground
			Diagnosis delay time	2 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Radio antenna signal is open (terminal 68)
			Threshold	Radio antenna circuit is open
			Diagnosis delay time	2 seconds or more

### POSSIBLE CAUSE

- Radio antenna is not connected
- Harness or connector (Radio antenna circuit is open or shorted)

### FAIL-SAFE

Radio is not received

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

#### Ⓟ CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "MULTI AV".
5. Check DTC.

#### Is DTC U12BE detected?

- YES >> Proceed to [AV-122, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012193771

#### 1. CHECK WINDOW ANTENNA HARNESS CONNECTOR

1. Turn ignition switch OFF.
2. Visually check radio antenna and antenna feeder.

#### Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Repair or replace malfunctioning parts.

#### 2. CHECK ANTENNA HARNESS CIRCUIT

1. Disconnect AV control unit harness connector M165.
2. Check the continuity AV control unit harness connector M165 and ground.

# U12BE RADIO ANTENNA CONN

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

(+)		(-)	Continuity
AV control unit			
Connector	Terminal		
M165	68	Ground	Yes

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

### 3. CHECK AV CONTROL UNIT VOLTAGE

1. Turn ignition switch ON.
2. Check the voltage between AV control unit connector M165 and ground.

(+)		(-)	Voltage (Approx.)
AV control unit			
Connector	Terminal		
M165	68	Ground	5.0 V

Is the inspection result normal?

YES >> Replace antenna. Refer to [AV-18, "Antenna and Antenna Feeder"](#).

NO >> Replace AV control unit. Refer to [AV-183, "Removal and Installation"](#).

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AV

## U1A01 TCU

### DTC Description

INFOID:000000012385871

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis contents)	DTC detection condition	
U1A01	INTERNAL ERROR (TCU) [Internal error (TCU)]	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	-
		Threshold	-
		Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

TCU

### FAIL-SAFE

Telematics system function stops

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

Ⓟ With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "TCU" using CONSULT.
5. Check DTC.

#### Is DTC U1A01 detected?

- YES >> Proceed to [AV-124, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012385872

#### 1. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Ⓟ With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to [AV-124, "DTC Description"](#).

#### Is DTC U1A01 detected again?

- YES >> Replace TCU. Refer to [AV-201, "Removal and Installation"](#).
- NO >> Inspection End.

U1A02 TCU

DTC Description

INFOID:000000012385873

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis contents)	DTC detection condition	
U1A02	TEL COMMUNICATION MODULE (TEL communication module)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	–
		Threshold	–
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

TCU

FAIL-SAFE

Telematics system function stops

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

ⓂWith CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "TCU" using CONSULT.
5. Check DTC.

Is DTC U1A02 detected?

- YES >> Proceed to [AV-125, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012385874

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

ⓂWith CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to [AV-125, "DTC Description"](#).

Is DTC U1A02 detected again?

- YES >> Replace TCU. Refer to [AV-201, "Removal and Installation"](#).
- NO >> Inspection End.

AV

U1A05 TCU

DTC Description

INFOID:000000012385869

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis contents)		DTC detection condition	
U1A05	USB COMM (USB communication)	1	Diagnosis condition	When ignition switch is ON
			Signal (terminal)	TCU USB circuits (terminals 41, 43, and 44)
			Threshold	TCU USB circuits are shorted to ground
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON
			Signal (terminal)	TCU USB circuits (terminals 41, 43, and 44)
			Threshold	TCU USB circuits are open
			Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- USB harness connector
- TCU

FAIL-SAFE

Telematics system does not function

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

 With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "TCU" using CONSULT.
5. Check DTC.

Is DTC U1A05 detected?

- YES >> Proceed to [AV-126, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

Diagnosis Procedure

INFOID:000000012385870

1. CHECK USB HARNESS

1. Turn ignition switch OFF.
2. Disconnect TCU harness connector M193 and AV control unit harness connector M157.
3. Check the continuity between TCU harness connector M193 and AV control unit harness connectors M157.

TCU		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M193	41	M157	82	Yes
	43		84	
	44		85	

4. Check the continuity between TCU vehicle-side harness connector M193 and ground.

# U1A05 TCU

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

TCU		Ground	Continuity
Connector	Terminal		
M193	41		No
	43		
	44		

Is the inspection result normal?

- YES >> Replace TCU. Refer to [AV-201. "Removal and Installation"](#).
- NO >> Repair or replace malfunctioning parts.

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AV

< DTC/CIRCUIT DIAGNOSIS >

**U1A07 TEL ANTENNA**

**DTC Description**

INFOID:000000012385865

**DTC DETECTION LOGIC**

DTC	CONSULT screen terms (Trouble diagnosis contents)	DTC detection condition	
U1A07	TEL ANTENNA SHORT (TEL antenna short)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	TEL antenna circuit is shorted to ground (terminal 47)
		Threshold	TEL antenna circuit is shorted to ground
		Diagnosis delay time	30 seconds or more

**POSSIBLE CAUSE**

- Telematics antenna circuit (short or poor harness condition)
- Telematics antenna

**FAIL-SAFE**

Telematics switch LED indicator turn OFF  
(LED indicator turns ON 10 times when push the SOS call switch)

**DTC CONFIRMATION PROCEDURE**

**1. PERFORM DTC CONFIRMATION PROCEDURE**

**With CONSULT**

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "TCU" using CONSULT.
5. Check DTC.

**Is DTC U1A07 detected?**

- YES >> Proceed to [AV-128, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

**Diagnosis Procedure**

INFOID:000000012385866

**1. TELEMATICS ANTENNA HARNESS INSPECTION**

1. Turn ignition switch OFF.
2. Disconnect TCU connector M194.
3. Check the continuity between TCU harness connector M194.

(+)		(-)	Continuity
TCU			
Connector	Terminal		
M194	47	Ground	No

**Is the inspection result normal?**

- YES >> Replace TCU. Refer to [AV-201, "Removal and Installation"](#).
- NO >> Replace telematics antenna. Refer to [AV-202, "Removal and Installation"](#).



# U1A08 TEL ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## U1A08 TEL ANTENNA

### DTC Description

INFOID:0000000012385867

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis contents)	DTC detection condition	
U1A08	TEL ANTENNA NO CONN (Telematics antenna no connection)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	TEL antenna circuit is open (terminal 47)
		Threshold	TEL antenna circuit is open
		Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

- Telematics antenna
- TCU

### FAIL-SAFE

Telematics switch LED indicator turn OFF  
(LED indicator turns ON 10 times when push the SOS call switch)

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

ⓐWith CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "TCU" using CONSULT.
5. Check DTC.

Is DTC U1A08 detected?

- YES >> Proceed to [AV-129, "Diagnosis Procedure"](#).  
 NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).  
 NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:0000000012385868

#### 1.CHECK TELEMATICS ANTENNA

1. Turn ignition switch OFF.
2. Disconnect telematics antenna feeder harness connector.
3. Visually check telematics antenna and antenna feeder.

Is the inspection result normal?

- YES >> GO TO 2.  
 NO >> Repair or replace malfunctioning parts.

#### 2.CHECK TCU VOLTAGE

1. Disconnect telematics antenna harness connector M194.
2. Turn ignition switch ON.
3. Check the voltage between TCU connector M194 and ground.

(+)		(-)	Voltage (Approx.)
TCU			
Connector	Terminal		
M194	47	Ground	2.8 V

Is the inspection result normal?

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AV

## U1A08 TEL ANTENNA

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

- 
- YES >> Replace telematics antenna. Refer to [AV-202, "Removal and Installation"](#).  
NO >> Replace TCU. Refer to [AV-201, "Removal and Installation"](#).

# U1A0B MICROPHONE

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## U1A0B MICROPHONE

### DTC Description

INFOID:000000012385879

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis contents)		DTC detection condition	
U1A0B	MIC IN CONN (Microphone input connection)	1	Diagnosis condition	When ignition switch is ON
			Signal (terminal)	Microphone input circuit is shorted to ground (terminals 17)
			Threshold	Microphone input circuit is shorted to ground
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON
			Signal (terminal)	Microphone input circuit is open (terminals 17)
			Threshold	Microphone input circuit is open
			Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

- Sound signal circuit
- Microphone VCC signal circuit

### FAIL-SAFE

Transmit an own vehicle position to the center

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

Ⓜ With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "TCU" using CONSULT.
5. Check DTC.

#### Is DTC U1A0B detected?

- YES >> Proceed to [AV-131, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012385880

#### 1. CHECK MICROPHONE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCU harness connector M173 and microphone connector R22.
3. Check the continuity between TCU harness connector M173 and microphone connector R22.

TCU		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
M173	16	R22	2	Yes
	17		1	
	18		4	

4. Check the continuity between TCU harness connector M173 and ground.

# U1A0B MICROPHONE

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

TCU		Ground	Continuity
Connector	Terminal		
M81	17		No
	18		

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning parts.

## 2. CHECK VOLTAGE MICROPHONE POWER SUPPLY

1. Connect TCU harness connector.
2. Turn ignition switch ON.
3. Check the voltage between TCU harness connector M173 and ground.

TCU		(-)	Voltage (Approx.)
Connector	Terminal		
M173	17	Ground	5.0 V

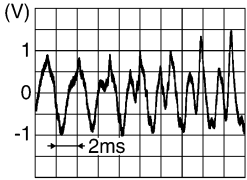
Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace TCU. Refer to [AV-201. "Removal and Installation"](#).

## 3. CHECK MICROPHONE SIGNAL

1. Connect microphone harness connector R22.
2. Check the signal between TCU harness connector M173 terminals.

Connector	TCU		Condition	Reference value
	(+)	(-)		
	Terminals			
M173	17	16	When inputting interior sound.	 <p style="text-align: right; font-size: small;">SKIB3609E</p>

Is the inspection result normal?

YES >> Replace TCU. Refer to [AV-201. "Removal and Installation"](#).

NO >> Replace microphone. Refer to [AV-199. "Removal and Installation"](#).

# U1A0C MICROPHONE

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## U1A0C MICROPHONE

### DTC Description

INFOID:000000012385881

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis contents)		DTC detection condition	
U1A0C	MIC OUT CONN (Microphone output connection)	1	Diagnosis condition	When ignition switch is ON
			Signal (terminal)	Microphone output circuit is shorted to ground (terminals 12)
			Threshold	Microphone output circuit is shorted to ground
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON
			Signal (terminal)	Microphone output circuit is open (terminals 12)
			Threshold	Microphone output circuit is open
			Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

Sound signal circuit

### FAIL-SAFE

Transmit an own vehicle position to the center

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### Ⓜ With CONSULT

- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 30 seconds.
- Turn ignition switch ON and wait at least 30 seconds or more.
- Select "Self Diagnostic Result" mode of "TCU" using CONSULT.
- Check DTC.

##### Is DTC U1A0C detected?

- YES >> Proceed to [AV-133, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012385882

#### 1. CHECK SOUND SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect TCU connector M173 and AV control unit connector M163.
- Check the continuity between TCU connector M173 and AV control unit connector M163.

TCU		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M173	12	M163	46	Yes

- Check continuity between TCU connector M173 and ground.

TCU		Ground	Continuity
Connector	Terminal		
M173	12		No

# U1A0C MICROPHONE

[MULTI AV SYSTEM]

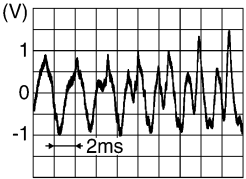
< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Repair or replace malfunctioning parts.

## 2. CHECK MICROPHONE SIGNAL

1. Connect TCU connector M173 and AV control unit connector M163.
2. Check the signal between TCU connector M173.

Connector	TCU		Condition	Reference value
	(+)	(-)		
Terminals				
M173	12	11	When inputting interior sound.	 <p style="text-align: right; font-size: small;">SKIB3609E</p>

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-183, "Removal and Installation"](#).
- NO >> Replace TCU. Refer to [AV-201, "Removal and Installation"](#).

# U1A0E TELEMATICS SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## U1A0E TELEMATICS SWITCH

### DTC Description

INFOID:0000000012385875

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis contents)	DTC detection condition	
		Diagnosis condition	When ignition switch is ON
U1A0E	SOS SWITCH ON STUCK (SOS switch ON stuck)	Signal (terminal)	ECALL switch circuit is shorted to ground (terminal 37)
		Threshold	ECALL switch circuit is shorted to ground
		Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

SOS call switch signal circuit

### FAIL-SAFE

- Telematics system does not function (Only SOS call does not operate)
- Telematics switch LED indicator turn OFF

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### Ⓜ With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "TCU" using CONSULT.
5. Check DTC.

##### Is DTC U1A0E detected?

- YES >> Proceed to [AV-135, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:0000000012385876

#### 1. CHECK TELEMATICS SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCU harness connector M173 and telematics switch harness connector R21.
3. Check the continuity between TCU harness connector M173 and telematics switch harness connector R21.

TCU		Telematics switch		Continuity
Connector	Terminal	Connector	Terminal	
M173	37	R21	3	Yes

4. Check the continuity between TCU harness connector M173 and ground.

TCU		Ground	Continuity
Connector	Terminal		
M173	37		No

##### Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Repair or replace malfunctioning parts.

#### 2. CHECK TCU VOLTAGE

## U1A0E TELEMATICS SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

1. Connect TCU switch harness connector M173.
2. Turn ignition switch ON.
3. Check the voltage TCU harness connector M173 and ground.

TCU		(-)	Voltage (Approx.)
Connector	Terminal		
M173	37	Ground	5.0 V

Is the inspection result normal?

- YES >> Replace TCU. Refer to [AV-201, "Removal and Installation"](#).
- NO >> Replace telematics switch. Refer to [AV-203, "Removal and Installation"](#).



# U1A0F TELEMATICS SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## U1A0F TELEMATICS SWITCH

### DTC Description

INFOID:000000012385877

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis contents)	DTC detection condition	
U1A0F	SOS SWITCH NO CONN (SOS switch no connection)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	ECALL switch circuit is open (terminal 37)
		Threshold	ECALL switch circuit is open
		Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

SOS call switch signal circuit

### FAIL-SAFE

- Telematics system cannot start
- Telematics switch LED indicator turn OFF

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

ⓂWith CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "TCU" using CONSULT.
5. Check DTC.

Is DTC U1A0F detected?

YES >> Proceed to [AV-137, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012385878

#### 1.CHECK TCU AND TELEMATICS SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCU harness connector M173 and telematics switch connector R21.
3. Check the continuity between TCU harness connector M173 and telematics switch connector R21.

TCU		Telematics switch		Continuity
Connector	Terminal	Connector	Terminal	
M173	37	R21	3	Yes

4. Check the continuity between TCU harness connector M173 and ground.

TCU		Ground	Continuity
Connector	Terminal		
M173	37		No

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning parts.

#### 2.CHECK TCU VOLTAGE

1. Connect TCU harness connector M173.

# U1A0F TELEMATICS SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

2. Turn ignition switch ON.
3. Check the voltage TCU harness connector M173 and ground.

(+)		(-)	Voltage (Approx.)
TCU			
Connector	Terminal		
M81	37	Ground	5.0 V

Is the inspection result normal?

- YES >> Replace TCU. Refer to [AV-201. "Removal and Installation"](#).
- NO >> Replace telematics switch. Refer to [AV-203. "Removal and Installation"](#).

# U1601, U1609 FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## U1601, U1609 FRONT DOOR SPEAKER

### DTC Description

INFOID:000000012471701

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
U1601	FL-DOOR SPEAKER (Front left-door speaker)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Front door speaker LH circuit is shorted to power or ground (terminal 13 or 8)
			Threshold	Front door speaker LH circuit is shorted to power or ground
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Front door speaker LH signal is open (terminal 13 or 8)
			Threshold	Front door speaker LH circuit is open
			Diagnosis delay time	30 seconds or more
U1609	FR-DOOR SPEAKER (Front right-door speaker)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Front door speaker RH circuit is shorted to power or ground (terminal 3 or 4)
			Threshold	Front door speaker RH circuit is shorted to power or ground
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Front door speaker RH signal is open (terminal 3 or 4)
			Threshold	Front door speaker RH circuit is open
			Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

- Front door speaker LH circuit is malfunction
- Front door speaker RH circuit is malfunction
- Front door speaker LH
- Front door speaker RH

### FAIL-SAFE

- No sound from front door speaker LH
- No sound from front door speaker RH

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### ④ With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "MULTI AV" using CONSULT.
5. Check DTC.

#### Is DTC U1601 or U1609 detected?

YES >> Proceed to [AV-140, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: Inspection End.

# U1601, U1609 FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## Diagnosis Procedure

INFOID:000000012471702

### 1. CHECK FRONT DOOR SPEAKER CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. harness connector B110 and front door speaker LH or RH harness connector.
3. Check the continuity between BOSE amp. harness connector B110 and front door speaker LH or RH harness connector.

Front door speaker LH

BOSE amp.		Front door speaker LH		Continuity
Connector	Terminal	Connector	Terminal	
B110	13	D3	1	Yes
	8		2	

Front door speaker RH

BOSE amp.		Front door speaker RH		Continuity
Connector	Terminal	Connector	Terminal	
B110	3	D103	1	Yes
	4		2	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning parts.

### 2. CHECK FRONT DOOR SPEAKER CIRCUIT FOR SHORT TO GROUND

Check the continuity between front door speaker LH or RH harness connector and ground.

Front door speaker LH

(+)			Continuity
Front door speaker LH			
Connector	Terminal		
D3	1	Ground	No
	2		

Front door speaker RH

(+)			Continuity
Front door speaker RH			
Connector	Terminal		
D103	1	Ground	No
	2		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

### 3. CHECK FRONT DOOR SPEAKER CIRCUIT FOR SHORT TO POWER SUPPLY

1. Turn ignition switch ON.
2. Check the voltage between front door speaker LH or RH harness connector and ground.

Front door speaker LH

(+)			Voltage (Approx.)
Front door speaker LH			
Connector	Terminal		
D3	1	Ground	0 V
	2		

# U1601, U1609 FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

Front door speaker RH

(+)		(-)	Voltage (Approx.)
Front door speaker RH			
Connector	Terminal		
D103	1	Ground	0 V
	2		

Is the inspection result normal?

- YES >> Replace front door speaker LH or RH. Refer to [AV-190. "Removal and Installation"](#).
- NO >> Repair or replace malfunctioning parts.

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# U1603, U160B FRONT DOOR TWEETER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## U1603, U160B FRONT DOOR TWEETER

### DTC Description

INFOID:000000012472936

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
U1603	FL-DOOR TWEETER (Front left-door tweeter)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Front door tweeter LH circuit is shorted to power or ground (terminal 24 or 35)
			Threshold	Front door tweeter LH circuit is shorted to power or ground
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Front door tweeter LH signal is open (terminal 24 or 35)
			Threshold	Front door tweeter LH circuit is open
			Diagnosis delay time	30 seconds or more
U160B	FR-DOOR TWEETER (Front right-door tweeter)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Front door tweeter RH circuit is shorted to power or ground (terminal 19 or 32)
			Threshold	Front door tweeter RH circuit is shorted to power or ground
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Front door tweeter RH signal is open (terminal 19 or 32)
			Threshold	Front door tweeter RH circuit is open
			Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

- Front door tweeter LH circuit is malfunction
- Front door tweeter RH circuit is malfunction
- Front door tweeter LH
- Front door tweeter RH

### FAIL-SAFE

- No sound from front door tweeter LH
- No sound from front door tweeter RH

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

#### ④ With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "MULTI AV" using CONSULT.
5. Check DTC.

#### Is DTC U1603 or U160B detected?

- YES >> Proceed to [AV-143, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

# U1603, U160B FRONT DOOR TWEETER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## Diagnosis Procedure

INFOID:000000012472937

### 1. CHECK FRONT DOOR TWEETER CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. harness connector B109 and front door tweeter LH or RH harness connector.
3. Check the continuity between BOSE amp. harness connector B109 and front door tweeter LH or RH harness connector.

Front door tweeter LH

BOSE amp.		Front door tweeter LH		Continuity
Connector	Terminal	Connector	Terminal	
B109	24	D18	1	Yes
	35		2	

Front door tweeter RH

BOSE amp.		Front door tweeter RH		Continuity
Connector	Terminal	Connector	Terminal	
B109	19	D111	1	Yes
	32		2	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning parts.

### 2. CHECK FRONT DOOR TWEETER CIRCUIT FOR SHORT TO GROUND

Check the continuity between front door tweeter LH or RH harness connector and ground.

Front door tweeter LH

(+)		(-)	Continuity
Front door tweeter LH			
Connector	Terminal	Ground	No
D18	1		
	2		

Front door tweeter RH

(+)		(-)	Continuity
Front door tweeter RH			
Connector	Terminal	Ground	No
D111	1		
	2		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

### 3. CHECK FRONT DOOR TWEETER CIRCUIT FOR SHORT TO POWER SUPPLY

1. Turn ignition switch ON.
2. Check the voltage between front door tweeter LH or RH harness connector and ground.

Front door tweeter LH

(+)		(-)	Voltage (Approx.)
Front door tweeter LH			
Connector	Terminal	Ground	0 V
D18	1		
	2		

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AV

## U1603, U160B FRONT DOOR TWEETER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

Front door tweeter RH

(+)		(-)	Voltage (Approx.)
Front door tweeter RH			
Connector	Terminal		
D111	1	Ground	0 V
	2		

Is the inspection result normal?

- YES >> Replace front door tweeter LH or RH. Refer to [AV-189, "Removal and Installation"](#).  
NO >> Repair or replace malfunctioning parts.



# U1626, U162E TWEETER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## U1626, U162E TWEETER

### DTC Description

INFOID:000000012476202

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
U1626	F-INST L-TWEETER (Front left-tweeter)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Front tweeter LH circuit is shorted to power or ground (terminal 16 or 29)
			Threshold	Front tweeter LH circuit is shorted to power or ground
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Front tweeter LH signal is open (terminal 16 or 29)
			Threshold	Front tweeter LH circuit is open
			Diagnosis delay time	30 seconds or more
U162E	F-INST R-TWEETER (Front right-tweeter)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Front tweeter RH circuit is shorted to power or ground (terminal 31 or 30)
			Threshold	Front tweeter RH circuit is shorted to power or ground
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Front tweeter RH signal is open (terminal 31 or 30)
			Threshold	Front tweeter RH circuit is open
			Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

- Tweeter LH circuit is malfunction
- Tweeter RH circuit is malfunction
- Tweeter LH
- Tweeter RH

### FAIL-SAFE

- No sound from tweeter LH
- No sound from tweeter RH

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### ④ With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "MULTI AV" using CONSULT.
5. Check DTC.

#### Is DTC U1626 or U162E detected?

YES >> Proceed to [AV-146, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: Inspection End.

# U1626, U162E TWEETER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## Diagnosis Procedure

INFOID:000000012476203

### 1. CHECK TWEETER CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. harness connector B109 and tweeter LH or RH harness connector.
3. Check the continuity between BOSE amp. harness connector B109 and tweeter LH or RH harness connector.

Tweeter LH

BOSE amp.		Tweeter LH		Continuity
Connector	Terminal	Connector	Terminal	
B109	16	M143	1	Yes
	29		2	

Tweeter RH

BOSE amp.		Tweeter RH		Continuity
Connector	Terminal	Connector	Terminal	
B109	31	M144	1	Yes
	30		2	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning parts.

### 2. CHECK TWEETER CIRCUIT FOR SHORT TO GROUND

Check the continuity between tweeter LH or RH harness connector and ground.

Tweeter LH

(+)			Continuity
Tweeter LH			
Connector	Terminal		
N143	1	Ground	No
	2		

Tweeter RH

(+)			Continuity
Tweeter RH			
Connector	Terminal		
M144	1	Ground	No
	2		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

### 3. CHECK TWEETER CIRCUIT FOR SHORT TO POWER SUPPLY

1. Turn ignition switch ON.
2. Check the voltage between TWEETER LH or RH harness connector and ground.

Tweeter LH

(+)			Voltage (Approx.)
Tweeter LH			
Connector	Terminal		
M143	1	Ground	0 V
	2		

# U1626, U162E TWEETER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

Tweeter RH

(+)		(-)	Voltage (Approx.)
Tweeter RH			
Connector	Terminal		
M144	1	Ground	0 V
	2		

Is the inspection result normal?

- YES >> Replace tweeter LH or RH. Refer to [AV-187. "Removal and Installation"](#).
- NO >> Repair or replace malfunctioning parts.

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# U162A CENTER SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## U162A CENTER SPEAKER

### DTC Description

INFOID:000000012476204

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
U162A	F-INST C-SPEAKER (Center speaker)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Center speaker circuit is shorted to power or ground (terminal 17 or 18)
			Threshold	Center speaker circuit is shorted to power or ground
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Center speaker signal is open (terminal 17 or 18)
			Threshold	Center speaker circuit is open
			Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

- Center speaker circuit is malfunction
- Center speaker

### FAIL-SAFE

No sound from front center squawker

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

#### Ⓟ With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "MULTI AV" using CONSULT.
5. Check DTC.

#### Is DTC U162A detected?

- YES >> Proceed to [AV-148, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012476205

#### 1. CHECK FRONT CENTER SQUAWKER CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. harness connector B109 and center speaker harness connector M301.
3. Check the continuity between BOSE amp. harness connector B109 and center speaker harness connector M301.

BOSE amp.		Center speaker		Continuity
Connector	Terminal	Connector	Terminal	
B109	17	M301	1	Yes
	18		2	

#### Is the inspection result normal?

- YES >> GO TO 2.

# U162A CENTER SPEAKER

[MULTI AV SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair or replace malfunctioning parts.

## 2. CHECK CENTER SPEAKER CIRCUIT FOR SHORT TO GROUND

Check the continuity between center speaker harness connector M301 and ground.

(+)		(-)	Continuity
Center speaker			
Connector	Terminal	Ground	No
M301	1		
	2		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

## 3. CHECK CENTER SPEAKER CIRCUIT FOR SHORT TO POWER SUPPLY

1. Turn ignition switch ON.
2. Check the voltage between center speaker harness connector M301 and ground.

(+)		(-)	Voltage (Approx.)
Center speaker			
Connector	Terminal	Ground	0 V
M301	1		
	2		

Is the inspection result normal?

YES >> Replace center speaker. Refer to [AV-188. "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

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# U170A, U170E REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## U170A, U170E REAR DOOR SPEAKER

### DTC Description

INFOID:000000012476206

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
U170A	RL-DOOR SPEAKER (Rear left-door speaker)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Rear door speaker LH circuit is shorted to power or ground (terminal 22 or 33)
			Threshold	Rear door speaker LH circuit is shorted to power or ground
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Rear door speaker LH signal is open (terminal 22 or 33)
			Threshold	Rear door speaker LH circuit is open
			Diagnosis delay time	30 seconds or more
U170E	RR-DOOR SPEAKER (Rear right-door speaker)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Rear door speaker RH circuit is shorted to power or ground (terminal 23 or 34)
			Threshold	Rear door speaker RH circuit is shorted to power or ground
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Rear door speaker RH signal is open (terminal 23 or 34)
			Threshold	Rear door speaker RH circuit is open
			Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

- Rear door speaker LH circuit is malfunction
- Rear door speaker RH circuit is malfunction
- Rear door speaker LH
- Rear door speaker RH

### FAIL-SAFE

- No sound from rear door speaker LH
- No sound from rear door speaker RH

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### ④ With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "MULTI AV" using CONSULT.
5. Check DTC.

#### Is DTC U170A or U170E detected?

- YES >> Proceed to [AV-151, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

# U170A, U170E REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

INFOID:000000012476207

## Diagnosis Procedure

### 1. CHECK REAR DOOR SPEAKER CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect BOSE speaker amp. harness connector B109 and rear door speaker LH or RH harness connector.
3. Check the continuity between BOSE speaker amp. harness connector B109 and rear door speaker LH or RH harness connector.

Rear door speaker LH

BOSE speaker amp.		Rear door speaker LH		Continuity
Connector	Terminal	Connector	Terminal	
B109	22	D202	1	Yes
	33		2	

Rear door speaker RH

BOSE speaker amp.		Rear door speaker RH		Continuity
Connector	Terminal	Connector	Terminal	
B109	23	D302	1	Yes
	34		2	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning parts.

### 2. CHECK REAR DOOR SPEAKER CIRCUIT FOR SHORT TO GROUND

Check the continuity between rear door speaker LH or RH harness connector and ground.

Rear door speaker LH

(+)		(-)	Continuity
Rear door speaker LH			
Connector	Terminal	Ground	No
D202	1		
	2		

Rear door speaker RH

(+)		(-)	Continuity
Rear door speaker RH			
Connector	Terminal	Ground	No
D302	1		
	2		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

### 3. CHECK REAR DOOR SPEAKER CIRCUIT FOR SHORT TO POWER SUPPLY

1. Turn ignition switch ON.
2. Check the voltage between rear door speaker LH or RH harness connector and ground.

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# U170A, U170E REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

Rear door speaker LH

(+)		(-)	Voltage (Approx.)
Rear door speaker LH			
Connector	Terminal	Ground	0 V
D202	1		
	2		

Rear door speaker RH

(+)		(-)	Voltage (Approx.)
Rear door speaker RH			
Connector	Terminal	Ground	0 V
D302	1		
	2		

Is the inspection result normal?

- YES >> Replace rear door speaker LH or RH. Refer to [AV-191, "Removal and Installation"](#).  
NO >> Repair or replace malfunctioning parts.



# U1721, U1729 REAR SUBWOOFER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## U1721, U1729 REAR SUBWOOFER

### DTC Description

INFOID:0000000012476211

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
U1721	RL-PSHELF SUBWOOFER (Rear left-subwoofer)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Rear subwoofer LH circuit is shorted to power or ground (terminal 5 or 6)
			Threshold	Rear subwoofer LH circuit is shorted to power or ground
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Rear subwoofer LH signal is open (terminal 5 or 6)
			Threshold	Rear subwoofer LH circuit is open
			Diagnosis delay time	30 seconds or more
U1729	RR-PSHELF SUBWOOFER (Rear right-subwoofer)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Rear subwoofer RH circuit is shorted to power or ground (terminal 1 or 2)
			Threshold	Rear subwoofer RH circuit is shorted to power or ground
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Rear subwoofer RH signal is open (terminal 1 or 2)
			Threshold	Rear subwoofer RH circuit is open
			Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

- Rear satellite speaker LH circuit is malfunction
- Rear satellite speaker RH circuit is malfunction
- Rear satellite speaker LH
- Rear satellite speaker RH

### FAIL-SAFE

- No sound from rear satellite speaker LH
- No sound from rear satellite speaker RH

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### ④ With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "MULTI AV" using CONSULT.
5. Check DTC.

#### Is DTC U1722 or U172A detected?

YES >> Proceed to [AV-154, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

# U1721, U1729 REAR SUBWOOFER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

INFOID:000000012476212

## Diagnosis Procedure

### 1. CHECK REAR SUBWOOFER CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. harness connector B110 and rear subwoofer LH or RH harness connector.
3. Check the continuity between BOSE amp. harness connector B110 and rear subwoofer LH or RH harness connector.

Rear subwoofer LH

BOSE amp.		Rear subwoofer LH		Continuity
Connector	Terminal	Connector	Terminal	
B110	5	B106	1	Yes
	6		2	

Rear subwoofer RH

BOSE amp.		Rear subwoofer RH		Continuity
Connector	Terminal	Connector	Terminal	
B110	1	B107	1	Yes
	2		2	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning parts.

### 2. CHECK REAR SUBWOOFER CIRCUIT FOR SHORT TO GROUND

Check the continuity between rear subwoofer LH or RH harness connector and ground.

Rear subwoofer LH

(+)			Continuity
Rear subwoofer LH			
Connector	Terminal		
B106	1	Ground	No
	2		

Rear subwoofer RH

(+)			Continuity
Rear subwoofer RH			
Connector	Terminal		
B107	1	Ground	No
	2		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

### 3. CHECK REAR SUBWOOFER CIRCUIT FOR SHORT TO POWER SUPPLY

1. Turn ignition switch ON.
2. Check the voltage between rear subwoofer LH or RH harness connector and ground.

Rear subwoofer LH

(+)			Voltage (Approx.)
Rear subwoofer LH			
Connector	Terminal		
B106	1	Ground	0 V
	2		

# U1721, U1729 REAR SUBWOOFER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

Rear subwoofer RH

(+)		(-)	Voltage (Approx.)
Rear subwoofer RH			
Connector	Terminal		
B107	1	Ground	0 V
	2		

Is the inspection result normal?

- YES >> Replace rear subwoofer LH or RH. Refer to [AV-192. "Removal and Installation"](#).
- NO >> Repair or replace malfunctioning parts.

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# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## POWER SUPPLY AND GROUND CIRCUIT

### AV CONTROL UNIT

#### AV CONTROL UNIT : Diagnosis Procedure

INFOID:000000012193772

#### 1. CHECK FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown:

Power source	Fuse No.	Capacity
Battery	15	20 A
Ignition switch ACC or ON (with Telematics system)	21	10 A
Ignition switch ON or START	30	10 A

#### Is the fuse blown?

- YES >> Replace the blown fuse after repairing the affected circuit.  
NO >> GO TO 2.

#### 2. CHECK AV CONTROL UNIT BATTERY POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect AV control unit harness connector M162.
3. Check the voltage between AV control unit harness connector M162 and ground.

(+)		(-)	Voltage (Approx.)
AV control unit			
Connector	Terminal	Ground	Battery voltage
M162	19		

#### Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Perform trouble diagnosis for battery power supply circuit.

#### 3. CHECK AV CONTROL UNIT ACCESSORY POWER SUPPLY

1. Turn ignition switch ON.
2. Check the voltage between AV control unit harness connector M163 and ground.

(+)		(-)	Voltage (Approx.)
AV control unit			
Connector	Terminal	Ground	Battery voltage
M163	7		

#### Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Perform trouble diagnosis for accessory power supply circuit.

#### 4. CHECK AV CONTROL UNIT IGNITION POWER SUPPLY

1. Check the voltage between AV control unit harness connector M163 and ground.

(+)		(-)	Voltage (Approx.)
AV control unit			
Connector	Terminal	Ground	Battery voltage
M163	31		

#### Is the inspection result normal?

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

- YES >> GO TO 4.  
NO >> Perform trouble diagnosis for accessory power supply circuit.

## 5.CHECK CASE GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check the continuity between AV control unit case and ground.

Is the inspection result normal?

- YES >> Inspection End.  
NO >> Repair or replace malfunctioning parts.

## BOSE AMP.

### BOSE AMP. : Diagnosis Procedure

INFOID:000000012193773

## 1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown:

Power source	Fuse No.	Capacity
Battery	11	15 A
	12	15 A
Ignition switch ACC or ON (without telematics system)	21	10 A

Is the fuse blown?

- YES >> Replace the blown fuse after repairing the affected circuit.  
NO >> GO TO 2.

## 2.CHECK BOSE AMP. BATTERY POWER SUPPLY

Check the voltage between BOSE amp. harness connector B110 and ground.

(+)		(-)	Voltage (Approx.)
BOSE amp.			
Connector	Terminal	Ground	Battery voltage
B110	10		
	11		

Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Perform trouble diagnosis for battery power supply circuit.

## 3.CHECK BOSE AMP. IGNITION POWER SUPPLY

1. Turn ignition switch to ACC or ON.
2. Disconnect BOSE amp. harness connector B120.
3. Check the continuity between BOSE amp. harness connector B120 and ground.

(+)		(-)	Voltage (Approx.)
BOSE amp.			
Connector	Terminal	Ground	Battery voltage
B120	53		

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Perform trouble diagnosis for ignition power supply circuit.

## 4.CHECK BOSE AMP. GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. harness connector B110.

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AV

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

3. Check the continuity between BOSE amp. harness connector B110 and ground.

(+)		(-)	Continuity
BOSE amp.			
Connector	Terminal		
B110	7	Ground	Yes
	12		

Is the inspection result normal?

- YES >> Inspection End.
- NO >> Repair or replace malfunctioning parts.

TCU

TCU : Diagnosis Procedure

INFOID:0000000012385859

## 1.CHECK FUSE

Check if the fuse is burned out.

Power source	Fuse No.	Capacity
Battery	15	20 A
Ignition switch ACC or ON	21	10 A
Ignition switch ON or START	30	10 A

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Replace the fuse after repairing the applicable circuit.

## 2.CHECK BATTERY POWER SUPPLY

Check the voltage between the TCU harness connector M173 and ground.

(+)		(-)	Voltage (Approx.)
TCU			
Connector	Terminal		
M173	1	Ground	Battery Voltage

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Repair or replace harness between TCU and fuse.

## 3.CHECK ACC POWER SUPPLY

1. Turn ignition switch to ACC or ON.
2. Disconnect TCU harness connector M173.
3. Check the continuity between TCU harness connector M173 and ground.

(+)		(-)	Voltage (Approx.)
TCU			
Connector	Terminal		
M173	2	Ground	Battery Voltage

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair or replace harness between TCU and fuse.

## 4.CHECK GROUND CIRCUIT

1. Turn ignition switch to ON or START.

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

2. Disconnect TCU harness connector.
3. Check the continuity between TCU harness connector M173 and ground.

A

TCU		(-)	Voltage (Approx.)
Connector	Terminal		
M173	10	Ground	Battery Voltage

B

C

Is the inspection result normal?

- YES >> Inspection End.  
NO >> Repair or replace malfunctioning parts.

D

## 5.CHECK GROUND CIRCUIT

1. Turn ignition switch to ON or START.
2. Disconnect TCU harness connector.
3. Check the continuity between TCU harness connector M173 and ground.

E

TCU		(-)	Continuity
(+)			
TCU	(+)		
M173	10	Ground	Yes

F

G

Is the inspection result normal?

- YES >> Inspection End.  
NO >> Repair or replace malfunctioning parts.

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# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

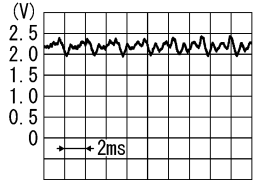
## MICROPHONE SIGNAL CIRCUIT

### Diagnosis Procedure

INFOID:000000012193774

#### 1. CHECK MICROPHONE SIGNAL

- Turn ignition switch ON.
- Check the signal between AV control unit harness connector M163 per the following condition:

Connector	AV control unit		Condition	Reference value
	(+)	(-)		
Terminal				
M163	46	47	Give a voice.	 <p style="text-align: right;">PKIB5037J</p>

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-183. "Removal and Installation"](#).  
 NO >> GO TO 2.

#### 2. CHECK VOLTAGE MICROPHONE VCC

- Turn ignition switch OFF.
- Disconnect microphone harness connector R22.
- Turn ignition switch ON.
- Check the voltage between microphone harness connector R22.

Connector	Microphone		Voltage (Approx.)
	(+)	(-)	
Terminal			
R22	4	1	5.0 V

Is the inspection result normal?

- YES >> Replace microphone. Refer to [AV-199. "Removal and Installation"](#).  
 NO >> GO TO 3.

#### 3. CHECK MICROPHONE CIRCUIT FOR OPEN

- Disconnect AV control unit harness connector M163.
- Check continuity between AV control unit harness connector M163 and microphone harness connector R22.

AV control unit		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
M163	46	R22	1	Yes
	47		4	
	48		2	

Is the inspection result normal?

- YES >> GO TO 4.  
 NO >> Repair or replace malfunctioning parts.

#### 4. CHECK MICROPHONE CIRCUIT FOR SHORT

Check the continuity between AV control unit harness connector M163 and ground.



# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

(+)		(-)	Continuity
AV control unit			
Connector	Terminal		
M163	46	Ground	No
	47		

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-183, "Removal and Installation"](#).
- NO >> Repair or replace malfunctioning parts.

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AV

# FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## FRONT DOOR SPEAKER

### Diagnosis Procedure

INFOID:000000012416906

Regarding Wiring Diagram information, refer to [AV-57. "Wiring Diagram"](#).

### 1. CONNECTOR CHECK

Check the AV control unit and speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

### 2. CHECK FRONT DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect AV control unit connector M160 and suspected front door speaker connector.
2. Check continuity between AV control unit connector M160 and suspected front door speaker connector.

AV control unit		Front door speaker		Continuity
Connector	Terminal	Connector	Terminal	
M160	2	D3 (LH)	1	Yes
	3		2	
	11	D103 (RH)	1	
	12		2	

3. Check continuity between audio unit connector M160 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M160	2	—	No
	3		
	11		
	12		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

### 3. CHECK FRONT DOOR SPEAKER SIGNAL

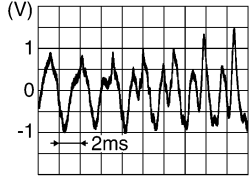
1. Connect audio unit connector M160 and suspected front door speaker connector.
2. Turn ignition switch to ACC.
3. Push audio unit POWER switch.
4. Check signal between audio unit connector M160 and ground.

AV control unit connector M160		Condition	Reference value
(+)	(-)		
Terminal	Terminal		

# FRONT DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

2	3	Audio signal output	
11	12		

Is the inspection result normal?

- YES >> Replace front door speaker. Refer to [AV-190. "Removal and Installation"](#).
- NO >> Replace AV control unit. Refer to [AV-183. "Removal and Installation"](#).

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AV

## REAR DOOR SPEAKER

### Diagnosis Procedure

INFOID:000000012416908

Regarding Wiring Diagram information, refer to [AV-57. "Wiring Diagram"](#).

### 1. CONNECTOR CHECK

Check the audio unit and speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

### 2. CHECK REAR DOOR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect AV control unit connector M160 and suspected rear door speaker connector.
2. Check continuity between AV control unit connector M160 and suspected rear door speaker connector.

AV control unit		Rear door speaker		Continuity
Connector	Terminal	Connector	Terminal	
M160	4	D202 (LH)	1	Yes
	5		2	
	13	D302 (RH)	1	
	14		2	

3. Check continuity between audio unit connector M160 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M160	4	—	No
	5		
	13		
	14		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

### 3. CHECK REAR DOOR SPEAKER SIGNAL

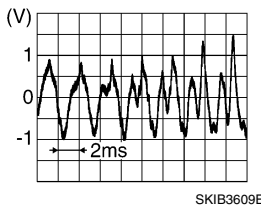
1. Connect AV control unit connector M160 and suspected rear door speaker connector.
2. Turn ignition switch to ACC.
3. Push audio unit POWER switch.
4. Check signal between AV control unit connector M160 and ground.

AV control unit connector M160		Condition	Reference value
(+)	(-)		
Terminal	Terminal		

# REAR DOOR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

4	5	Audio signal output	
13	14		

Is the inspection result normal?

- YES >> Replace rear door speaker. Refer to [AV-191. "Removal and Installation"](#).
- NO >> Replace AV control unit. Refer to [AV-183. "Removal and Installation"](#).

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AV

## REAR SPEAKER

### Diagnosis Procedure

INFOID:000000012476347

Regarding Wiring Diagram information, refer to [AV-57. "Wiring Diagram"](#).

### 1. CONNECTOR CHECK

Check the AV control unit and speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

### 2. CHECK REAR SPEAKER SIGNAL CIRCUIT CONTINUITY

1. Disconnect AV control unit connector M160 and suspected rear speaker connector.
2. Check continuity between AV control unit connector M160 and suspected rear speaker connector.

AV control unit		Rear door speaker		Continuity
Connector	Terminal	Connector	Terminal	
M160	4	B73 (LH)	1	Yes
	5		2	
	13	B72 (RH)	1	
	14		2	

3. Check continuity between audio unit connector M160 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M160	4	—	No
	5		
	13		
	14		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

### 3. CHECK REAR SPEAKER SIGNAL

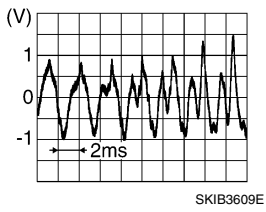
1. Connect AV control unit connector M160 and suspected rear speaker connector.
2. Turn ignition switch to ACC.
3. Push audio unit POWER switch.
4. Check signal between AV control unit connector M160 and ground.

AV control unit connector M160		Condition	Reference value
(+)	(-)		
Terminal	Terminal		

# REAR SPEAKER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

4	5	Audio signal output	
13	14		

Is the inspection result normal?

- YES >> Replace rear speaker. Refer to [AV-192. "Removal and Installation"](#).
- NO >> Replace AV control unit. Refer to [AV-183. "Removal and Installation"](#).

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AV

## TWEETER

## Diagnosis Procedure

INFOID:000000012435139

Regarding Wiring Diagram information, refer to [GI-41, "Intermittent Incident"](#).

**1. CONNECTOR CHECK**

Check the AV control unit, BOSE speaker amp., speaker connectors for the following:

- Proper connection
- Damage
- Disconnected or loose terminals

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair the terminals or connectors.

**2. CHECK INSTRUMENT PANEL TWEETER SIGNAL CIRCUIT CONTINUITY**

1. Disconnect AV control unit connector M162 and suspected tweeter connector.
2. Check continuity between AV control unit connector M162 and suspected tweeter connector.

AV control unit		Tweeter		Continuity
Connector	Terminal	Connector	Terminal	
M162	2	M143 (LH)	1	Yes
	3		2	
	11	M144 (RH)	1	
	12		2	

3. Check continuity between AV control unit connector M162 and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M162	2	—	No
	3		
	11		
	12		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace harness or connectors.

**3. CHECK TWEETER SIGNAL**

1. Connect AV control unit connector M162 and suspected tweeter connector.
2. Turn ignition switch to ACC.
3. Push audio unit POWER switch.
4. Check signal between AV control unit connector M162 and ground.

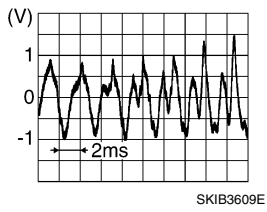
AV control unit connector M162		Condition	Reference value
(+)	(-)		
Terminal	Terminal		



# TWEETER

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

2	3	Audio signal output	
11	12		

Is the inspection result normal?

- YES >> Replace tweeter. Refer to [AV-187. "Removal and Installation"](#).
- NO >> Replace AV control unit. Refer to [AV-183. "Removal and Installation"](#).

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AV

# STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MULTI AV SYSTEM]

## STEERING SWITCH






### Diagnosis Procedure

INFOID:000000012416911

Regarding Wiring Diagram information, refer to [AV-57. "Wiring Diagram"](#).

### 1. CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

1. Turn ignition switch OFF.
2. Disconnect combination switch connector M149.
3. Check resistance between combination switch connector terminals.

Combination switch connector M149		Condition	Resistance $\Omega$ (Approx.)
Terminal	Terminal		
16	19	Depress SOURCE switch.	1
		Depress $\Delta$ switch.	121
		Depress $\nabla$ switch.	321
		Depress  switch.	723
		Depress ENTER switch.	2023
17		Depress -  switch.	1
		Depress  + switch.	121
		Depress  switch.	321
		Depress  switch.	723
		Depress DISP switch.	2023

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace steering switches. Refer to [AV-184. "Removal and Installation"](#).

### 2. CHECK HARNESS BETWEEN COMBINATION SWITCH AND COMBINATION METER

1. Disconnect combination meter connector M24 and combination switch connector M30.
2. Check continuity between combination meter connector M24 and combination switch connector M30.

Combination meter		Combination switch		Continuity
Connector	Terminal	Connector	Terminal	
M23	21	M30	11	Yes
	22		9	
	23		8	

3. Check continuity between combination meter connector M24 and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M24	21	—	No
	22		
	23		

Is the inspection result normal?

# STEERING SWITCH

[MULTI AV SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

- YES >> GO TO 3.
- NO >> Repair or replace harness or connectors.

## 3. CHECK COMBINATION SWITCH

Check continuity between combination switch connectors M30 and M149.

Combination switch				Continuity
Connector	Terminal	Connector	Terminal	
M30	8	M149	17	Yes
	9		16	
	11		19	

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Replace spiral cable. Refer to [SR-16, "Removal and Installation"](#).

## 4. CHECK HARNESS BETWEEN COMBINATION METER AND AUDIO UNIT

1. Disconnect AV control connector M163.
2. Check continuity between combination meter connector M23 and AV control unit connector M163.

Combination meter		Audio unit		Continuity
Connector	Terminal	Connector	Terminal	
M23	49	M163	23	Yes
	50		24	

3. Check continuity between combination meter connector M23 and ground.

Combination meter		Ground	Continuity
Connector	Terminal		
M23	49	—	No
	50		

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-183, "Removal and Installation"](#).
- NO >> Repair or replace harness or connectors.

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## USB CONNECTOR

### Diagnosis Procedure

INFOID:000000012435134

Regarding Wiring Diagram information, refer to [AV-57. "Wiring Diagram"](#).

#### 1. CHECK FRONT USB INTERFACE HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M164, or M158, and USB interface-1 connector M190, or USB interface-2 connector M191.
3. Check continuity between audio unit connector M164, or M158, and USB interface-1 connector M190, or USB interface-2 connector M191.

Audio unit		Front USB interfaces		Continuity
Connector	Terminal	Connector	Terminal	
M164	61	M190 (USB interface-1)	1	Yes
	63		3	
	64		4	
	65		5	
	66		6	
M158	76	M191 (USB interface-2)	1	Yes
	78		3	
	79		4	
	80		5	
	81		6	

4. Check continuity between audio unit connector M164, or M158, and ground.

Audio unit		—	Continuity
Connector	Terminal		
M164	63	Ground	No
	64		
M158	84	Ground	No
	85		

**Is the inspection result normal?**

- YES >> Replace the front USB interface. Refer to [AV-186. "Removal and Installation"](#).  
 NO >> Repair or replace harness or connectors.

# AUXILIARY INPUT JACK

[MULTI AV SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

## AUXILIARY INPUT JACK

### Diagnosis Procedure

INFOID:000000012416913

Regarding Wiring Diagram information, refer to [AV-57. "Wiring Diagram"](#).

#### 1. CHECK AUX IN JACK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M163 and AUX in jack connector M172.
3. Check continuity between AV control unit connector M163 and AUX in jack connector M172.

AV control unit		AUX in jack		Continuity
Connector	Terminal	Connector	Terminal	
M163	49	M172	1	Yes
	50		4	
	51		3	

4. Check continuity between audio unit connector M163 and ground.

AV control unit		—	Continuity
Connector	Terminal		
M163	49	Ground	No
	50		

Is the inspection result normal?

- YES >> Replace the AUX in jack. Refer to [AV-186. "Removal and Installation"](#).  
NO >> Repair or replace harness or connectors.

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## SYMPTOM DIAGNOSIS

### MULTI AV SYSTEM SYMPTOMS

#### Symptom Table

INFOID:0000000012193775

#### RELATED TO NAVIGATION

Symptom	Check items	Probable malfunction location
MAP is not displayed	"Map data cannot be read. Please confirm~" is displayed on the screen.	Check whether SD card is inserted correctly.
Fuel economy display or vehicle setting operation is abnormal.	There is a malfunction in the CONSULT "Self-Diagnostic Result" of "MULTI AV". Refer to <a href="#">AV-40. "CONSULT Function"</a> .	Perform detected DTC diagnosis.
	There is no malfunction in the CONSULT "Self-diagnostic Results" of "MULTI AV". Refer to <a href="#">AV-40. "CONSULT Function"</a> .	Ignition signal circuit malfunction. Refer to <a href="#">EC-555. "Diagnosis Procedure"</a> .
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.	Voice guidance signal circuit malfunction.

#### 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

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

**NOTE:**  
The customer's phone may be required, depending upon their concern.
3. 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.
4. Go to "www.nissanusa.com/bluetooth".
  - a. Using the website's search engine, find out if the customer's phone is on the approved list.
  - b. 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.
  - c. If the feature related to the customer's concern shows as "N" (not compatible):  
Stop diagnosis here. If the customer still wants the feature to function, they will need to get an approved phone showing the feature as "Y" (compatible) in the "Basic Features" list.
  - d. If the feature related to the customer's concern shows as "Y" (compatible):  
Perform diagnosis as per the following table:

# MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[MULTI AV SYSTEM]

Symptom	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.		A
Hands-free phone cannot be established.	<ul style="list-style-type: none"> <li>Hands-free phone operation can be made, but the communication cannot be established.</li> <li>Hands-free phone operation can be performed; however, voice between each other cannot be heard during the conversation.</li> </ul>	AV control unit malfunction. Replace AV control unit. Refer to <a href="#">AV-183, "Removal and Installation"</a> .	B C
The other party's voice cannot be heard by hands-free phone.	Check the "Voice Microphone Test" in Confirmation/Adjustment mode if sound is heard.		D
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.		E
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to <a href="#">AV-160, "Diagnosis Procedure"</a> .	F
The system cannot be operated.	Steering switches "VOL UP", "VOL DOWN" and, "↶" switches work, but "↷" switch does not work.	Steering switch signal A circuit malfunction. Refer to <a href="#">AV-170, "Diagnosis Procedure"</a> .	G
	<ul style="list-style-type: none"> <li>The voice recognition can be controlled.</li> <li>Steering switch "↷" switch work, but "VOL UP", "VOL DOWN" and, "↶", switches do not work.</li> </ul>	Steering switch signal B circuit malfunction. Refer to <a href="#">AV-170, "Diagnosis Procedure"</a> .	H

## RELATED TO AUDIO

Symptom	Check items	Probable malfunction location	
The disk cannot be removed.	—	Replace the AV Control Unit. Refer to <a href="#">AV-183, "Removal and Installation"</a> .	I J
No sound comes out or the level of the sound is low.	No sound from all speakers.	Without BOSE system: <ul style="list-style-type: none"> <li>Sound signal circuit malfunction. Refer to <a href="#">AV-113, "Diagnosis Procedure"</a>.</li> </ul>	K
		With BOSE system: <ul style="list-style-type: none"> <li>Sound signal circuit malfunction. Refer to <a href="#">AV-157, "BOSE AMP. : Diagnosis Procedure"</a>.</li> <li>BOSE amp. power supply and ground circuit malfunction. Refer to <a href="#">AV-157, "BOSE AMP. : Diagnosis Procedure"</a>.</li> </ul>	L
	Sound is not heard from woofer.	Sound signal (woofer) circuit malfunction.	M

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# MULTI AV SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[MULTI AV SYSTEM]

Symptom	Check items	Probable malfunction location
Noise is mixed with audio.	Noise comes from all speakers.	Without BOSE system: • Malfunction in AV control unit.  With BOSE system: • Malfunction in AV control unit. • Malfunction in BOSE amp.
	Noise comes only from a certain speaker (front right, front left, rear right, or rear left).	Without BOSE system: • Poor connector connection of speaker. • Sound signal circuit malfunction. • Malfunction in speaker. • Poor installation of speaker (e.g. backlash and looseness). • Malfunction in display control unit. • Malfunction in AV control unit.  With BOSE system: • Poor connector connection of speaker. • Sound signal circuit malfunction. Refer to <a href="#">AV-157, "BOSE AMP. : Diagnosis Procedure"</a> . • Malfunction in speaker. • Poor installation of speaker (e.g. backlash and looseness) • Malfunction in AV control unit. • Malfunction in BOSE amp.
	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.	• Other audio sounds are normal. • 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).  • Antenna amp. ON signal circuit malfunction. • Poor connector connection of antenna or antenna feeder.

## RELATED TO STEERING SWITCH

Symptom	Probable malfunction location
None of the steering switch operations work.	Steering switch malfunction. Replace steering wheel. Refer to <a href="#">ST-30, "Removal and Installation"</a> .
Only specified switch cannot be operated.	
Steering switches "D", "MENU UP", "MENU DOWN", "⏏" and, "OK" do not work.	Steering switch signal A circuit malfunction. Refer to <a href="#">AV-170, "Diagnosis Procedure"</a> .
Steering switches "VOL UP", "VOL DOWN" and "⏏", do not work.	Steering switch signal B circuit malfunction. Refer to <a href="#">AV-170, "Diagnosis Procedure"</a> .

## RELATED TO USB INTERFACE

### NOTE:

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

Symptom	Probable malfunction location
No voice sound is heard when AUX mode is selected.	AUX sound signal circuit between USB interface and AV control unit.
iPod® or USB memory cannot be recognized.	• USB harness malfunction. • USB interface malfunction.

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



# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV SYSTEM]

## NORMAL OPERATING CONDITION

### Description

INFOID:000000012193776

**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 system is in the video mode.	Press "AUDIO" to change the mode.
	The interior of the vehicle becomes a little more than 80°C (176°F), the protection of the display reacts, 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" switch.
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 of 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.

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

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV SYSTEM]

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 voice tag.	1. Ensure that the voice tag requested matches what was originally stored. This can be confirmed by giving the "Address Book" Directory or Phone Directory command.
	2. Replace one of the voice tags being confused with a different voice tag.

### 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 a 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", refer to "OWNER'S MANUAL".
The system consistently selects the wrong voice tag	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 are 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 it 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 >

[MULTI AV SYSTEM]

Symptom	Cause and countermeasure
Cannot play	Check if the CD was inserted correctly.
	Check if the CD is scratched or dirty.
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.
	If there is a mixture of music CD files (CD-DA data) and MP3/WMA/AAC/M4A files on a CD, only the music CD files (CD-DA data) will be played.
	Files with extensions other than ".MP3", ".WMA", ".AAC", ".M4A", ".mp3", ".wma", ".aac" or ".m4a" cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format. This may occur depending on the variation or the setting of MP3/WMA/AAC/M4A writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the disc.
Poor sound quality	Check if the CD is scratched or dirty.
	It takes a relatively long time before the music starts playing.
	Music cuts off or skips
Skipping with high bit rate files	Check if the CD is scratched or dirty.
Move immediately to the next song when playing	If there are many folder or file levels on the MP3/WMA/AAC/M4A CD or if it is a multi-session disc, some time may be required before the music starts playing.
The songs do not play in the desired order.	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width might not match the specifications. Try using the slowest writing speed.
Poor reception only from a certain radio broadcast station.	Skipping may occur with large quantities of data such as for high bit rate data.
Buzz/rattle sound from speaker	When a non-MP3/WMA/AAC/M4A file has been given an extension of ".MP3", ".WMA", ".AAC", ".M4A", ".mp3", ".wma", ".aac" or ".m4a" or when play is prohibited by copyright protection, the player will skip to the next song.
	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.
	Check incoming radio wave signal strength of applicable broadcast station.
	The majority of rattle sounds are not indicative of an issue with the speaker; usually something nearby the speaker is causing the rattle.

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

**NOTE:**

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

**RELATED TO 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.

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## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV SYSTEM]

Symptom	Possible cause	Possible solution
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.
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 Nissan 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.

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV SYSTEM]

Symptom	Possible cause	Possible solution
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 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.
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 close 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. In some cases, 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 guidance is set to OFF.	Turn ON voice guidance.
	Route guidance is set to OFF.	Turn ON route 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 turns are made.	Follow all traffic rules and regulations.

### RELATED TO HANDS-FREE PHONE

Symptom	Cause and countermeasure
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 the telephone service area.</li> <li>The vehicle is in an area where it is difficult to receive radio waves, such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area.</li> <li>The cellular phone is locked to prevent it from being dialed.</li> </ul> <b>NOTE:</b> While a cellular phone is connected through the Bluetooth® wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth® Hands-Free Phone System cannot charge cellular phones.
The other party's voice cannot be heard by hands-free phone.	When the radio wave condition is not ideal or ambient sound is too loud, it may be difficult to hear the other person's voice during a call.
Poor sound quality.	Do not place the cellular phone in an area surrounded by metal or far away from the in-vehicle phone module to prevent tone quality degradation and wireless connection disruption.

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MULTI AV SYSTEM]

RELATED TO NISSANCONNECT<sup>SM</sup>

Symptom	Possible cause	Possible solution
The system cannot connect to the NISSANCONNECT <sup>SM</sup> center.	A subscription for the NISSANCONNECT <sup>SM</sup> service has not been established.	Sign up for a subscription to the NISSANCONNECT <sup>SM</sup> service. For details about subscriptions, contact a NISSAN dealer or visit the NISSANCONNECT <sup>SM</sup> center website.
	The communication line is busy.	Try again after a short period of time.
	The vehicle is in a location where it is difficult to receive radio waves.	When the vehicle moves to an area where radio waves can be transmitted sufficiently, communication will be restored. When the icon on the display shows that the vehicle is inside the communication area, the system can be used.
	Radio wave reception for TCU is insufficient.	When the vehicle moves to an area where radio waves can be transmitted sufficiently, communication will be restored. When the icon on the display shows that the vehicle is inside the communication area, the system can be used.
Some of the items that are displayed on the menu screen cannot be selected.	The vehicle is being driven and some menu items are disabled.	The vehicle is being driven. Stop the vehicle in a safe location and apply the parking brake before operating the functions.
Some parts of the screen are not displayed	The vehicle is being driven and some menu items are disabled.	Operate the system after stopping the vehicle in a safe location and applying the parking brake.
The system does not announce information.	The volume level is set to the minimum.	Adjust the volume level by operating the VOL switches located on the control panel or on the steering wheel switch while the system is announcing information.

# AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

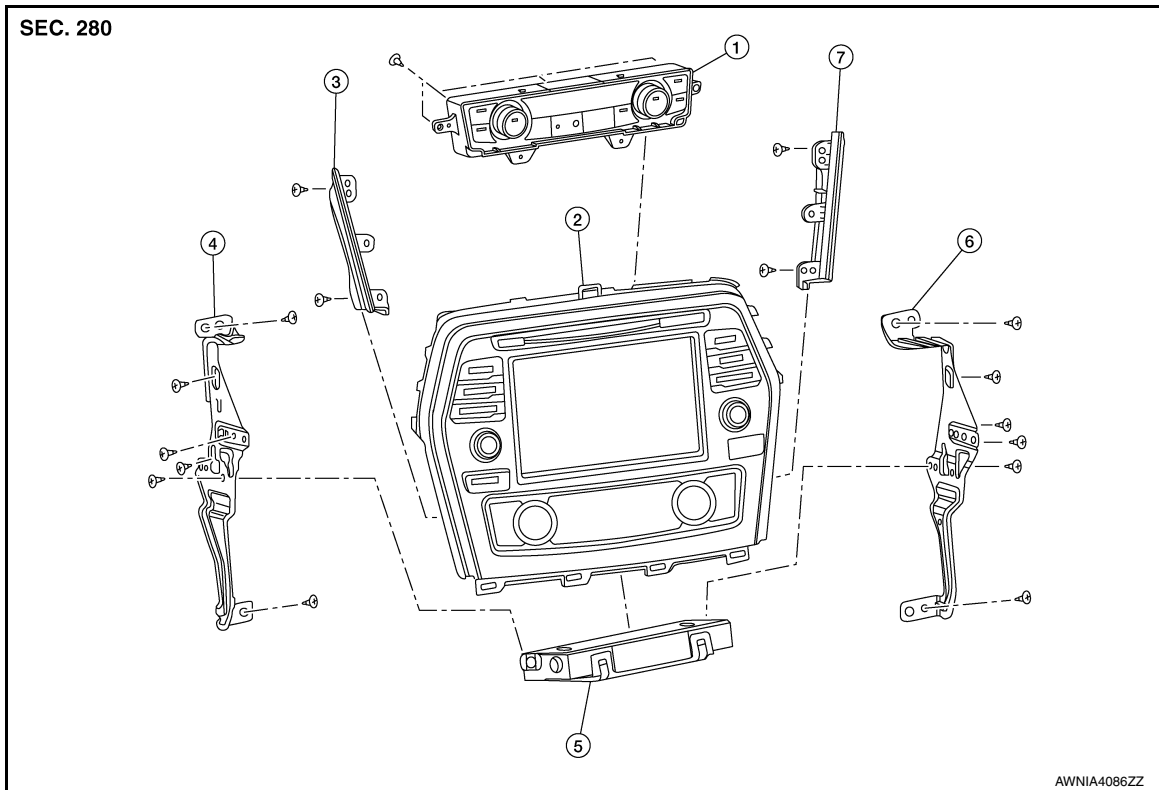
[MULTI AV SYSTEM]

## REMOVAL AND INSTALLATION

### AV CONTROL UNIT

Exploded View

INFOID:0000000012193777



- |                             |                    |                             |
|-----------------------------|--------------------|-----------------------------|
| 1. A/C switch assembly      | 2. AV control unit | 3. Audio unit finisher (LH) |
| 4. Audio unit bracket (LH)  | 5. A/C auto amp.   | 6. Audio unit bracket (RH)  |
| 7. Audio unit finisher (RH) |                    |                             |

### Removal and Installation

INFOID:0000000012193778

#### REMOVAL

##### CAUTION:

Before disconnecting the AV control unit and battery terminals, turn the ignition switch OFF and wait at least 30 seconds.

##### NOTE:

- Before replacing AV control unit, perform "Before Replace ECU" of "Read / Write Configuration" to save or print current vehicle specification. Refer to [AV-94, "Description"](#).
- After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Data corruption may occur if battery voltage is cut off within 30 seconds.

1. Disconnect the negative battery terminal. Refer to [PG-105, "Removal and Installation"](#).
2. Remove A/C switch assembly. Refer to [HAC-100, "Removal and Installation"](#).
3. Remove AV control unit screws then pull out AV control unit.
4. Disconnect the harness connectors from AV control unit and remove.
5. Remove AV control unit bracket (LH/RH) screws and AV control unit brackets [(LH/RH) (if necessary)].

#### INSTALLATION

##### CAUTION:

Be sure to perform "After Replace ECU" of "Read / Write Configuration" or "Manual Configuration" when replacing AV control unit. Refer to [AV-94, "Description"](#).

Installation is in the reverse order of removal.

A  
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AV

# STEERING SWITCHES

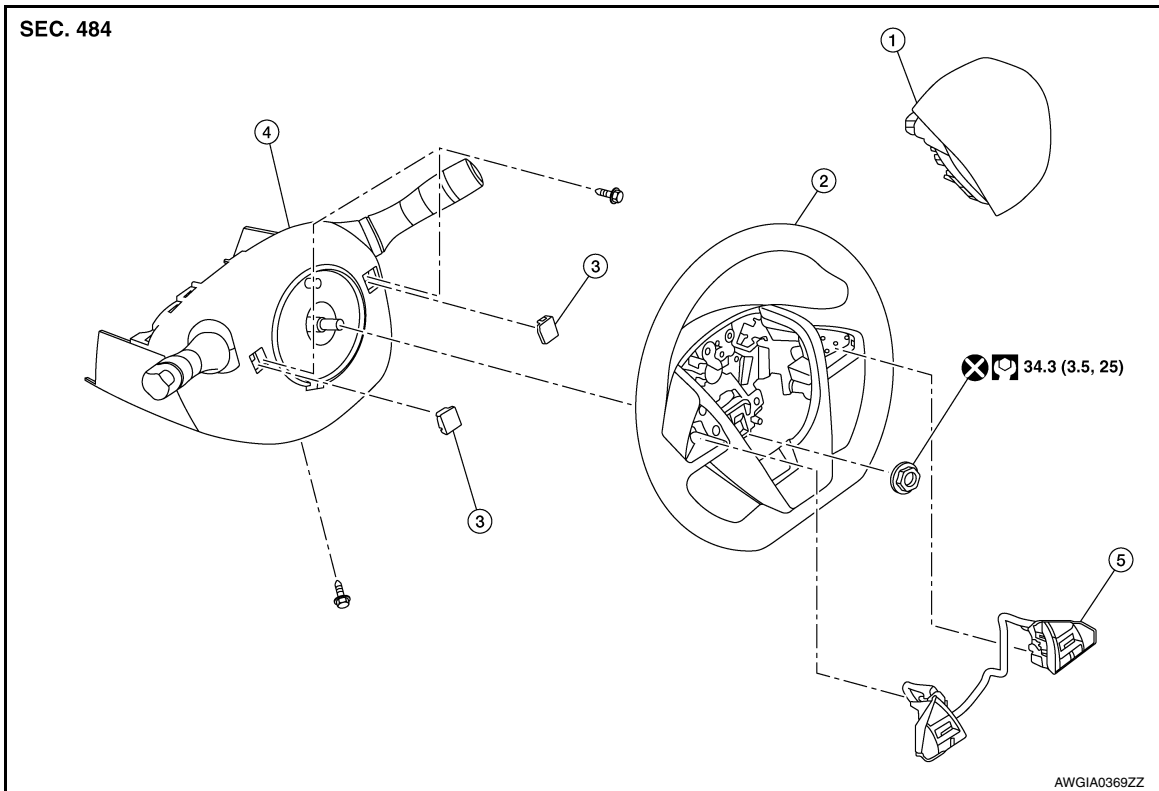
< REMOVAL AND INSTALLATION >

[MULTI AV SYSTEM]

## STEERING SWITCHES

Exploded View

INFOID:000000012217603



- |                          |                            |          |
|--------------------------|----------------------------|----------|
| 1. Driver air bag module | 2. Steering wheel          | 3. Cover |
| 4. Steering column cover | 5. Steering wheel switches |          |

## Removal and Installation


INFOID:000000012217604

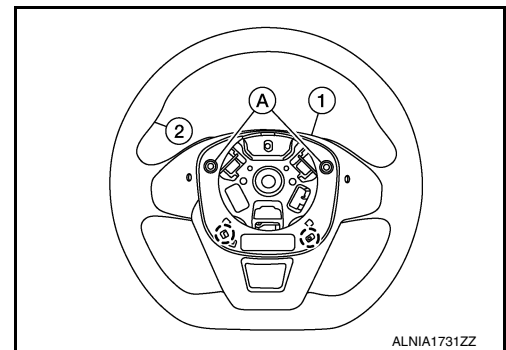
### REMOVAL

#### NOTE:

The steering switches are serviced as an assembly.

1. Remove steering wheel. Refer to [ST-30, "Removal and Installation"](#).
2. Remove screws (A) and pawls then remove steering wheel rear finisher (1) from steering wheel (2).

 : Pawl






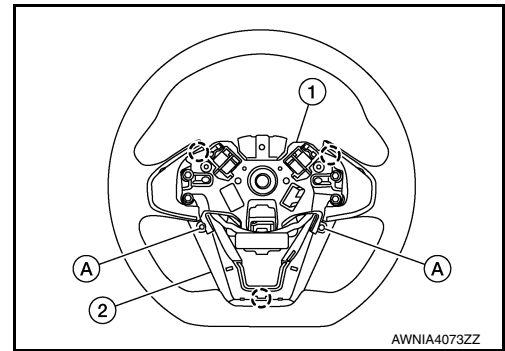
# STEERING SWITCHES

## < REMOVAL AND INSTALLATION >

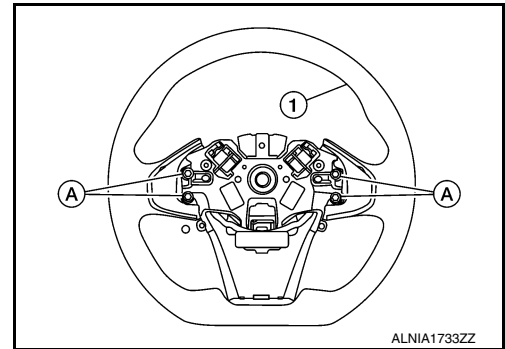
[MULTI AV SYSTEM]

3. Remove screws (A) and pawls then remove steering wheel front finisher (2) from steering wheel (1).

 : Pawl



4. Remove screws (A) and remove steering switches from steering wheel (1).



## INSTALLATION

Installation is in the reverse order of removal.

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# USB INTERFACE AND AUX IN JACK

< REMOVAL AND INSTALLATION >

[MULTI AV SYSTEM]


## USB INTERFACE AND AUX IN JACK

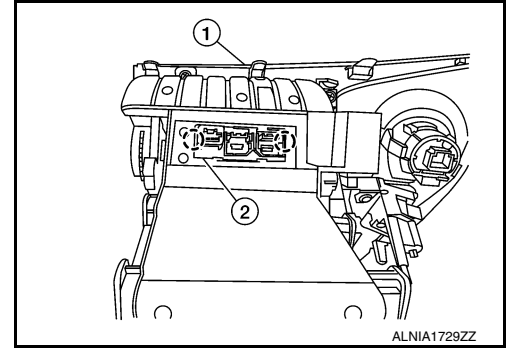
### Removal and Installation

INFOID:000000012227397

#### REMOVAL

1. Remove shift selector finisher. Refer to [JP-20. "Exploded View"](#).
2. Release pawls and remove USB interface and AUX in jack (2) from the back of the shift selector finisher (1).

 : Pawl



#### INSTALLATION

Installation is in the reverse order of removal.

# INSTRUMENT PANEL TWEETER

< REMOVAL AND INSTALLATION >

[MULTI AV SYSTEM]

## INSTRUMENT PANEL TWEETER

### Removal and Installation

INFOID:000000012226876

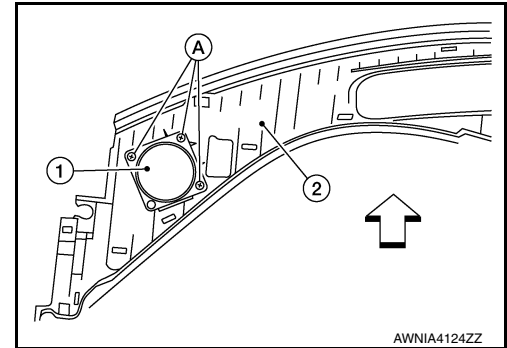
#### INSTRUMENT PANEL TWEETER (LH)

##### REMOVAL

1. Remove defroster grille. Refer to [IP-14, "Exploded View"](#).
2. Disconnect the harness connector from instrument panel tweeter (LH) and remove screws (A) to remove instrument panel tweeter [LH (1)].

(2) : Instrument panel assembly

⇐ : Front



##### INSTALLATION

Installation is in the reverse order of removal.

#### INSTRUMENT PANEL TWEETER (RH)

##### REMOVAL

1. Remove instrument panel tweeter grill. Refer to [IP-14, "Exploded View"](#).
2. Disconnect the harness connector from instrument panel tweeter (RH) and remove screws to remove instrument panel tweeter.

##### INSTALLATION

Installation is in the reverse order of removal.

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# CENTER SPEAKER

< REMOVAL AND INSTALLATION >

[MULTI AV SYSTEM]

## CENTER SPEAKER

### Removal and Installation

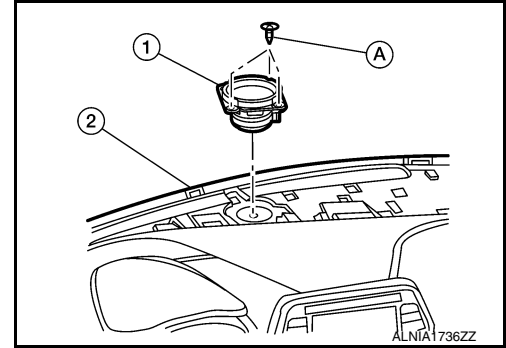
INFOID:000000012193785

#### REMOVAL

1. Remove defroster grille. Refer to [IP-14, "Exploded View"](#).
2. Disconnect the harness connector from center speaker (1) and remove screws (A) to remove.

(2) : Instrument panel assembly

⇐ : Front



#### INSTALLATION

Installation is in the reverse order of removal.

# FRONT TWEETER

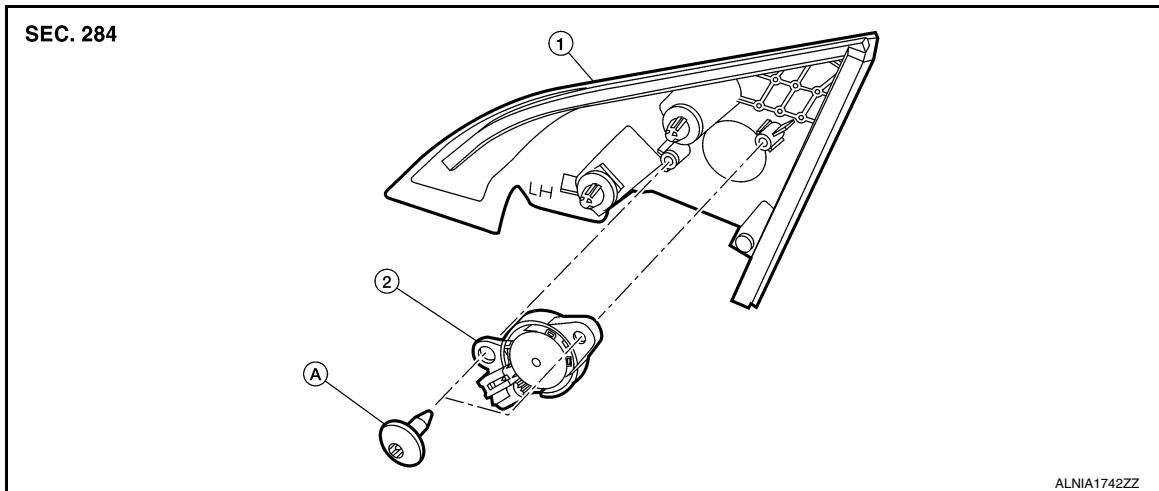
< REMOVAL AND INSTALLATION >

[MULTI AV SYSTEM]

## FRONT TWEETER

### Exploded View

INFOID:000000012232191



1. Door mirror corner finisher

2. Front tweeter

A. Screw

#### NOTE:

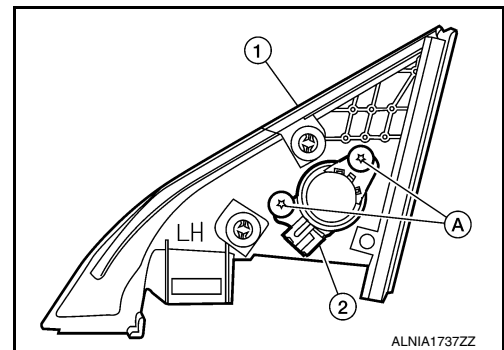
LH shown, RH similar.

### Removal and Installation

INFOID:000000012193786

#### REMOVAL

1. Remove door mirror corner finisher. Refer to [MIR-21. "Exploded View"](#).
2. Remove screws (A) and remove front tweeter (1) from door mirror corner finisher (2).



#### INSTALLATION

Installation is the reverse order of removal.

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# FRONT DOOR SPEAKER

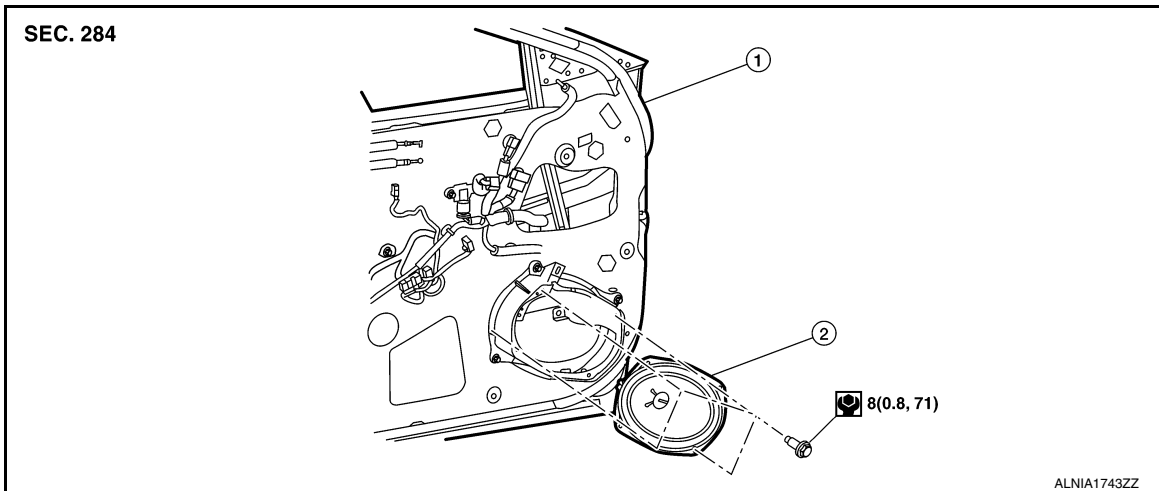
< REMOVAL AND INSTALLATION >

[MULTI AV SYSTEM]

## FRONT DOOR SPEAKER

Exploded View

INFOID:000000012232337



1. Front door finisher

2. Front door speaker

### NOTE:

LH shown, RH similar.

## Removal and Installation

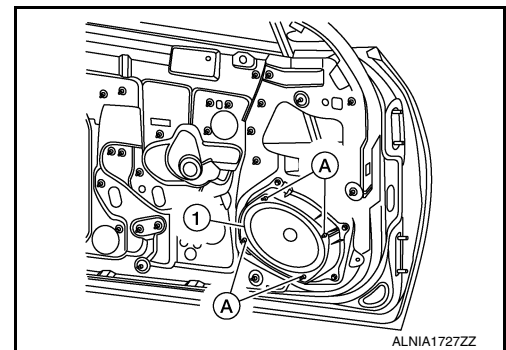
INFOID:000000012226877

### REMOVAL

1. Remove front door finisher. Refer to [INT-27. "Removal and Installation"](#).
2. Remove screws (A) and pull out front door speaker (1).

### NOTE:

LH shown, RH similar.



3. Disconnect the harness connector from front door speaker and remove.

### INSTALLATION

Installation is in the reverse order of removal.

# REAR DOOR SPEAKER

< REMOVAL AND INSTALLATION >

[MULTI AV SYSTEM]

## REAR DOOR SPEAKER

### Removal and Installation

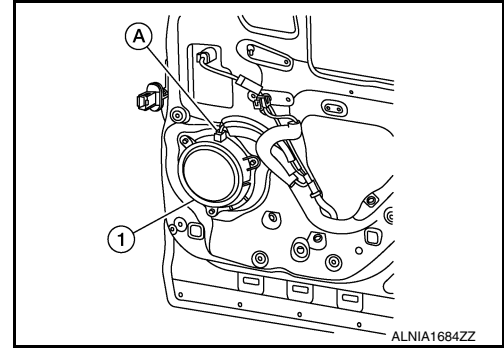
INFOID:000000012226878

#### REMOVAL

1. Remove rear door finisher. Refer to [INT-29. "Removal and Installation"](#).
2. Remove screws (A) then remove rear door speaker (1).

**NOTE:**

RH shown, LH similar.



#### INSTALLATION

Installation is in the reverse order of removal.

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# REAR SPEAKER

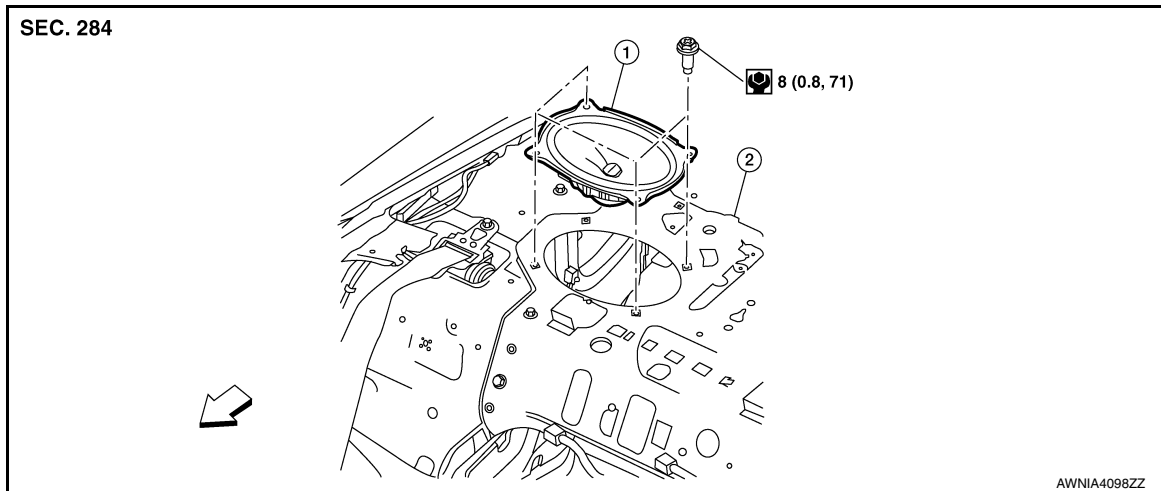
< REMOVAL AND INSTALLATION >

[MULTI AV SYSTEM]

## REAR SPEAKER

Exploded View

INFOID:000000012232338



1. Rear speaker

2. Rear parcel shelf

← Front

### NOTE:

RH shown, LH similar.

## Removal and Installation

INFOID:000000012226879

### REMOVAL

1. Remove the rear parcel shelf finisher. Refer to [INT-40, "Removal and Installation"](#).
2. Remove the rear speaker screws.
3. Disconnect the harness connector from the rear speaker and remove.

### INSTALLATION

Installation is in the reverse order of removal.



# SUBWOOFER

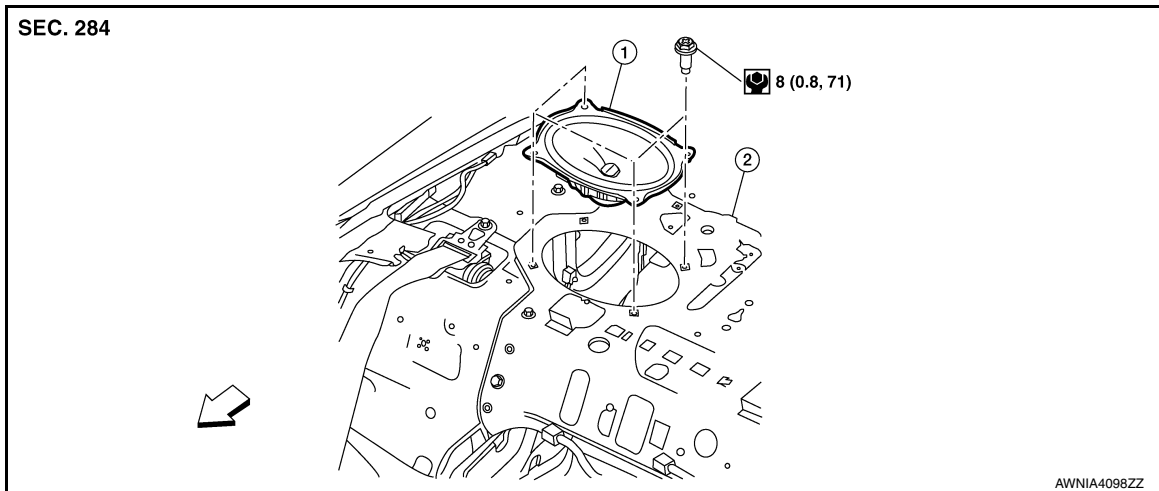
< REMOVAL AND INSTALLATION >

[MULTI AV SYSTEM]

## SUBWOOFER

### Exploded View

INFOID:000000012193789



1. Rear subwoofer

2. Rear parcel shelf

← Front

#### NOTE:

RH shown, LH similar.

### Removal and Installation

INFOID:000000012193790

#### REMOVAL

1. Remove the rear parcel shelf finisher. Refer to [INT-40, "Removal and Installation"](#).
2. Remove the rear subwoofer screws.
3. Disconnect the harness connector from the rear subwoofer and remove.

#### INSTALLATION

Installation is in the reverse order of removal.

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# BOSE SPEAKER AMP

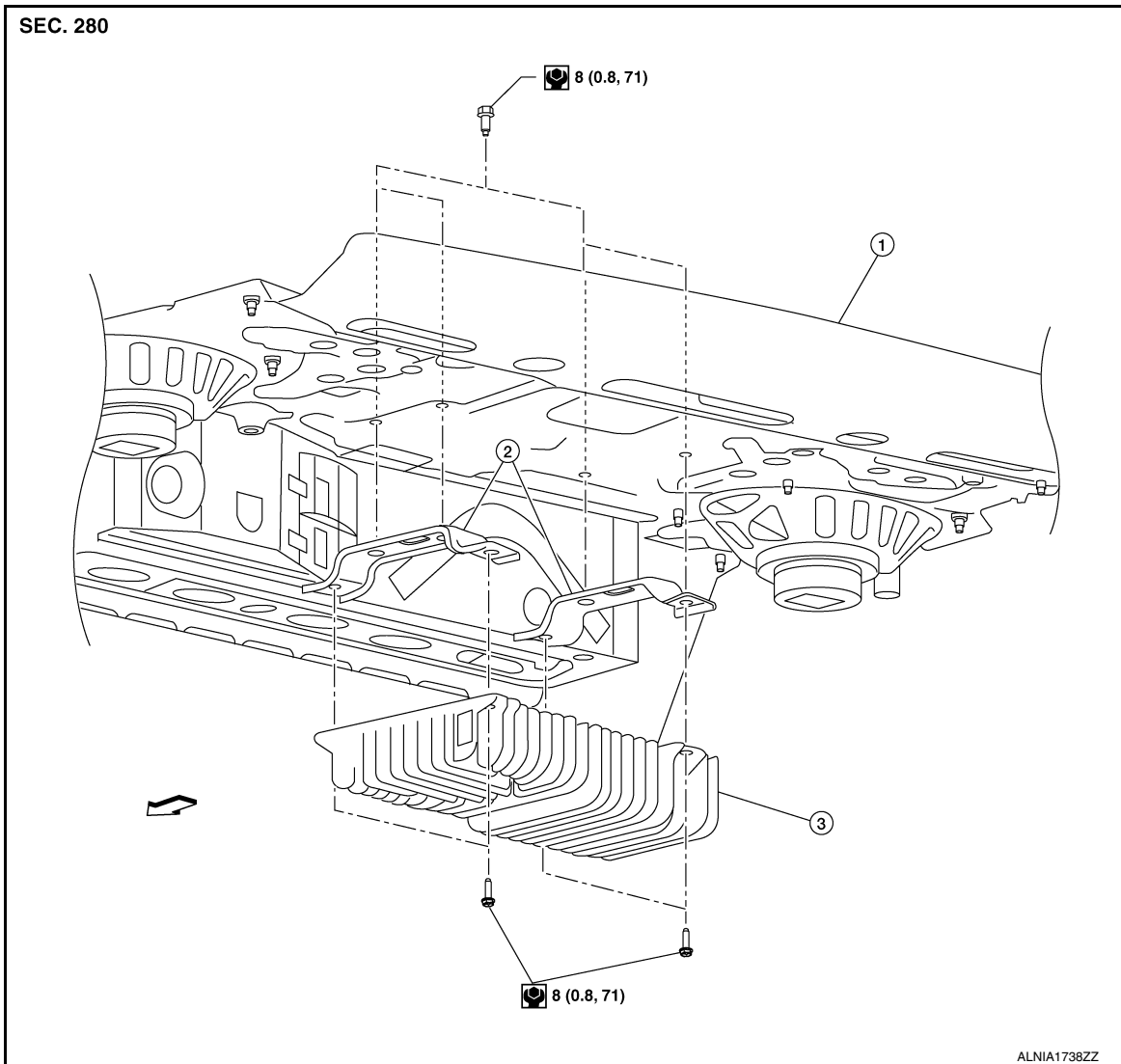
< REMOVAL AND INSTALLATION >

[MULTI AV SYSTEM]

## BOSE SPEAKER AMP

Exploded View

INFOID:000000012193791



1. Rear parcel shelf

2. BOSE speaker amp. bracket

3. BOSE speaker amp.

⇐ Front

## Removal and Installation

INFOID:000000012193792

### REMOVAL

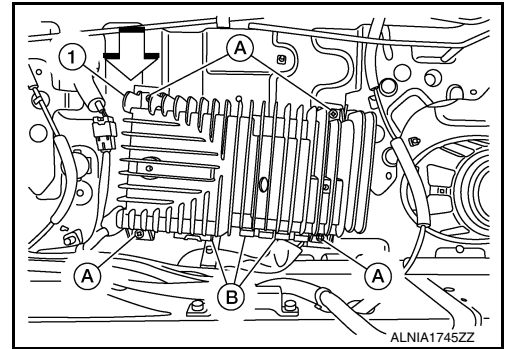
1. Remove rear parcel shelf finisher. Refer to [INT-40, "Removal and Installation"](#).

## BOSE SPEAKER AMP

### < REMOVAL AND INSTALLATION >

[MULTI AV SYSTEM]

2. Disconnect the harness connector (B) from the BOSE speaker amp.
3. Remove bolts (A) then remove BOSE speaker amp.



4. Remove BOSE speaker amp. bracket (if necessary).

### INSTALLATION

Installation is in the reverse order of removal.

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AV

# SATELLITE RADIO ANTENNA

< REMOVAL AND INSTALLATION >

[MULTI AV SYSTEM]

## SATELLITE RADIO ANTENNA

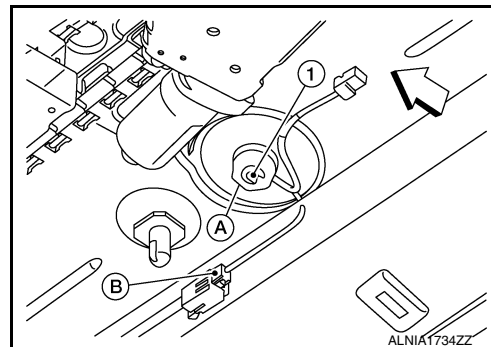
### Removal and Installation

INFOID:000000012242627

#### REMOVAL

1. Lower headlining (rear). Refer to [INT-47, "Exploded View"](#).
2. Disconnect harness connector (B) from antenna feeder.
3. Remove nut (A) from satellite antenna (1) and remove.

⇐ : Front



#### INSTALLATION

Installation is in the reverse order of removal.

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

#### CAUTION:

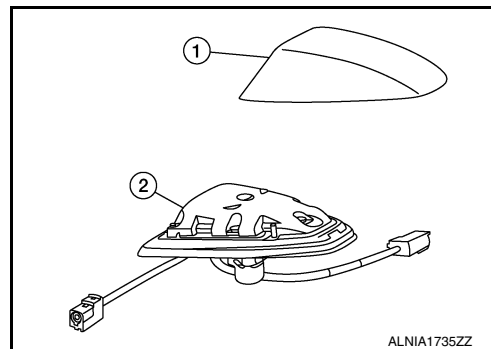
If the satellite antenna nut is not tightened to the specified torque, lower sensitivity of the antenna may be experienced. If the nut is tightened tighter than the specified torque, this will deform the roof panel.

#### Disassembly and Assembly

INFOID:000000012242628

#### DISASSEMBLY

Insert a suitable tool into gap between satellite antenna (2) and the cover (1) then remove the cover (1) from satellite antenna (2).



#### ASSEMBLY

Assembly is in the reverse order of disassembly.

# ANTENNA AMP.

< REMOVAL AND INSTALLATION >

[MULTI AV SYSTEM]

## ANTENNA AMP.

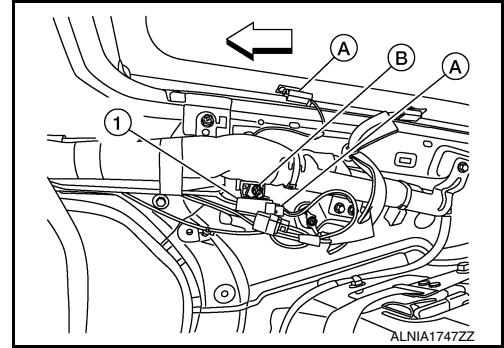
### Removal and Installation

INFOID:000000012193796

#### REMOVAL

1. Remove rear pillar finisher (RH). Refer to [INT-37. "REAR PILLAR FINISHER : Removal and Installation"](#).
2. Disconnect the harness connectors (A) from the antenna amp. (1).
3. Remove bolt (B) and remove.

← : Front



#### INSTALLATION

Installation is in the reverse order of removal.

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AV

## GPS ANTENNA

### Removal and Installation

INFOID:000000012193797

#### REMOVAL

1. Remove instrument panel assembly. Refer to [IP-15, "Removal and Installation"](#).
2. Remove screw to remove GPS antenna from instrument panel.

#### INSTALLATION

Installation is in the reverse order of removal.

# MICROPHONE

< REMOVAL AND INSTALLATION >

[MULTI AV SYSTEM]


## MICROPHONE

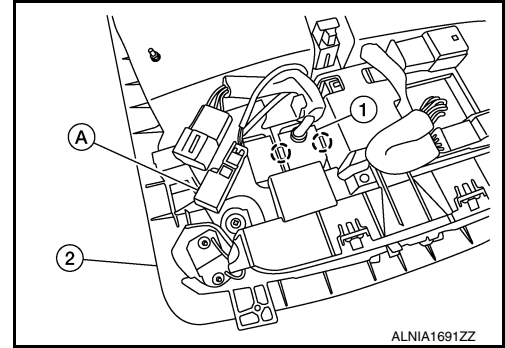
### Removal and Installation

INFOID:000000012193798

#### REMOVAL

1. Remove front room\map lamp assembly. Refer to [INL-50. "Removal and Installation"](#).
2. Disconnect the harness connector (A) from front room\map lamp assembly (2).
3. Release pawls and remove microphone (1).

 : Pawl



#### INSTALLATION

Installation is in the reverse order of removal.

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AV

# ACTIVE NOISE CONTROL MICROPHONE

< REMOVAL AND INSTALLATION >

[MULTI AV SYSTEM]

## ACTIVE NOISE CONTROL MICROPHONE

### Removal and Installation - Front

INFOID:0000000012441112

#### REMOVAL

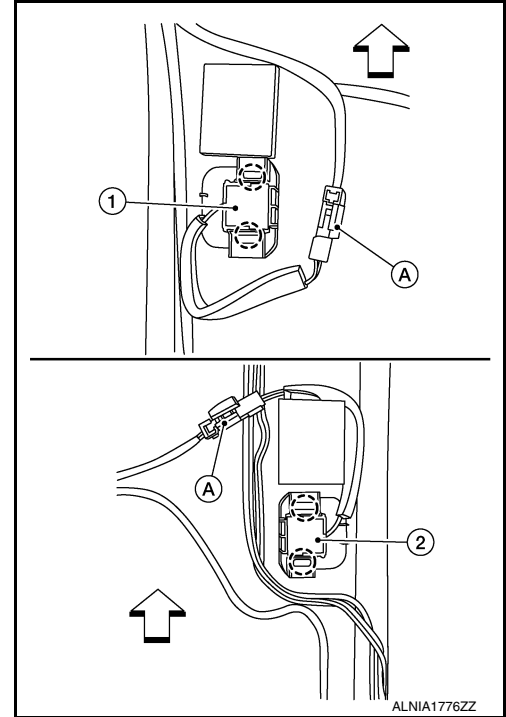
1. Remove the headlining. Refer to [INT-48. "Removal and Installation"](#).
2. Disconnect the harness connectors (A) from the active noise control microphones (1,2).

○ : Pawl  
⇐ : Front

3. Release the pawls, then remove the active noise control microphones (1,2) from the headlining.

#### CAUTION:

Carefully handle the pawls that retain the microphone to avoid damaging.



#### INSTALLATION

Installation is in the reverse order of removal.

#### NOTE:

Check the microphone for looseness after installation.

### Removal and Installation - Rear

INFOID:0000000012441113

#### REMOVAL

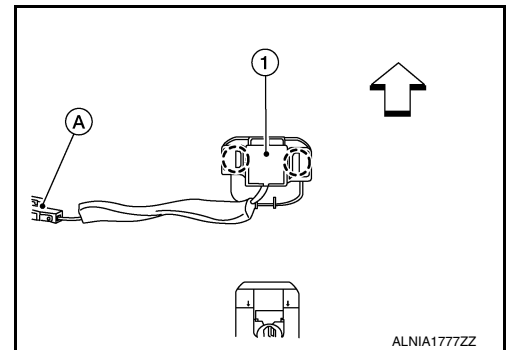
1. Remove the headlining. Refer to [INT-48. "Removal and Installation"](#).
2. Disconnect the harness connector (A) from the active noise control microphone (1).

○ : Pawl  
⇐ : Front

3. Release the pawls, then remove the active noise control microphone (1) from the headlining.

#### CAUTION:

Carefully handle the pawls that retain the microphone to avoid damaging.



#### INSTALLATION

Installation is in the reverse order of removal.

#### NOTE:

Check the microphone for looseness after installation.



## TCU

### Removal and Installation

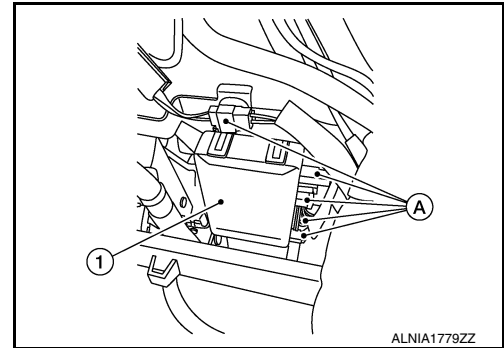
INFOID:0000000012441118

#### REMOVAL

**NOTE:**

Before replacing TCU, perform "SAVE VIN DATA" to save current vehicle specification. For details, refer to [AV-91, "Description"](#).

1. Remove AV control unit. Refer to [AV-183, "Removal and Installation"](#).
2. Disconnect the harness connectors (A) from TCU (1).



3. Remove screws, then remove TCU with the bracket attached.
4. Remove the bracket from TCU, if necessary.

#### INSTALLATION

1. Installation is in the reverse order of removal.
2. After installation, perform activation. Refer to [AV-91, "Description"](#).

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AV

## TEL ANTENNA

### Removal and Installation

INFOID:0000000012441119

#### REMOVAL

1. Remove instrument panel assembly. Refer to [IP-15, "Removal and Installation"](#).
2. Remove screw to remove TEL antenna from instrument panel.

#### INSTALLATION

Installation is in the reverse order of removal.

## TELEMATICS SWITCH

### Removal and Installation

INFOID:000000012441108

The telematics switch is serviced as part of the room/map lamp. Refer to [INL-50. "Removal and Installation"](#).

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AV

# MULTIFUNCTION SWITCH

< REMOVAL AND INSTALLATION >

[MULTI AV SYSTEM]

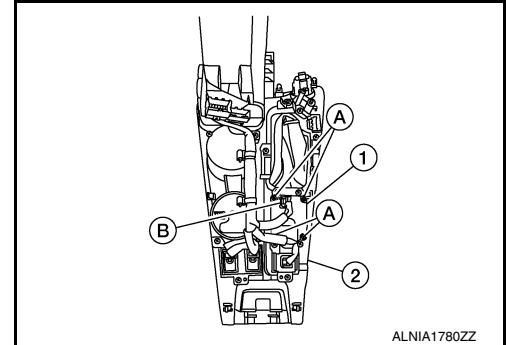
## MULTIFUNCTION SWITCH

### Removal and Installation

INFOID:000000012504125

#### REMOVAL

1. Remove shift selector finisher. Refer to [JP-14. "Exploded View"](#)
2. Disconnect the harness connector (B) from the multifunction switch (1).
3. Remove screws (A) and remove multifunction switch (1) from the shift selector finisher (2).



ALNIA1780ZZ

#### INSTALLATION

Installation is in the reverse order of removal.

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000012300414

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

**WARNING:**

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

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

**WARNING:**

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

Cautions in Removing Battery Terminal, and AV Control Unit

INFOID:000000012193800

**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 display control unit, and 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:000000012193801

M-CAN 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.

AV

Precaution for Harness Repair

INFOID:000000012193802

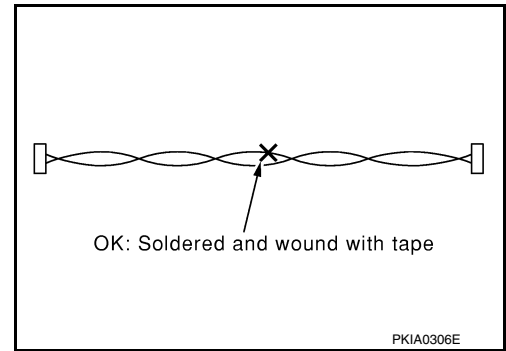
AV COMMUNICATION SYSTEM

# PRECAUTIONS

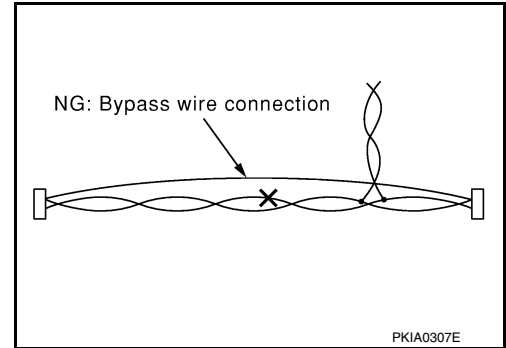
## [AROUND VIEW MONITOR SYSTEM]

### < 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.)



### Precaution for Work

INFOID:000000012193803

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:
  - Water soluble dirt:
    - Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
    - Then rub with a soft, dry cloth.
  - Oily dirt:
    - Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
    - Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
    - Then rub with a soft, dry cloth.
  - Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
  - For genuine leather seats, use a genuine leather seat cleaner.

# PREPARATION

[AROUND VIEW MONITOR SYSTEM]

< PREPARATION >

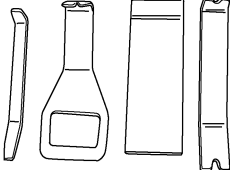
## PREPARATION

### PREPARATION

#### Special Service Tools


INFOID:0000000012193804

The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
— (J-46534) Trim Tool Set <div style="text-align: center;">  <p>AWJIA0483ZZ</p> </div>	Removing trim components

#### Commercial Service Tools

INFOID:0000000012193805

Tool name	Description
Power tool <div style="text-align: center;">  <p>PIIB1407E</p> </div>	Loosening nuts, screws and bolts

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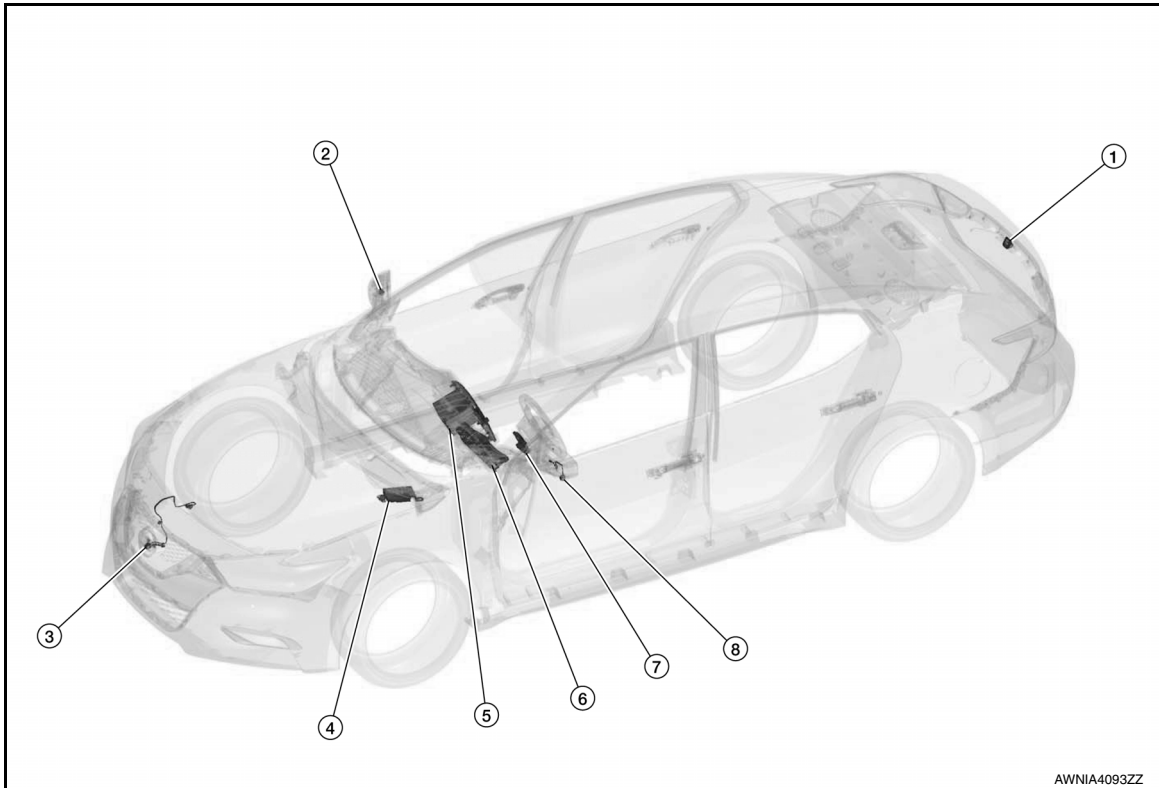
AV

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000012193806



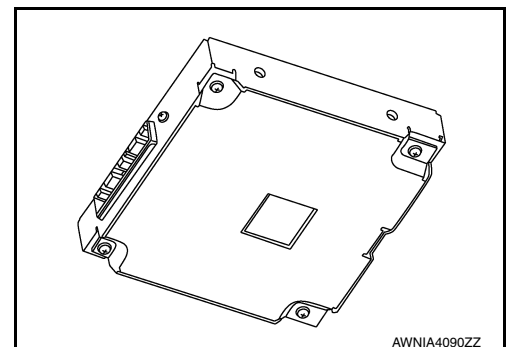
AWNIA4093ZZ

No.	Component	Function
1.	Rear view camera	Refer to <a href="#">AV-209, "Rear Camera"</a> .
2.	Door mirror RH	Refer to <a href="#">AV-209, "Side Camera"</a> .
3.	Front camera	Refer to <a href="#">AV-209, "Front Camera"</a> .
4.	Around view monitor control unit	Refer to <a href="#">AV-208, "Around View Monitor Control Unit"</a> .
5.	AV control unit	Refer to <a href="#">AV-13, "AV Control Unit"</a> .
6.	Combination meter	Refer to <a href="#">MWI-7, "METER SYSTEM : Combination Meter"</a> .
7.	Door mirror LH	Refer to <a href="#">AV-209, "Side Camera"</a> .
8.	Steering angle sensor	Refer to <a href="#">AV-210, "Steering Angle Sensor"</a> .

Around View Monitor Control Unit

INFOID:000000012193807

- The around view monitor control unit is installed at the lower dash.
- Necessary signals are transmitted/received to/from control unit via CAN communication.
- Camera image signals received from each camera are converted/synthesized in the around view monitor control unit and transmitted to the AV control unit.
- Vehicle width guide lines, predicted course line, vehicle front guiding line and vehicle side line, tire icon, and vehicle icon are rendered with the around view monitor control unit and combined with camera image.



AWNIA4090ZZ



# COMPONENT PARTS

## [AROUND VIEW MONITOR SYSTEM]

< SYSTEM DESCRIPTION >

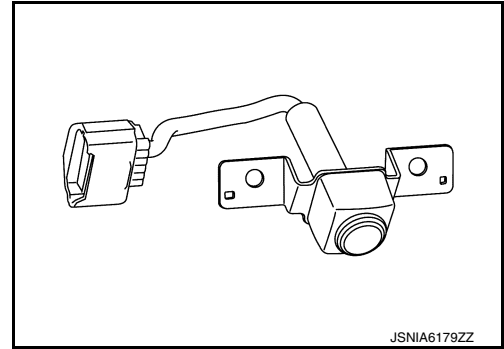
### Front Camera

INFOID:000000012193808

- The front camera is installed in the front grille.
- Super-small CMOS camera (color) using CMOS\* for the image pickup element is adopted.
- Power for the camera is supplied from the around view monitor control unit, and the image at the front of the vehicle is sent to the around view monitor control unit.

**NOTE:**

\*: "CMOS" is an abbreviation of Complementary Metal Oxide Semiconductor and features low power consumption and high speed reading rate of electric charge.



### Specification

Image pickup element	1/3.8-inch CMOS image sensor
Effective number of pixels	Approx. 300,000 pixels (632 × 480)
Minimum brightness	1 lx
Angle of view	H: 190° V: 141°

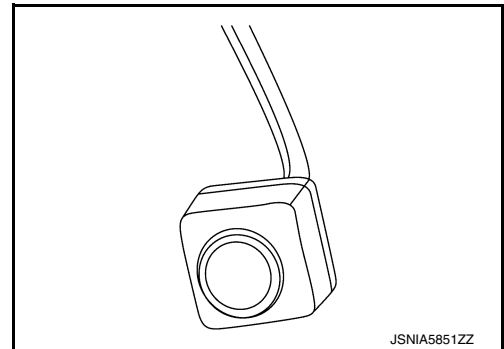
### Side Camera

INFOID:000000012193809

- The side camera is installed in the door mirror.
- Super-small CMOS camera (color) using CMOS\* for the image pickup element is adopted.
- Power for the camera is supplied from the around view monitor control unit, and the image at the side of the vehicle is sent to the around view monitor control unit.

**NOTE:**

\*: "CMOS" is an abbreviation of Complementary Metal Oxide Semiconductor and features low power consumption and high speed reading rate of electric charge.



### Specification

Image pickup element	1/3.8-inch CMOS image sensor
Effective number of pixels	Approx. 300,000 pixels (632 × 480)
Minimum brightness	1 lx
Angle of view	H: 190° V: 141°

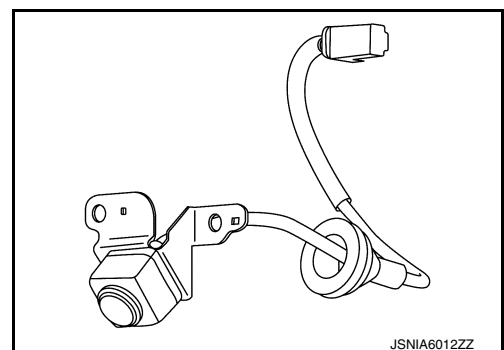
### Rear Camera

INFOID:000000012193810

- The rear camera is installed next to the license plate lamp.
- Super-small CMOS camera (color) using CMOS\* for the image pickup element is adopted.
- With the mirror processing function, a mirror image is sent as if it is viewed by a rear view mirror.
- Power for the camera is supplied from the around view monitor control unit, and the image at the rear of the vehicle is sent to the around view monitor control unit.

**NOTE:**

\*: "CMOS" is an abbreviation of Complementary Metal Oxide Semiconductor and features low power consumption and high speed reading rate of electric charge.



### Specification

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AV

## COMPONENT PARTS

< SYSTEM DESCRIPTION >

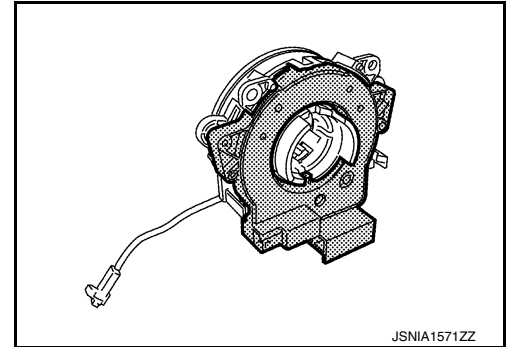
[AROUND VIEW MONITOR SYSTEM]

Image pickup element	1/3.8-inch CMOS image sensor
Effective number of pixels	Approx. 300,000 pixels (632 × 480)
Minimum brightness	1 lx
Angle of view	H: 190° V: 141°
Image	With the mirror processing function

### Steering Angle Sensor

INFOID:000000012193811

- Steering angle sensor is installed to the spiral cable.
- Steering angle sensor sends the steering signal necessary for predictive course line of the front or rear view monitor to the around view monitor control unit via CAN communication.



# AROUND VIEW MONITOR SYSTEM

< SYSTEM DESCRIPTION >

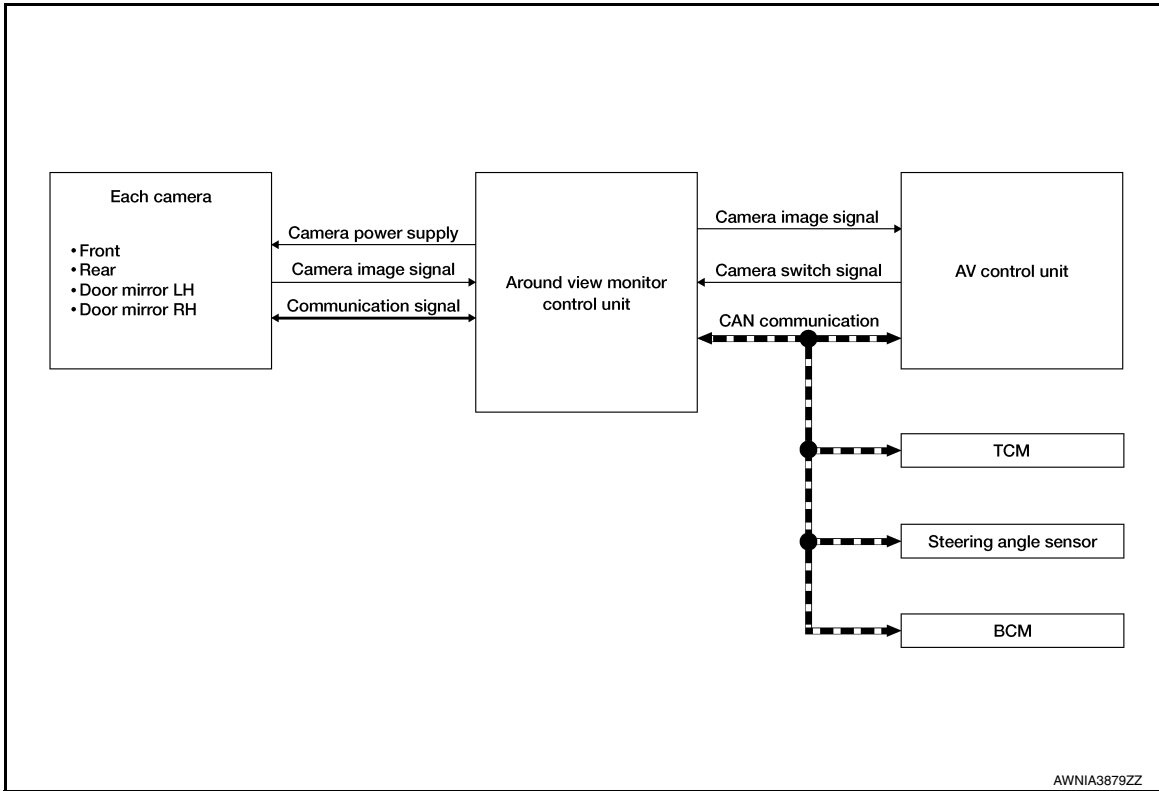
[AROUND VIEW MONITOR SYSTEM]

## AROUND VIEW MONITOR SYSTEM

### System Description

INFOID:000000012193812

### SYSTEM DIAGRAM



Around View Monitor Control Unit Input Signal (CAN Communication)

Transmit unit	Signal name
Steering angle sensor	Steering angle sensor signal
TCM	Shift position signal
	Vehicle speed signal
BCM	Door switch signal
	Trunk switch signal
AV control unit	Camera switch signal

Around View Monitor Control Unit Output Signal (CAN Communication)

Transmit unit	Signal name
AV control unit	View change signal

### DESCRIPTION

- This system is equipped with wide-angle, high-resolution cameras on the front and rear of the vehicle and on both the right and left door mirrors. The images from front view, rear view, front-side view RH side, and birds-eye view which shows the view from the top of the vehicle, are displayed to monitor the vehicle surroundings.
- Around view monitor control unit cuts out and expands the image received from each camera to create each view.
- Camera image is displayed on the display.
- In front view and rear view, the vehicle width, distance lines and predictive course lines are superimposed and displayed. In front-side view, the vehicle distance guiding line and vehicle width guiding line are displayed.

# AROUND VIEW MONITOR SYSTEM

## [AROUND VIEW MONITOR SYSTEM]

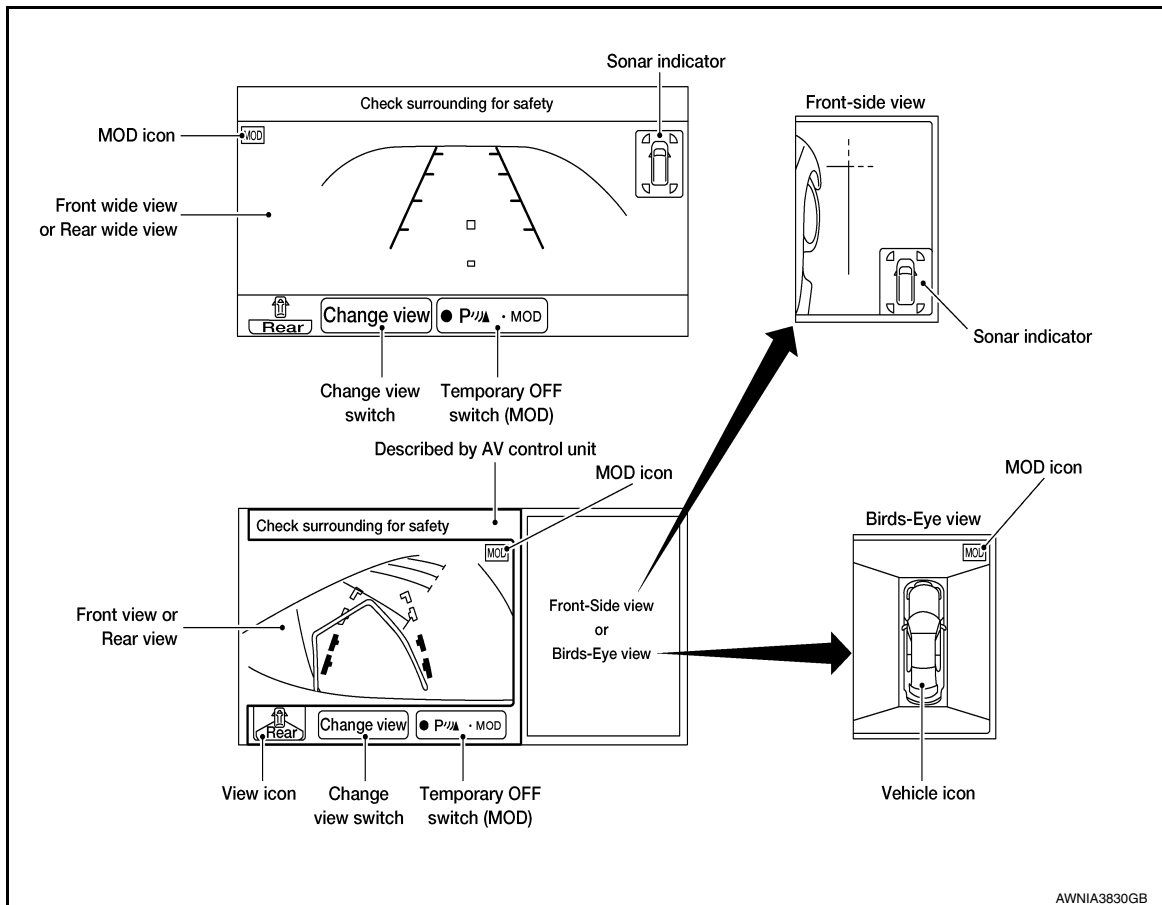
### < SYSTEM DESCRIPTION >

- The Bird's-Eye view converts the images from four cameras into the overhead view and displays the status of the vehicle on display. The vehicle icon and sonar indicator that are displayed on the Bird's-Eye view display are rendered by around view monitor control unit.
- Moving Object Detection (MOD) is adopted and detects moving objects according to camera image and notifies the detection result to the driver.
- Tire icon is adopted for Birds-Eye view image.
- Front/rear wide view function is adopted. Visibility for the left and right views that contains invisible area is improved.

### AROUND VIEW MONITOR SCREEN

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

#### Screen constitution



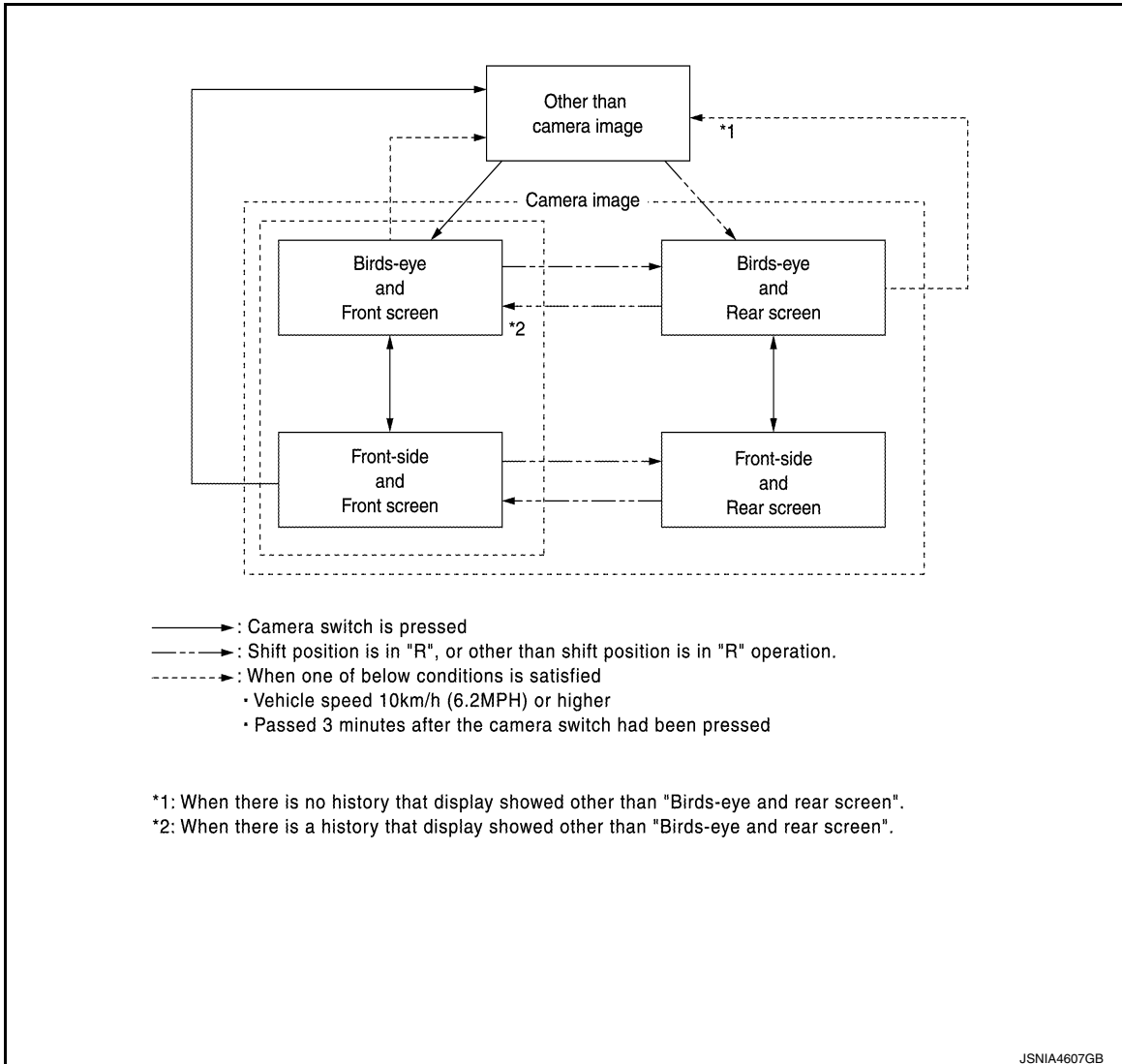
### OPERATION DESCRIPTION

# AROUND VIEW MONITOR SYSTEM

< SYSTEM DESCRIPTION >

[AROUND VIEW MONITOR SYSTEM]

Around view monitor screen transition



- Around view monitor is displayed on the display when “CAMERA” switch is pressed, when shifting position is reverse.
- Bird’s-Eye view, Front-side view, and front/rear wide view can be switched by “Change View” switch (touch switch) or “CAMERA” switch while around view monitor is displayed.
- Priority of view to be displayed can be set by “Settings” screen.
- While shift position is other than reverse, around view monitor is canceled when approximately 3 minutes are passed after “CAMERA” switch is pressed or when vehicle speed is approximately 10 km/h (6 MPH) or more. The screen returns to the screen before displaying around view monitor.
- Setting of Moving Object Detection (MOD) can be switched ON/OFF by temporary OFF switch of AV control unit (Temporary OFF).
- In temporary OFF, around view monitor is canceled. Temporary OFF is canceled when around view monitor is displayed once again. MOD is switched to operation-ready status.
- In permanent OFF, MOD is not operative until MOD is switched to ON by “Settings” screen.
- In Bird’s-Eye view, an enhanced boundary is displayed on the image indicating the invisible area and clearly indicating the boundary of the four cameras. The invisible area is displayed in yellow when Bird’s-Eye view is displayed after the ignition switch is turned ON.
- If information of camera and information written to around view monitor control unit are not the same, error indicator of applicable camera position is displayed when Bird’s-Eye view is displayed.
- When “CAMERA” switch is pressed, it receives camera switch signal from AV control unit via CAN communication.
- When around view monitor control unit receives camera switch signal around view monitor control unit reads the image signal from each camera.
- When around view monitor control unit receives reverse signal, while shift position is R position, around view monitor control unit reads image signal from each camera.

# AROUND VIEW MONITOR SYSTEM

< SYSTEM DESCRIPTION >

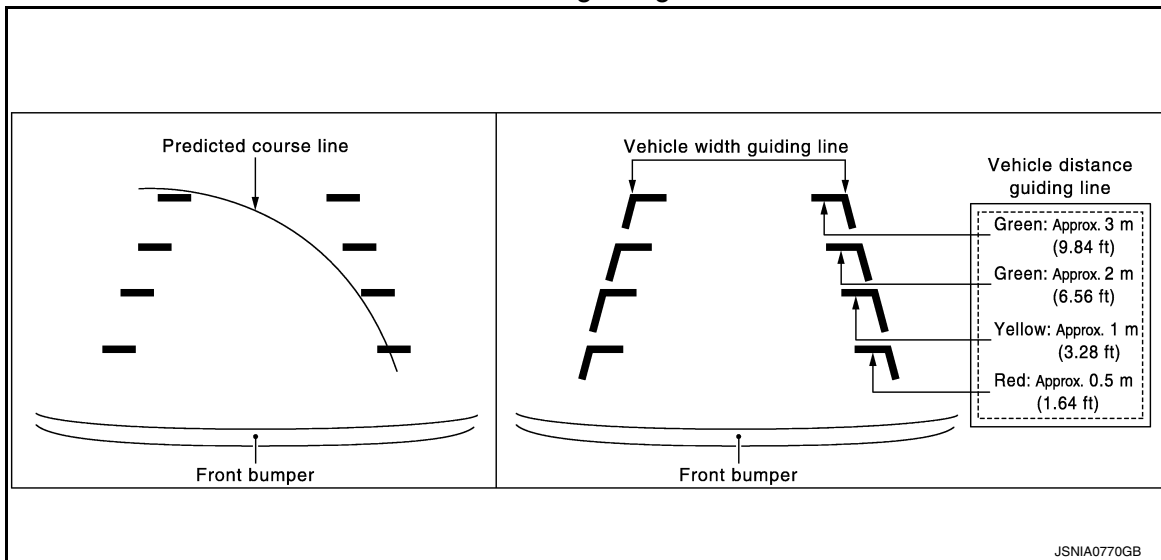
[AROUND VIEW MONITOR SYSTEM]

- When around view monitor control unit reads image signal from each camera, it cuts out the required screen for each view, superimposes camera image, vehicle icon, guiding lines, predicted course line, and “MOD” icon and then outputs them to AV control unit.

## Front View

- The front view image is from the front camera.
- When the selector lever is in any position other than the reverse position, the front view is displayed by pressing the “CAMERA” switch. It improves the visibility of obstacles in front of the vehicle and helps driving by the images displayed from Bird’s-Eye view and Front-side view. The front wide view function allows the display of an image with a 180° horizontal angle.
- Displays the vehicle width guiding line and vehicle distance guiding line in front view and displays the predictive course line according to the steering angle.
- If the steering angle is within approximately 90 degrees, the predictive course lines on the left/right side are displayed. If the steering angle is exceeding approximately 90 degrees, only the predictive course line on the outside (in the opposite side of steering direction) is displayed.
- Around view monitor control unit is connected to the steering angle sensor and receives the steering angle signal via CAN communication.
- Around view monitor control unit controls the direction and distance of the predictive course line according to the sensor signal from steering angle sensor.

Front view guiding lines



## Rear View

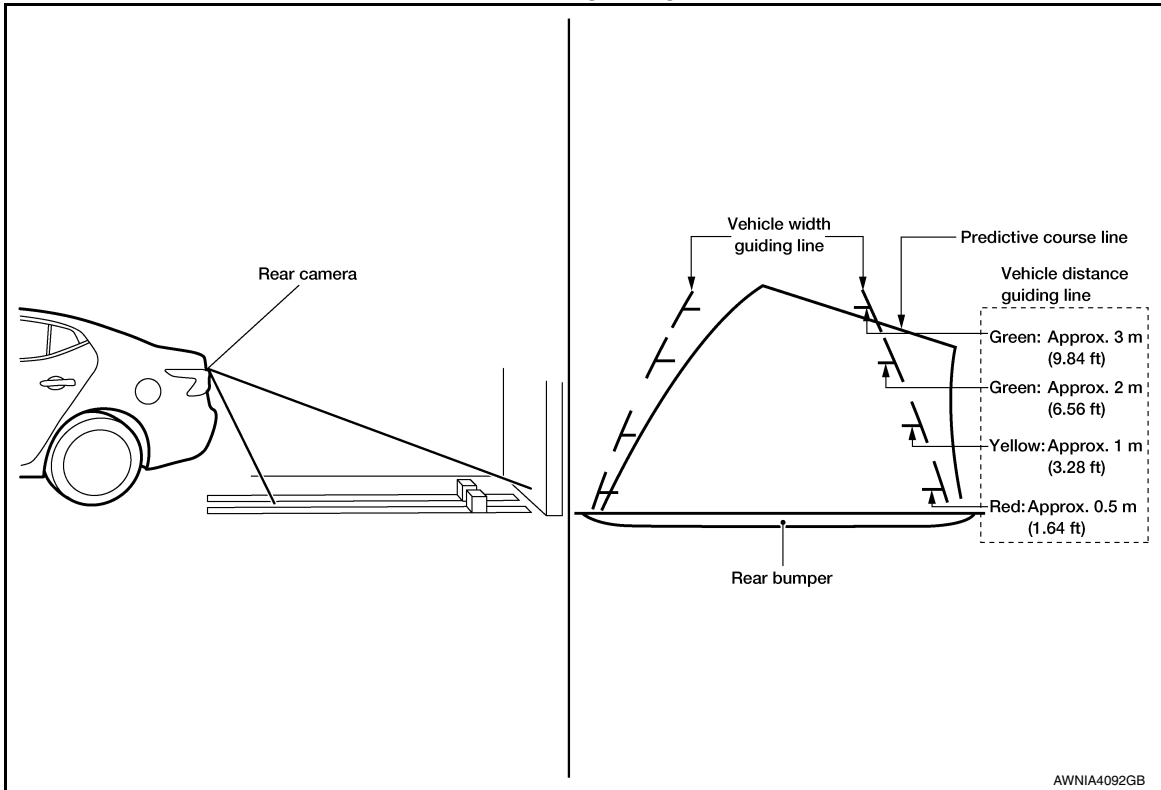
- The rear view image is from the rear camera.
- When the selector lever is in the reverse position, the rear view is displayed. Backing and parking are improved by the images from Bird’s-Eye view and Front-side view. The rear wide view function allows the display of an image with a 180° horizontal angle.
- Displays the vehicle width guiding line and vehicle distance guiding line in rear view and displays the predictive course line according to the steering angle (except when using the rear wide view function).
- The predictive course line is not displayed at the steering neutral position.
- Around view monitor control unit is connected to the steering angle sensor and receives the steering angle signal via CAN communication.
- Around view monitor control unit controls the direction and distance of predictive course line according to the sensor signal from steering angle sensor.

# AROUND VIEW MONITOR SYSTEM

< SYSTEM DESCRIPTION >

[AROUND VIEW MONITOR SYSTEM]

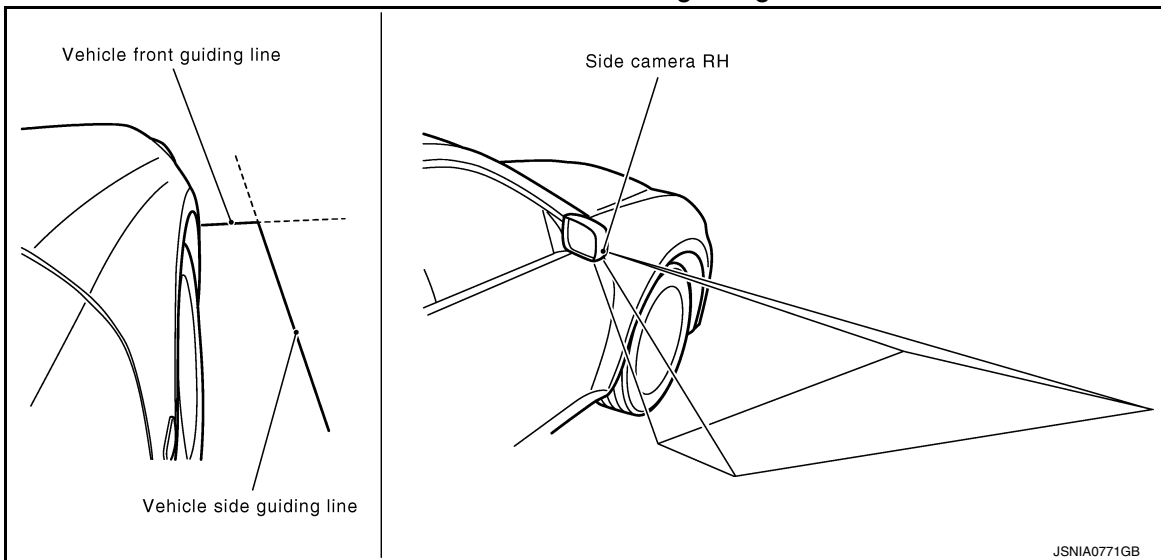
Rear view guiding lines



## Front-side View

- The Front-side view image is from the side camera RH.
- In Front-side view, displays the vehicle distance guiding line and vehicle width guiding line.

Front-side view area and guiding line



## Birds-eye View

- The image from the four cameras is cut out and converted into the overhead view, and the surroundings of the vehicle are displayed in birds-eye view.
- In Birds-Eye view, the invisible area is displayed on the image to specify the boundaries of the four cameras.
- The invisible area is displayed in yellow in the Bird's-Eye view after turning the ignition switch ON as an information for the user. (OFF setting can be performed)

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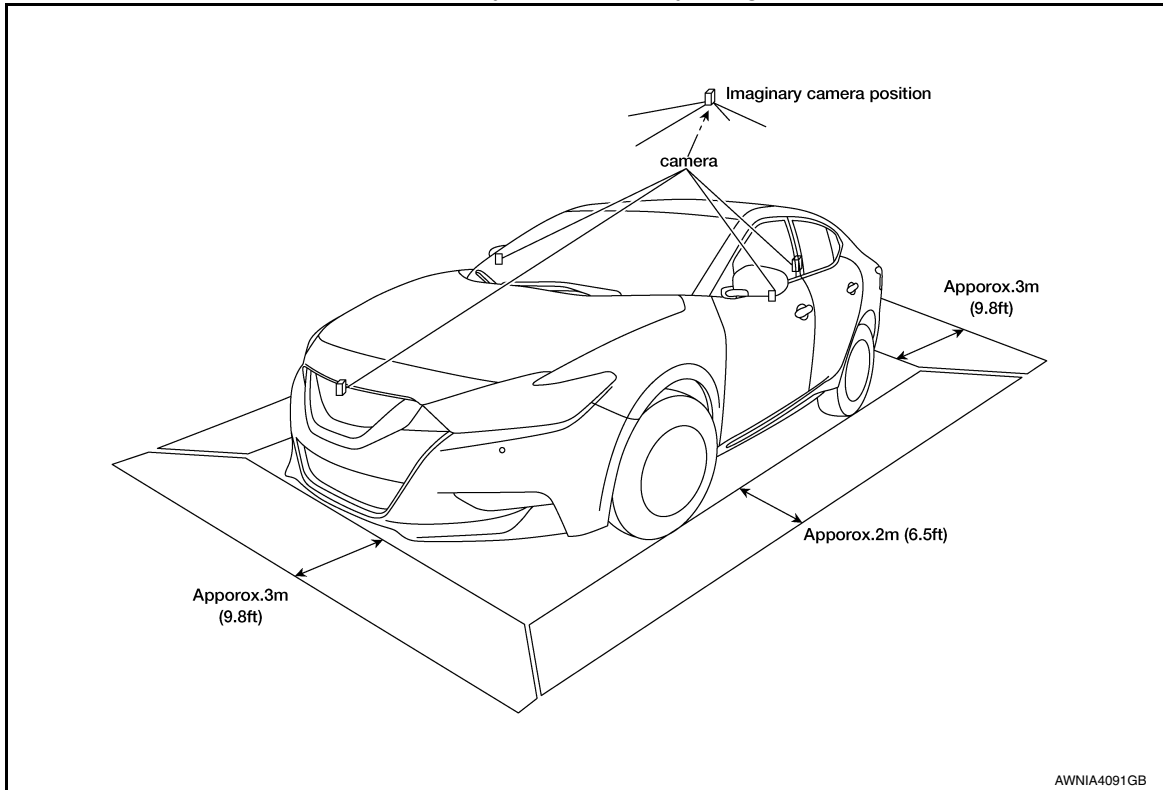
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# AROUND VIEW MONITOR SYSTEM

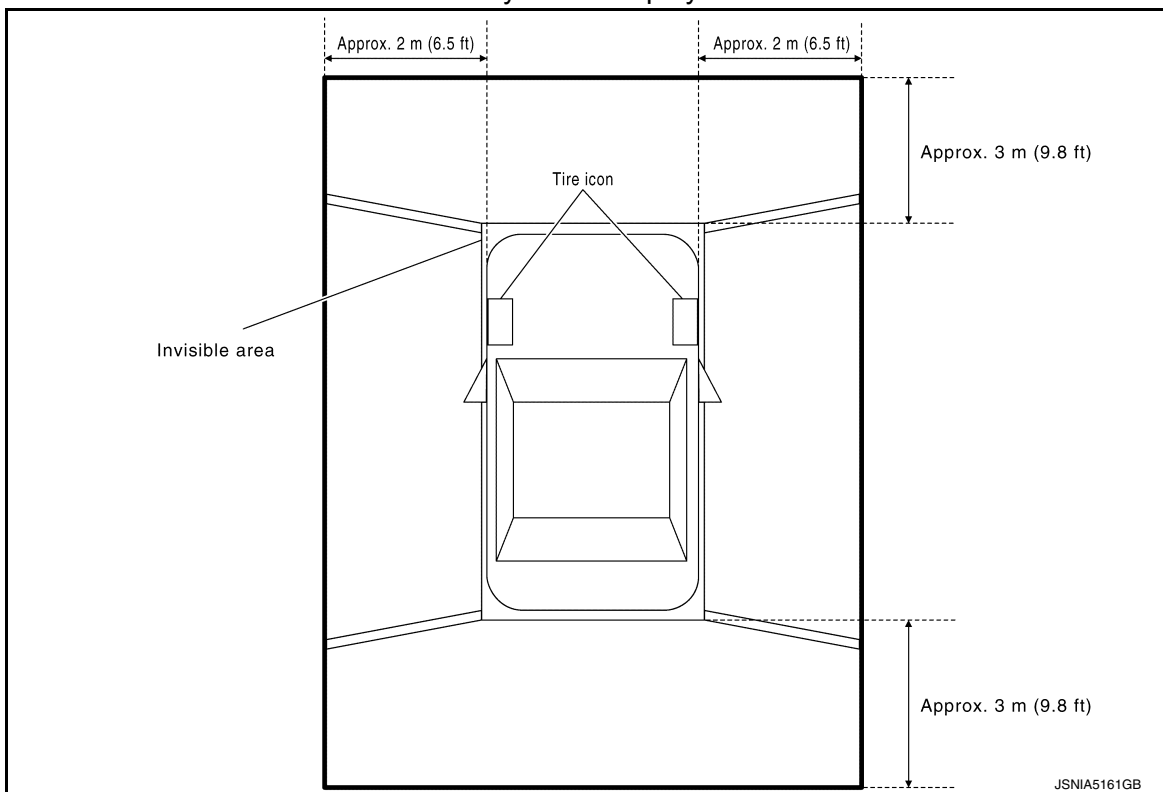
< SYSTEM DESCRIPTION >

[AROUND VIEW MONITOR SYSTEM]

### Birds-Eye view display image



### Birds-Eye view display area



### Moving Object Detection (MOD)

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



# AROUND VIEW MONITOR SYSTEM

## [AROUND VIEW MONITOR SYSTEM]

### < SYSTEM DESCRIPTION >

- Transmits MOD chime sound output request signal to the AV control unit via CAN communication.
- The combination meter receives the MOD beep sound output request signal from around view monitor control unit and outputs chime.
- Around view monitor control unit detects moving objects from camera image according to an image recognition method called optical flow.
- MOD does not detect a background as a moving object when the vehicle moves (when whole screen moves) but detects a moving object when an actual moving object is displayed on screen.
- MOD can be set to temporary OFF or permanent OFF by the following operations:
  - Temporary off: MOD is switched to OFF with a switch on the AV control unit (touch switch) while camera image is displayed on AV control unit.
  - Permanent off: MOD is switched to OFF by “Settings”.
- Color of “MOD” icon indicates whether or not MOD is operative. “MOD” icon is displayed as shown in the following table. when MOD is operative, “MOD” icon is displayed in blue. when MOD is not operative, “MOD” icon is displayed in gray. MOD icon is not displayed when MOD is off (permanent OFF) by “Settings”, or when MOD is OFF (temporary OFF) by switch of AV control unit (touch switch):

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

×: Icon is not displayed.

—: View is not displayed in each shift position (D position and R position).

- MOD illuminates frame of view in yellow and sounds chime when any of the conditions in the following table are satisfied:

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

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

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

### Tire Icon

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

# AROUND VIEW MONITOR SYSTEM

## [AROUND VIEW MONITOR SYSTEM]

### < SYSTEM DESCRIPTION >

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

### CAMERA IMAGE OPERATION PRINCIPLE

- If the information written to around view monitor control unit and the information from the camera do not match, the applicable camera position is indicated as an error on the Birds-Eye view display. (Calibration operation is necessary when replacing each camera or when replacing around view monitor control unit.)
- Around view monitor control unit receives the camera switch signal from AV control unit via CAN communication by pressing the "CAMERA" button.
- Around view monitor control unit that receives the camera button signal supplies the power to each camera and inputs the camera image from each camera.
- When the selector lever is in the reverse position, around view monitor control unit receives the reverse signal, supplies the power to each camera, and inputs the camera image from each camera.
- Around view monitor control unit that receives the camera image signal from each camera cuts out the required screen for each view, superimposes the camera image, vehicle icon, guiding lines, sonar indicator and "MOD" icon and outputs them to the display unit.

### Fail-Safe


INFOID:000000012193813

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

# AROUND VIEW MONITOR SYSTEM

< SYSTEM DESCRIPTION >

[AROUND VIEW MONITOR SYSTEM]

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



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# AROUND VIEW MONITOR SYSTEM

< SYSTEM DESCRIPTION >

[AROUND VIEW MONITOR SYSTEM]

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

# HANDLING PRECAUTION

< SYSTEM DESCRIPTION >

[AROUND VIEW MONITOR SYSTEM]

## HANDLING PRECAUTION

### Display

INFOID:000000012193814

- When the compartment temperature is low, the display images may look slower because the LCD response is deteriorated. The system will recover its normal operation when the cabin temperature increases to an appropriate level.
- When the compartment temperature is low [0°C (32°F) or less], the display images may look slower. It is characteristic of the LCD monitor and should not be considered to be a malfunction. When the temperature is at the operating temperature [0°C (32°F) to 50°C (122°F)], the display returns to normal.
- There may be small dark or bright dots in the screen or remaining display content may be found (image lag). These are inherent symptoms to any LCD monitor and should not be considered to be a malfunction.
- The image may look bright or dark when viewed obliquely from the rear. It is inherent to any LCD monitor and should not be considered to be a malfunction.
- Do not apply pressure on the LCD monitor. Doing so may cause irregularities in the screen image or render it inoperative.
- Do not use hard cloth, organic solvent (alcohol, benzene, and thinner), or chemical wipe to clean the LCD monitor. Doing so may affect the panel surface. When cleaning the LCD monitor, always wipe it with a soft cloth after shutting off the power. For severe contamination, use a soft cloth dampened with mild detergent (no droplets can be present).

### Around View Monitor

INFOID:000000012193815

#### PRECAUTIONS FOR THE HANDLING OF CAMERA SYSTEM

- The camera system assists the detection of obstacles. When operating the vehicle, the safety must be confirmed and ensured directly by sight, using the mirrors.
- Distance shown by vehicle width guiding lines and predicted course lines may differ from actual distance depending on the number of passengers and fuel capacity. For this reason, these lines must be used only as a guide.
- With the camera lens characteristics, a distance shown on the screen may look different from actual distance or obstacles may look deformed.
- The camera is a precision instrument. Always prevent a strong impact, such as high-pressure car wash. Failure to do this results in a malfunction.
- Adhesion of dirt, rain drops, and snow to the camera lens may lower the sharpness of camera image or cause an improper operation in MOD (Moving Object Detection) function or parking frame recognition function. These adherents must be removed with a soft wet cloth first, then with a dry soft cloth.
- Never damage the camera. Failure to do this may affect camera images.

#### PRECAUTIONS FOR THE HANDLING OF MOD (MOVING OBJECT DETECTION)

- MOD (Moving Object Detection) does not inform the driver of stationary objects.
- MOD (Moving Object Detection) detects a moving object by processing image data of an image shown on the display. The detection performance of a moving object is limited.
- MOD (Moving Object Detection) may not operate properly when any of the following conditions is satisfied:
  - Color and brightness of a moving object are similar to those of its background.
  - Existence of blinking light, such as turn signal lamp
  - Reflection of a strong light, such as head lamp light from other vehicles or sun light.
  - Inappropriate orientation of camera due to folded mirror.
  - Non-moving objects, such as water droplets dripping on the camera lens, white smoke from the muffler or moving shadow may be detected.
  - Detection may not be performed properly depending on the speed, direction, distance, and shape of moving object.

# DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[AROUND VIEW MONITOR SYSTEM]

## DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

### CONSULT Function

INFOID:000000012193816

### CONSULT FUNCTIONS

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

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

### SELF DIAGNOSTIC RESULT

Refer to [AV-230. "DTC Index"](#).

- In CONSULT self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates "CRNT". The past malfunction indicates "PAST".

### Freeze Frame Data (FFD)

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

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

### DATA MONITOR

#### NOTE:

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

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

# DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[AROUND VIEW MONITOR SYSTEM]

Display item	Remarks
ST ANGLE SENSOR SIGNAL [On/Off]	Receiving status of steering angle signal received from steering angle sensor is displayed by ON/OFF.
REVERSE SIGNAL [On/Off]	Receiving status of reverse signal received from AV control unit is displayed by ON/OFF.
VEHICLE SPEED SIGNAL [On/Off]	Receiving status of vehicle speed signal received from ABS actuator control unit is displayed by ON/OFF.
CAMERA SWITCH SIGNAL [On/Off]	Receiving status of camera switch signal received from AV control unit is displayed by ON/OFF.
CAMERA OFF SIGNAL [On/Off]	Receiving status of camera OFF signal received from AV control unit is displayed by ON/OFF.
ST ANGLE SENSOR TYPE [Absolute]	Input type of steering angle sensor is displayed. <b>NOTE:</b> For this vehicle, "Absolute" is displayed.
STEERING GEAR RATIO TYPE [TYPE1]	Type of steering gear ratio is displayed. <b>NOTE:</b> For this vehicle, "TYPE 1" is displayed.
STEERING POSITION [LHD/RHD]	Steering position is displayed.
REAR CAMERA IMAGE SIGNAL [OK/NG]	Input status of rear view camera image signal is displayed by OK/NG in real time.
F-CAMERA IMAGE SIGNAL [OK/NG]	Input status of front view camera image signal is displayed by OK/NG in real time.
DR-SIDE CAMERA IMAGE SIG [OK/NG]	Input status of side camera LH image signal is displayed by OK/NG in real time.
PA-SIDE CAMERA IMAGE SIG [OK/NG]	Input status of side camera RH image signal is displayed by OK/NG in real time.
ILL [ON/OFF]	Input status of illumination signal condition.
TURN SIGNAL [ON/OFF]	Input status of turn signal condition.

## WORK SUPPORT

Work support items	Description
NON-VIEWABLE AREA REMINDER	ON/OFF setting of the non-viewable area reminder can be performed.
INITIALIZE CAMERA IMAGE CALIBRATION	The calibration can be initialized to factory shipment condition. <b>NOTE:</b> Calibration of camera image caused by misalignment of the camera installation position is performed.
STEERING ANGLE SENSOR ADJUSTMENT	Steering angle sensor neutral position can be adjusted and registered. <b>CAUTION:</b> <b>For vehicles with VDC, adjust the steering angle sensor neutral position on the ABS actuator control unit side. Refer to <a href="#">BRC-248</a>. "Work Procedure".</b>
CALIBRATING CAMERA IMAGE (FRONT CAMERA)	Performs the calibration of front camera. <b>NOTE:</b> Calibration of camera image caused by misalignment of the camera installation position is performed.
CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)	Performs the calibration of side camera RH. <b>NOTE:</b> Calibration of camera image caused by misalignment of the camera installation position is performed.

# DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[AROUND VIEW MONITOR SYSTEM]

Work support items	Description
CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)	Performs the calibration of side camera LH. <b>NOTE:</b> Calibration of camera image caused by misalignment of the camera installation position is performed.
CALIBRATING CAMERA IMAGE (REAR CAMERA)	Performs the calibration of rear camera. <b>NOTE:</b> Calibration of camera image caused by misalignment of the camera installation position is performed.
FINE TUNING OF BIRDS-EYE VIEW	The confirmation and adjustment of the difference between each camera can be performed. The fine adjustment function of camera calibration can check and adjust the difference between each camera.
REAR WIDE VIEW FIXED GUIDE LINE CORRECTION	The position of rear wide view guiding line can be changed.
CAUSE OF ENTRY CANCEL	Displays cancel cause item.
MOD FUNCTION	Allows turning ON/OFF of MOD function.
PREDICTIVE COURSE LINE DISPLAY	ON/OFF setting of non-viewable area can be performed.

## ECU IDENTIFICATION

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



# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[AROUND VIEW MONITOR SYSTEM]

## ECU DIAGNOSIS INFORMATION

### AROUND VIEW MONITOR CONTROL UNIT

#### Reference Value

INFOID:0000000012193817

#### 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:

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

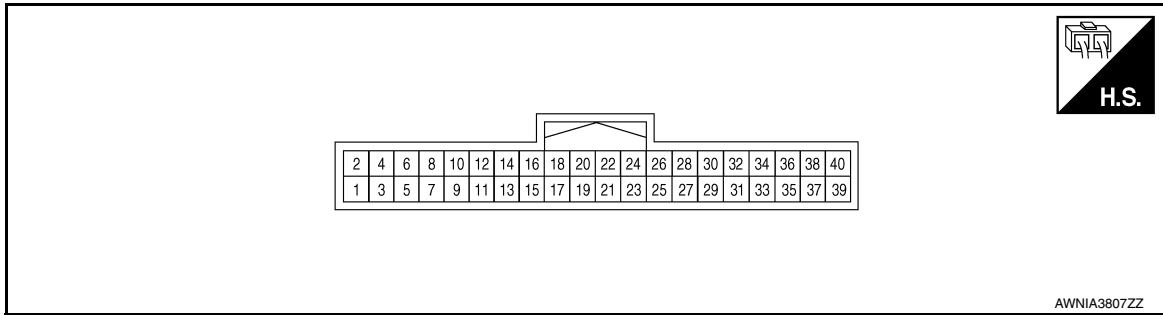
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# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[AROUND VIEW MONITOR SYSTEM]

## TERMINAL LAYOUT



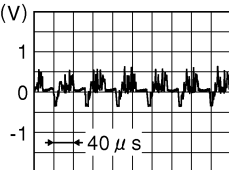
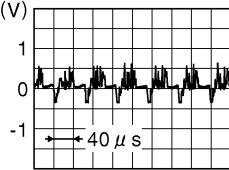
## PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
3 (Shield)	—	Video output shield	—	—	—
4 (B)	Ground	Video output signal	Output	[Ignition switch ON] • CAMERA switch is ON or shift position is R position	 JSNIA0834GB
5 (B)	—	Front camera ground	—	[Ignition switch ON]	0 V
6 (R)	5 (B)	Front camera power supply	Output	[Ignition switch ON]	6.0 V
7 (Shield)	—	Front camera video ground	—	[Ignition switch ON]	0 V
8 (W)	7 (Shield)	Front camera video signal	Input	[Ignition switch ON] • CAMERA switch is ON or shift position is R position	 JSNIA0834GB
9 (B)	—	Door mirror RH camera ground	—	[Ignition switch ON]	0 V
10 (R)	9 (B)	Door mirror RH camera power supply	Output	[Ignition switch ON]	6.0 V
11 (Shield)	—	Door mirror RH camera video ground	—	[Ignition switch ON]	0 V
12 (W)	11 (Shield)	Door mirror RH camera video signal	Input	[Ignition switch ON] • CAMERA switch is ON or shift position is R position	 JSNIA0834GB

# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[AROUND VIEW MONITOR SYSTEM]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
13 (B)	—	Door mirror LH camera ground	—	[Ignition switch ON]	0 V
14 (R)	13 (B)	Door mirror LH camera power supply	Output	[Ignition switch ON]	6.0 V
15 (Shield)	—	Door mirror LH camera video ground	—	[Ignition switch ON]	0 V
16 (W)	15 (Shield)	Door mirror LH camera video signal	Input	[Ignition switch ON] • CAMERA switch is ON or shift position is R position	 <small>JSNIA0834GB</small>
17 (B)	—	Rear view camera ground	—	[Ignition switch ON]	0 V
18 (R)	17 (B)	Rear view camera power supply	Output	[Ignition switch ON]	6.0 V
19 (Shield)	—	Rear view camera video ground	—	[Ignition switch ON]	0 V
20 (W)	19 (Shield)	Rear view camera video signal	Input	[Ignition switch ON] • CAMERA switch is ON or shift position is R position	 <small>JSNIA0834GB</small>
24 (Y)	—	CAN low	Input/ Output	—	—
26 (L)	—	CAN high	Input/ Output	—	—
32 (G)	39 (B)	Reverse signal	Input	[Ignition switch ON] • R position	12.0 V
39 (B)	—	Ground	—	[Ignition switch ON]	0 V
40 (BG)	39 (B)	Ignition signal	Input	[Ignition switch ON or START]	12.0 V

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# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[AROUND VIEW MONITOR SYSTEM]

## Fail-Safe

INFOID:000000012193818

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U0428: ST ANGLE SENSOR CALIBRATION	Neutral position adjustment of steering angle sensor is not complete.	<ul style="list-style-type: none"> <li>• Predicted course line is not displayed.</li> <li>• MOD (Moving Object Detection) function is stopped.</li> <li>• Front tire angle display is stopped.</li> <li>• Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed.</li> </ul>
U1000: CAN COMM CIRCUIT	When around view monitor control unit cannot transmit/receive CAN communication signal continuously for 2 seconds or more.	<p>The following functions are stopped</p> <ul style="list-style-type: none"> <li>• When communication of steering angle sensor signal is not normal:                             <ul style="list-style-type: none"> <li>- Predicted course line is not displayed.</li> <li>- MOD (Moving Object Detection) function is stopped.</li> <li>- Front tire angle display is stopped.</li> <li>- Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed.</li> </ul> </li> <li>• When communication of vehicle signal, wheel speed sensor signal, and shift signal is not normal:                             <ul style="list-style-type: none"> <li>- Predicted course line is not displayed.</li> <li>- MOD (Moving Object Detection) function is stopped.</li> <li>- Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed.</li> </ul> </li> </ul>
U111A: REAR CAMERA IMAGE SIGNAL	No-signal status of rear camera image signal is continued for 500 ms or more while ignition switch is ON. <b>NOTE:</b> Current malfunction is displayed only and is not saved.	Camera image is not displayed (gray screen display).
U111B: SIDE CAMERA RH IMAGE SIGNAL	No-signal status of side camera RH image signal is continued for 500 ms or more while ignition switch is ON. <b>NOTE:</b> Current malfunction is displayed only and is not saved.	
U111C: FRONT CAMERA IMAGE SIGNAL	No-signal status of front camera image signal is continued for 500 ms or more while ignition switch is ON. <b>NOTE:</b> Current malfunction is displayed only and is not saved.	
U111D: SIDE CAMERA LH IMAGE SIGNAL	No-signal status of side camera LH image signal is continued for 500 ms or more while ignition switch is ON. <b>NOTE:</b> Current malfunction is displayed only and is not saved.	

# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[AROUND VIEW MONITOR SYSTEM]

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U1232: ST ANGLE SEN CALIB	Neutral position adjustment of steering angle sensor is performed. NG signal from steering angle sensor is received.	<ul style="list-style-type: none"> <li>• Predicted course line is not displayed.</li> <li>• MOD (Moving Object Detection) function is stopped.</li> <li>• Tire icon is stopped.</li> <li>• Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed.</li> </ul>
U1302: CAMERA POWER VOLT	Camera power supply voltage does not satisfy the following conditions for 2 seconds or more when ignition switch is turned ON: <ul style="list-style-type: none"> <li>• When supplemental lighting power supply output is ON: 5.9 – 6.5 V.</li> <li>• When OFF: 0 V by camera power supply measurement.</li> </ul>	Camera power output is stopped.
U1304: CAMERA IMAGE CALIB	<ul style="list-style-type: none"> <li>• When camera calibration is incomplete.</li> <li>• When camera information in around view monitor control unit and information read from camera are not the same.</li> </ul> <b>NOTE:</b> Current malfunction is displayed only and is not saved.	Unmatched icon  display (red) is displayed (applicable for unmatched camera only).
U1305: CONFIG UNFINISH	The vehicle setting of around view monitor control unit is incomplete. <b>NOTE:</b> Current malfunction is displayed only and is not saved.	Operation is according to the vehicle setting value as default value.
Other	When around view monitor control unit is not normal.	Switch to camera screen is not allowed.
	When communication between around view monitor control unit and each camera is not normal.	On applicable camera screen,  marking (Red) is displayed.
	When communication line between around view monitor control unit and each camera image line is affected by electromagnetic noises.	On applicable camera image screen,  display (Blue) is displayed.

## DTC Inspection Priority Chart

INFOID:000000012193819

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart:

Priority	Detected items (DTC)
1	U1305: CONFIG UNFINISH
2	<ul style="list-style-type: none"> <li>• U1000: CAN COMM CIRCUIT</li> <li>• U1010: CONTROL UNIT (CAN)</li> </ul>
3	<ul style="list-style-type: none"> <li>• U0428: ST ANGLE SENSOR CALIBRATION</li> <li>• U111A: REAR CAMERA IMAGE SIGNAL</li> <li>• U111B: SIDE CAMERA RH IMAGE SIGNAL</li> <li>• U111C: FRONT CAMERA IMAGE SIGNAL</li> <li>• U111D: SIDE CAMERA LH IMAGE SIGNAL</li> <li>• U1232: ST ANGLE SEN CALIB</li> <li>• U1302: CAMERA POWER VOLT</li> <li>• U1304: CAMERA IMAGE CALIB</li> </ul>

# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[AROUND VIEW MONITOR SYSTEM]

## DTC Index

INFOID:000000012193820

DTC	CONSULT display	Refer to
U0428	ST ANGLE SENSOR CALIBRATION	<a href="#">AV-246. "DTC Description"</a>
U1000	CAN COMM CIRCUIT	<a href="#">AV-248. "AROUND VIEW MONITOR CONTROL UNIT : DTC Description"</a>
U1010	CONTROL UNIT (CAN)	<a href="#">AV-250. "AROUND VIEW MONITOR CONTROL UNIT : DTC Description"</a>
U111A	REAR CAMERA IMAGE SIGNAL	<a href="#">AV-251. "DTC Description"</a>
U111B	SIDE CAMERA RH IMAGE SIGNAL	<a href="#">AV-254. "DTC Description"</a>
U111C	FRONT CAMERA IMAGE SIGNAL	<a href="#">AV-257. "DTC Description"</a>
U111D	SIDE CAMERA LH IMAGE SIGNAL	<a href="#">AV-260. "DTC Description"</a>
U1232	ST ANGLE SEN CALIB	<a href="#">AV-263. "DTC Description"</a>
U1302	CAMERA POWER VOLT	<a href="#">AV-264. "DTC Description"</a>
U1304	CAMERA IMAGE CALIB	<a href="#">AV-268. "DTC Description"</a>
U1305	CONFIG UNFINISH	<a href="#">AV-269. "DTC Description"</a>

# AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

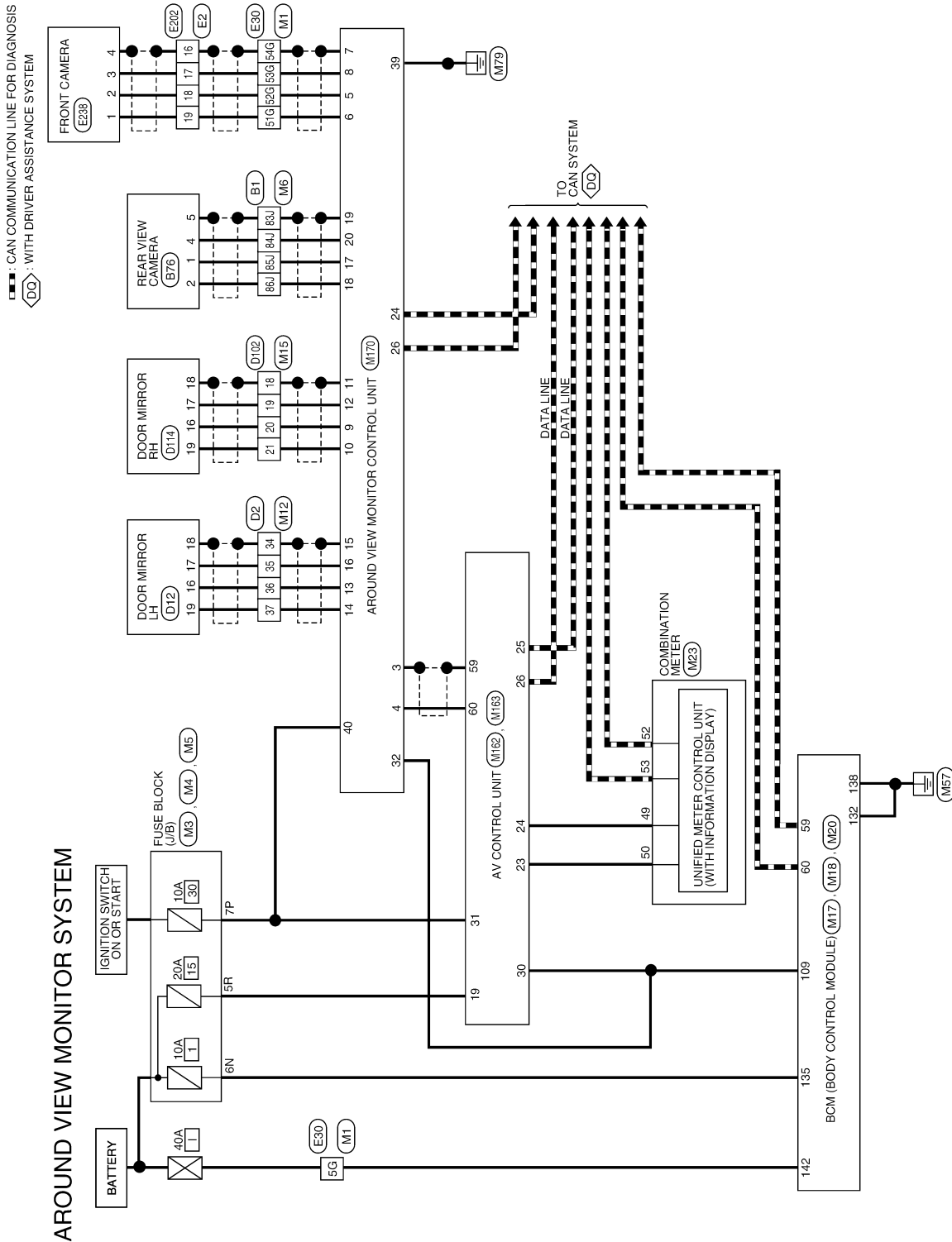
[AROUND VIEW MONITOR SYSTEM]

## WIRING DIAGRAM

### AROUND VIEW MONITOR SYSTEM

#### Wiring Diagram

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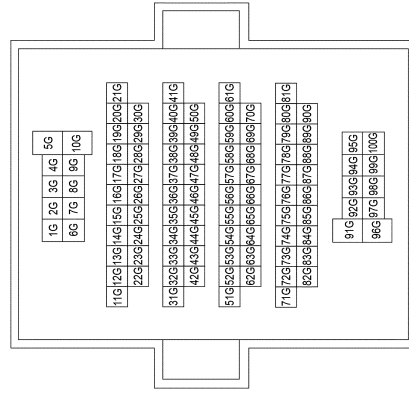
# AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

[AROUND VIEW MONITOR SYSTEM]

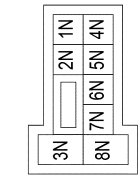
## AROUND VIEW MONITOR SYSTEM CONNECTORS

Connector No.	M1
Connector Name	WIRED TO WIRE
Connector Type	TH80FW-CS16-TM4
Connector Color	WHITE



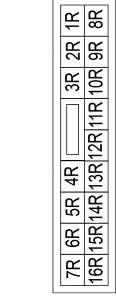
Terminal No.	Color of Wire	Signal Name
5G	W	-
51G	R	-
52G	B	-
53G	W	-
54G	SHIELD	-

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Type	CS96FW-M2
Connector Color	WHITE



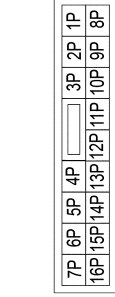
Terminal No.	Color of Wire	Signal Name
6N	LG	-

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FBR-CS
Connector Color	BROWN



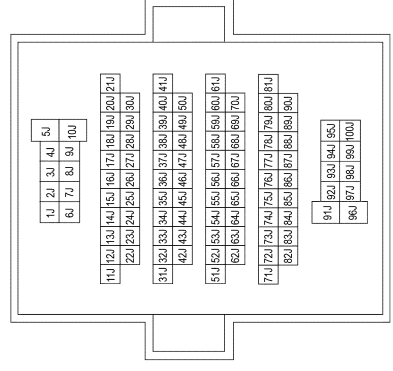
Terminal No.	Color of Wire	Signal Name
5R	G	-

Connector No.	M5
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
Connector Color	WHITE



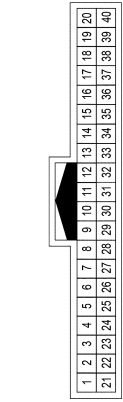
Terminal No.	Color of Wire	Signal Name
7P	BG	-

Connector No.	M6
Connector Name	WIRED TO WIRE
Connector Type	TH80FDGY-CS16-TM4
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
83J	SHIELD	-
84J	W	-
85J	B	-
86J	R	-

Connector No.	M12
Connector Name	WIRED TO WIRE
Connector Type	TH40MW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
34	SHIELD	-
35	W	-
36	B	-
37	R	-



# AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

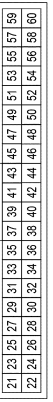
[AROUND VIEW MONITOR SYSTEM]

53	L	CAN-H
Connector No.	M162	
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)	
Connector Type	NH18FW-CS2	
Connector Color	WHITE	



Terminal No.	19	Color of Wire	G	Signal Name	BAT
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Connector No.	M163	
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)	
Connector Type	TH40FW-NH	
Connector Color	WHITE	



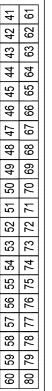
Terminal No.	23	Color of Wire	LG	Signal Name	M-CAN_L
24	SB			M-CAN_H	
25	P			CAN-L	
26	L			CAN-H	
30	G			REVERSE	
31	BQ			IGN	
59	B			CAMERA_COMP+ (WITH AROUND VIEW CAMERA)	
59	W			CAMERA_COMP+ (WITH REAR VIEW CAMERA)	
60	SHIELD			CAMERA_SHIELD	

Connector No.	M18	
Connector Name	BCM (BODY CONTROL MODULE)	
Connector Type	TH24FB-NH	
Connector Color	BLACK	



Terminal No.	109	Color of Wire	G	Signal Name	REVERSE SIGNAL
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Connector No.	M20	
Connector Name	BCM (BODY CONTROL MODULE)	
Connector Type	TH40FB-NH	
Connector Color	BLACK	



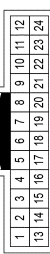
Terminal No.	59	Color of Wire	P	Signal Name	CAN-L
60	L			CAN-H	

Connector No.	M23	
Connector Name	COMBINATION METER	
Connector Type	TH16FW-NH	
Connector Color	WHITE	



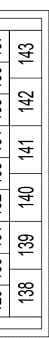
Terminal No.	49	Color of Wire	LG	Signal Name	M-CAN (LOW)
50	SB			M-CAN (HI)	
52	P			CAN-L	

Connector No.	M15	
Connector Name	WIRE TO WIRE	
Connector Type	TH24MW-NH	
Connector Color	WHITE	



Terminal No.	18	Color of Wire	SHIELD	Signal Name	-
19	W			-	
20	B			-	
21	R			-	

Connector No.	M17	
Connector Name	BCM (BODY CONTROL MODULE)	
Connector Type	FEA09FW-FHA6-SA	
Connector Color	WHITE	



Terminal No.	132	Color of Wire	B	Signal Name	GND2
135	LG			BAT_BCM_FUSE	
138	B			GND1	
142	W			BAT-POWER_F/L	

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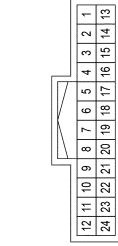
AV

# AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

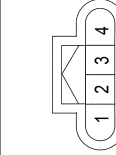
[AROUND VIEW MONITOR SYSTEM]

54G	SHIELD	-
Connector No.	E202	
Connector Name	WIRE TO WIRE	
Connector Type	TH24FW-NH	
Connector Color	WHITE	



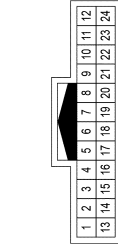
Terminal No.	Color of Wire	Signal Name
16	SHIELD	-
17	W	-
18	B	-
19	R	-

Connector No.	E238
Connector Name	FRONT CAMERA
Connector Type	RH04FB
Connector Color	BLACK



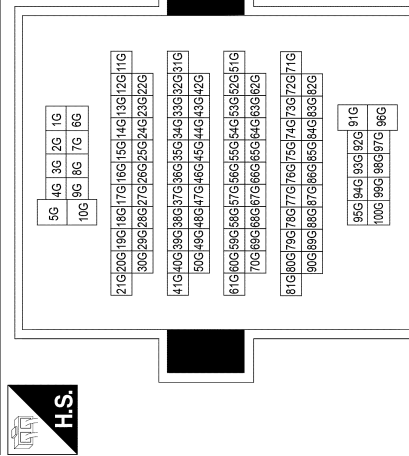
Terminal No.	Color of Wire	Signal Name
1	R	-
2	B	-
3	W	-
4	SHIELD	-

40	BG	IGN
Connector No.	E2	
Connector Name	WIRE TO WIRE	
Connector Type	TH24MW-NH	
Connector Color	WHITE	



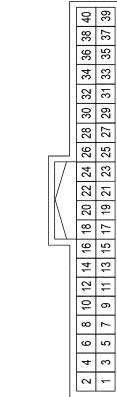
Terminal No.	Color of Wire	Signal Name
16	SHIELD	-
17	W	-
18	B	-
19	R	-

Connector No.	E30
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
5G	P	-
51G	R	-
52G	B	-
53G	W	-

Connector No.	M170
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	-	-
2	-	-
3	SHIELD	VIDEO OUTPUT GND
4	B	VIDEO OUTPUT SIGNAL
5	B	FV-POWER GND
6	R	FV-POWER 6.2V
7	SHIELD	FV-VIDEO GND
8	W	FV-VIDEO SIGNAL
9	B	SV1-POWER GND
10	R	SV1-POWER 6.2V
11	SHIELD	SV1-VIDEO GND
12	W	SV1-VIDEO SIGNAL
13	B	SV2-POWER GND
14	R	SV2-POWER 6.2V
15	SHIELD	SV2-VIDEO GND
16	W	SV2-VIDEO SIGNAL
17	B	RV-POWER GND
18	R	RV-POWER 6.2V
19	SHIELD	RV-VIDEO GND
20	W	RV-VIDEO SIGNAL
21	-	-
22	-	-
23	-	-
24	Y	ITS CAN-L
25	-	-
26	L	ITS CAN-H
27	-	-
28	-	-
29	-	-
30	-	-
31	-	-
32	G	REVERSE
33	-	-
34	-	-
35	-	-
36	-	-
37	-	-
38	-	-
39	B	GND

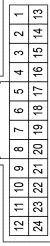
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# AROUND VIEW MONITOR SYSTEM

< WIRING DIAGRAM >

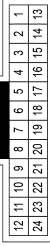
[AROUND VIEW MONITOR SYSTEM]

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH
Connector Color	WHITE



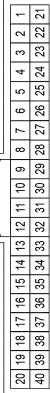
Terminal No.	Color of Wire	Signal Name
18	SHIELD	-
19	W	-
20	B	-
21	R	-

Connector No.	D114
Connector Name	DOOR MIRROR RH (WITH AUTOMATIC DRIVE POSITIONER)
Connector Type	TH24MW-NH
Connector Color	WHITE



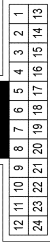
Terminal No.	Color of Wire	Signal Name
16	B	-
17	W	-
18	SHIELD	-
19	R	-

Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-NH
Connector Color	WHITE



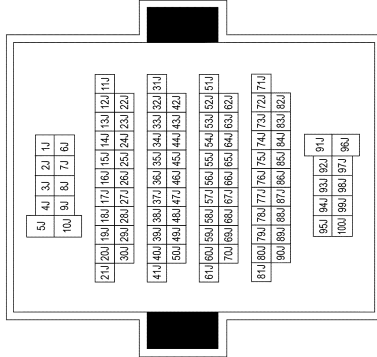
Terminal No.	Color of Wire	Signal Name
34	SHIELD	-
35	W	-
36	B	-
37	R	-

Connector No.	D12
Connector Name	DOOR MIRROR LH (WITH AUTOMATIC DRIVE POSITIONER)
Connector Type	TH24MW-NH
Connector Color	WHITE



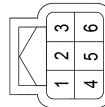
Terminal No.	Color of Wire	Signal Name
16	B	-
17	W	-
18	SHIELD	-
19	R	-

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80MDGY-CS16-TM4
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
83J	SHIELD	-
84J	W	-
85J	B	-
86J	R	-

Connector No.	B76
Connector Name	REAR VIEW CAMERA
Connector Type	RH06FB-1V
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	-
2	R	-
4	W	-
5	SHIELD	-

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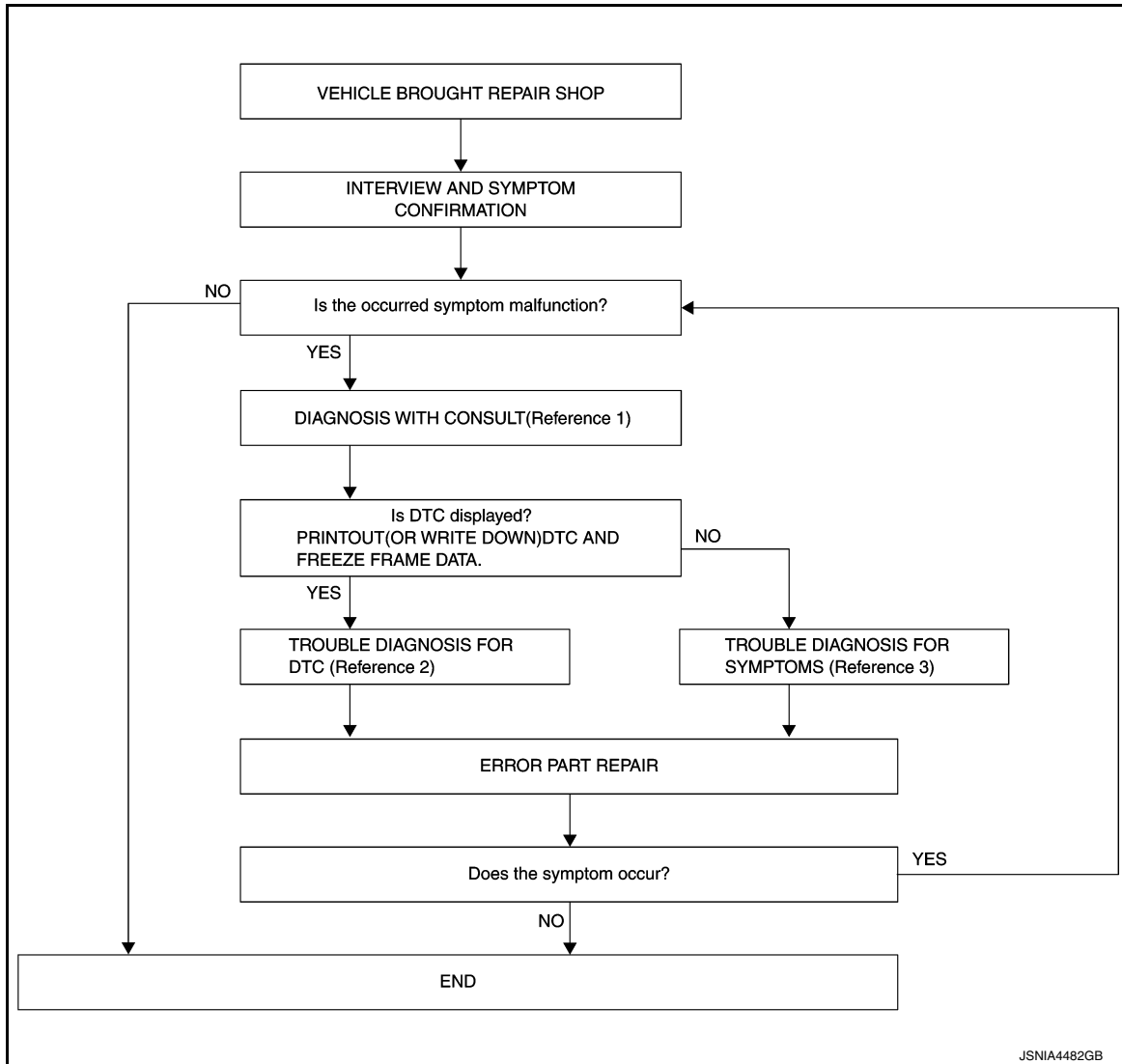
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

#### Work Flow

INFOID:000000012193822

#### OVERALL SEQUENCE



JSNIA4482GB

- Reference 1: Refer to [AV-222, "CONSULT Function"](#).
- Reference 2: Refer to [AV-230, "DTC Index"](#).
- Reference 3: Refer to [AV-271, "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 a malfunction?

YES >> GO TO 2.

NO >> Inspection End.

##### 2. DIAGNOSIS WITH CONSULT

# DIAGNOSIS AND REPAIR WORKFLOW

[AROUND VIEW MONITOR SYSTEM]

< BASIC INSPECTION >

1. Connect CONSULT and perform a self-diagnosis for "MULTI AV". Refer to [AV-222. "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 (FFD).

Is DTC displayed?

YES >> GO TO 3.

NO >> GO TO 4.

## 3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the "Self Diagnostic Result".
2. Perform the relevant diagnosis referring to the DTC Index. Refer to [AV-230. "DTC Index"](#).

>> GO TO 5.

## 4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-271. "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".

**NOTE:**  
Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the "Self Diagnostic Result".
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 AROUND VIEW MONITOR CONTROL UNIT

< BASIC INSPECTION >

[AROUND VIEW MONITOR SYSTEM]

## ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT

### Description

INFOID:000000012193823

When replacing around view monitor control unit, save or print current vehicle specification with CONSULT "Configuration" before replacement.

#### BEFORE REPLACEMENT

##### NOTE:

If "READ CONFIGURATION" can not be used, use the "MANUAL CONFIGURATION" after replacing around view monitor control unit

#### AFTER REPLACEMENT

##### CAUTION:

- When replacing around view monitor control unit, you must perform "WRITE CONFIGURATION" with CONSULT.
- Never perform "WRITE CONFIGURATION" except for new around view monitor control unit

### Work Procedure

INFOID:000000012193824

#### 1.SAVING VEHICLE SPECIFICATION

---

##### ⓅCONSULT Configuration

Perform "READ CONFIGURATION" to save or print current vehicle specification. Refer to [AV-239, "Description"](#).

##### NOTE:

If "READ CONFIGURATION" can not be used, use "MANUAL CONFIGURATION" after replacing around view monitor control unit.

>> GO TO 2.

#### 2.REPLACE AROUND VIEW MONITOR CONTROL UNIT

---

Replace around view monitor control unit. Refer to [AV-273, "Removal and Installation"](#).

>> GO TO 3.

#### 3.WRITING VEHICLE SPECIFICATION

---

##### ⓅCONSULT Configuration

Perform "WRITE CONFIGURATION - Config file" or "MANUAL CONFIGURATION" to write vehicle specification. Refer to [AV-239, "Work Procedure"](#).

>> GO TO 4.

#### 4.CALIBRATE CAMERA IMAGE

---

Perform calibration of camera image. Refer to [AV-240, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).

>> Work End.

# CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT)

< BASIC INSPECTION >

[AROUND VIEW MONITOR SYSTEM]

## CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT)

### Description

INFOID:000000012193825

Vehicle specification needs to be written with CONSULT because it is not written after replacing around view monitor control unit.

Configuration has three functions as follows

Function	Description
READ CONFIGURATION	<ul style="list-style-type: none"><li>• Reads the vehicle configuration of current around view monitor control unit.</li><li>• Saves the read vehicle configuration.</li></ul>
WRITE CONFIGURATION - Manual setting	Writes the vehicle configuration with manual setting.
WRITE CONFIGURATION - Config file	Writes the vehicle configuration with saved data.

#### CAUTION:

- When replacing around view monitor control unit, you must perform “WRITE CONFIGURATION” with CONSULT.
- Never perform “WRITE CONFIGURATION” except for new around view monitor control unit.

### Work Procedure

INFOID:000000012193826

#### 1. WRITING MODE SELECTION

 CONSULT Configuration  
Select “CONFIGURATION” of AV.


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

#### 2. PERFORM “WRITE CONFIGURATION - CONFIG FILE”

 CONSULT Configuration  
Perform “WRITE CONFIGURATION - Config file”.

>> Work End.

#### 3. PERFORM “MANUAL CONFIGURATION”

 CONSULT Configuration  
Select “MANUAL CONFIGURATION” to write vehicle specifications into the around view monitor control unit.

#### CAUTION:

- Thoroughly read and understand the vehicle specification. Incorrect settings may result in abnormal control of ECU.
- Make sure to select “NEXT” even if the default settings displayed on the CONSULT are the desired settings. If “NEXT” is not selected, the configuration process will be incomplete.

#### NOTE:

If manual configuration items are not displayed, touch “NEXT”.

>> GO TO 4.

#### 4. OPERATION CHECK

Confirm that each function controlled by around view monitor control unit operates normally.

>> Work End.

# INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[AROUND VIEW MONITOR SYSTEM]

## INSPECTION AND ADJUSTMENT

### PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT

#### PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Description

INFOID:000000012193827

Adjust the center position of the predictive course line of the front view and rear view monitor.

#### PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Work Procedure

INFOID:000000012193828

## 1.DRIVING

Drive the vehicle straight ahead 100 m (328.1 ft) or more at a speed of 30 km/h (18.6 MPH) or more.

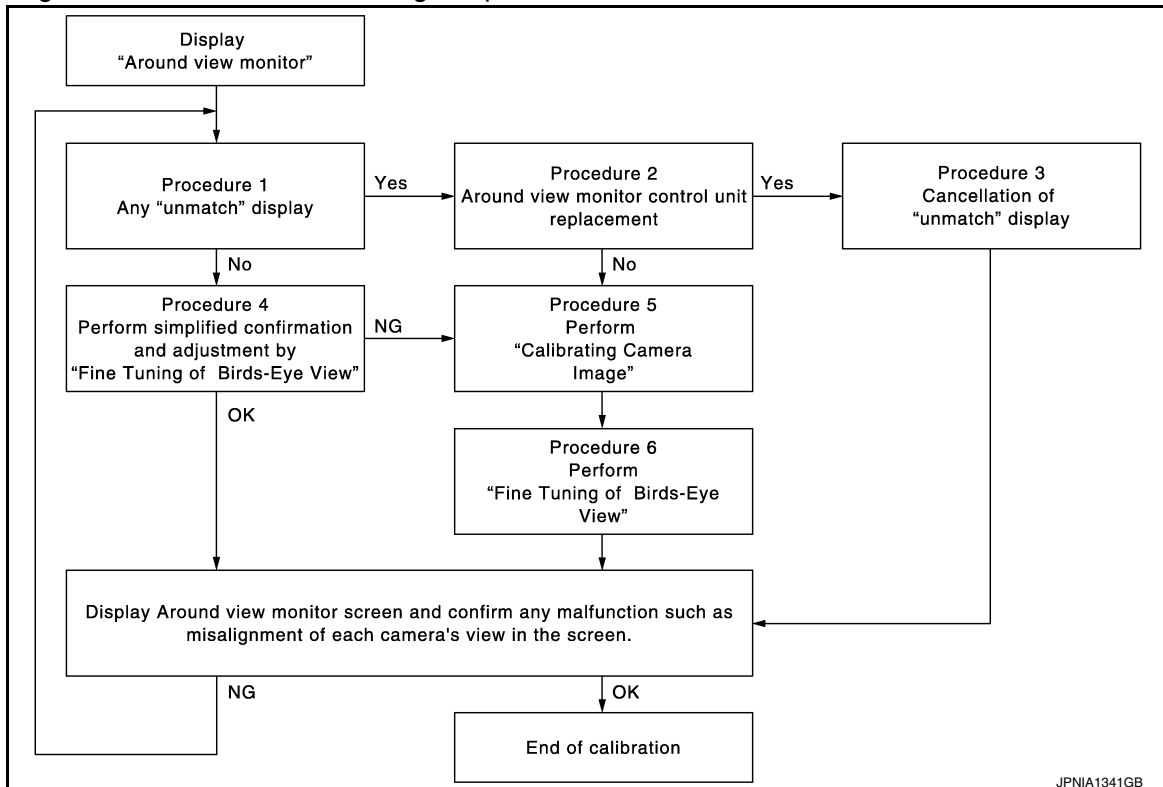
>> Work End.

### CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

#### CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Description

INFOID:000000012193829

- Perform camera calibration and perform writing to the around view monitor control unit after removal/installation or replacement of each camera or camera mounting parts (front grille, door mirror, or others) or replacement of around view monitor control unit.
- By performing this camera calibration procedure, the boundary of each camera image is aligned to the white lines on the road near the vehicle. The boundary of each camera image may not be aligned to the white lines far from the vehicle. The farther the line, the greater the difference is.
- Following the flow chart shown in the figure, perform calibration:



- For details of calibration operation, refer to [AV-240. "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Work Procedure"](#).

#### CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Work Procedure

INFOID:000000012193830

**CAUTION:**



# INSPECTION AND ADJUSTMENT

## [AROUND VIEW MONITOR SYSTEM]

< BASIC INSPECTION >

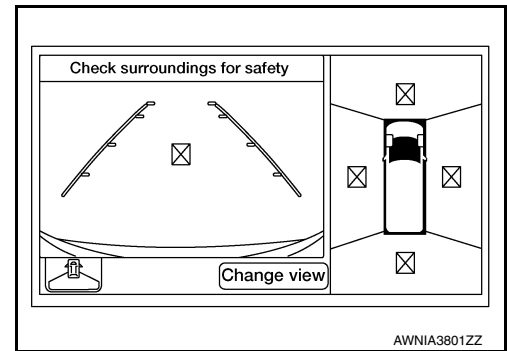
When around view monitor control unit is replaced, perform the control unit setting before performing this calibration. Refer to [AV-240, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).

### 1. CHECK AROUND VIEW MONITOR SCREEN

Check whether or not un-match display "⊠" is on screen.

Is un-match display on screen?

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



### 2. CHECK WHETHER OR NOT AROUND VIEW MONITOR CONTROL UNIT IS REPLACED

Check whether or not around view monitor control unit is replaced.

Is around view monitor control unit replaced?

- YES >> GO TO 3.
- NO >> GO TO 5.

### 3. RELEASE UN-MATCH DISPLAY (PERFORM ONLY WHEN AROUND VIEW MONITOR CONTROL UNIT IS REPLACED)

Ⓜ CONSULT Work Support

1. Select "CALIBRATING CAMERA IMAGE".

#### NOTE:

In random order, perform the operation for all cameras for which un-match display "⊠" appears.

- Front camera: "CALIBRATING CAMERA IMAGE (FRONT CAMERA)"
  - Passenger side camera: "CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)"
  - Driver side camera: "CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)"
  - Rear camera: "CALIBRATING CAMERA IMAGE (REAR CAMERA)"
2. On each camera calibration screen, press "APPLY", and then press "OK" button.

#### CAUTION:

- Never perform any operation other than selecting "APPLY" button.
- Never perform "INITIALIZE CAMERA IMAGE CALIBRATION".

3. Display the around view monitor screen. Check that images are displayed normally without any difference between images for each camera.

Is there a malfunction such as a difference between camera images?

- YES >> Calibration end.
- NO >> GO TO 1.

### 4. PERFORM SIMPLIFIED CONFIRMATION/ADJUSTMENT BY "FINE TUNING OF BIRDS-EYE VIEW"

1. Put target line 1 beside each axle using packing tape, etc.
2. Put target line 2 at a position approximately 30 cm (11.81 in) away from each side of the vehicle (the left and right). Check that the target line is a length equivalent to the vehicle length plus an additional approximate length of 1.0 m (39.37 in) (parallel to the vehicle as much as possible).

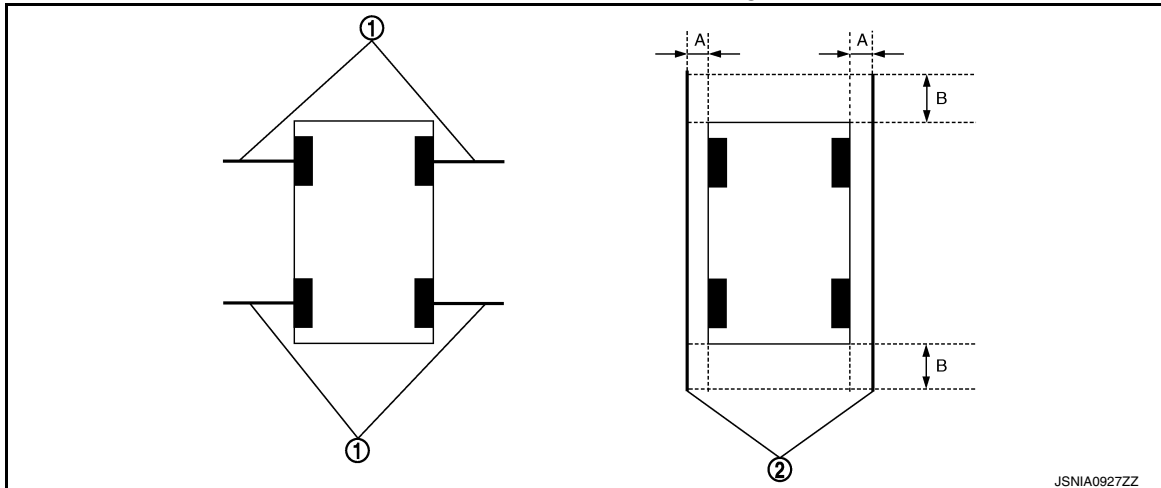
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# INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[AROUND VIEW MONITOR SYSTEM]

## Preparation of simplified target line



- |                             |                             |
|-----------------------------|-----------------------------|
| 1. Target lines 1           | 2. Target lines 2           |
| A. Approx. 30 cm (11.81 in) | B. Approx. 1.0 m (39.37 in) |

- CONSULT Work Support  
Select "FINE TUNING OF BIRDS-EYE VIEW".
- Select the left and right cameras on CONSULT screen. Perform the following calibration:
  - Check that target line 1 and marker are aligned normally on screen. If difference is detected, align marker using "+" and "-" of "AXIS X" and "AXIS Y" on CONSULT screen.
  - Check that target line 2 is aligned normally on screen without difference between images of each camera. If difference is detected, align images so that line 2 is displayed in a straight line using "+" and "-" of "AXIS X", "AXIS Y", and "ROTATE" on CONSULT screen.

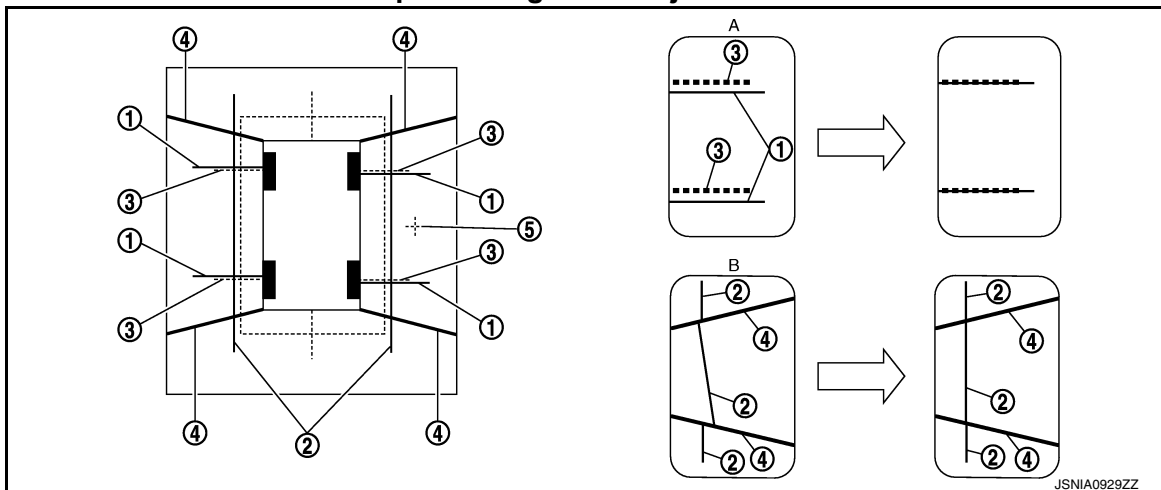
**NOTE:**

Press "SELECT" on CONSULT screen and select camera position for adjustment.

**CAUTION:**

- Never adjust the front camera and rear camera. Only adjust the side cameras LH/RH.
- Perform adjustment operation slowly because approximately 1 second is required for changing image on screen.

## Simplified target line adjustment method



- |   |   |                             |
|---|---|-----------------------------|
| 1. Target lines 1                               | 2. Target lines 2   | 3. Marker for target line 1 |
| 4. Boundary between cameras                     | 5. Crosshair cursor (mark indicated by the selected camera) |                             |
| A. Adjustment method for target lines 1 (right) | B. Adjustment method for target lines 2 (right)             |                             |

- Adjust the left and right cameras. Check that difference of images on screen between target line 1 and marker, and between target lines 2 are solved. Press "APPLY".

# INSPECTION AND ADJUSTMENT

## [AROUND VIEW MONITOR SYSTEM]

### < BASIC INSPECTION >

#### NOTE:

- The setting can be initialized to factory default condition using “CALIBRATING CAMERA IMAGE” of Work Support.
- The adjustment value on this mode is canceled when “INITIALIZE CAMERA IMAGE CALIBRATION” is performed.

#### Is the difference corrected?

YES >> • Select “OK” to end calibration.

#### CAUTION:

After selecting “OK”, never perform any operation other than “BACK” on CONSULT.

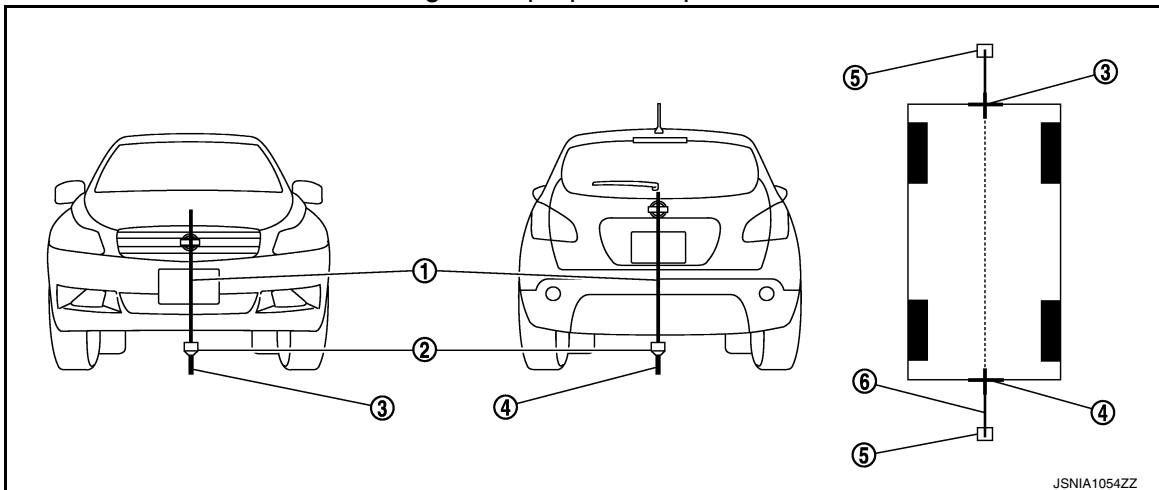
NO >> GO TO 5.

### 5.PERFORM “CALIBRATING CAMERA IMAGE”

#### Preparation of target line

1. Hang a string with a weight as shown in the figure. Put the points FM0 and RM0 (mark) on the ground at the center of the vehicle front end and rear end using white packing tape or a pen.
2. Route the vinyl string under the vehicle, and then pull and fix the vinyl string at a point approximately 1.0 m (39.37 in) at the front and rear of the vehicle through points FM0 and RM0 using packing tape.

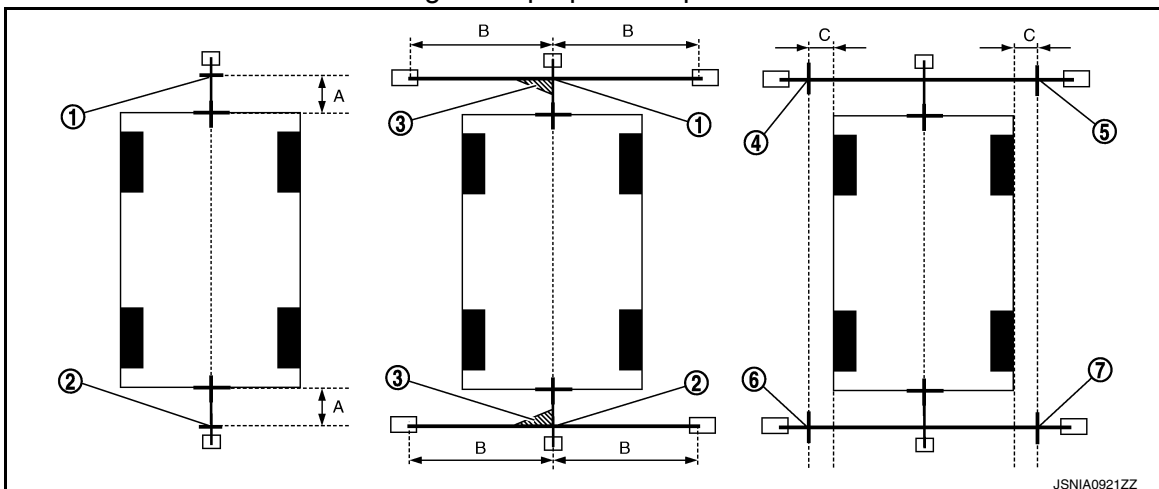
Target line preparation procedure 1



- |                     |   |                     |
|---------------------|---|---------------------|
| 1. Thread           | 2. Weight                                 | 3. Point FM0 (mark) |
| 4. Point RM0 (mark) | 5. Packing tape (to fix the vinyl string) | 6. Vinyl string     |

3. Put points FM and RM (mark) 75 cm (29.53 in) from the points FM0 and RM0 individually.
4. Route the vinyl string through points FM and RM using a triangle scale, and then fix it at approximately 1.5 m (59.06 in) on both sides with packing tape.
5. Put points FL, FR, RL, and RR (mark) at a distance of half the vehicle width, plus 30 cm (11.81 in) to the left and right from points FM and RM.

Target line preparation procedure 2



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# INSPECTION AND ADJUSTMENT

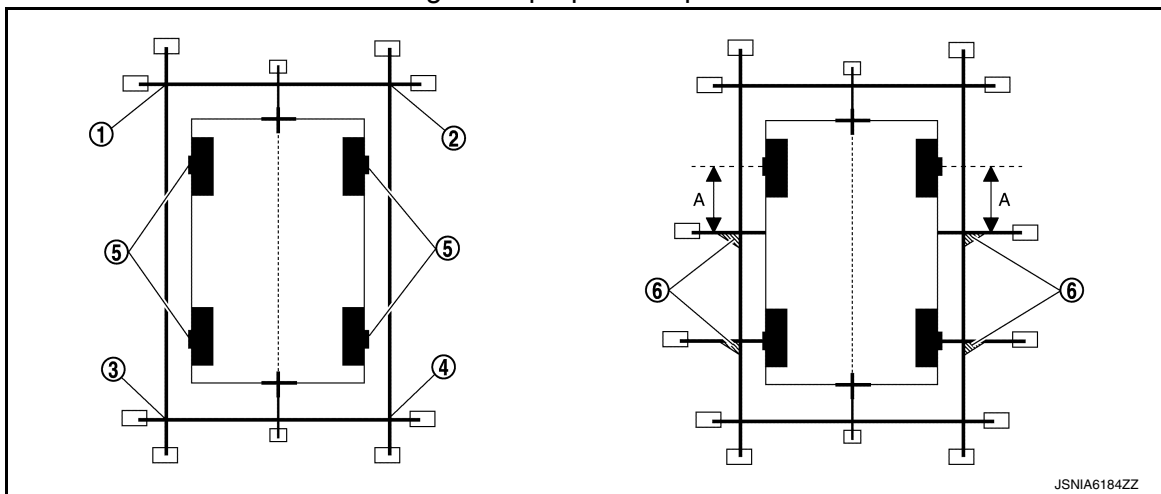
## < BASIC INSPECTION >

## [AROUND VIEW MONITOR SYSTEM]

- |                     |                                   |  |
|---------------------|-----------------------------------|--|
| 1. Point FM         | 2. Point RM                       | 3. Triangle scale  |
| 4. Point FL (mark)  | 5. Point FR (mark)                | 6. Point RL (mark)   |
| 7. Point RR (mark)  |                                   |  |
| A. 75 cm (29.53 in) | B. Approximately 1.5 m (59.06 in) | C. 30 cm (11.81 in)<br>[A half of the vehicle width plus 30 cm (11.81 in) from the points FM and RM] |

- Draw the lines of the points FL – RL and FR – RR with the vinyl string, and fix them with packing tape.
- Put a mark at the center of front axle. Use a triangle ruler to draw a line at the position 1 m (39.37 in) backward from the mark placed at the center of front axle so that the line becomes perpendicular to the line drawn between point FL-RL and point FR-RR and fix with packing tape.
- Put a mark at the center of rear axle. Use a triangle ruler to draw a line at the position 1 m (39.37 in) backward from the mark placed at the center of rear axle so that the line becomes perpendicular to the line drawn between point FL-RL and point FR-RR and fix with packing tape.

Target line preparation procedure 3



- |                   |                            |                   |
|-------------------|----------------------------|-------------------|
| 1. Point FL       | 2. Point FR                | 3. Point RL       |
| 4. Point RR       | 5. Center position of axle | 6. Triangle scale |
| A. 1 m (39.37 in) |                            |                   |

Perform “CALIBRATING CAMERA IMAGE”

ⓑCONSULT Work Support

- Select “CALIBRATING CAMERA IMAGE”.

**NOTE:**

In random order, perform the operation for all cameras.

- Front camera: “CALIBRATING CAMERA IMAGE (FRONT CAMERA)”
  - Passenger side camera: “CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)”
  - Driver side camera: “CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)”
  - Rear camera: “CALIBRATING CAMERA IMAGE (REAR CAMERA)”
- On each calibration screen of “REAR CAMERA”, “FRONT CAMERA”, “DR-SIDE CAMERA”, and “PASS-SIDE CAMERA”, operate “+” and “-” of “AXIS X”, “AXIS Y”, and “ROTATE” so that images on screen of target line and calibration maker are aligned.
  - Press “APPLY” on CONSULT screen. “Writing...” is displayed, and then the adjustment result is displayed on the display.

**CAUTION:**

**Check that “Writing...” is displayed. Never perform other operations while “Writing...” is displayed.**

- Press “APPLY” on CONSULT screen. “Writing...” is displayed, and then the adjustment result is written to around view monitor control unit.

**CAUTION:**

**Check that “Writing...” is displayed. Never perform other operations while “Writing...” is displayed.**

>> GO TO 6.

# INSPECTION AND ADJUSTMENT

## [AROUND VIEW MONITOR SYSTEM]

< BASIC INSPECTION >

### 6. PERFORM "FINE TUNING OF BIRDS-EYE VIEW"

This mode is designed to align the boundary between each camera image that cannot be aligned in the "CALIBRATING CAMERA IMAGE" mode.

CONSULT Work Support

1. Select "FINE TUNING OF BIRDS-EYE VIEW".
2. Operate "+" and "-" of "AXIS X", "AXIS Y", and "ROTATE" so that images on screen of target line on the ground and marker are aligned between each camera.

**CAUTION:**

**Perform adjustment operation slowly because approximately 1 second is required for changing image on screen.**

**NOTE:**

Press "SELECT" on CONSULT screen and select camera position for adjustment.

3. Press "APPLY" on CONSULT screen. "Writing..." is displayed, and then the adjustment result is displayed on the display.

**CAUTION:**

**Check that "Writing..." is displayed. Never perform other operations while "Writing..." is displayed.**

4. Press "APPLY" on CONSULT screen. "Writing..." is displayed, and then the adjustment result is written to around view monitor control unit.

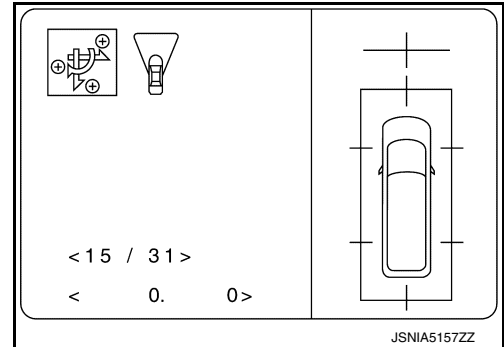
**CAUTION:**

- Check that "Writing..." is displayed. Never perform other operations while "Writing..." is displayed.
- After selecting "OK", never perform any operation other than "BACK" on CONSULT.

**NOTE:**

- The setting can be initialized to the factory default setting using "CALIBRATING CAMERA IMAGE" of Work Support.
- The adjustment value on this mode is canceled when "INITIALIZE CAMERA IMAGE CALIBRATION" is performed.

>> Calibration end.



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AV

# U0428 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## DTC/CIRCUIT DIAGNOSIS

### U0428 STEERING ANGLE SENSOR

#### DTC Description

INFOID:000000012193831

#### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U0428	ST ANGLE SENSOR CALIBRATION (Steering angle sensor calibration)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	–
		Threshold	–
		Diagnosis delay time	2 seconds or more

#### POSSIBLE CAUSE

Neutral position adjustment of steering angle sensor is not complete

#### FAIL-SAFE

- Predicted course line is not displayed
- MOD (Moving Object Detection) function is stopped
- Front tire angle display is stopped
- Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed

#### DTC CONFIRMATION PROCEDURE

##### 1. CHECK DTC PRIORITY

If DTC U0428 is displayed with DTC U1232, first perform the confirmation procedure (trouble diagnosis) for DTC U1232.

##### Is applicable DTC detected?

- YES >> Perform diagnosis of applicable DTC. Refer to [AV-263. "DTC Description"](#).  
NO >> GO TO 2.

##### 2. PERFORM DTC CONFIRMATION PROCEDURE

##### CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "AVM" using.
5. Check DTC.

##### Is DTC U0428 detected?

- YES >> Proceed to [AV-246. "Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: [GI-41. "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: Inspection End.

#### Diagnosis Procedure

INFOID:000000012193832

##### 1. ADJUST THE NEUTRAL POSITION OF THE STEERING ANGLE SENSOR

When U0428 is detected, adjust the neutral position of the steering angle sensor.

Perform adjustment of the neutral position of the steering angle sensor. Refer to [BRC-248. "Work Procedure"](#).

##### **CAUTION:**

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

>> GO TO 2.

##### 2. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

## U0428 STEERING ANGLE SENSOR

[AROUND VIEW MONITOR SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

Perform DTC confirmation procedure again. Refer to [AV-246. "DTC Description"](#).

Is DTC U0428 detected again?

- YES >> Replace steering angle sensor. Refer to [BRC-370. "Removal and Installation"](#).
- NO >> Inspection End.

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# U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## U1000 CAN COMM CIRCUIT

### AROUND VIEW MONITOR CONTROL UNIT

#### AROUND VIEW MONITOR CONTROL UNIT : DTC Description

INFOID:000000012193833

#### DESCRIPTION

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 two 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-32, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart"](#).

#### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	When ignition switch is ON
U1000	CAN COMM CIRCUIT (CAN COMM CIRCUIT)	Signal (terminal)	—
		Threshold	—
		Diagnosis delay time	2 seconds or more

#### POSSIBLE CAUSE

CAN communication system

#### FAIL-SAFE

The following functions are stopped:

- When communication of steering angle sensor signal is not normal:
  - Predicted course line is not displayed
  - MOD (Moving Object Detection) function is stopped
  - Front tire angle display is stopped
  - Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed
- When communication of vehicle signal, wheel speed sensor signal, and shift signal is not normal:
  - Predicted course line is not displayed
  - MOD (Moving Object Detection) function is stopped.
  - Using "SETTING" menu display, switch each indicator of predicted course line display and MOD switch to "OFF" (turn OFF) so that switch operation cannot be performed

#### DTC CONFIRMATION PROCEDURE

##### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### Ⓟ CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 2 seconds or more.
4. Select "Self Diagnostic Result" mode of "AVM".
5. Check DTC.

##### Is DTC U1000 detected?

- YES >> Proceed to [AV-248, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

#### AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:000000012193834

##### 1. PERFORM DTC CONFIRMATION PROCEDURE AGAIN



# U1000 CAN COMM CIRCUIT

[AROUND VIEW MONITOR SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

## CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to [AV-248, "AROUND VIEW MONITOR CONTROL UNIT : DTC Description"](#).

Is DTC U1000 detected again?

- YES >> Perform the trouble diagnosis for CAN communication system. Refer to [LAN-17, "Trouble Diagnosis Flow Chart"](#).
- NO >> Inspection End.

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# U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## U1010 CONTROL UNIT (CAN)

### AROUND VIEW MONITOR CONTROL UNIT

#### AROUND VIEW MONITOR CONTROL UNIT : DTC Description

INFOID:000000012193835

#### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1010	CONTROL UNIT (CAN) [Control unit (CAN)]	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	–
		Threshold	–
		Diagnosis delay time	2 seconds or more

#### POSSIBLE CAUSE

Around view monitor control unit

#### FAIL-SAFE

Around view monitor system does not function

#### DTC CONFIRMATION PROCEDURE

##### 1.PERFORM DTC CONFIRMATION PROCEDURE

###### CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 2 seconds or more.
4. Select "Self Diagnostic Result" mode of "AVM".
5. Check DTC.

###### Is DTC U1010 detected?

- YES >> Proceed to [AV-250. "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: [GI-41. "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: Inspection End.

#### AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:000000012193836

##### 1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

###### CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to [AV-250. "AROUND VIEW MONITOR CONTROL UNIT : DTC Description"](#).

###### Is DTC U1010 detected again?

- YES >> Replace around view monitor control unit. Refer to [AV-273. "Removal and Installation"](#).  
NO >> Inspection End.

# U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

### DTC Description

INFOID:000000012193837

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U111A	REAR CAMERA IMAGE SIGNAL (CAN COMM CIRCUIT)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	Rear camera image signal (terminal 20)
		Threshold	Rear camera image signal circuit is shorted or open
		Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

Rear camera image signal circuit

### FAIL-SAFE

Camera image is not displayed (gray screen display)

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

#### CONSULT

- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 30 seconds.
- Turn ignition switch ON and wait at least 30 seconds or more.
- Select "Self Diagnostic Result" mode of "AVM".
- Check DTC.

#### Is DTC U111A detected?

- YES >> Proceed to [AV-251, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012193838

#### 1. CHECK CONTINUITY OF REAR VIEW CAMERA POWER SUPPLY AND GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect around view monitor control unit connector M170 and rear view camera connector B76
- Check continuity between around view monitor control unit harness connector M170 and rear view camera harness connector B76.

Around view monitor control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M170	17	B76	1	Yes
	18		2	

- Check continuity between around view monitor control unit harness connector M170 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M170	18		No

#### Is the inspection result normal?

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

# U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## 2. CHECK VOLTAGE OF REAR VIEW CAMERA POWER SUPPLY

1. Connect around view monitor control unit connector M170 and rear view camera connector B76.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector M170 and ground.

(+)		(-)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
M170	18	Ground	"CAMERA" switch is ON or shift position is "R".	6.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace around view monitor control unit. Refer to [AV-273, "Removal and Installation"](#).

## 3. CHECK CONTINUITY OF REAR VIEW CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M170 and rear view camera connector B76.
3. Check continuity between around view monitor control unit harness connector M170 and rear view camera harness connector B76.

Around view monitor control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M170	19	B76	5	Yes
	20		4	

4. Check continuity between around view monitor control unit harness connector M170 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M170	19		No
	20		

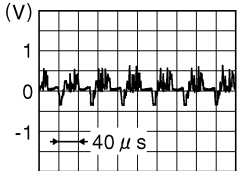
Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

## 4. CHECK REAR VIEW CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit connector M170 and rear view camera connector B76.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector M170.

Around view monitor control unit			Condition	Reference value
Connector	(+)	(-)		
		Terminal		
M170	20	19	"CAMERA" switch is ON or shift position is "R".	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to [AV-273, "Removal and Installation"](#).

# U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

NO >> Replace rear view camera. Refer to [AV-276. "Removal and Installation"](#).

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# U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

### DTC Description

INFOID:000000012193839

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U111B	SIDE CAMERA RH IMAGE SIGNAL (Side camera right image signal)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	Door mirror RH signal circuit (terminal 12)
		Threshold	Door mirror RH signal circuit is open or shorted
		Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

Side camera RH image signal circuit

### FAIL-SAFE

Camera image is not displayed (gray screen display)

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

#### CONSULT

- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 30 seconds.
- Turn ignition switch ON and wait at least 30 seconds or more.
- Select "Self Diagnostic Result" mode of "AVM".
- Check DTC.

#### Is DTC U111B detected?

- YES >> Proceed to [AV-254, "Diagnosis Procedure"](#).  
 NO-1 >> To check malfunction symptom before repair: [GI-41, "Intermittent Incident"](#).  
 NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012193840

#### 1. CHECK CONTINUITY OF SIDE CAMERA RH POWER SUPPLY AND GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect around view monitor control unit connector M170 and door mirror RH connector D114.
- Check continuity between around view monitor control unit harness connector M170 and door mirror RH harness connector D114.

Around view monitor control unit		Door mirror RH		Continuity
Connector	Terminal	Connector	Terminal	
M170	9	D114	16	Yes
	10		19	

- Check continuity between door mirror RH harness connector D114 and ground.

Door mirror RH		Ground	Continuity
Connector	Terminal		
D114	16		No
	19		

#### Is the inspection result normal?

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

# U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## 2. CHECK VOLTAGE OF SIDE CAMERA RH POWER SUPPLY

1. Connect around view monitor control unit connector M170 and door mirror RH connector D114.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector M170 and ground.

(+)		(-)	Condition	Voltage (Approx.)
Connector	Terminal			
M170	10	Ground	"CAMERA" switch is ON or shift position is "R".	6.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace around view monitor control unit. Refer to [AV-273, "Removal and Installation"](#).

## 3. CHECK CONTINUITY OF SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M170 and door mirror RH connector D114.
3. Check continuity between around view monitor control unit harness connector M170 and door mirror RH harness connector D114.

Around view monitor control unit		Door mirror RH		Continuity
Connector	Terminal	Connector	Terminal	
M170	11	D114	18	Yes
	12		17	

4. Check continuity between around view monitor control unit harness connector M170 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M170	11		No
	12		

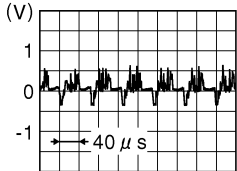
Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

## 4. CHECK SIDE CAMERA RH IMAGE SIGNAL

1. Connect around view monitor control unit connector M170 and door mirror RH connector D114.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector M170.

Around view monitor control unit			Condition	Reference value
Connector	(+)	(-)		
		Terminal		
M170	12	11	"CAMERA" switch is ON or shift position is "R".	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to [AV-273, "Removal and Installation"](#).

## U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

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NO >> Replace side camera RH. Refer to [AV-275. "Removal and Installation"](#).



# U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

### DTC Description

INFOID:000000012193841

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U111C	FRONT CAMERA IMAGE SIGNAL (Front camera image signal)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	Front view camera image signal (terminal 8)
		Threshold	Front camera image signal circuit is open or shorted
		Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

Front camera image signal circuit

### FAIL-SAFE

Camera image is not displayed (gray screen display)

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

#### CONSULT

- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 30 seconds.
- Turn ignition switch ON and wait at least 30 seconds or more.
- Select "Self Diagnostic Result" mode of "AVM".
- Check DTC.

#### Is DTC U111C detected?

- YES >> Proceed to [AV-257, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012193842

#### 1. CHECK CONTINUITY OF FRONT CAMERA POWER SUPPLY AND GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect around view monitor control unit connector M170 and front camera connector E238.
- Check continuity between around view monitor control unit harness connector M170 and front camera harness connector E238.

Around view monitor control unit		Front camera		Continuity
Connector	Terminal	Connector	Terminal	
M170	5	E238	2	Yes
	6		1	

- Check continuity between front camera harness connector E238 and ground.

Front camera		Ground	Continuity
Connector	Terminal		
E238	1		No
	2		

#### Is the inspection result normal?

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

# U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## 2. CHECK VOLTAGE OF FRONT CAMERA POWER SUPPLY

1. Connect around view monitor control unit connector M170 and front camera connector E238.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector M170.

Around view monitor control unit			Condition	Voltage (Approx.)
Connector	(+)	(-)		
	Terminal			
M170	5	6	"CAMERA" switch is ON or shift position is "R".	6.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace around view monitor control unit. Refer to [AV-273, "Removal and Installation"](#).

## 3. CHECK CONTINUITY OF FRONT CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M170 and front camera connector E238.
3. Check continuity between around view monitor control unit harness connector M170 and front camera harness connector E238.

Around view monitor control unit		Front camera		Continuity
Connector	Terminal	Connector	Terminal	
M170	7	E238	4	Yes
	8		3	

4. Check continuity between around view monitor control unit harness connector M170 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M170	7		No
	8		

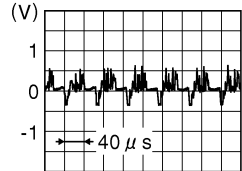
Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

## 4. CHECK FRONT CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit connector M170 and front camera connector E238.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector M170.

Around view monitor control unit			Condition	Reference value
Connector	(+)	(-)		
	Terminal			
M170	8	7	"CAMERA" switch is ON or shift position is "R".	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to [AV-273, "Removal and Installation"](#).

# U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

NO >> Replace front camera. Refer to [AV-274. "Removal and Installation"](#).

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# U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

### DTC Description

INFOID:000000012193843

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U111D	SIDE CAMERA LH IMAGE SIGNAL (Side camera left image signal)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	Side camera LH image signal (terminal 16)
		Threshold	Side camera LH image signal circuit is open or shorted
		Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

Side camera LH image signal circuit

### FAIL-SAFE

Camera image is not displayed (gray screen display)

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

#### CONSULT

- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 30 seconds.
- Turn ignition switch ON and wait at least 30 seconds or more.
- Select "Self Diagnostic Result" mode of "AVM".
- Check DTC.

#### Is DTC U111D detected?

- YES >> Proceed to [AV-260, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012193844

#### 1. CHECK CONTINUITY OF SIDE CAMERA LH POWER SUPPLY AND GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect around view monitor control unit connector M170 and door mirror LH connector D12.
- Check continuity between around view monitor control unit harness connector M170 and door mirror LH harness connector D12.

Around view monitor control unit		Door mirror LH		Continuity
Connector	Terminal	Connector	Terminal	
M170	13	D12	16	Yes
	14		19	

- Check continuity between around view monitor control unit harness connector M170 and ground.

Around view control module		Ground	Continuity
Connector	Terminal		
M170	13		No
	14		

#### Is the inspection result normal?

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

# U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## 2. CHECK VOLTAGE OF SIDE CAMERA LH POWER SUPPLY

1. Connect around view monitor control unit connector M170 and door mirror LH connector D12.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector M170 and ground.

Around view monitor control unit			Condition	Voltage (Approx.)
Connector	(+)	(-)		
	Terminal			
M170	14	13	"CAMERA" switch is ON or shift position is "R".	6.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace around view monitor control unit. Refer to [AV-273, "Removal and Installation"](#).

## 3. CHECK CONTINUITY OF SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M170 and door mirror LH connector D12.
3. Check continuity between around view monitor control unit harness connector M170 and door mirror LH harness connector D12.

Around view monitor control unit		Door mirror LH		Continuity
Connector	Terminal	Connector	Terminal	
M170	15	D12	18	Yes
	16		17	

4. Check continuity between around view monitor control unit harness connector M170 and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminals		
M170	15		Ground
	16		

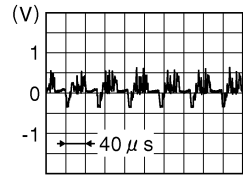
Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

## 4. CHECK SIDE CAMERA LH IMAGE SIGNAL

1. Connect around view monitor control unit connector M170 and door mirror LH connector D12.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector M170.

Around view monitor control unit			Condition	Reference value
Connector	(+)	(-)		
	Terminal			
M170	16	15	"CAMERA" switch is ON or shift position is "R".	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to [AV-273, "Removal and Installation"](#).

## U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

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NO >> Replace side camera LH. Refer to [AV-275. "Removal and Installation"](#).

# U1232 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## U1232 STEERING ANGLE SENSOR

### DTC Description

INFOID:000000012193845

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	When ignition switch is ON
U1232	ST ANGLE SEN CALIB (Steering angle sensor calibration)	Signal (terminal)	–
		Threshold	–
		Diagnosis delay time	30 seconds or more

### POSSIBLE CAUSE

- Neutral position adjustment of the steering angle sensor is incomplete
- Steering angle sensor

### FAIL-SAFE

Predictive course line is not displayed

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self diagnostic result" mode of "MULTI AV".
5. Check DTC.

##### Is DTC U1232 detected?

- YES >> Proceed to [AV-263, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012193846

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

Adjust the steering angle sensor neutral position on ABS actuator and electrical unit (control unit) side. Refer to [BRC-248, "Work Procedure"](#).

##### NOTE:

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

>> GO TO 2.

#### 2. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to [AV-263, "DTC Description"](#).

##### Is DTC U1232 detected again?

- YES >> Replace steering angle sensor. Refer to [BRC-370, "Removal and Installation"](#).
- NO >> Inspection End.

# U1302 CAMERA POWER VOLT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## U1302 CAMERA POWER VOLT

### DTC Description

INFOID:000000012193847

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1302	CAMERA POWER VOLT (Camera power voltage)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	Camera power supply circuit (terminal 18)
		Threshold	Camera power supply voltage is 5.9 V-6.5 V when ON, or 0 V when OFF
		Diagnosis delay time	2 seconds or more

### POSSIBLE CAUSE

- Short circuit to battery or short circuit to ground of camera power supply output circuit
- Around view monitor control unit

### FAIL-SAFE

Camera power output is stopped

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

##### CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "AVM".
5. Check DTC.

##### Is DTC U1302 detected?

- YES >> Proceed to [AV-264, "Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: [GI-41, "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012193848

#### 1.CHECK AROUND VIEW MONITOR CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check around view monitor control unit power supply and ground circuit. Refer to [AV-270, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure"](#).

##### Is the inspection result normal?

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

#### 2.CHECK REAR VIEW CAMERA POWER SUPPLY OUTPUT CIRCUIT (CHECK FOR SHORT CIRCUIT)

1. Disconnect around view monitor control unit connector M170 and rear view camera connector B76.
2. Check whether or not continuity between around view monitor control unit harness connector M170 and ground is normal.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M170	18		No

##### Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Repair the harnesses or connectors.

#### 3.CHECK REAR VIEW CAMERA POWER SUPPLY "1"



# U1302 CAMERA POWER VOLT

[AROUND VIEW MONITOR SYSTEM]

< DTC/CIRCUIT DIAGNOSIS >

1. Connect around view monitor control unit connector M170.
2. Turn ignition switch ON.
3. Check whether or not voltage between around view monitor control unit harness connector M170 is normal.

Around view monitor control unit			Reference value (Approx.)
Connector	(+)	(-)	
	Terminal		
M170	18	17	6.0 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace around view monitor control unit. Refer to [AV-273, "Removal and Installation"](#).

## 4. CHECK REAR CAMERA POWER SUPPLY 2

1. Turn ignition switch OFF.
2. Connect rear camera connector B76.
3. Turn ignition switch ON.
4. Check whether or not voltage between around view monitor control unit harness connector M170 is normal.

Around view monitor control unit			Reference value (Approx.)
Connector	(+)	(-)	
	Terminal		
M170	18	17	6.0 V

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace rear camera. Refer to [AV-276, "Removal and Installation"](#).

## 5. CHECK FRONT CAMERA POWER SUPPLY OUTPUT CIRCUIT (CHECK FOR SHORT CIRCUIT)

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M170 and front camera connector E228.
3. Check whether or not continuity between around view monitor control unit harness connector M170 and ground is normal.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M170	5		

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair the harnesses or connectors.

## 6. CHECK FRONT CAMERA POWER SUPPLY "1"

1. Connect around view monitor control unit connector M170.
2. Turn ignition switch ON.
3. Check whether or not voltage between around view monitor control unit harness connector M170 is normal.

Around view monitor control unit			Reference value (Approx.)
Connector	(+)	(-)	
	Terminal		
M170	5	6	6.0 V

Is the inspection result normal?

YES >> GO TO 7.

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# U1302 CAMERA POWER VOLT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

NO >> Replace around view monitor control unit. Refer to [AV-273, "Removal and Installation"](#).

## 7. CHECK FRONT CAMERA POWER SUPPLY "2"

1. Turn ignition switch OFF.
2. Connect front camera connector E228.
3. Turn ignition switch ON.
4. Check whether or not voltage between around view monitor control unit harness connector M170 is normal.

Around view monitor control unit			Reference value (Approx.)
Connector	(+)	(-)	
	Terminal		
M170	5	6	6.0 V

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace front camera. Refer to [AV-274, "Removal and Installation"](#).

## 8. CHECK SIDE CAMERA RH POWER SUPPLY OUTPUT CIRCUIT (CHECK FOR SHORT CIRCUIT)

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M170 and door mirror RH connector D114.
3. Check whether or not continuity between around view monitor control unit harness connector M170 and ground is normal.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M170	10		No

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair the harnesses or connectors.

## 9. CHECK SIDE CAMERA RH POWER SUPPLY "1"

1. Connect around view monitor control unit connector M170.
2. Turn ignition switch ON.
3. Check whether or not voltage between around view monitor control unit harness connector M170 is normal.

Around view monitor control unit			Reference value (Approx.)
Connector	(+)	(-)	
	Terminal		
M170	10	9	6.0 V

Is the inspection result normal?

YES >> GO TO 10.

NO >> Replace around view monitor control unit. Refer to [AV-273, "Removal and Installation"](#).

## 10. CHECK SIDE CAMERA RH POWER SUPPLY "2"

1. Turn ignition switch OFF.
2. Connect door mirror RH connector D114.
3. Turn ignition switch ON.
4. Check whether or not voltage between around view monitor control unit harness connector M170 is normal.

# U1302 CAMERA POWER VOLT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

Around view monitor control unit			Reference value (Approx.)
Connector	(+)	(-)	
	Terminal		
M170	10	9	6.0 V

Is the inspection result normal?

YES >> GO TO 11.

NO >> Replace side camera RH. Refer to [AV-275. "Removal and Installation"](#).

## 11. CHECK SIDE CAMERA LH POWER SUPPLY OUTPUT CIRCUIT (CHECK FOR SHORT CIRCUIT)

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M170 and door mirror LH connector D12.
3. Check whether or not continuity between around view monitor control unit harness connector M170 and ground is normal.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M170	14		No

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair the harnesses or connectors.

## 12. CHECK SIDE CAMERA LH POWER SUPPLY "1"

1. Connect around view monitor control unit connector M170.
2. Turn ignition switch ON.
3. Check whether or not voltage between around view monitor control unit harness connector M170 is normal.

Around view monitor control unit			Reference value (Approx.)
Connector	(+)	(-)	
	Terminal		
M170	14	13	6.0 V

Is the inspection result normal?

YES >> GO TO 13.

NO >> Replace around view monitor control unit. Refer to [AV-273. "Removal and Installation"](#).

## 13. CHECK SIDE CAMERA LH POWER SUPPLY "2"

1. Turn ignition switch OFF.
2. Connect door mirror LH connector D112.
3. Turn ignition switch ON.
4. Check whether or not voltage between around view monitor control unit harness connector M170 is normal.

Around view monitor control unit			Reference value (Approx.)
Connector	(+)	(-)	
	Terminal		
M170	14	13	6.0 V

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to [AV-273. "Removal and Installation"](#).

NO >> Replace side camera LH. Refer to [AV-275. "Removal and Installation"](#).

# U1304 CAMERA IMAGE CALIBRATION

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## U1304 CAMERA IMAGE CALIBRATION

### DTC Description

INFOID:000000012193849

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1304	CAMERA IMAGE CALIB (Camera image calibration)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	–
		Threshold	–
		Diagnosis delay time	2 seconds or more

### POSSIBLE CAUSE

Camera calibration is incomplete

### FAIL-SAFE

Unmatched icon  display (red) is displayed (applicable for unmatched camera only)

### DTC CONFIRMATION PROCEDURE

#### 1. PERFORM DTC CONFIRMATION PROCEDURE

##### ⓈCONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "AVM".
5. Check DTC.

##### Is DTC U1304 detected?

- YES >> Proceed to [AV-268, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: [GI-41, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012193850

#### 1. PERFORM CALIBRATING CAMERA IMAGE

Perform camera calibration. Refer to [AV-240, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).

>> GO TO 2.

#### 2. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to [AV-268, "DTC Description"](#).

##### Is DTC U1304 detected again?

- YES >> Replace malfunctioning camera.
- NO >> Inspection End.

# U1305 CONFIG UNFINISH

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## U1305 CONFIG UNFINISH

### DTC Description

INFOID:000000012193851

### DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	When ignition switch is ON
U1305	CONFIG UNFINISH (Configuration unfinish)	Signal (terminal)	–
		Threshold	–
		Diagnosis delay time	2 seconds or more

### POSSIBLE CAUSE

The vehicle setting of around view monitor control unit is incomplete

### FAIL-SAFE

Operation is according to the vehicle setting value as default value

### DTC CONFIRMATION PROCEDURE

#### 1.PERFORM DTC CONFIRMATION PROCEDURE

##### ⓂCONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select "Self Diagnostic Result" mode of "AVM".
5. Check DTC.

##### Is DTC U1305 detected?

- YES >> Proceed to [AV-269, "Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: [GI-41, "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: Inspection End.

### Diagnosis Procedure

INFOID:000000012193852

#### 1.PERFORM CONFIGURATION OF AROUND VIEW MONITOR CONTROL UNIT

Perform configuration of around view monitor control unit. Refer to [AV-239, "Work Procedure"](#).

>> GO TO 2.

#### 2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to [AV-269, "DTC Description"](#).

##### Is DTC U1305 detected again?

- YES >> Replace around view monitor control unit. Refer to [AV-273, "Removal and Installation"](#).  
NO >> Inspection End.

AV

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## POWER SUPPLY AND GROUND CIRCUIT AROUND VIEW MONITOR CONTROL UNIT

### AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:000000012193853

#### 1. CHECK FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown:

Power source	Fuse No.	Capacity
Ignition switch ON or START	30	10 A

#### Is the fuse blown?

- YES >> Replace the blown fuse after repairing the affected circuit.  
NO >> GO TO 2.

#### 2. CHECK POWER SUPPLY CIRCUITS

Check voltage between around view monitor control unit harness connector M170 and ground.

Signal name	(+)		(-)	Ignition switch position	Reference Value (Approx.)
	Around view monitor control unit				
	Connector	Terminal			
Ignition signal	M170	40	Ground	ON	Battery voltage

#### Is inspection result normal?

- YES >> GO TO 3.  
NO >> Check harness between around view monitor control unit and fuse.

#### 3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector M170.
3. Check continuity between around view monitor control unit harness connector M170 and ground.

(+)		(-)	Continuity
Around view monitor control unit			
Connector	Terminal		
M170	39	Ground	Yes

#### Is inspection result normal?

- YES >> Inspection End.  
NO >> Repair harness or connector.

# AROUND VIEW MONITOR SYSTEM

< SYMPTOM DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

## SYMPTOM DIAGNOSIS

### AROUND VIEW MONITOR SYSTEM

#### Symptom Table

INFOID:0000000012193854

#### AROUND VIEW MONITOR SYSTEM

Symptom	Check items		Probable malfunction location
Screen is not switched to camera image when CAMERA button is pressed and when shift position is shifted to the reverse position.	"AVM" is not displayed on the system selection screen of CONSULT.		Around view monitor control unit power supply circuit • BAT power supply circuit • Ignition power supply circuit
	Check that the following Data Monitor items operate normally using CONSULT: • Camera switch signal • Reverse signal	Camera switch signal and reverse signal are normal.	Around view monitor control unit
		Camera switch signal or reverse signal is not normal.	CAN communication circuit
Screen is switched when pressing camera button or shifting selector lever to the reverse position; however, all views are not displayed.	Only superimposing is displayed (only images that AV control unit plots are displayed).		Camera image signal circuit Refer to <a href="#">AV-302, "Diagnosis Procedure"</a> .
	Superimposing is not displayed.		AV control unit Refer to <a href="#">AV-87, "Work Flow"</a> .
The screen is not switched to the rear view image even if the selector is shifted to the reverse position.	The front view is displayed normally.		Reverse signal circuit.
• Front view screen is not displayed. • Front of top view screen is not displayed.	Check the following Data Monitor items using CONSULT: • Front camera image signal	• Image signal: NG	Front camera power supply circuit and image signal circuit Refer to <a href="#">AV-257, "Diagnosis Procedure"</a> .
• The rear view screen is not displayed. • Rear of top view screen is not displayed.	Check the following Data Monitor items using CONSULT: • Rear camera image signal	• Image signal: NG	Rear camera power supply circuit and image signal circuit Refer to <a href="#">AV-251, "Diagnosis Procedure"</a> .
• The side view screen is not displayed. • Left side of top view screen is not displayed.	Check the following Data Monitor items using CONSULT: • Side camera LH image signal	• Image signal: NG	Side camera LH power supply circuit and image signal circuit Refer to <a href="#">AV-260, "Diagnosis Procedure"</a> .
Right side of top view image is not displayed.	Check the following Data Monitor items using CONSULT: • Side camera RH image signal	• Image signal: NG	Side camera RH power supply circuit and image signal circuit. Refer to <a href="#">AV-254, "Diagnosis Procedure"</a> .

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## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[AROUND VIEW MONITOR SYSTEM]

### NORMAL OPERATING CONDITION

#### Description

INFOID:000000012193855

#### 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 is in the video mode.	Press "AUDIO" to change the mode.
	The interior of the vehicle is above 80°C (176°F) or high temperature, and the protection of the display reacts, 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. 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.



# AROUND VIEW MONITOR CONTROL UNIT

< REMOVAL AND INSTALLATION >

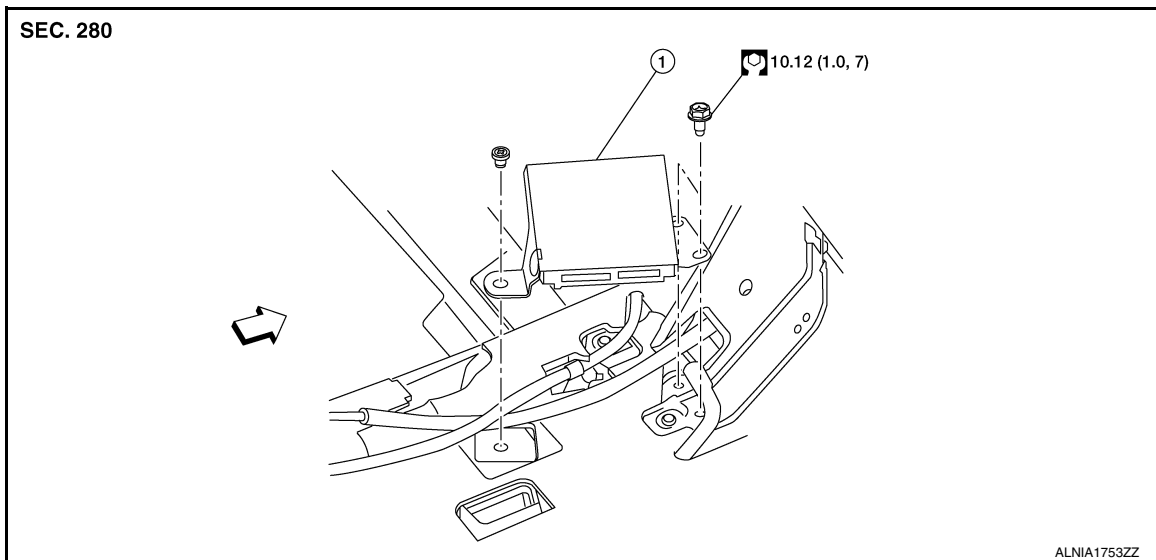
[AROUND VIEW MONITOR SYSTEM]

## REMOVAL AND INSTALLATION

### AROUND VIEW MONITOR CONTROL UNIT

Exploded View

INFOID:000000012193856



1. Around view monitor control unit ← Front

### Removal and Installation

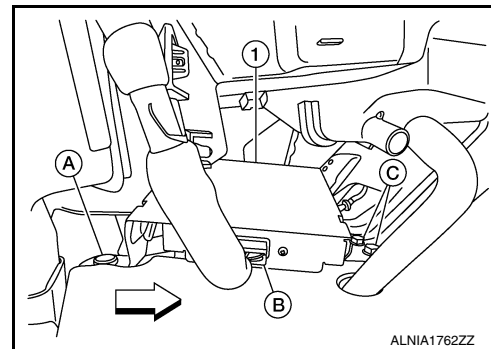
INFOID:000000012193857

#### REMOVAL

##### NOTE:

Before replacing around view monitor control unit, perform "Before Replace ECU" of "Read / Write Configuration" to save or print current vehicle specification. Refer to [AV-238, "Description"](#).

1. Remove center console finisher (RH). Refer to [IP-20, "Exploded View"](#).
2. Disconnect the harness connector (B) from the around view monitor control unit (1).
3. Remove clip (A) and bolts (C) and remove around view monitor control unit.



#### INSTALLATION

Installation is in the reverse order of removal.

##### CAUTION:

- Be sure to perform "After Replace ECU" of "Read / Write Configuration" or "Manual Configuration" when replacing around view monitor control unit. Refer to [AV-238, "Description"](#).
- Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit. Refer to [AV-240, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).

##### NOTE:

Perform predictive course line center position adjustment. Refer to [AV-240, "PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Description"](#).

# FRONT CAMERA

< REMOVAL AND INSTALLATION >

[AROUND VIEW MONITOR SYSTEM]

## FRONT CAMERA

### Removal and Installation

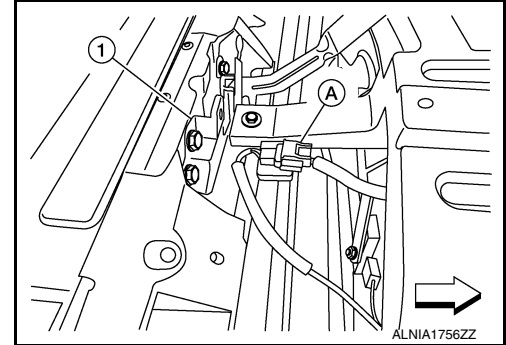
INFOID:000000012193858

#### REMOVAL

1. Remove core support cover. Refer to [EXT-16, "Exploded View"](#).
2. Remove condenser air deflector. Refer to [HA-41, "CONDENSER : Exploded View"](#).
3. Disconnect the harness connector (A) from the front camera.

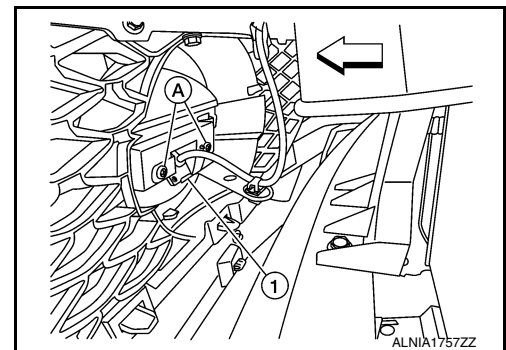
(1) : Hood lock

↔ : Front



4. Remove screws (A) and remove front camera (1).

↔ : Front



#### INSTALLATION

Installation is in the reverse order of removal.

#### **CAUTION:**

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit. Refer to [AV-240, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).

# SIDE CAMERA

< REMOVAL AND INSTALLATION >

[AROUND VIEW MONITOR SYSTEM]


## SIDE CAMERA

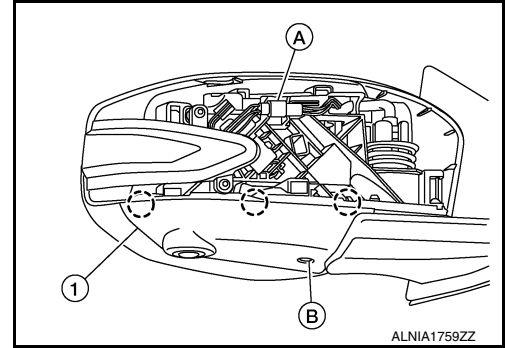
### Removal and Installation

INFOID:000000012193859

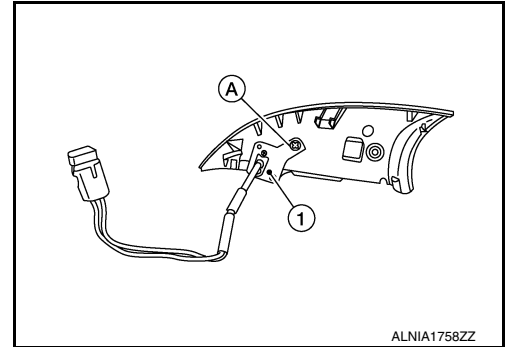
#### REMOVAL

1. Remove door mirror rear finisher. Refer to [MIR-24. "Removal and Installation"](#).
2. Disconnect the harness connector (A) from the side camera.
3. Remove screw (B) and release pawls to remove side camera finisher (1).

 : Pawl



4. Remove screw (A) and remove side camera (1).



#### INSTALLATION

Installation is in the reverse order of removal.

#### **CAUTION:**

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit. Refer to [AV-240. "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).

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# REAR CAMERA

< REMOVAL AND INSTALLATION >

[AROUND VIEW MONITOR SYSTEM]

## REAR CAMERA

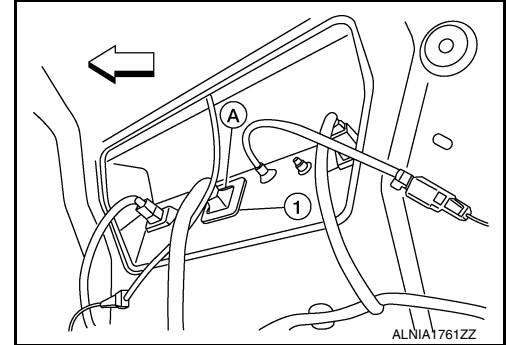
### Removal and Installation

INFOID:000000012193860

#### REMOVAL

1. Remove license lamp finisher. Refer to [EXT-40, "Removal and Installation"](#).
2. Remove trunk lid finisher. Refer to [INT-51, "TRUNK LID FINISHER : Removal and Installation"](#).
3. Disconnect the harness connector (A) from the rear camera (1).

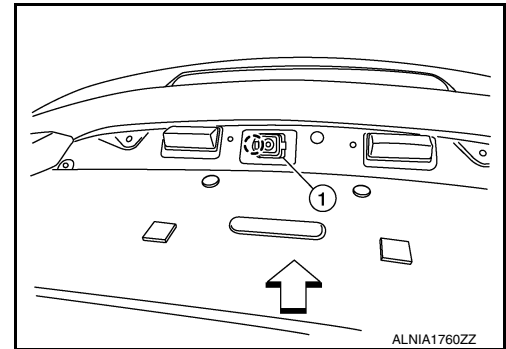
↔ : Front



4. Release pawl then remove rear camera (1).

○ : Pawl

↔ : Front



#### INSTALLATION

Installation is in the reverse order of removal.

#### **CAUTION:**

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit. Refer to [AV-240, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).

# PRECAUTIONS

[REAR VIEW MONITOR SYSTEM (NAVIGATION)]

< PRECAUTION >

## PRECAUTION

### PRECAUTIONS

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

INFOID:000000012193886

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

#### **WARNING:**

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

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

#### **WARNING:**

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

#### Cautions in Removing Battery Terminal, and AV Control Unit

INFOID:000000012193887

#### **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, and 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:000000012193888

#### M-CAN 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.

AV

#### Precaution for Harness Repair

INFOID:000000012193889

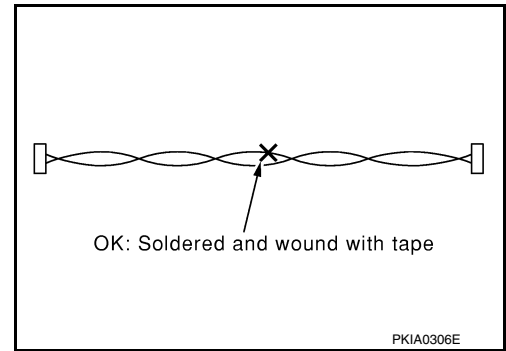
#### M-CAN COMMUNICATION SYSTEM

## PRECAUTIONS

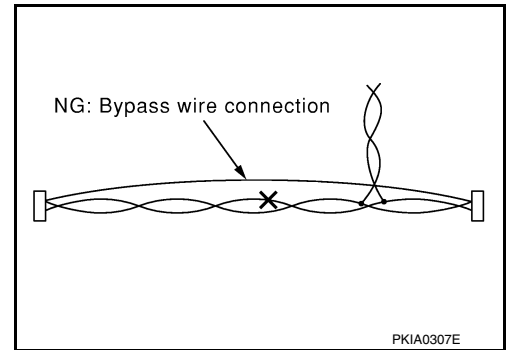
### [REAR VIEW MONITOR SYSTEM (NAVIGATION)]

#### < 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.)



#### Precaution for Work

INFOID:000000012193890

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with a new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components:
  - Water soluble dirt:
    - Dip a soft cloth into lukewarm water, wring the water out of the cloth and wipe the dirty area.
    - Then rub with a soft, dry cloth.
  - Oily dirt:
    - Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%) and wipe the dirty area.
    - Then dip a cloth into fresh water, wring the water out of the cloth and wipe the detergent off.
    - Then rub with a soft, dry cloth.
  - Do not use organic solvent such as thinner, benzene, alcohol or gasoline.
  - For genuine leather seats, use a genuine leather seat cleaner.

# PREPARATION

## [REAR VIEW MONITOR SYSTEM (NAVIGATION)]

< PREPARATION >

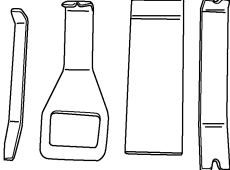
# PREPARATION

## PREPARATION

### Special Service Tools


INFOID:000000012193891

The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
— (J-46534) Trim Tool Set <div style="text-align: center;">  <p>AWJIA0483ZZ</p> </div>	Removing trim components

### Commercial Service Tools

INFOID:000000012193892

Tool name	Description
Power tool <div style="text-align: center;">  <p>PIIB1407E</p> </div>	Loosening nuts, screws and bolts

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# COMPONENT PARTS

[REAR VIEW MONITOR SYSTEM (NAVIGATION)]

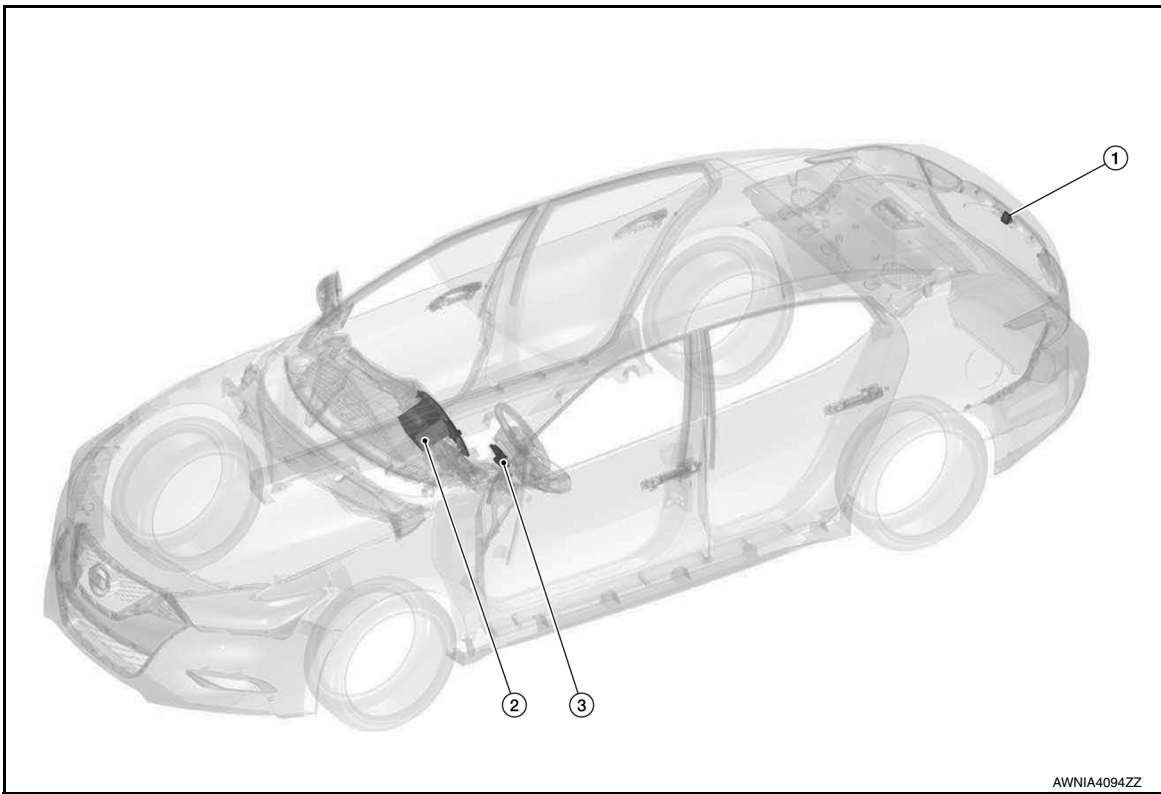
< SYSTEM DESCRIPTION >

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:0000000012193893



No.	Component	Function
1.	Rear view camera	Refer to <a href="#">AV-281, "Rear View Camera"</a> .
2.	AV control unit	Refer to <a href="#">AV-280, "AV Control Unit"</a> .
3.	Steering angle sensor	Refer to <a href="#">AV-281, "Steering Angle Sensor"</a> .

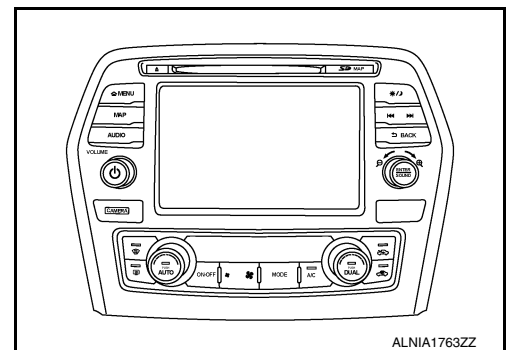
### AV Control Unit

INFOID:0000000012193894

#### DESCRIPTION

- AV control unit is located in the center of the instrument panel assembly.
- AV control unit integrates the following functions and controls the rear view monitor system:

Unit equipped
Display
Camera controller



#### SPECIFICATION

Camera controller	Guide line display function	Vehicle width guide lines
		Predictive course lines
	Steering signal input method	CAN communication



# COMPONENT PARTS

## [REAR VIEW MONITOR SYSTEM (NAVIGATION)]

< SYSTEM DESCRIPTION >

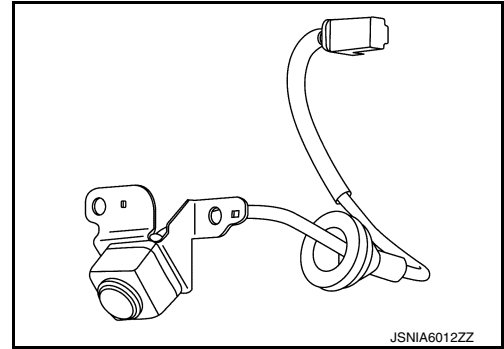
### Rear View Camera

INFOID:000000012193895

- The rear view camera is installed next to the rear license plate lamp.
- Super-small CMOS camera (color) using CMOS\* for the image pickup element is adopted.
- With the mirror processing function, a mirror image is sent as if it is viewed by a rear view mirror.
- Power for the camera is supplied from the AV control unit and the image at the rear of the vehicle is sent to the AV monitor control unit.

**NOTE:**

\*: "CMOS" is an abbreviation of Complementary Metal Oxide Semiconductor and features low power consumption and high speed reading rate of electric charge.



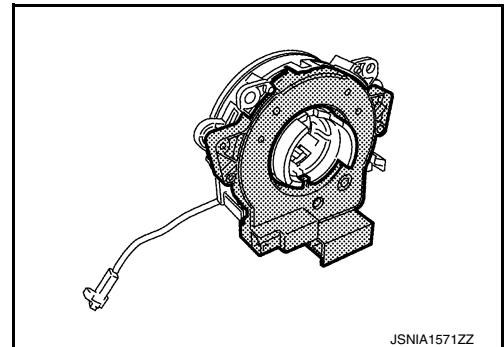
### Specification

Image pickup element	1/3.8-inch CMOS image sensor
Effective number of pixels	Approx. 300,000 pixels (632 × 480)
Minimum brightness	1 lx
Angle of view	H: 190° V: 141°
Image	With the mirror processing function

### Steering Angle Sensor

INFOID:000000012193896

- Steering angle sensor is installed to the spiral cable.
- Steering angle sensor sends the steering signal necessary for predictive course line of the rear view monitor to the AV control unit via CAN communication.



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AV

# REAR VIEW MONITOR SYSTEM

[REAR VIEW MONITOR SYSTEM (NAVIGATION)]

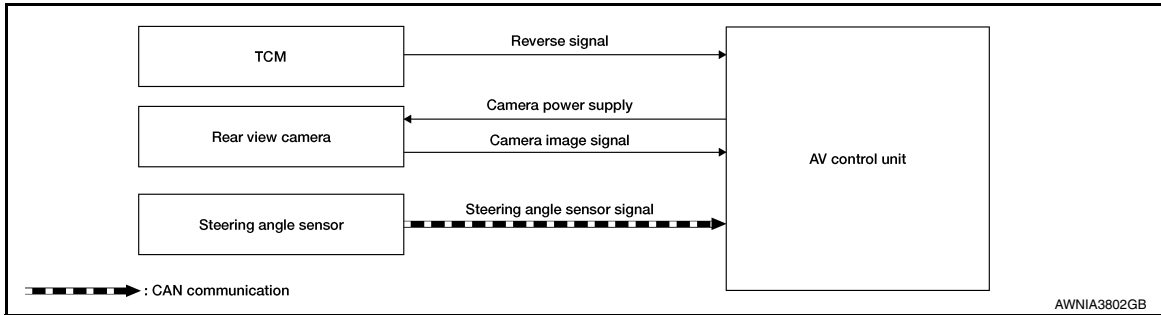
< SYSTEM DESCRIPTION >

## REAR VIEW MONITOR SYSTEM

### System Description

INFOID:000000012193897

### SYSTEM DIAGRAM



### AV Control Unit Input Signal (CAN Communication)

Transmit unit	Signal name
Steering angle sensor	Steering angle signal

### DESCRIPTION

#### Operation Description

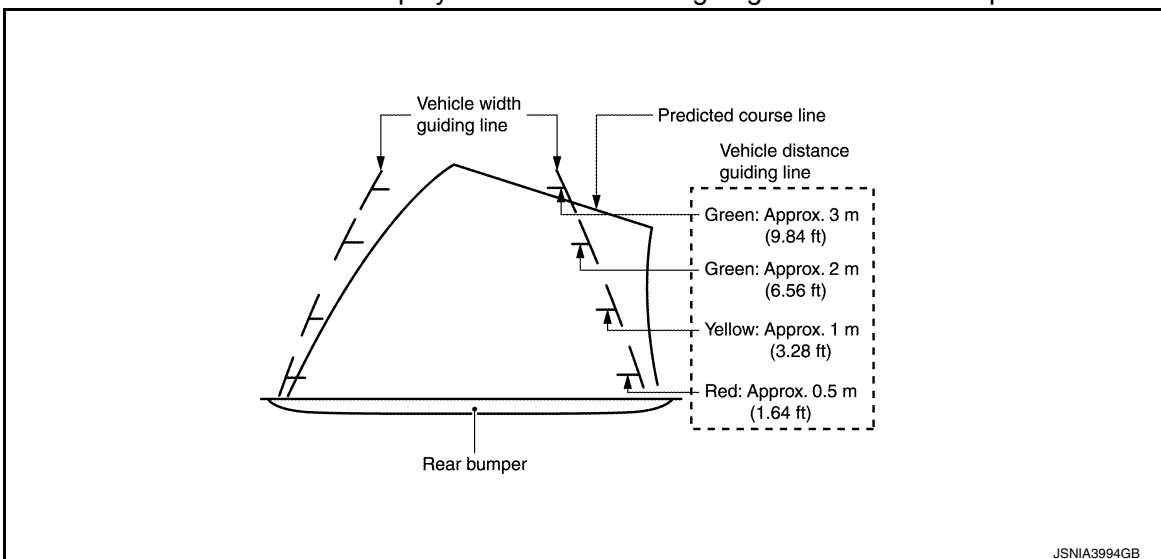
- When the selector lever is shifted to the reverse position, the rear view monitor image is displayed.
- When the selector lever is shifted to any position other than the reverse position, the original image (the image displayed before the rear view monitor image) is displayed.

#### Camera Image Operation Principle

- The AV control unit that receives the reverse signal input supplies power to the rear view camera and gives input of image signal.
- The AV control unit outputs the rear view camera image to the display when the reverse signal is inputted.
- The AV control unit generates the warning message, vehicle width guide lines and the predicted course lines on the image from the rear view camera and transmits the rear view camera image signal to the front display unit.

#### Vehicle Width Guide Lines and Predicted Course Lines Display Function at Rear View Monitor Display

- The vehicle width guide lines and the predicted course lines that indicate the vehicle route according to the steering angle are displayed on the rear view monitor display to allow the driver to more easily judge distances between the vehicle and objects and help the driver back into a parking space.
- The AV control unit receives the steering signal from the steering sensor via CAN communication and draws a vehicle width guide line according to the steering angle.
- When the vehicle width guide lines are displayed, the vehicle width guide lines are displayed translucently.
- The predicted course lines are not displayed when the steering angle is in the neutral position.



# REAR VIEW MONITOR SYSTEM

## [REAR VIEW MONITOR SYSTEM (NAVIGATION)]

### < SYSTEM DESCRIPTION >

Precautions for Vehicle Width Guide Lines and Predicted Course Lines Display on the Rear View Monitor Display  
 Vehicle width guide lines and predicted course lines on the display may be different from actual lines depending on vehicle conditions and road conditions.

#### Precautions for road conditions

- Since vehicle width guide lines and predicted course lines are drawn based on the road, a different distance may be displayed if a protruding block is present nearby.

<p>Vehicle and road surface condition</p>	<p>Rear view monitor display screen</p>
<p>Reference line is displayed closer than actual distance when an uphill gradient is located rearward.</p>	
<p>Reference line is displayed more distant than actual distance when a downhill gradient is located rearward.</p>	
<p>The closer obstacle seems more distant than actual distance when an uphill gradient is located rearward.</p>	

JSNIA3995GB

#### Precautions for block

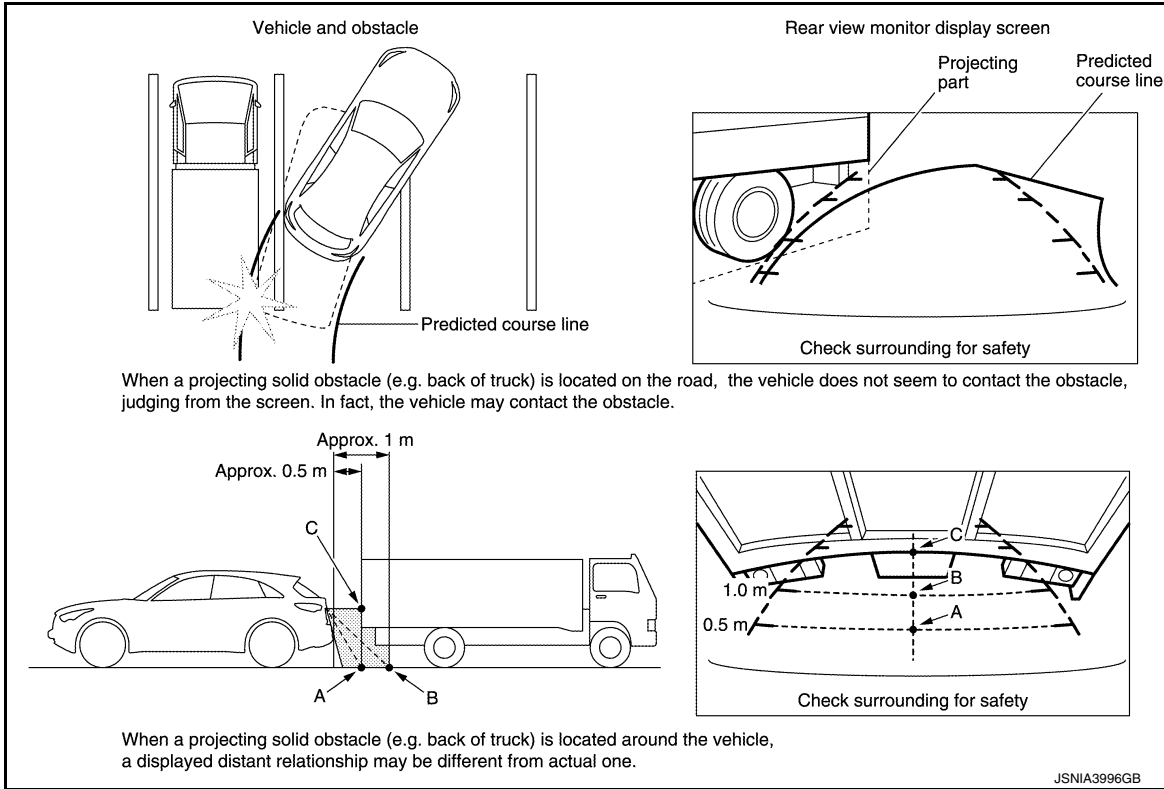
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# REAR VIEW MONITOR SYSTEM

## [REAR VIEW MONITOR SYSTEM (NAVIGATION)]

### < SYSTEM DESCRIPTION >

- Since vehicle width guide lines and predicted course lines are drawn based on the road, a different distance may be displayed if a protruding block is present nearby.



# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

## [REAR VIEW MONITOR SYSTEM (NAVIGATION)]

< SYSTEM DESCRIPTION >

### DIAGNOSIS SYSTEM (AV CONTROL UNIT)

#### Description

INFOID:0000000012402837

- The AV control unit diagnosis function starts 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:0000000012402838

#### 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. 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 requires 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.</li> </ul>
Confirmation/ Adjustment	Display Diagnosis	The following check functions are available: <ul style="list-style-type: none"> <li>• Color tone check by color bar display, white display and black display</li> <li>• Light and shade check by gray scale display</li> <li>• Touch panel check</li> <li>• Sensor sensitivity settings</li> </ul>
	Vehicle Signals	Diagnosis of signals can be performed.
	Speaker Test	The connection of a speaker can be confirmed by test tone.
	ANC/ASC	Allows for testing and adjustment of the ANC/ASC system.
	Navigation *	The reception status of GPS can be confirmed. Display On/Off of the simulation menu of navigation.
	Error Location Display	The system malfunction is displayed. When the malfunctioning item is selected, the time and place that the selected malfunction last occurred are displayed.
	AV COMM Diagnosis	The communication condition of each unit of NISSANCONNECT <sup>SM</sup> can be monitored.
	Camera Control Unit	The signal connected to camera control unit can be checked and the guiding line position that overlaps rear view camera image can be adjusted.
	SXM	Displays the information related to satellite radio.
	Delete Unit Connection Log	Erases the connection history of unit and error history.
	Reset Settings	Initializes the default data.
	Version Information	Version information of the following items is displayed: <ul style="list-style-type: none"> <li>• AV control unit</li> <li>• BOSE amp.</li> <li>• Combination meter</li> <li>• Around view monitor control unit</li> </ul>
	Program Update	Version of the AV control unit can be updated.
Hands-free Phone	The received volume adjustment of hands-free phone and microphone speaker check can be performed.	

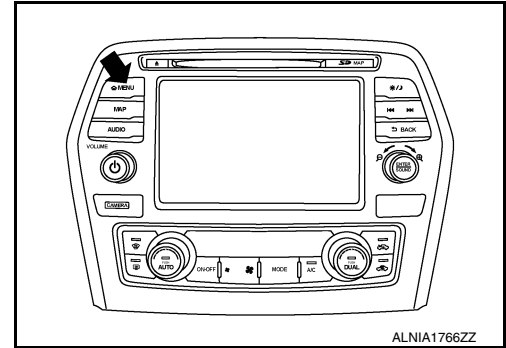
#### METHOD OF STARTING

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

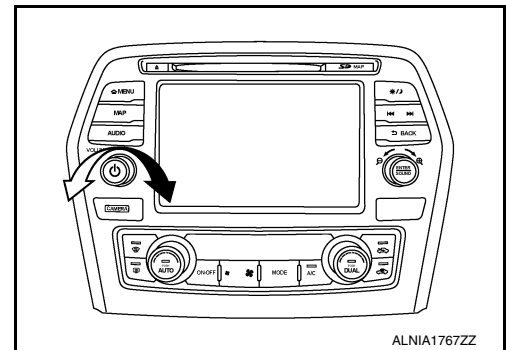
## [REAR VIEW MONITOR SYSTEM (NAVIGATION)]

### < SYSTEM DESCRIPTION >

1. Start the engine.
2. Turn the audio system OFF.
3. Press the MENU button.



4. While menu button is pressed rotate the volume encoder left, right, and left. On each rotation, it should be at least 7 clicks.



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

#### NOTE:

When a diagnostic screen is not displayed, press the “MENU” switch. And then, restart from the procedure of Step 3.

#### SELF-DIAGNOSIS MODE

1. Start the self-diagnosis function and select “Self Diagnosis”.
  - Self-diagnosis subdivision screen is displayed, and the self-diagnosis mode starts.
  - The bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis.
2. Diagnosis results are displayed after the self-diagnosis is completed. The unit names and the connection lines are color-coded according to the diagnostic results.

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

#### NOTE:

Control Unit (AV control unit) and BOSE Amp. are 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-183, "Removal and Installation"](#).
- 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.

## DIAGNOSIS SYSTEM (AV CONTROL UNIT)

### [REAR VIEW MONITOR SYSTEM (NAVIGATION)]

< SYSTEM DESCRIPTION >

#### SELF-DIAGNOSIS RESULTS

Check the applicable display with 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
Audio Head Unit	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. Refer to <a href="#">AV-156. "AV CONTROL UNIT : Diagnosis Procedure"</a> . When detecting no malfunction in those components, replace AV control unit. Refer to <a href="#">AV-183. "Removal and Installation"</a> .
BOSE Amp.	When either one of the following items are detected: <ul style="list-style-type: none"> <li>• Sound signal circuits between BOSE amp. and each speaker are malfunctioning.</li> <li>• Sound signal circuits between BOSE amp. and either front or rear microphone are malfunctioning.</li> <li>• BOSE amp. malfunction is detected.</li> </ul>	<ul style="list-style-type: none"> <li>• Malfunctioning speaker circuits.</li> <li>• Malfunctioning front or rear microphone circuits.</li> <li>• Replace BOSE amp. Refer to <a href="#">AV-194. "Removal and Installation"</a>.</li> </ul>

Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control Unit ⇔ Cluster	When either one of the following items are detected: <ul style="list-style-type: none"> <li>• Combination meter power supply and ground circuits are malfunctioning.</li> <li>• AV communication circuits between AV control unit and combination meter are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• Combination meter power supply and ground circuits. Refer to <a href="#">MWI-50. "COMBINATION METER : Diagnosis Procedure"</a>.</li> <li>• AV communication circuits between AV control unit and combination meter are malfunctioning.</li> </ul>
Navigation unit ⇔ GPS Antenna	GPS antenna connection malfunctions detected.	GPS antenna Refer to <a href="#">AV-116. "Diagnosis Procedure"</a> .
Audio Head Unit ⇔ XM Antenna	Satellite antenna connection malfunctions detected.	Satellite antenna Refer to <a href="#">AV-117. "Diagnosis Procedure"</a> .

#### 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. Touch the "MAP" to return to the initial "Confirmation/Adjustment Mode" screen.

Display Diagnosis

Confirmation of the AV control unit screen.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[REAR VIEW MONITOR SYSTEM (NAVIGATION)]

Item	Description
Display Settings	<ul style="list-style-type: none"> <li>• Color Spectrum Bar</li> <li>- White</li> <li>- Yellow</li> <li>- Cyan (Close to light blue)</li> <li>- Green</li> <li>- Magenta (Close to purplish red)</li> <li>- Red</li> <li>- Blue</li> <li>- Black</li> </ul>
	Gradation Bar
	White Display
Touch Panel Response Check	<ul style="list-style-type: none"> <li>• The function can check the presence of a circle indication and deviation from where it should be while touching the touch panel. If you hit Map button you will be taken to a trace screen. Here you can check the function of continuous gesture on the screen. To back out of screen hit the map button.</li> </ul>
Touch Panel Calibration	<ul style="list-style-type: none"> <li>• Allows you to recalibrate the touch screen panel.</li> </ul>

### Vehicle Signals

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

#### AV control unit

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 pressed	Changes in indication may be delayed. This is normal.
	OFF	Parking brake is released	
Lights Signal	ON	Headlamp switch is ON.	Changes in indication may be delayed. This is normal.
	OFF	Headlamp switch is OFF.	
Ignition Signal	ON	Ignition switch ON.	—
	OFF	Ignition switch in ACC position.	
Reverse Signal	ON	Shift the selector lever to "R" position.	Changes in indication may be delayed. This is normal.
	OFF	Shift the selector lever to a position other than "R" position.	

### Speaker Test

Select "Speaker Test" to display the speaker diagnosis screen. Touch "Start" to generate a test tone in a speaker. Touch "Next" to generate a test tone in the next speaker. Touch "End" to stop the test tones.

#### ANC/ASC

Select Confirmation/Adjustment to access ANC/ASC settings

Item	Description
### Speaker test	Left Front Tweeter
	Front Center
	Right Front Tweeter
	R-PSHELF R-WOOFER



# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[REAR VIEW MONITOR SYSTEM (NAVIGATION)]

	Item	Description
ANC/ASC	Status	Displays software version for ANC, ASC, and Config Results.
	Setting	Allows user to enable/disable ANC/ASC after connection diagnosis.
	Connection diagnosis	Displays the status of each signal acquisition route.
	Active test	Outputs the test tone imitating ANC ON/OFF. Active test function will be available after the connection diagnosis.

## Navigation

Item	Description
Sensor Information	The reception status of GPS can be confirmed.

## Error Location Display

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

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

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

- Place of the error occurrence is represented by the longitude and latitude 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 up-and-down manner.

## 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	Applicable DTC	Reference
CAN COMM CIRCUIT	U1000	<a href="#">AV-109</a>
CONTROL UNIT (CAN)	U1010	<a href="#">AV-111</a>
Mismatched configuration data stored	U1223	<a href="#">AV-112</a>
Amplifier temperature error	U1231	<a href="#">AV-113</a>
Steer. Angle Sensor calibration	U1232	<a href="#">AV-114</a>
GPS Antenna error	U1244	<a href="#">AV-116</a>
XM Antenna connection error : open	U1258	<a href="#">AV-117</a>
XM Antenna connection error : short		
Cluster connection error	U1267	<a href="#">AV-119</a>
Confirm user connection unit	U12B7	<a href="#">AV-121</a>
Radio Antenna error : open	U12BE	<a href="#">AV-122</a>
Radio Antenna error : short		

## CAN COMM Diagnosis

### CAN COMM Monitor

- 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)
CMF Send Switch	OK / UNKW	OK / 0 – 39 / —
CMF Receive Bose AMP	OK / UNKW	OK / 0 – 39 / —

## DIAGNOSIS SYSTEM (AV CONTROL UNIT)

< SYSTEM DESCRIPTION >

[REAR VIEW MONITOR SYSTEM (NAVIGATION)]

Items	Status (Current)	Counter (Past)
CMF Receive AVM	OK / UNKW	OK / 0 – 39 / —
CMF Receive Meter	OK / UNKW	OK / 0 – 39 / —
CMF Receive Audio	OK / UNKW	OK / 0 – 39 / —

Camera Cont.

Item	Description
Correct Draw Line of Rear View Camera	The guiding lines in the rear view monitor can be adjusted.
Check/Change Configuration	Displays the current configuration data. <b>NOTE:</b> Refer to the following list for the items of the configuration adjustment function:
Reset Configuration	Initializes the camera system configuration.
Camera System Type	Sets the type of camera that is connected.

Configuration list

Setting item	Setting (Default value)	
	Direct adaptive steering models	Vehicle speed sensitive P/S models
Predictive Course Lines	With SBW	Without SBW
Rear Coeff. K	1.37847	1.37847
Rear Coeff. F	0.0394	0.0394
Rear Coeff. P1	-0.24463	-0.24463
Rear Coeff. P2	0.07005	0.07005
Rear Coeff. C1	-0.00608	-0.00608
Rear Coeff. C2	-0.00001	-0.00001
Rear Coeff. D1	130.6	130.6
Rear Coeff. D2	-35	-35
Car Width	1822.9	1822.9
Rear Offset	3835.175	3835.175
Rear Height	581.589	581.589
Rear L/R Angle	0	0
Rear Up/Dn Angle	0	0
Rear Roll Angle	0	0
Bumper Rear Dist.	0	0
Bumper Rear Ax Dist	0	0
Max. Steering Angle	31.56	31.56
Min. Turning Radius	1	1.47
Wheelbase	2850	2850
Total Length	4792	4792
Steering Gear Ratio	0.032	0.047
Tot.Width With Mirrors	0	0

SXM

SXM Mode Diagnosis

Item	Description
Diagnostic Mode Display	Display adjustment items to test satellite radio function.
External Diagnostic Mode	Set in external diagnostic mode.

# DIAGNOSIS SYSTEM (AV CONTROL UNIT)

## [REAR VIEW MONITOR SYSTEM (NAVIGATION)]

### < SYSTEM DESCRIPTION >

#### Delete Unit Connection Log

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

#### Reset Settings

Item	Description
Reset User Data	Initializes the AV control unit.
Reset Configuration	Initializes the configuration data.

#### Version Information

Version information of each control unit and switch is displayed.

#### Program Update

Version of the AV control unit can be updated.

#### Hands-Free Phone

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

Item	Description
HF Vol. Adjustment	The reception volume can be set in three steps: "Low", "Standard" and "High".
Voice Microphone Test	The microphone audio can be directly connected to the speakers to perform a microphone test.
Onload model ID	Displays the on board unit ID.

## CONSULT Function

INFOID:0000000012402839

### APPLICATION ITEMS

CONSULT performs the following functions via the communication with the AV control unit:

Diagnosis mode	Description
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 inputted to the AV control unit can be performed.
Work Support	Steering angle sensor can be adjusted.
ECU Identification	The part number of AV control unit can be checked.
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>

### 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, are detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.
- Refer to [AV-109, "Diagnosis Procedure"](#).

#### Freeze Frame Data (FFD)

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

Item name	Display content
ODO/TRIP METER (km)	Total driving distance (odometer value) upon DTC detection is displayed.
TOTAL DISTANCE (km)	

### 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:

A

B

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D

E

F

G

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L

M

AV

O

P

## DIAGNOSIS SYSTEM (AV CONTROL UNIT)

### [REAR VIEW MONITOR SYSTEM (NAVIGATION)]

#### < SYSTEM DESCRIPTION >

- 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 switch is ON.	—	
	Off	Either of the following conditions: <ul style="list-style-type: none"> <li>• Light switch is OFF.</li> <li>• Expose the auto light optical sensor to light when the light switch is ON.</li> </ul>		
IGN SIG	On	Ignition switch ON.		
	Off	Ignition switch in ACC position.		
REV SIG	On	Selector lever is in R position.		Changes in indication may be delayed. This is normal.
	Off	Selector lever is in any position other than R.		

#### WORK SUPPORT

Adjust 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. Refer to [BRC-248, "Work Procedure"](#).**

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

#### ECU IDENTIFICATION

The part number of AV control unit is displayed.

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[REAR VIEW MONITOR SYSTEM (NAVIGATION)]

## ECU DIAGNOSIS INFORMATION

### AV CONTROL UNIT

#### Reference Value

INFOID:000000012193901

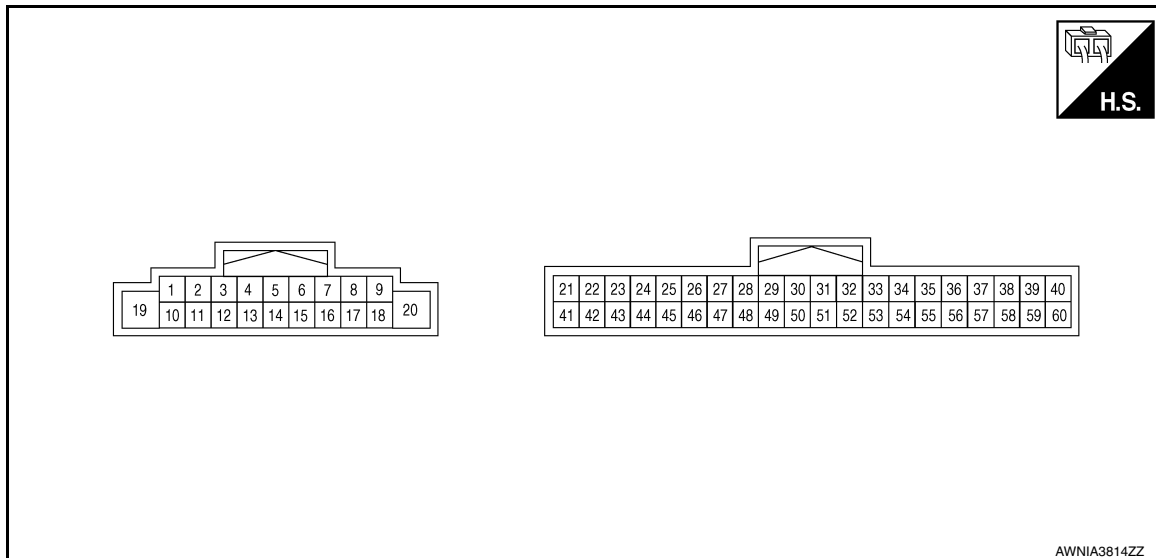
#### VALUES ON THE DIAGNOSIS TOOL

**NOTE:**

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

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	Block the light beam from the auto light optical sensor when the light switch is ON.	On
		Expose the auto light optical sensor to light when the light switch is OFF or ON.	Off
IGN SIG	Ignition switch ON		On
	Ignition switch ACC		Off
REV SIG	Ignition switch ON	Selector lever is in R position.	On
		Selector lever is in any position other than R.	Off

#### TERMINAL LAYOUT



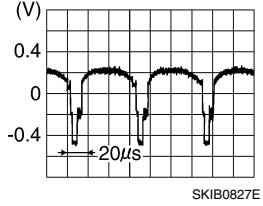
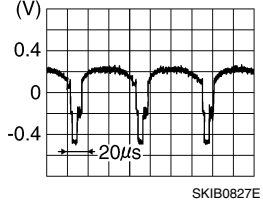
#### PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/Output		
19 (G)	Ground	Battery power supply	Input	Ignition switch OFF	Battery voltage
23 (LG)	—	M-CAN low	Input/Output	—	—

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[REAR VIEW MONITOR SYSTEM (NAVIGATION)]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
24 (SB)	—	M-CAN high	Input/ Output	—	—
25 (P)	—	CAN low	Input/ Output	—	—
26 (L)	—	CAN high	Input/ Output	—	—
30 (G)	Ground	Reverse signal	Input	[Ignition switch ON] • R position	7.0 V or more
				[Ignition switch ON] • Other than R position	3.0 V or less
31 (BG)	Ground	Ignition power supply	Input	Ignition switch ON	Battery voltage
57 (R)	Ground	Camera power supply	Output	[Ignition switch ON]	6.2 V
58 (B)	Ground	Camera ground	—	Ignition switch ON	0 V
59 (B)	87 (B)	Camera image signal (with around view monitor)	Input	[Ignition switch ON] • Image is displayed.	
59 (W)	87 (B)	Camera image signal (with rear view camera)	Input	[Ignition switch ON] • Image is displayed.	
60 (Shield)	—	Camera shield	—	—	—

## Fail-Safe

INFOID:000000012193902

If a malfunction occurs in the Nissan Multi AV, AV control unit performs fail-safe activation according to the detected malfunction.

Detection item	Nissan multi AV operation in fail-safe mode	DTC
CAN communication	The system using the CAN communication signal from control unit which cannot communicate does not function.	U1000
	The system using the CAN communication signal does not function.	U1010
Configuration	A function of AV control unit becomes mismatched with a vehicle specification and destination.	U1223
BOSE amp.	BOSE system does not function.	U1231
Steering angle sensor	Predictive course line is not displayed.	U1232

# AV CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[REAR VIEW MONITOR SYSTEM (NAVIGATION)]

Detection item	Nissan multi AV operation in fail-safe mode		DTC
AV control unit	<ul style="list-style-type: none"> <li>• Sound is not outputted by a speaker.</li> <li>• CD is not played.</li> <li>• Radio does not operate.</li> </ul> <p><b>NOTE:</b> Symptom other than an item may occur.</p>		U1234
GPS antenna	The vehicle positions of a navigation screen differ.		U1244
Satellite radio antenna	Satellite radio is not received.		U1258
USB communication	External data input box	Audio equipment which is connected to USB does not operate.	U12B7
Rear view camera	Rear camera image is not displayed.		U12B8
Radio antenna	Radio is not received.		U12BE

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AV

# REAR VIEW MONITOR SYSTEM

## [REAR VIEW MONITOR SYSTEM (NAVIGATION)]

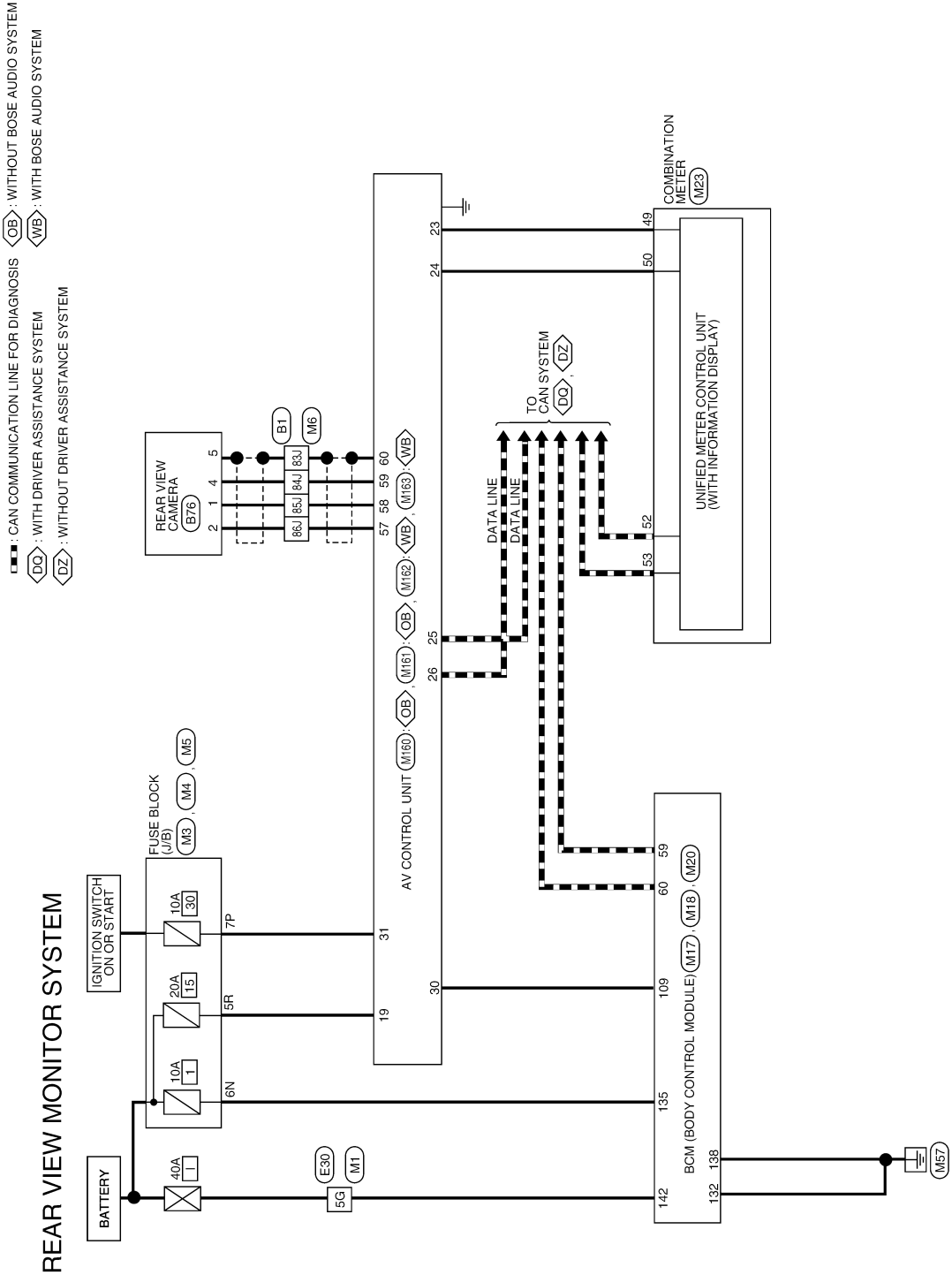
< WIRING DIAGRAM >

# WIRING DIAGRAM

## REAR VIEW MONITOR SYSTEM

### Wiring Diagram

INFOID:000000012193903



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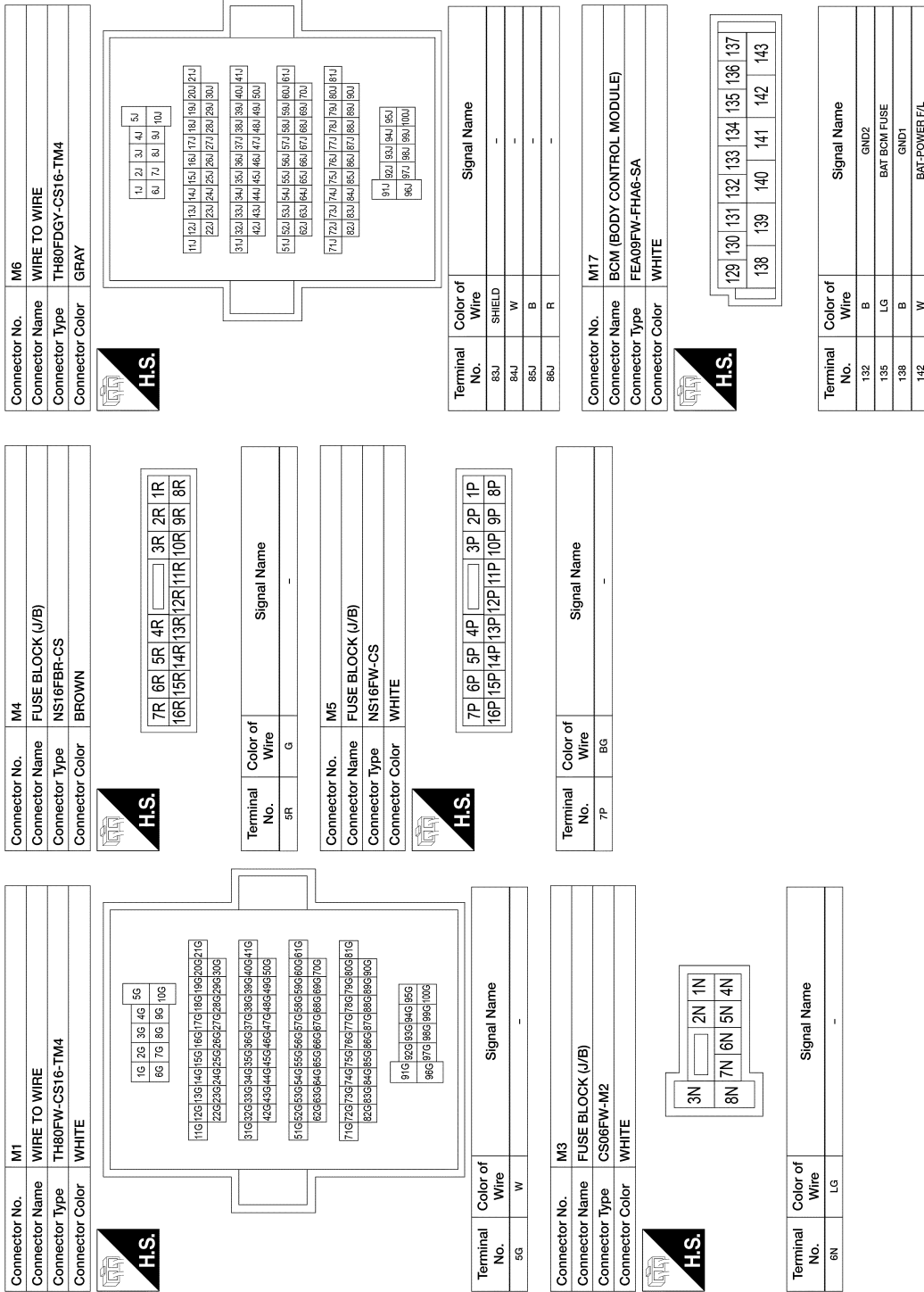


# REAR VIEW MONITOR SYSTEM

## [REAR VIEW MONITOR SYSTEM (NAVIGATION)]

< WIRING DIAGRAM >

### REAR VIEW MONITOR SYSTEM CONNECTORS



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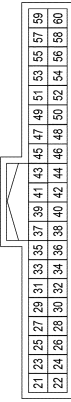
AV

# REAR VIEW MONITOR SYSTEM

## [REAR VIEW MONITOR SYSTEM (NAVIGATION)]


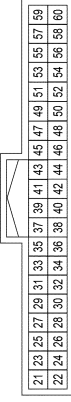
< WIRING DIAGRAM >

Connector No.	M163
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Type	TH40FW-NH
Connector Color	WHITE


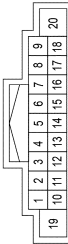
Terminal No.	Color of Wire	Signal Name
23	LG	M-CAN L
24	SB	M-CAN H
25	P	CAN-L
26	L	CAN-H
30	G	REVERSE
31	BG	IGN
57	R	CAMERA V+
58	B	CAMERA GND
59	B	CAMERA_COMP+ (WITH AROUND VIEW CAMERA)
59	W	CAMERA_COMP+ (WITH REAR VIEW CAMERA)
60	SHIELD	CAMERA_SHIELD

Connector No.	M161
Connector Name	AV CONTROL UNIT (WITHOUT BOSE AUDIO SYSTEM)
Connector Type	TH40FW-NH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
23	LG	M-CAN L
24	SB	M-CAN H
25	P	CAN-L
26	L	CAN-H
30	G	REVERSE
31	BG	IGN
57	R	CAMERA V+
58	B	CAMERA GND
59	W	CAMERA_COMP+
60	SHIELD	CAMERA_SHIELD

Connector No.	M162
Connector Name	AV CONTROL UNIT (WITH BOSE AUDIO SYSTEM)
Connector Type	NH18FW-CS2
Connector Color	WHITE

Terminal No.	19
Color of Wire	G
Signal Name	BAT


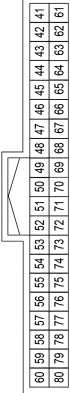
Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH24FB-NH
Connector Color	BLACK

Terminal No.	Color of Wire	Signal Name
109	G	REVERSE SIGNAL


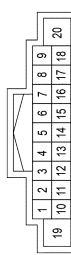
Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH
Connector Color	BLACK

Terminal No.	59
Color of Wire	P
Signal Name	CAN-L
Terminal No.	60
Color of Wire	L
Signal Name	CAN-H

Connector No.	M160
Connector Name	AV CONTROL UNIT (WITHOUT BOSE AUDIO SYSTEM)
Connector Type	NH18FW-CS2
Connector Color	WHITE

Terminal No.	19
Color of Wire	G
Signal Name	BAT

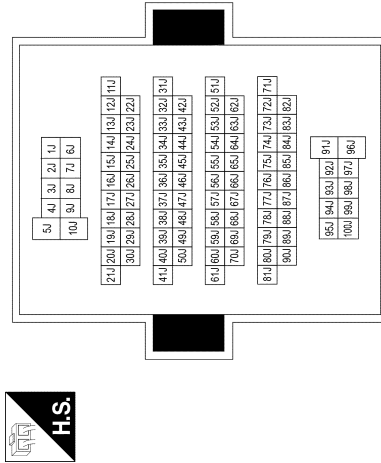
AANIA3959GB

# REAR VIEW MONITOR SYSTEM

## [REAR VIEW MONITOR SYSTEM (NAVIGATION)]

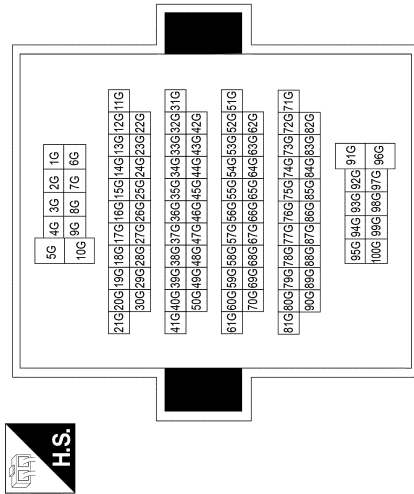
< WIRING DIAGRAM >

Connector No.	B1
Connector Name	WIRE TO WIRE
Connector Type	TH80MDGY-CS16-TM4
Connector Color	GRAY



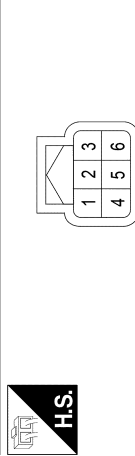
Terminal No.	Color of Wire	Signal Name
83J	SHIELD	-
84J	W	-
85J	B	-
86J	R	-

Connector No.	E30
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
5G	P	-

Connector No.	B76
Connector Name	REAR VIEW CAMERA
Connector Type	RH06FB-1V
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	-
2	R	-
4	W	-
5	SHIELD	-

AANIA3960GB

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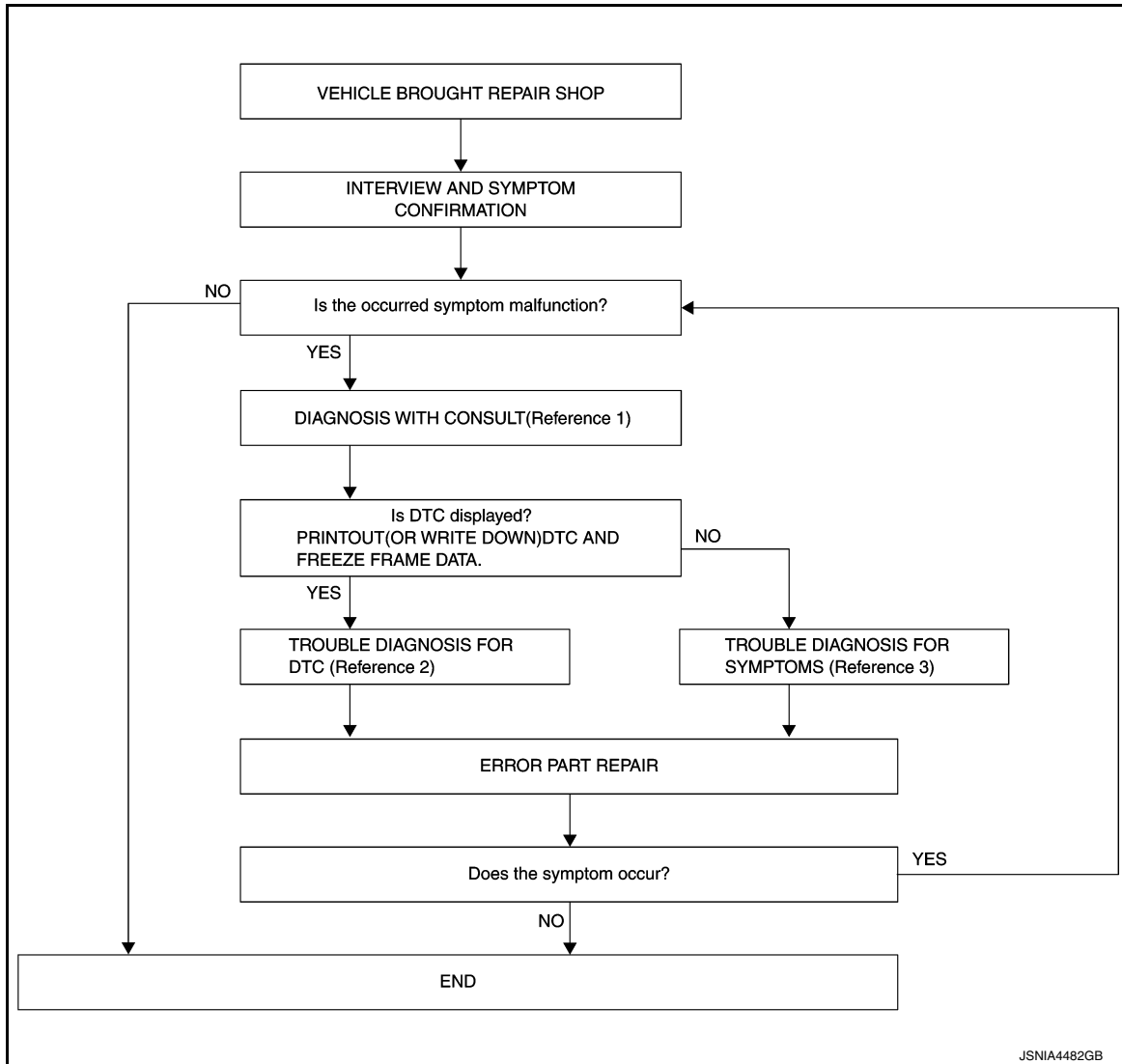
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

#### Work Flow

INFOID:000000012193904

#### OVERALL SEQUENCE



JSNIA4482GB

- Reference 1: Refer to [AV-40, "CONSULT Function"](#).
- Reference 2: Refer to [AV-304, "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 a malfunction?

- YES >> GO TO 2.  
NO >> Inspection End.

### 2. DIAGNOSIS WITH CONSULT

1. Connect CONSULT and perform a self-diagnosis for "MULTI AV". Refer to [AV-40, "CONSULT Function"](#).

# DIAGNOSIS AND REPAIR WORKFLOW

## [REAR VIEW MONITOR SYSTEM (NAVIGATION)]

< BASIC INSPECTION >

**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 (FFD).

Is DTC displayed?

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

### 3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the "Self Diagnostic Result".
2. Perform the relevant diagnosis referring to the DTC list.

>> GO TO 5.

### 4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-304. "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 Diagnostic Result".

3. Check that the symptom does not occur.

Does the symptom occur?

- YES >> GO TO 1.  
NO >> Inspection End.

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AV

# CAMERA IMAGE SIGNAL CIRCUIT (WITH REAR VIEW MONITOR)

< DTC/CIRCUIT DIAGNOSIS >

[REAR VIEW MONITOR SYSTEM (NAVIGATION)]

## DTC/CIRCUIT DIAGNOSIS

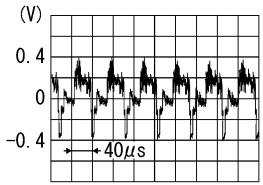
### CAMERA IMAGE SIGNAL CIRCUIT (WITH REAR VIEW MONITOR)

#### Diagnosis Procedure

INFOID:000000012193905

#### 1. CHECK CAMERA IMAGE SIGNAL

1. Turn ignition switch ON.
2. Shift the selector lever to "R" position.
3. Check the signal between AV control unit harness connector M161 (without BOSE audio system), or M163 (with BOSE audio system), and ground.

AV control unit		Condition	Reference value
Connector	(+) Terminal		
M161 (without BOSE audio system)	59	When rear view camera image is displayed.	
M163 (with BOSE audio system)			

SKIB2251J

Is the inspection result normal?

- YES >> Replace AV control unit. Refer to [AV-183. "Removal and Installation"](#).  
 NO >> GO TO 2.

#### 2. CHECK CAMERA IMAGE SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector M161 (without BOSE audio system), or M163 (with BOSE audio system), and rear view camera harness connector B76.
3. Check the continuity between AV control unit harness connector M161 (without BOSE audio system), or M163 (with BOSE audio system), and rear view camera harness connector B76.

AV control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M161 (without BOSE audio system)	59	B76	4	Yes
M163 (with BOSE audio system)				

Is the inspection result normal?

- YES >> GO TO 3.  
 NO >> Repair or replace malfunctioning parts.

#### 3. CHECK CAMERA IMAGE SIGNAL CIRCUIT FOR SHORT

Check the continuity between AV control unit harness connector M161 (without BOSE audio system), or M163 (with BOSE audio system), and ground.

# CAMERA IMAGE SIGNAL CIRCUIT (WITH REAR VIEW MONITOR)

< DTC/CIRCUIT DIAGNOSIS >

[REAR VIEW MONITOR SYSTEM (NAVIGATION)]

(+)		(-)	Continuity
AV control unit			
Connector	Terminal		
M161 (without BOSE audio system)	59	Ground	No
M163 (with BOSE audio system)			

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning parts.

## 4. CHECK CAMERA IMAGE SIGNAL GROUND CIRCUIT

Check the continuity between AV control unit harness connector M161 (without BOSE audio system), or M163 (with BOSE audio system), and rear view camera harness connector B76.

AV control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M161 (without BOSE audio system)	58	B76	1	Yes
M163 (with BOSE audio system)				

Is the inspection result normal?

YES >> Replace rear view camera. Refer to [AV-307. "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

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AV

# REAR VIEW MONITOR SYSTEM

< SYMPTOM DIAGNOSIS >

[REAR VIEW MONITOR SYSTEM (NAVIGATION)]

## SYMPTOM DIAGNOSIS

### REAR VIEW MONITOR SYSTEM

#### Symptom Table

INFOID:000000012193906

#### REAR VIEW MONITOR SYSTEM

Symptom	Possible cause	Inspection item
Camera image is not shown. (Vehicle width and predictive course line are displayed.)	<ul style="list-style-type: none"><li>• Harness between rear view camera and AV control unit</li><li>• Rear view camera</li><li>• AV control unit</li></ul>	Camera image signal circuit. Refer to <a href="#">AV-302. "Diagnosis Procedure"</a> .
Camera image does not switch.	<ul style="list-style-type: none"><li>• Harness between BCM and AV control unit</li><li>• Ignition power supply circuit</li><li>• Transmission range switch</li><li>• AV control unit</li><li>• BCM</li></ul>	Reverse signal circuit. Refer to <a href="#">TM-98. "Diagnosis Procedure"</a> .



# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[REAR VIEW MONITOR SYSTEM (NAVIGATION)]

## NORMAL OPERATING CONDITION

### Description

INFOID:000000012193907

#### 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 system is in the video mode.	Press "AUDIO" to change the mode.
	The interior of the vehicle is above 80°C (176°F) or high temperature, and the protection of the display reacts, and a display is turned off.	Wait until the interior of the vehicle has cooled down.
Screen is not clear.	Contrast setting is not appropriate.	Adjust the contrast of the display.
No voice guidance is available. 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 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.

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AV

# AV CONTROL UNIT

< REMOVAL AND INSTALLATION >

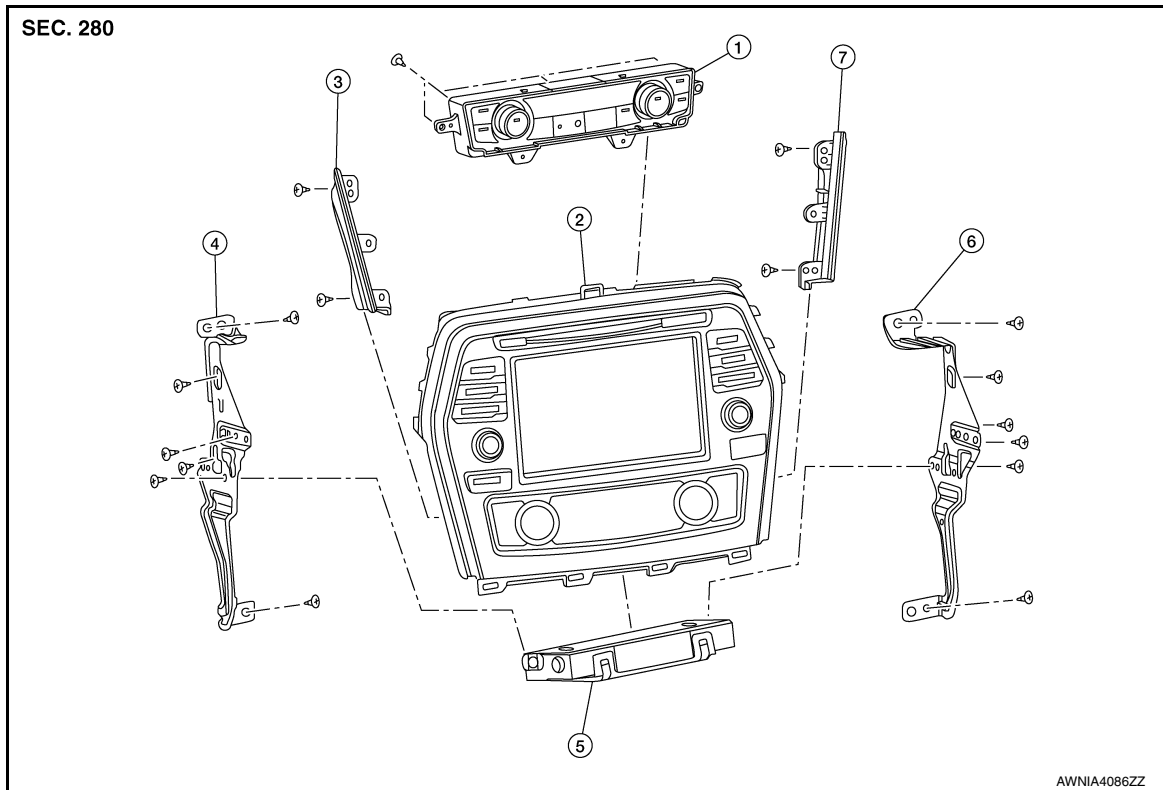
[REAR VIEW MONITOR SYSTEM (NAVIGATION)]

## REMOVAL AND INSTALLATION

### AV CONTROL UNIT

Exploded View

INFOID:000000012340446



- |                             |                    |                             |
|-----------------------------|--------------------|-----------------------------|
| 1. A/C switch assembly      | 2. AV control unit | 3. Audio unit finisher (LH) |
| 4. Audio unit bracket (LH)  | 5. A/C auto amp.   | 6. Audio unit bracket (RH)  |
| 7. Audio unit finisher (RH) |                    |                             |

### Removal and Installation

INFOID:000000012300884

#### REMOVAL

##### CAUTION:

Before disconnecting the AV control unit and battery terminals, turn the ignition switch OFF and wait at least 30 seconds.

##### NOTE:

- Before replacing AV control unit, perform "Before Replace ECU" of "Read / Write Configuration" to save or print current vehicle specification. Refer to [AV-94, "Description"](#).
  - After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Data corruption may occur if battery voltage is cut off within 30 seconds.
1. Disconnect the negative battery terminal. Refer to [PG-101, "Removal and Installation \(Battery\)"](#).
  2. Remove A/C switch assembly. Refer to [HAC-100, "Removal and Installation"](#).
  3. Remove AV control unit screws then pull out AV control unit.
  4. Disconnect the harness connectors from AV control unit and remove.
  5. Remove AV control unit bracket (LH/RH) screws and AV control unit brackets [(LH/RH) (if necessary)].

#### INSTALLATION

##### CAUTION:

Be sure to perform "After Replace ECU" of "Read / Write Configuration" or "Manual Configuration" when replacing AV control unit. Refer to [AV-94, "Description"](#).

Installation is in the reverse order of removal.

# REAR VIEW CAMERA

< REMOVAL AND INSTALLATION >

[REAR VIEW MONITOR SYSTEM (NAVIGATION)]

## REAR VIEW CAMERA

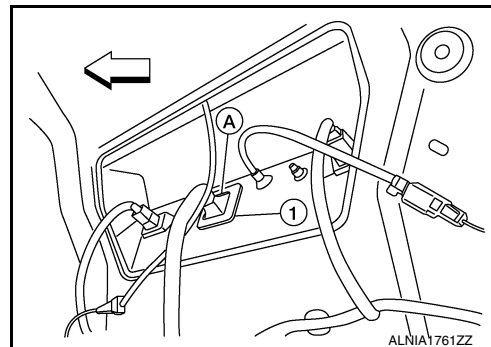
### Removal and Installation

INFOID:000000012300949

#### REMOVAL

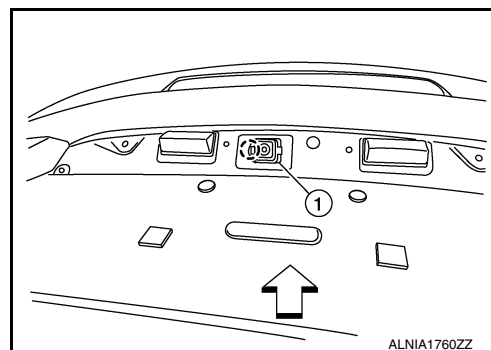
1. Remove license lamp finisher. Refer to [EXT-40, "Removal and Installation"](#).
2. Remove trunk lid finisher. Refer to [INT-51, "TRUNK LID FINISHER : Removal and Installation"](#).
3. Disconnect the harness connector (A) from the rear camera (1).

↔ : Front



4. Release pawl then remove rear camera (1).

○ : Pawl  
↔ : Front



#### INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit. Refer to [AV-240, "CALIBRATING CAMERA IMAGE \(AROUND VIEW MONITOR\) : Description"](#).