

SECTION **AV**

AUDIO, VISUAL & NAVIGATION SYSTEM

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## PRECAUTION

### PRECAUTIONS FOR MEXICO

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

INFOID:000000008280435

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

**WARNING:**

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

**WARNING:**

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

#### EXCEPT FOR MEXICO

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

INFOID:000000008280436

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

**WARNING:**

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

**WARNING:**



# PRECAUTIONS

< PRECAUTION >

[BASE AUDIO]

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

## Precaution for Trouble Diagnosis

INFOID:000000008280437

### AV COMMUNICATION SYSTEM

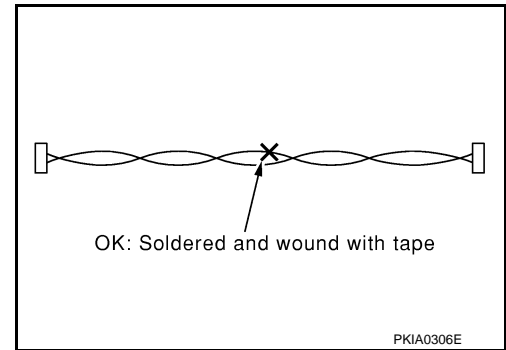
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

## Precaution for Harness Repair

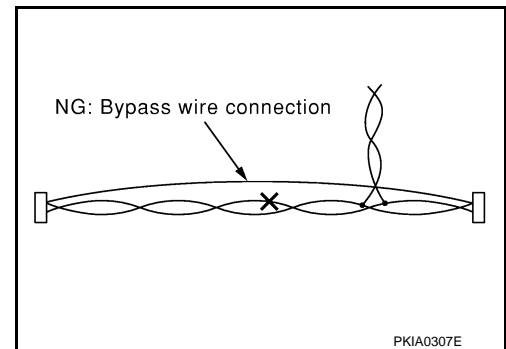
INFOID:000000008280438

### AV COMMUNICATION SYSTEM

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



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



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# PREPARATION

< PREPARATION >

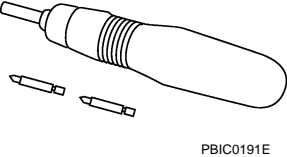
[BASE AUDIO]

## PREPARATION

### PREPARATION

#### Commercial Service Tools

INFOID:000000008280439

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

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

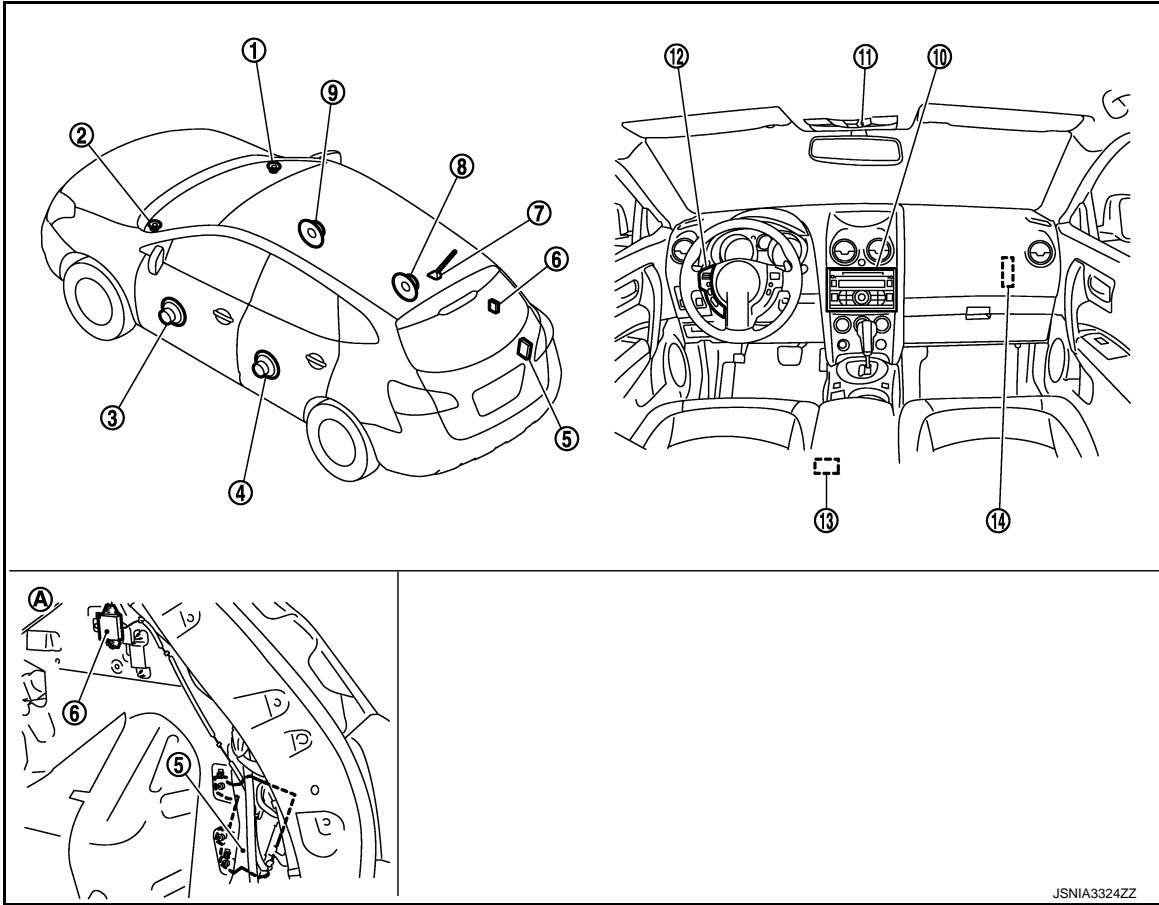
[BASE AUDIO]

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000008280440



- |                                |  |  |
|--------------------------------|--|--|
| 1. Tweeter RH                  | 2. Tweeter LH                                      | 3. Front speaker LH                                |
| 4. Rear door speaker LH        | 5. TEL adapter unit (with hands-free phone system) | 6. TEL antenna (with hands-free phone system)      |
| 7. Antenna base (antenna amp.) | 8. Rear door speaker RH                            | 9. Front door speaker RH                           |
| 10. Audio unit                 | 11. Microphone (with hands-free phone system)      | 12. Steering switch (with hands-free phone system) |
| 13. iPod connector             | 14. iPod adapter                                   |  |
| A. Luggage side RH             |  |  |

#### Component Description

INFOID:000000008280441

Part name	Description
Audio unit	Controls audio system and hands-free phone system functions.
Front speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from audio unit.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
Rear speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from audio unit.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
Tweeter	<ul style="list-style-type: none"> <li>Outputs sound signal from audio unit.</li> <li>Outputs high range sounds.</li> </ul>

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# COMPONENT PARTS

< SYSTEM DESCRIPTION >

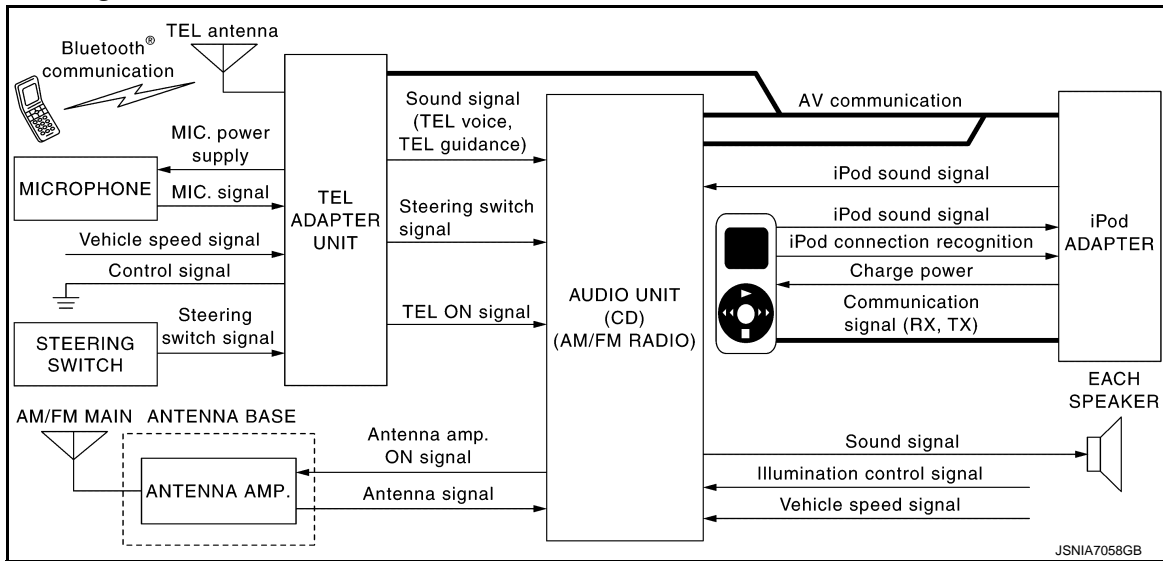
[BASE AUDIO]

Part name	Description
Antenna base	<ul style="list-style-type: none"><li>• An antenna base integrated with antenna amp.</li><li>• Radio signal received by rod antenna is amplified and transmitted to audio unit.</li><li>• Power (antenna amp. ON signal) is supplied from audio unit.</li></ul>
iPod adapter	<ul style="list-style-type: none"><li>• Inputs iPod sound signal from iPod®, and outputs iPod sound signal to audio unit.</li><li>• Receiving/transmitting of iPod® operation signals are performed as follows:<ul style="list-style-type: none"><li>- between audio unit and iPod adapter: AV communication.</li><li>- between iPod® and iPod adapter: serial communication.</li></ul></li></ul>
Steering switch (with hands-free phone system)	<ul style="list-style-type: none"><li>• Operation for audio and hands-free phone are possible.</li><li>• Steering switch signal (operation signal) is output to TEL adapter unit.</li><li>• Steering switch signal (operation signal) is output to audio unit via TEL adapter unit.</li></ul>
TEL adapter unit (with hands-free phone system)	<ul style="list-style-type: none"><li>• Inputs the steering switch signal (operation signal) from the steering switch.</li><li>• Outputs the steering switch signal (operation signal) to audio unit.</li><li>• Inputs the TEL voice signal from TEL antenna during reception and outputs it to the audio unit.</li><li>• Inputs the TEL voice signal from microphone during speech recognition and outputs it to the TEL antenna.</li><li>• Audio unit and TEL adapter unit exchange data by AV communication.</li></ul>
TEL antenna (with hands-free phone system)	Receives the TEL voice signal and outputs it to the TEL adapter unit.
Microphone (with hands-free phone system)	<ul style="list-style-type: none"><li>• Used for hands-free phone operation.</li><li>• Microphone signal is transmitted to TEL adapter unit.</li><li>• Power (microphone VCC) is supplied from TEL adapter unit.</li></ul>

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

SYSTEM

System Diagram



NOTE:

An antenna base integrated with radio antenna amp. is adopted.  
iPod® is a trademark of Apple inc., registered in the U.S. and other countries.

System Description

AUDIO SYSTEM

Audio functions

×: Applicable

		Without hands-free phone system	With hands-free phone system
Audio function	AM/FM radio	×	×
	CD	×	×
	AUX connection	×	×
	iPod® connection	×	×
	Speed sensitive volume	×	×
Hands-free phone system		—	×

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

AUDIO FUNCTION

AM/FM Radio

- AM/FM radio tuner is built into audio unit.
- Radio signals are received by radio antenna, next they are amplified by antenna amp., and finally they are input to audio unit. (Antenna amp. is built into antenna base.)
- Audio unit outputs the sound signal to each speaker.

CD

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

Auxiliary input

- When the external device is connected to the auxiliary (AUX) input jack of the audio unit, the external device inputs a sound signal to the audio unit.
- When AUX mode is selected, audio unit outputs sound signal to each speaker.

iPod® Connection

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- Connect iPod® and iPod adapter with wire harness and iPod adapter input iPod sound signal from iPod®.
- When iPod mode is selected, iPod adapter outputs iPod sound signal to audio unit.
- Audio unit outputs the sound signal to each speaker.

#### Speed Sensitive Volume

- Volume level of this system goes up and down automatically in proportion to the vehicle speed.
- The control level can be selected by the customer.

#### HANDS-FREE PHONE SYSTEM

- The connection between cellular phone and TEL adapter unit is performed with Bluetooth® communication.
- The voice guidance signal is input from the TEL adapter unit to the audio unit and output to the front speaker when operating the telephone.
- TEL adapter unit has the on board self-diagnosis function. Refer to [AV-18. "Diagnosis Description"](#).

#### When Receiving A Call

TEL voice signal received with the cellular phone is input from TEL antenna via TEL adapter unit to audio unit with Bluetooth® communication and output to the front speaker. The operation is performed with the steering switch or voice recognition function.

#### When A Call Is Originated

Speech sound (TEL voice signal) is input from the microphone to the TEL adapter unit. It is input from the TEL antenna via Bluetooth® communication to the cellular phone. It is transmitted to the phone on the other side. The operation is performed with the steering switch or voice recognition function.

## DIAGNOSIS SYSTEM (AUDIO UNIT)

### Description

INFOID:000000008280444

Self-diagnosis mode can check the following items.

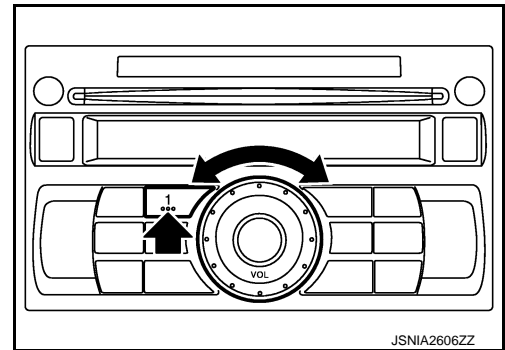
- Display all icons and segments
- Audio unit hardware/software/CD mechanism/EEPROM versions
- Satellite radio version
- Audio CD changer version
- iPod hardware/software versions

### On Board Diagnosis Function

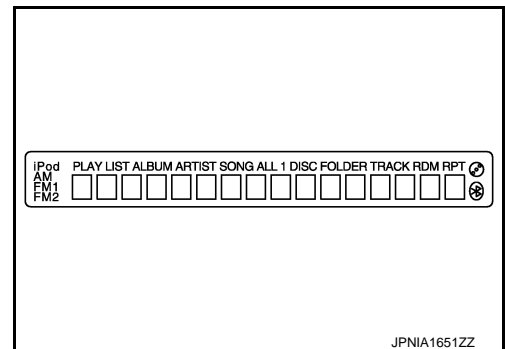
INFOID:000000008280445

#### OPERATION PROCEDURE

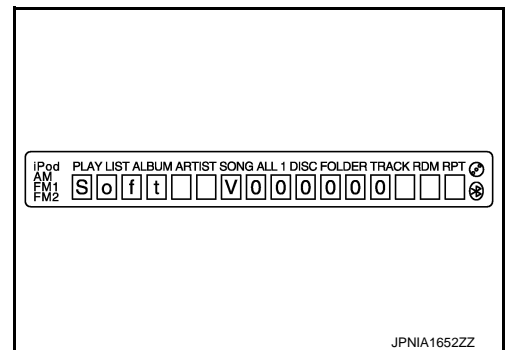
1. Turn ignition switch to the ON position.
2. Turn the audio unit off.
3. While pressing the “1” button, turn the volume control dial clockwise or counterclockwise 30 clicks or more. When the self-diagnosis mode is started, a short beep will be heard.



4. Initially, all display segments will be illuminated.



5. Press the “DISP TEXT” switch to enter version diagnostics. “Soft” (audio software version) is displayed.



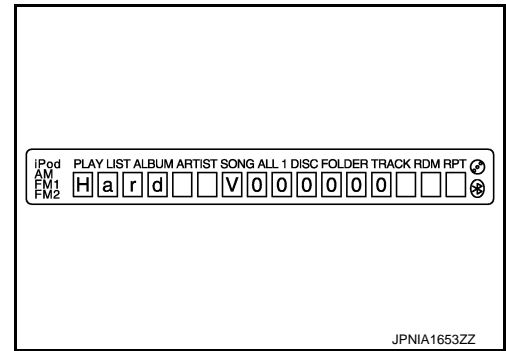
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# DIAGNOSIS SYSTEM (AUDIO UNIT)

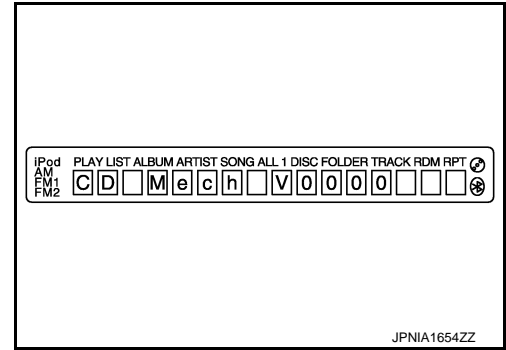
< SYSTEM DESCRIPTION >

[BASE AUDIO]

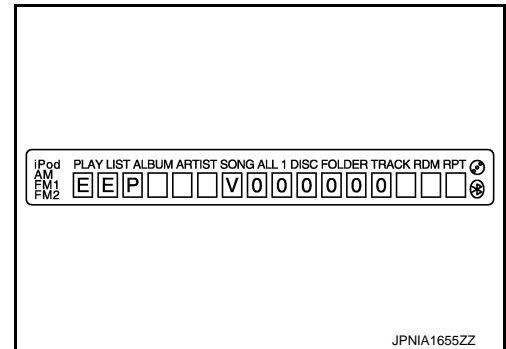
6. Press the "DISP TEXT" switch again to display the "Hard" (audio hardware version).



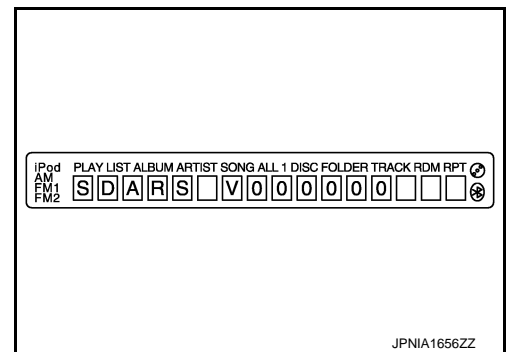
7. Press the "DISP TEXT" switch again to display the "CD Mech" (CD mechanism version).



8. Press the "DISP TEXT" switch again to display the "EEP" (audio unit EEPROM version).



9. Press the "DISP TEXT" switch again to display the "SDARS" (satellite radio version).



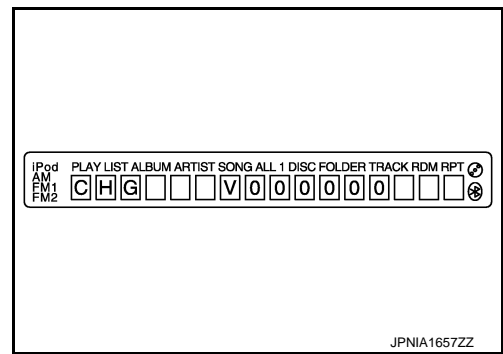


# DIAGNOSIS SYSTEM (AUDIO UNIT)

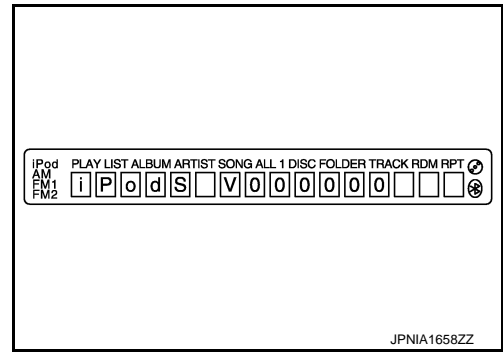
< SYSTEM DESCRIPTION >

[BASE AUDIO]

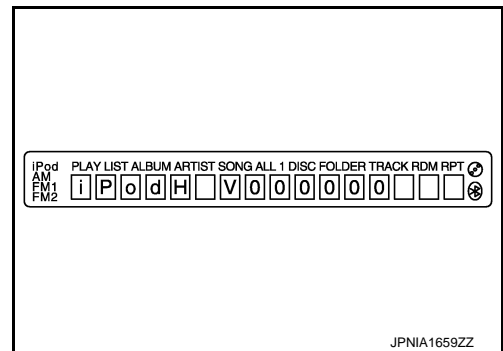
10. Press the “DISP TEXT” switch again to display the “CHG” (audio CD changer version). If audio CD changer is not connected, “FFFFFF” is displayed.



11. Press the “DISP TEXT” switch again to display the “iPodS” (iPod software version). “FFFFFF” is displayed when communication signals between the audio unit and iPod adapter include a malfunction.



12. Press the “DISP TEXT” switch again to display the “iPodH” (iPod hardware version). “FFFFFF” is displayed when communication signals between the audio unit and iPod adapter include a malfunction.



## Finishing Self-diagnosis Mode

Self-diagnosis Mode is canceled when turning ignition switch OFF.

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# DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

[BASE AUDIO]

## DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

### Description

INFOID:000000008280446

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

### Diagnosis Description

INFOID:000000008280447

#### ON BOARD DIAGNOSIS ITEM

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

#### CAUTION:

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

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

#### Self-diagnosis results

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

#### NOTE:

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

#### Self-diagnosis results

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

#### The Details of Error Count

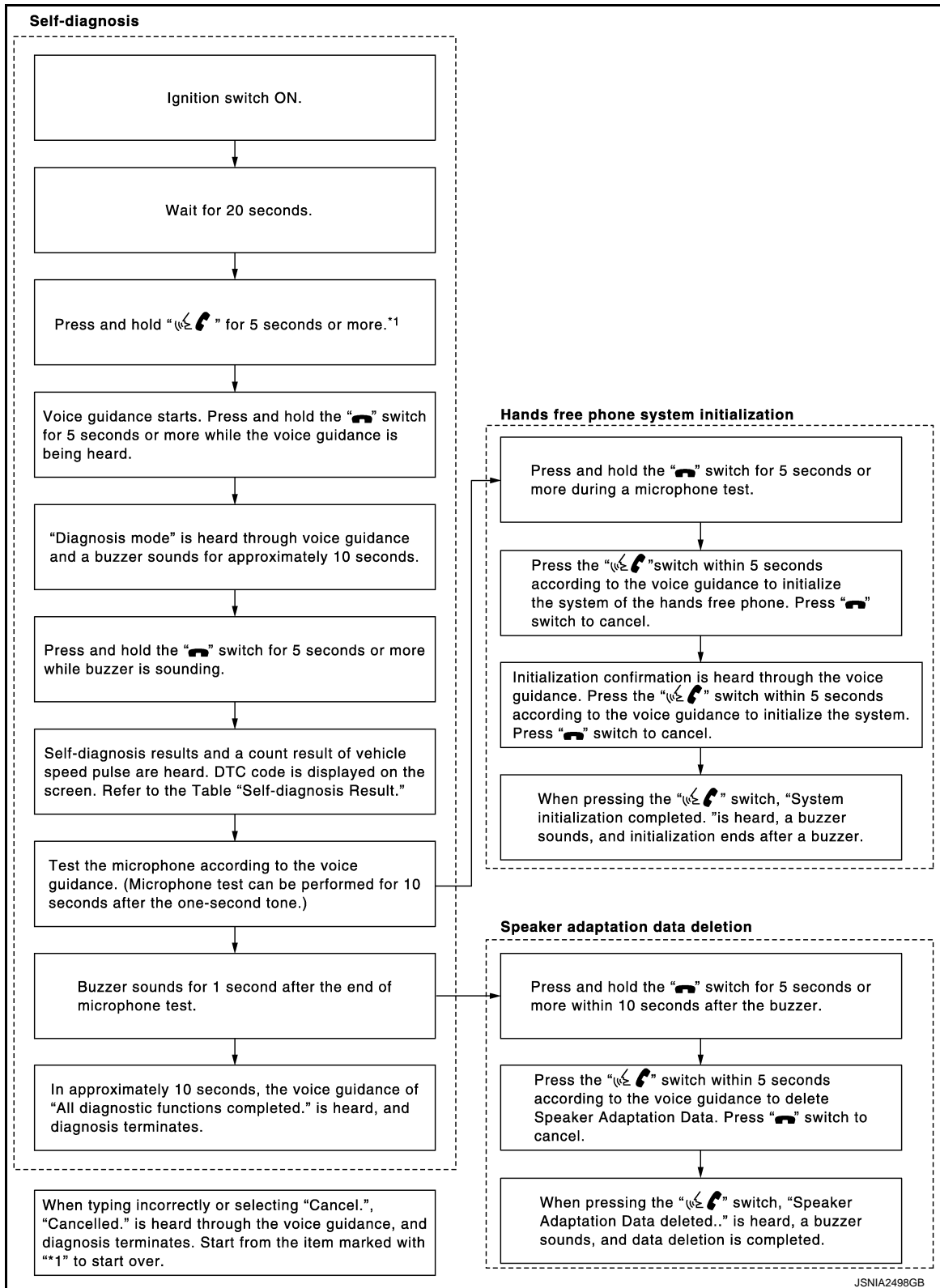
The error count guides "0" when the error occurs. The next time it counts up "1" if it is normal with the ignition switch ON. It continues the count up unless the initialization of hands-free phone system is performed.

# DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

[BASE AUDIO]

## FLOW CHART OF TROUBLE DIAGNOSIS



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# AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO]

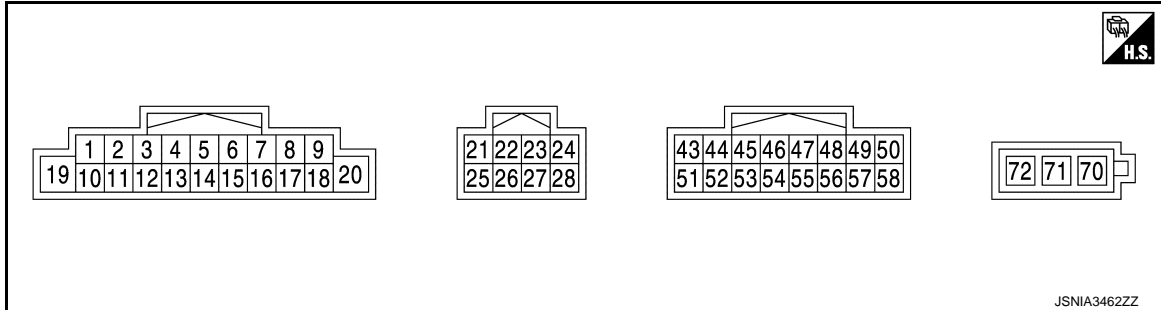
## ECU DIAGNOSIS INFORMATION

### AUDIO UNIT

Reference Value

INFOID:000000008280448

#### TERMINAL LAYOUT



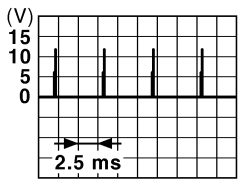
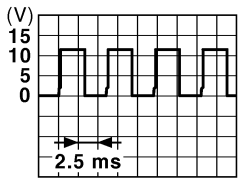
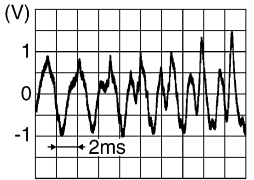
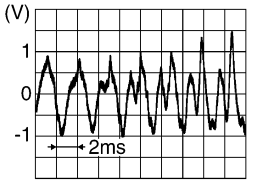
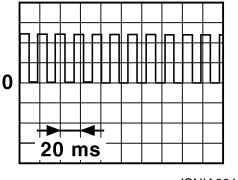
#### PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
2 (R)	3 (G)	Sound signal front speaker LH	Output	Ignition switch ON	Sound output	<p>SKIB3609E</p>
4 (V)	5 (LG)	Sound signal rear speaker LH	Output	Ignition switch ON	Sound output	<p>SKIB3609E</p>
6 (BR)	15 (GR)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch	0.2 V
					Keep pressing SEEK UP switch	1.0 V
					Keep pressing VOL UP switch	2.2 V
					Except for above	3.3 V
7 (SB)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage

# AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO]

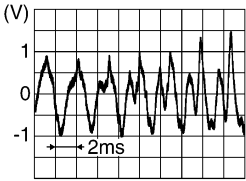
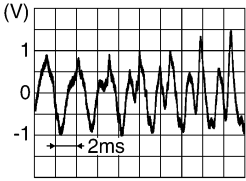

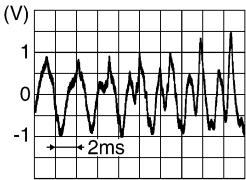
Terminal (Wire color)		Description		Condition	Reference value (Approx.)	
+	-	Signal name	Input/ Output			
9 (R)	8 (Y)	Illumination control signal	Input	Ignition switch ON	<ul style="list-style-type: none"> <li>Lighting switch 1ST</li> <li>When meter illumination is maximum</li> </ul> 	
				Ignition switch OFF	<ul style="list-style-type: none"> <li>Lighting switch 1ST</li> <li>When meter illumination is step 11</li> </ul> 	
				Ignition switch ON	<ul style="list-style-type: none"> <li>Lighting switch 1ST</li> <li>When meter illumination is minimum</li> </ul> <p style="text-align: center;">12.0 V</p>	
11 (Y)	12 (W)	Sound signal front speaker RH	Output	Ignition switch ON	Sound output	
13 (L)	14 (P)	Sound signal rear speaker RH	Output	Ignition switch ON	Sound output	
16 (BG)	15 (GR)	Steering switch signal B	Input	Ignition switch ON	Keep pressing SEEK DOWN switch	1.0 V
				Ignition switch ON	Keep pressing VOL DOWN switch	2.2 V
				Ignition switch ON	Except for above	3.3 V
18 (L)	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> 
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage

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# AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
31 (R)	35 (W)	iPod sound signal LH	Input	Ignition switch ON	When iPod mode is select- ed	 SKIB3609E
33 (B)	37 (G)	iPod sound signal RH	Input	Ignition switch ON	When iPod mode is select- ed	 SKIB3609E
38	—	Shield	—	—	—	—
47 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
48 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
49 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
54 (V)	Ground	TEL ON signal	Input	Ignition switch ON	While using hands-free phone system	0 V
					While not using hands-free phone system	5.0 V
55 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
56 (BR)	57 (Y)	Sound signal (TEL voice, voice guid- ance)	Input	Ignition switch ON	During voice guide output with the  switch pressed	 SKIB3609E
58	—	Shield	—	—	—	—
70	Ground	Antenna amp. ON signal	Output	Ignition switch ON	—	12.0 V
71	—	Antenna signal	Input	—	—	—

# TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

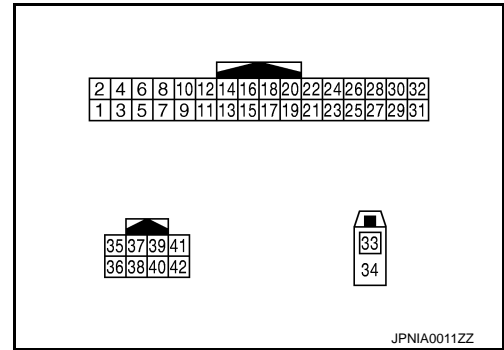
[BASE AUDIO]

## TEL ADAPTER UNIT

Reference Value

INFOID:000000008280449

TERMINAL LAYOUT





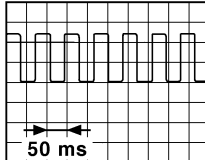
PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (BR)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
2 (SB)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
3 (W)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
4 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
7 (B)	8	Microphone signal	Input	Ignition switch ON	Give a voice.	 SKIB3609E
9 (BR)	10 (Y)	Sound signal (TEL voice, voice guid- ance)	Output	Ignition switch ON	During voice guide output with the  switch pressed.	 SKIB3609E
11 (V)	Ground	TEL ON signal	Output	Ignition switch ON	While using hands-free phone system.	0 V
					While not using hands-free phone system.	5.0 V

# TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)	
+	-	Signal name	Input/ Output			
12 (W)	14 (GR)	Steering switch signal A	Input	Ignition switch ON	Keep pressing  switch.	0 V
					Keep pressing SEEK UP switch.	1.2 V
					Keep pressing SEEK DOWN switch.	2.5 V
					Except for above.	5.0 V
13 (Y)	14 (GR)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	1.2 V
					Keep pressing  switch.	2.5 V
					Keep pressing SOURCE switch.	3.7 V
					Except for above.	5.0 V
17 (W)	19 (GR)	Steering switch signal A	Output	Ignition switch ON	Keep pressing SOURCE switch.	0.2 V
					Keep pressing SEEK UP switch.	1.0 V
					Keep pressing VOL UP switch.	2.2 V
					Except for above.	3.3 V
18 (L)	19 (GR)	Steering switch signal B	Output	Ignition switch ON	Keep pressing SEEK DOWN switch.	1.0 V
					Keep pressing VOL DOWN switch.	2.2 V
					Except for above.	3.3 V
20 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
21 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
27 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
28 (G)	Ground	Vehicle speed signal (2-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>  <p style="text-align: right; font-size: small;">JSNIA0015GB</p>
29 (W)	Ground	Microphone power supply	Output	Ignition switch ON	—	5.0 V



# TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
33	—	TEL antenna signal	Input	—	Not connected to TEL antenna connector.	5.0 V
34	—	Shield	—	—	—	—
35 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
36 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—

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# IPOD ADAPTER

< ECU DIAGNOSIS INFORMATION >

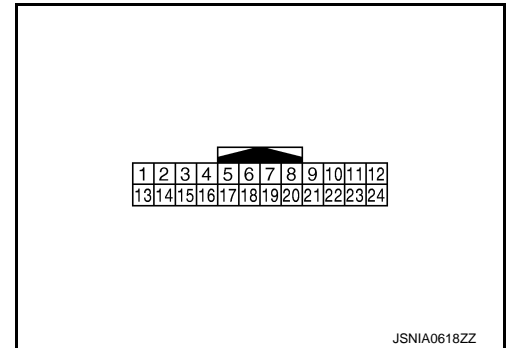
[BASE AUDIO]

## IPOD ADAPTER

Reference Value

INFOID:000000008280450

TERMINAL LAYOUT



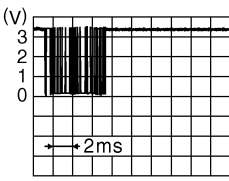
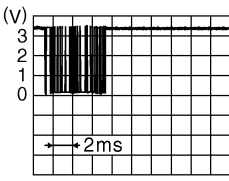
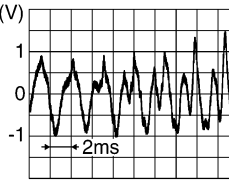
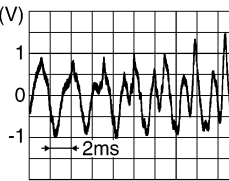
PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (R)	13 (W)	iPod sound signal LH	Output	Ignition switch ON	When iPod mode is select- ed.	<p style="text-align: right;">SKIB3609E</p>
2 (B)	14 (G)	iPod sound signal RH	Output	Ignition switch ON	When iPod mode is select- ed.	<p style="text-align: right;">SKIB3609E</p>
3 (SB)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
4 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
5 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
6 (GR)	—	USB D+ signal	—	—	—	—
7 (V)	—	USB D- signal	—	—	—	—
8 (G)	Ground	iPod battery charge 12 V	Output	Ignition switch ON	Connected to iPod®	12.0 V

# IPOD ADAPTER

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
9 (R)	Ground	Communication signal (iPod adapter→iPod®)	Output	Ignition switch ON	The wave pattern is displayed just after iPod connection.	 <p>JPNIA0462GB</p> <p><b>NOTE:</b> After the wave pattern display, the value continues Approx 3.3 V</p>
10 (L)	Ground	Communication signal (iPod®→iPod adapter)	Input	Ignition switch ON	Connected to iPod®	 <p>JPNIA0462GB</p>
11 (BR)	Ground	ACCESSORY-IDENTIFY	—	Ignition switch ON	Connected to iPod®	0 V
12 (W)	23 (B)	iPod sound signal RH	Input	Ignition switch ON	When iPod mode is selected.	 <p>SKIB3609E</p>
15	—	Shield	—	—	—	—
16 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
17 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
19	—	Shield	—	—	—	—
20 (P)	Ground	iPod battery charge 5 V	Output	Ignition switch ON	Connected to iPod®	5.0 V
21 (Y)	Ground	iPod connection recognition signal	Input	Ignition switch ON	Not connected to iPod®	4.0 V
					Connected to iPod®	0 V
22 (LG)	Ground	ACCESSORY-DETECT	—	Ignition switch ON	Connected to iPod®	0 V
24 (R)	23 (B)	iPod sound signal LH	Input	Ignition switch ON	When iPod mode is selected.	 <p>SKIB3609E</p>

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
AV

# WIRING DIAGRAM

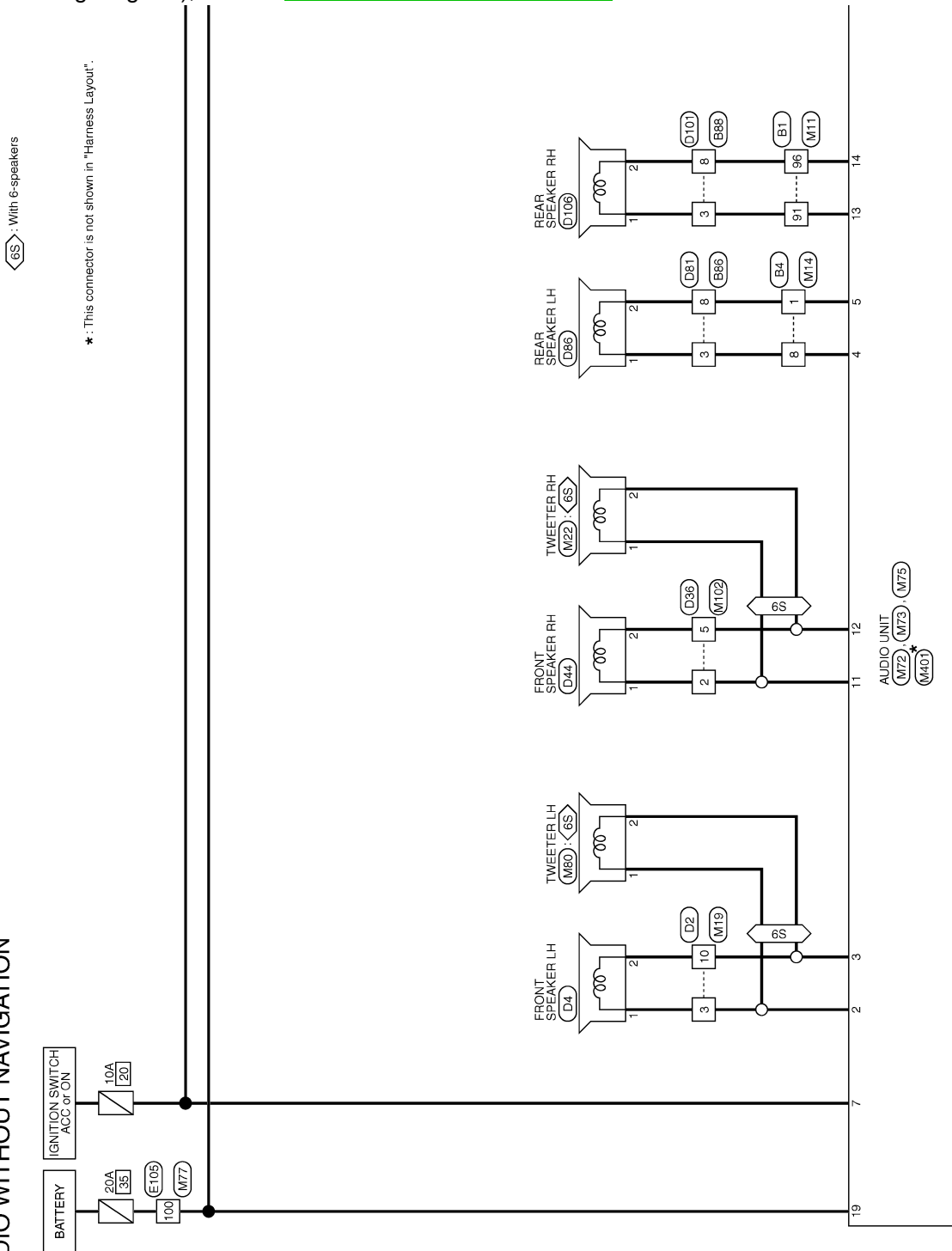
## BASE AUDIO

### Wiring Diagram

INFOID:000000008280451

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

#### BASE AUDIO WITHOUT NAVIGATION



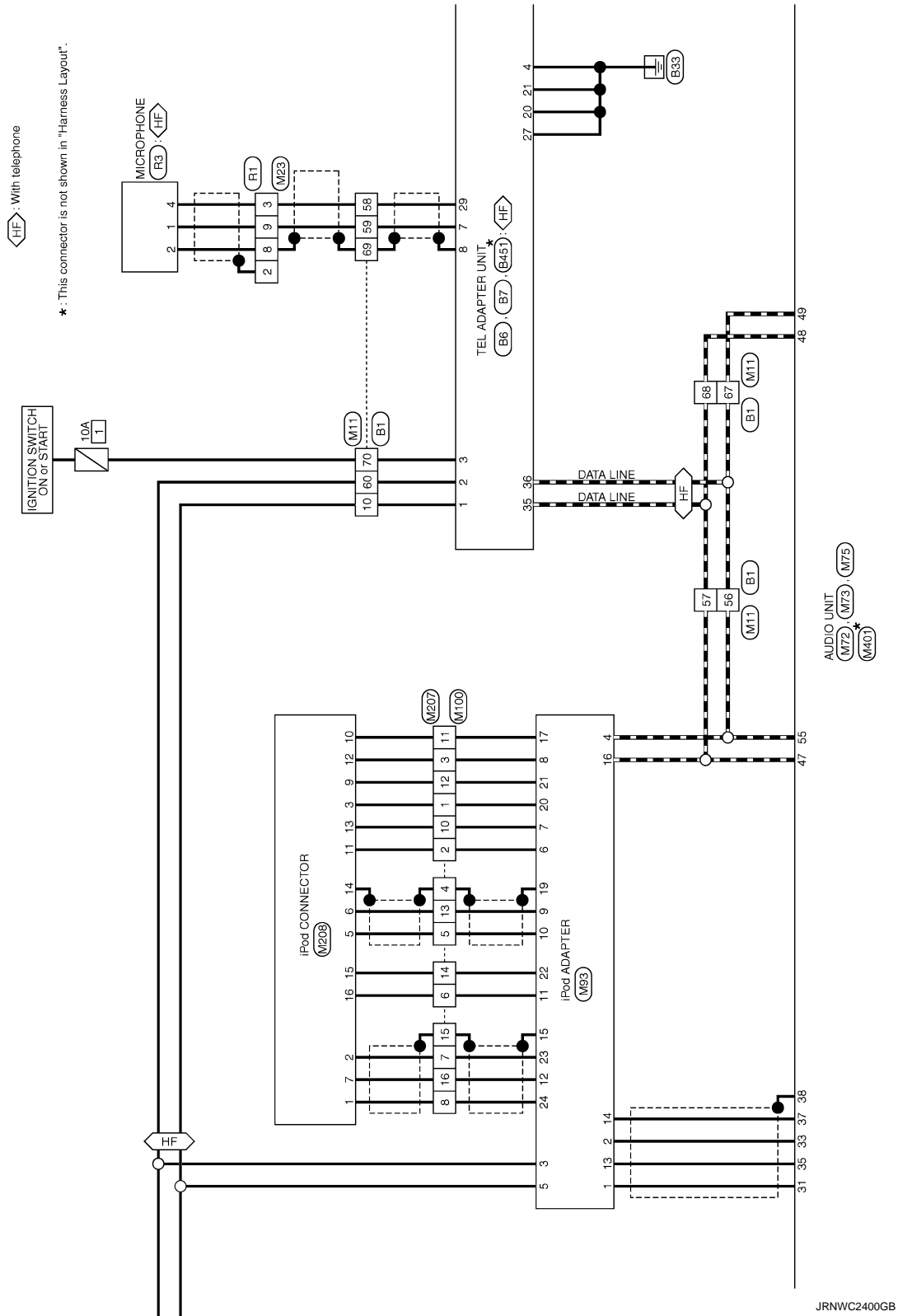
2012/05/23

JRNWC2399GB

# BASE AUDIO

< WIRING DIAGRAM >

[BASE AUDIO]



JRNWC2400GB

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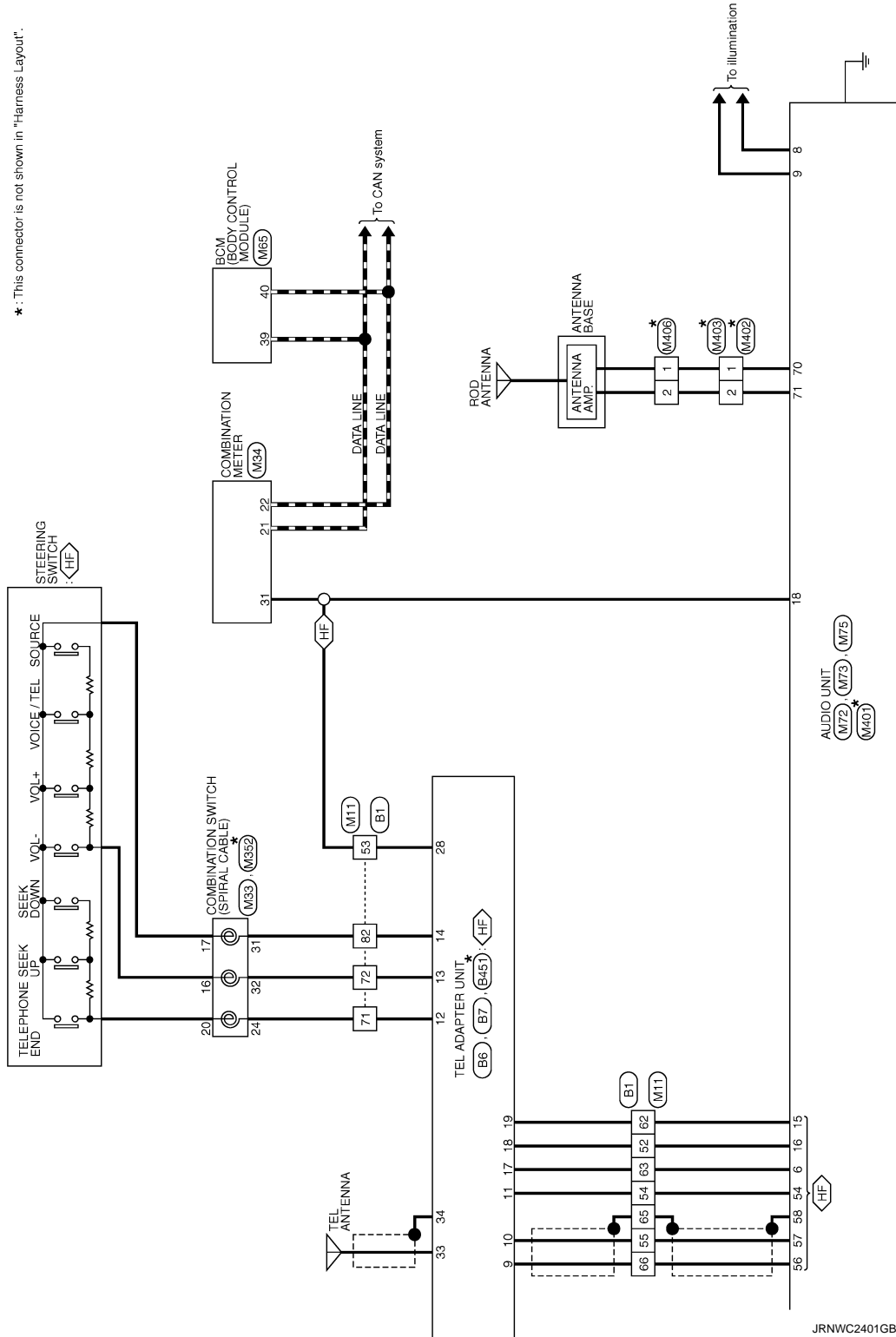
# BASE AUDIO

< WIRING DIAGRAM >

[BASE AUDIO]

HF : With telephone

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



JRNWC2401GB

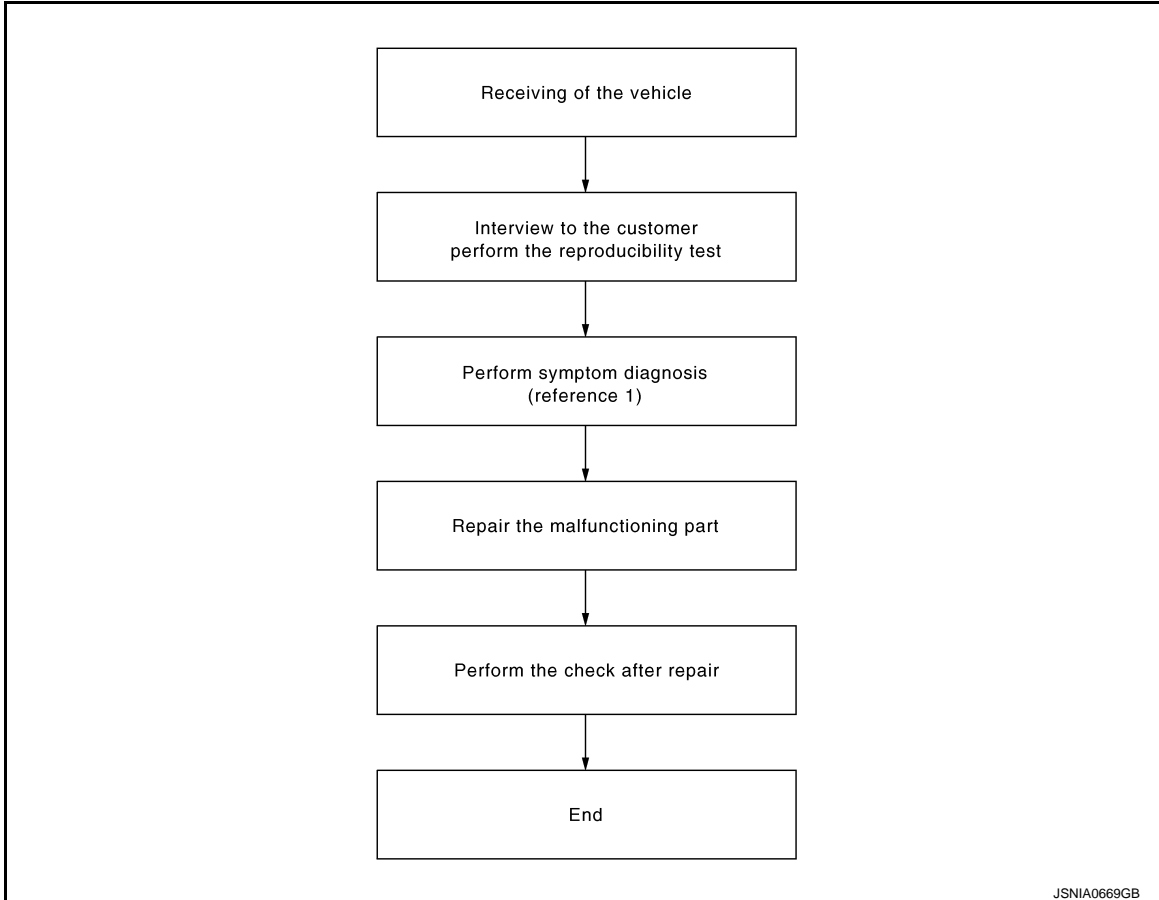
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

#### Work Flow

INFOID:000000008280452

#### OVERALL SEQUENCE



Reference 1...Refer to [AV-47, "Symptom Table"](#) (audio system) or [AV-49, "Symptom Table"](#) (hands-free phone system).

#### DETAILED FLOW

##### 1. CHECK SYMPTOM

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.

>> GO TO 2.

##### 2. PERFORM DIAGNOSIS BY SYMPTOM

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-47, "Symptom Table"](#) (audio system) or [AV-49, "Symptom Table"](#) (hands-free phone system).

>> GO TO 3.

##### 3. REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace the malfunctioning parts.

>> GO TO 4.

## DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[BASE AUDIO]

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### 4. FINAL CHECK

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Perform the operation to check that the malfunction symptom is solved or any other symptoms are present.

Is there any symptom?

YES >> GO TO 2.

NO >> INSPECTION END



# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

## DTC/CIRCUIT DIAGNOSIS

### POWER SUPPLY AND GROUND CIRCUIT AUDIO UNIT

#### AUDIO UNIT : Diagnosis Procedure

INFOID:000000008280453

#### 1.CHECK FUSE

Check that the following fuses of the audio unit are not blown.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	20

Is inspection result OK?

YES >> GO TO 2.

NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

#### 2.CHECK AUDIO UNIT POWER SUPPLY CIRCUIT

Check voltage between the audio unit and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Voltage
Battery power supply	M72	19	OFF	Battery voltage
ACC power supply	M72	7	ACC	Battery voltage

Is inspection result OK?

YES >> INSPECTION END

NO >> Check harness between audio unit and fuse.

### TEL ADAPTER UNIT

#### TEL ADAPTER UNIT : Diagnosis Procedure

INFOID:000000008280454

#### 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	20

Is the inspection result normal?

YES >> GO TO 2.

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

#### 2.CHECK POWER SUPPLY CIRCUIT

Check voltage between TEL adapter unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B6	1	OFF	Battery voltage
ACC power supply		2	ACC	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between TEL adapter unit and fuse.

#### 3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit connector.

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# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B6	4	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

## iPod ADAPTER

### iPod ADAPTER : Diagnosis Procedure

INFOID:000000008280455

#### 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	20

Is the inspection result normal?

YES >> GO TO 2.

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

#### 2.CHECK POWER SUPPLY CIRCUIT

Check voltage between iPod adapter harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Voltage
Battery power supply	M93	5	OFF	Battery voltage
ACC power supply		3	ACC	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Check harness between iPod adapter and fuse.

# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

## MICROPHONE SIGNAL CIRCUIT

### Description

INFOID:000000008280456

TEL adapter unit supplies power to microphone. The microphone transmits the sound voice to the TEL adapter unit.

### Diagnosis Procedure

INFOID:000000008280457

#### 1.CHECK CONTINUITY BETWEEN TEL ADAPTER UNIT AND MICROPHONE CIRCUIT

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

TEL adapter unit		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
B6	7	R3	1	Existed
	8		2	
	29		4	

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

TEL adapter unit		Ground	Continuity
Connector	Terminal		
B6	7		Not existed
	29		

Is inspection result OK?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2.CHECK VOLTAGE MICROPHONE VCC

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

(+) TEL adapter unit		(-)	Voltage (Approx.)
Connector	Terminal		
B6	29	Ground	5.0 V

Is inspection result OK?

YES >> GO TO 3.

NO >> Replace TEL adapter unit. Refer to [AV-59. "Exploded View"](#).

#### 3.CHECK MICROPHONE SIGNAL

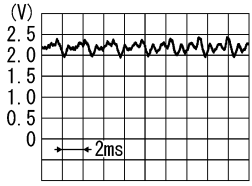
1. Turn ignition switch OFF.
2. Connect microphone connector.
3. Turn ignition switch ON.
4. Check signal between TEL adapter unit harness connector.

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# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

TEL adapter unit				Condition	Reference value
(+)		(-)			
Connector	Terminal	Connector	Terminal		
B6	7	B6	8	Give a voice.	 <p style="text-align: right; font-size: small;">PKIB5037J</p>

Is inspection result OK?

- YES >> Replace TEL adapter unit. Refer to [AV-59, "Exploded View"](#).
- NO >> Replace microphone. Refer to [AV-61, "Exploded View"](#).

# CONTROL SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

## CONTROL SIGNAL CIRCUIT

### Description

INFOID:000000008280458

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

### Diagnosis Procedure

INFOID:000000008280459

#### 1. CHECK CONTINUITY CONTROL SIGNAL CIRCUIT

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

TEL adapter unit		Ground	Continuity
Connector	Terminals		
B6	20	Ground	Existed
	21		
	27		

#### Is the inspection result normal?

- YES >> Replace TEL adapter unit. Refer to [AV-59, "Exploded View"](#).
- NO >> Repair harness or connector.

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# STEERING SWITCH SIGNAL A CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

## STEERING SWITCH SIGNAL A CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

### Description

INFOID:000000008280460

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

### Diagnosis Procedure

INFOID:000000008280461

#### 1. CHECK STEERING SWITCH SIGNAL A (STEERING SWITCH TO TEL ADAPTER UNIT) CIRCUIT

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

TEL adapter unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
B6	12	M33	24	Existed

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

TEL adapter unit		Ground	Continuity
Connector	Terminal		
B6	12		Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace spiral cable.

#### 3. CHECK TEL ADAPTER UNIT VOLTAGE

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

(+)		(-)		Voltage (Approx.)
TEL adapter unit				
Connector	Terminal	Connector	Terminal	
B6	12	B6	14	5.0 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace TEL adapter unit. Refer to [AV-59, "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-39, "Component Inspection"](#).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace steering switch. Refer to [AV-64, "Exploded View"](#).

# STEERING SWITCH SIGNAL A CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

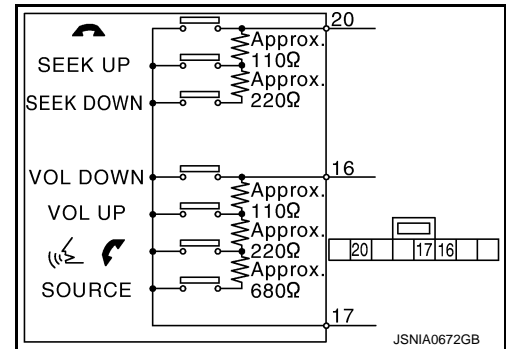
## Component Inspection

INFOID:000000008280462

Measure the resistance between the steering switch connector terminals 16 to 17 and 20 to 17.

Standard

Steering switch		Condition	Resistance Ω
Terminal	Terminal		
16	17	SOURCE switch ON	1000 – 1020
		switch ON	327 – 333
		VOL UP switch ON	109 – 111
		VOL DOWN switch ON	0
20	17	SEEK DOWN switch ON	327 – 333
		SEEK UP switch ON	109 – 111
		switch ON	0



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# STEERING SWITCH SIGNAL B CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

## STEERING SWITCH SIGNAL B CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

### Description

INFOID:000000008280463

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

### Diagnosis Procedure

INFOID:000000008280464

#### 1. CHECK STEERING SWITCH SIGNAL B (STEERING SWITCH TO TEL ADAPTER UNIT) CIRCUIT

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

TEL adapter unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
B6	13	M33	32	Existed

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

TEL adapter unit		Ground	Continuity
Connector	Terminal		
B6	13		Not existed

Is the inspection result normal?

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

#### 2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Replace spiral cable.

#### 3. CHECK TEL ADAPTER UNIT VOLTAGE

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

(+)		(-)		Voltage (Approx.)
TEL adapter unit				
Connector	Terminal	Connector	Terminal	
B6	13	B6	14	5.0 V

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace TEL adapter unit. Refer to [AV-59, "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-41, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [AV-64, "Exploded View"](#).



# STEERING SWITCH SIGNAL B CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

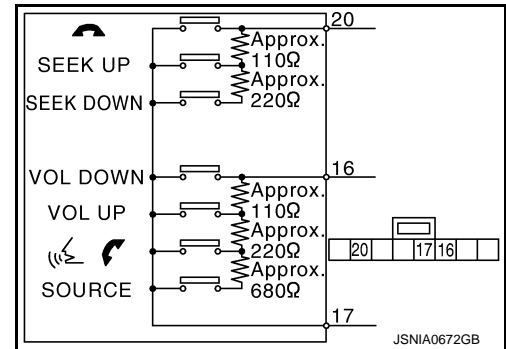
## Component Inspection

INFOID:000000008280465

Measure the resistance between the steering switch connector terminals 16 to 17 and 20 to 17.

Standard

Steering switch		Condition	Resistance Ω
Terminal	Terminal		
16	17	SOURCE switch ON	1000 – 1020
		switch ON	327 – 333
		VOL UP switch ON	109 – 111
		VOL DOWN switch ON	0
20	17	SEEK DOWN switch ON	327 – 333
		SEEK UP switch ON	109 – 111
		switch ON	0



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# STEERING SWITCH SIGNAL GND CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

## STEERING SWITCH SIGNAL GND CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

### Description

INFOID:000000008280466

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

### Diagnosis Procedure

INFOID:000000008280467

#### 1. CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

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

TEL adapter unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
B6	14	M33	31	Existed

Is the inspection result normal?

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

#### 2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Replace spiral cable.

#### 3. CHECK GROUND CIRCUIT

1. Connect TEL adapter unit connector.
2. Check continuity between TEL adapter unit harness connector and ground.

TEL adapter unit		Ground	Continuity
Connector	Terminal		
B6	14		Existed

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace TEL adapter unit. Refer to [AV-59, "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

Check steering switch. Refer to [AV-42, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [AV-64, "Exploded View"](#)

### Component Inspection

INFOID:000000008280468

Measure the resistance between the steering switch connector terminals 16 to 17 and 20 to 17.

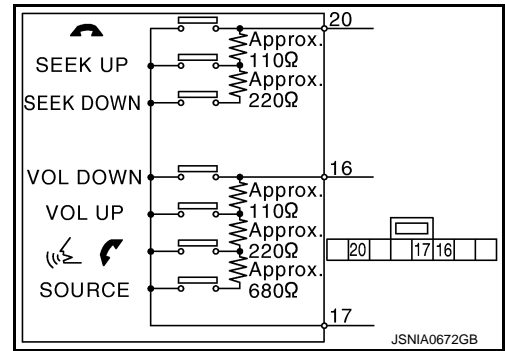
# STEERING SWITCH SIGNAL GND CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

Standard

Steering switch		Condition	Resistance Ω
Terminal	Terminal		
16	17	SOURCE switch ON	1000 – 1020
		switch ON	327 – 333
		VOL UP switch ON	109 – 111
		VOL DOWN switch ON	0
20	17	SEEK DOWN switch ON	327 – 333
		SEEK UP switch ON	109 – 111
		switch ON	0



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**STEERING SWITCH SIGNAL A CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)**

**Description**

INFOID:000000008280469

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

**Diagnosis Procedure**

INFOID:000000008280470

**1. CHECK STEERING SWITCH SIGNAL A CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)**

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

Audio unit		TEL adapter unit		Continuity
Connector	Terminal	Connector	Terminal	
M72	6	B6	17	Existed

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

Audio unit		Ground	Continuity
Connector	Terminal		
M72	6		Not existed

**Is inspection result normal?**

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

**2. CHECK AUDIO UNIT VOLTAGE**

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

(+)		(-)		Voltage (Approx.)
Audio unit				
Connector	Terminal	Connector	Terminal	
M72	6	M72	15	3.3 V

**Is inspection result normal?**

- YES >> Replace TEL adapter unit. Refer to [AV-59, "Exploded View"](#).  
 NO >> Replace audio unit. Refer to [AV-54, "Removal and Installation"](#).

# STEERING SWITCH SIGNAL B CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

## STEERING SWITCH SIGNAL B CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

### Description

INFOID:000000008280471

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

### Diagnosis Procedure

INFOID:000000008280472

#### 1. CHECK STEERING SWITCH SIGNAL B CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

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

Audio unit		TEL adapter unit		Continuity
Connector	Terminal	Connector	Terminal	
M72	16	B6	18	Existed

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

Audio unit		Ground	Continuity
Connector	Terminal		
M72	16		Not existed

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK AUDIO UNIT VOLTAGE

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

(+)		(-)		Voltage (Approx.)
Audio unit				
Connector	Terminal	Connector	Terminal	
M72	16	M72	15	3.3 V

Is inspection result normal?

YES >> Replace TEL adapter unit. Refer to [AV-59, "Exploded View"](#).

NO >> Replace audio unit. Refer to [AV-54, "Removal and Installation"](#).

# STEERING SWITCH SIGNAL GND CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO]

## STEERING SWITCH SIGNAL GND CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

### Description

INFOID:000000008280473

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

### Diagnosis Procedure

INFOID:000000008280474

#### 1. CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

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

Audio unit		TEL adapter unit		Continuity
Connector	Terminal	Connector	Terminal	
M72	15	B6	19	Existed

#### Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK GROUND CIRCUIT

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

Audio unit		Ground	Continuity
Connector	Terminal		
M72	15		Existed

#### Is inspection result normal?

YES >> Replace TEL adapter unit. Refer to [AV-59, "Exploded View"](#).

NO >> Replace audio unit. Refer to [AV-54, "Removal and Installation"](#).

# AUDIO SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[BASE AUDIO]

## SYMPTOM DIAGNOSIS

### AUDIO SYSTEM SYMPTOMS

#### Symptom Table

INFOID:000000008280475

#### AUDIO SYSTEM

Symptoms	Check items	Possible malfunction location / Action to take
Audio unit does not start.	—	Audio unit power supply and ground circuit. Refer to <a href="#">AV-33, "AUDIO UNIT : Diagnosis Procedure"</a> .
No sound comes out.	No sound from all speakers.	Audio unit power supply and ground circuit. Refer to <a href="#">AV-33, "AUDIO UNIT : Diagnosis Procedure"</a> .
	Only a certain speaker (front right, front left, rear right, or rear left) does not output sound.	<ul style="list-style-type: none"> <li>Poor connector connection of speaker.</li> <li>Sound signal circuit malfunction between audio unit and speaker.</li> <li>Malfunction in speaker.</li> <li>Malfunction in audio unit.</li> </ul>
Noise is mixed with audio.	Noise comes out from all speaker.	Malfunction in audio unit.
	Noise comes out only from a certain speaker (front right, front left, rear right, or rear left).	<ul style="list-style-type: none"> <li>Poor connector connection of speaker.</li> <li>Sound signal circuit malfunction between audio unit and speaker.</li> <li>Malfunction in speaker.</li> <li>Poor installation of speaker (e.g. backlash and looseness)</li> <li>Malfunction in audio unit.</li> </ul>
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	<ul style="list-style-type: none"> <li>Poor connector connection of antenna or antenna feeder.</li> <li>Loose antenna base mounting nut. Refer to <a href="#">AV-58, "Exploded View"</a>.</li> </ul>
Radio is not received or poor reception.	<ul style="list-style-type: none"> <li>Other audio sounds are normal.</li> <li>Any radio cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no obstacles generating external noises).</li> </ul>	<ul style="list-style-type: none"> <li>Antenna amp. ON signal circuit malfunction.</li> <li>Poor connector connection of antenna or antenna feeder.</li> <li>Loose antenna base mounting nut. Refer to <a href="#">AV-58, "Exploded View"</a>.</li> </ul>

#### RELATED TO iPod®

##### Trouble Diagnosis Chart by Symptom

Connect another iPod® and check if the symptom is reproduced or not. If the symptom is reproduced, diagnose the vehicle. If no malfunction is detected, replace the iPod harness.

##### NOTE:

- It is unable to read a connection between iPod® and iPod harness.
- Charging of iPod® with no 5 V charging circuit is not supported. (e.g. iPod 1G mechanical scroll wheel, iPod Classic 2G touch-sensitive wheel, and iPod Classic 3G 4 touch button)

##### Trouble diagnosis chart by symptom

Symptoms	Check items	Possible malfunction location / Action to take
There is no sound from the iPod®.	Other audio sounds are normal.	<ul style="list-style-type: none"> <li>iPod sound signal circuit between audio unit and iPod adapter.</li> <li>iPod sound signal circuit between iPod® and iPod adapter.</li> </ul>

# AUDIO SYSTEM SYMPTOMS



< SYMPTOM DIAGNOSIS >

[BASE AUDIO]

Symptoms	Check items	Possible malfunction location / Action to take
"iPod No connect" is displayed when "iPod" switch is pressed.	<ul style="list-style-type: none"> <li>• iPod battery charging is normal.</li> <li>• iPod software and hardware version are displayed when performing audio unit self-diagnosis.</li> </ul>	Communication circuit between iPod® and iPod adapter.
	<ul style="list-style-type: none"> <li>• iPod battery charging is normal.</li> <li>• iPod software and hardware version are not displayed when performing audio unit self-diagnosis.</li> </ul>	AV communication circuit between audio unit and iPod adapter.
	iPod battery charge does not work.	iPod adapter power supply and ground circuit. Refer to <a href="#">AV-34, "iPod ADAPTER : Diagnosis Procedure"</a> .
iPod® cannot charge the battery.	Not chargeable even when connecting other iPod®. Refer to NOTE.	iPod battery charge 5 V circuit between iPod® and iPod adapter.

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

## RELATED TO STEERING SWITCH

Symptoms	Possible malfunction location / Action to take
All steering switches are not operated.	Steering switch signal ground circuit. (steering switch to TEL adapter unit) Refer to <a href="#">AV-42, "Diagnosis Procedure"</a> .
"SOURCE", "SEEK UP", "VOL UP", "SEEK DOWN" and "VOL DOWN" switches are not operated.	Steering switch signal ground circuit. (TEL adapter unit to audio unit) Refer to <a href="#">AV-46, "Diagnosis Procedure"</a> .
Only specified switch cannot be operated.	Replace steering switch. Refer to <a href="#">AV-64, "Exploded View"</a> .
"  ", "SEEK UP" and "SEEK DOWN" switches are not operated.	Steering switch signal A circuit. (steering switch to TEL adapter unit) Refer to <a href="#">AV-38, "Diagnosis Procedure"</a> .
"SEEK UP" and "SEEK DOWN" switches are not operated.	Steering switch signal A circuit. (TEL adapter unit to audio unit) Refer to <a href="#">AV-44, "Diagnosis Procedure"</a> .
"  ", "SOURCE", "VOL UP" and "VOL DOWN" switches are not operated.	Steering switch signal B circuit. (steering switch to TEL adapter unit) Refer to <a href="#">AV-40, "Diagnosis Procedure"</a> .
"SOURCE", "VOL UP" and "VOL DOWN" switches are not operated.	Steering switch signal B circuit. (TEL adapter unit to audio unit) Refer to <a href="#">AV-45, "Diagnosis Procedure"</a> .



# HANDS-FREE PHONE SYMPTOMS

< SYMPTOM DIAGNOSIS >

[BASE AUDIO]

## HANDS-FREE PHONE SYMPTOMS

### Symptom Table

INFOID:000000008280476

#### RELATED TO HANDS-FREE PHONE (EXCEPT FOR MEXICO)

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

#### Check Compatibility

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.

Symptoms	Check items	Possible malfunction location/Action to take
Does not recognize cellular phone connection.	Repeat the registration of cellular phone.	TEL adapter unit
Hands-free phone cannot be established.	<ul style="list-style-type: none"> <li>• Both the reception and the speech cannot be performed.</li> <li>• Audio can be operated by steering switch.</li> </ul>	<ul style="list-style-type: none"> <li>• TEL adapter unit power supply and ground circuit. Refer to <a href="#">AV-33, "TEL ADAPTER UNIT : Diagnosis Procedure"</a>.</li> <li>• Control signal circuit. Refer to <a href="#">AV-37, "Diagnosis Procedure"</a>.</li> <li>• AV communication circuit between audio unit and TEL adapter unit.</li> </ul>
	<ul style="list-style-type: none"> <li>• Both the reception and the speech cannot be performed.</li> <li>• Audio can be operated by steering switch.</li> </ul>	TEL ON signal circuit.
The other party's voice cannot be heard by hands-free phone.	Audio system sound is normal.	Sound signal (TEL voice, TEL guidance) circuit
	Audio system sound does not sound.	Refer to <a href="#">AV-47, "Symptom Table"</a> .
Originating sound is not heard by the other party with hands-free phone communication.	Voice recognition function is normal.	TEL adapter unit
	Voice recognition function does not work.	Microphone signal circuit. Refer to <a href="#">AV-35, "Diagnosis Procedure"</a> .

#### RELATED TO HANDS-FREE PHONE (FOR MEXICO)



# HANDS-FREE PHONE SYMPTOMS

< SYMPTOM DIAGNOSIS >

[BASE AUDIO]

Symptoms	Check items	Possible malfunction location/Action to take
Does not recognize cellular phone connection.	Repeat the registration of cellular phone.	TEL adapter unit
Hands-free phone cannot be established.	<ul style="list-style-type: none"> <li>Both the reception and the speech cannot be performed.</li> <li>Audio can be operated by steering switch.</li> </ul>	<ul style="list-style-type: none"> <li>TEL adapter unit power supply and ground circuit. Refer to <a href="#">AV-33, "TEL ADAPTER UNIT : Diagnosis Procedure"</a>.</li> <li>Control signal circuit. Refer to <a href="#">AV-37, "Diagnosis Procedure"</a>.</li> <li>AV communication circuit between audio unit and TEL adapter unit.</li> </ul>
	<ul style="list-style-type: none"> <li>Both the reception and the speech cannot be performed.</li> <li>Audio can be operated by steering switch.</li> </ul>	TEL ON signal circuit.
The other party's voice cannot be heard by hands-free phone.	Audio system sound is normal.	Sound signal (TEL voice, TEL guidance) circuit
	Audio system sound does not sound.	Refer to <a href="#">AV-47, "Symptom Table"</a> .
Originating sound is not heard by the other party with hands-free phone communication.	Voice recognition function is normal.	TEL adapter unit
	Voice recognition function does not work.	Microphone signal circuit. Refer to <a href="#">AV-35, "Diagnosis Procedure"</a> .

## RELATED TO STEERING SWITCH

Symptoms	Possible malfunction location / Action to take
All steering switches are not operated.	Steering switch signal ground circuit. (steering switch to TEL adapter unit) Refer to <a href="#">AV-42, "Diagnosis Procedure"</a> .
Only specified switch cannot be operated.	Replace steering switch.
“  ”, “SOURCE”, “SEEK UP” and “SEEK DOWN” switches are not operated.	Steering switch signal A circuit. (steering switch to TEL adapter unit) Refer to <a href="#">AV-38, "Diagnosis Procedure"</a> .
“  ”, “VOL UP” and “VOL DOWN” switches are not operated.	Steering switch signal B circuit. (steering switch to TEL adapter unit) Refer to <a href="#">AV-40, "Diagnosis Procedure"</a> .

# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BASE AUDIO]

## NORMAL OPERATING CONDITION

### Description

INFOID:000000008280477

#### RELATED TO AUDIO

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

#### NOTE:

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA) or could be incorrectly mastered by the customer on a computer.
- Check that 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.

Symptoms	Cause and Counter measure
Cannot play	Check that the disc was inserted correctly.
	Check that the disc is scratched or dirty.
	Check if there is condensation inside the player. If there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the CD player will play correctly after it returns to the normal temperature.
	Files with extensions other than ".MP3", ".WMA", ".mp3", or ".wma" cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format. This may occur depending on the variation or the setting of MP3/WMA writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the disc.
Poor sound quality	Check if the disc is scratched or dirty.
	Bit rate may be too low.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA CD, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width, etc., might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities of data, such as for high bit rate data.
Move immediately to the next song when playing.	When a non-MP3/WMA file has been given an extension of ".MP3", ".WMA", ".mp3" or ".wma", or when play is prohibited by copyright protection, there will be approximately 5 seconds of no sound and then the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the writing software. Therefore, the files might not play in the desired order.
Poor reception only from a certain radio broadcast station.	Check incoming radio wave signal strength of applicable broadcast station.
Buzz/rattle sound from speaker	The majority of rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the rattle.

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

#### NOTE:

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

#### RELATED TO TELEPHONE

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BASE AUDIO]

Symptoms	Cause and Counter measure
System fails to interpret the command correctly.	1. Ensure that the command format 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. Refer to <a href="#">AV-18. "Diagnosis Description"</a> .
The system consistently selects the wrong entry from the phone book.	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the "List Names" command.
	2. Replace one of the names being confused with a new name.

### RELATED TO HANDS-FREE PHONE (EXCEPT FOR MEXICO)

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

### RELATED TO HANDS-FREE PHONE (FOR MEXICO)

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BASE AUDIO]

Symptom	Cause and Counter measure
Cannot use hands-free phone	<p>Customer will not be able to use a hands-free phone under the following conditions.</p> <ul style="list-style-type: none"> <li>• The vehicle is outside of the telephone service area.</li> <li>• The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area.</li> <li>• The cellular phone is locked to prevent it from being dialed.</li> </ul> <p><b>NOTE:</b> While a cellular phone is connected through the Bluetooth wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth Hands-Free Phone System cannot charge cellular phones.</p>
The other party's voice cannot be heard by hands-free phone.	<p>When the radio wave condition is not ideal or ambient sound is too loud, it may be difficult to hear the other person's voice during a call.</p>
Poor sound quality	<p>Do not place the cellular phone in an area surrounded by metal or far away from the in-vehicle phone module to prevent tone quality degradation and wireless connection disruption.</p>

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## REMOVAL AND INSTALLATION

### AUDIO UNIT

#### Removal and Installation

INFOID:000000008280478

#### REMOVAL

1. Remove cluster lid C. Refer to [JP-13, "Exploded View"](#).
2. Remove audio unit mounting screws.
3. Pull out audio unit, remove harness clip, and then disconnect antenna feeder and harness connectors.
4. Remove audio unit and bracket as a unit.
5. Remove brackets from audio unit.

#### INSTALLATION

Install in the reverse order of removal.

# FRONT SPEAKER

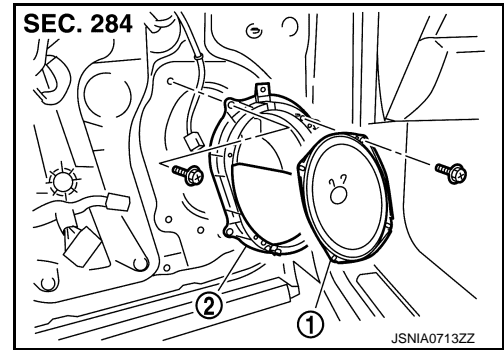
< REMOVAL AND INSTALLATION >

[BASE AUDIO]

## FRONT SPEAKER

### Exploded View

INFOID:000000008280479



1. Front speaker
2. Bracket

### Removal and Installation

INFOID:000000008280480

#### REMOVAL

1. Remove front door finisher. Refer to [INT-12. "FRONT DOOR FINISHER : Exploded View"](#).
2. Remove front door speaker from bracket.

#### INSTALLATION

Install in the reverse order of removal.

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## REAR SPEAKER

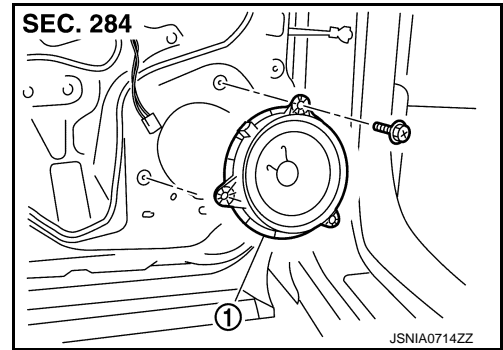
< REMOVAL AND INSTALLATION >

[BASE AUDIO]

### REAR SPEAKER

#### Exploded View

INFOID:000000008280481



1. Rear speaker

#### Removal and Installation

INFOID:000000008280482

##### REMOVAL

1. Remove rear door finisher. Refer to [INT-15. "REAR DOOR FINISHER : Exploded View"](#).
2. Remove rear speaker.

##### INSTALLATION

Install in the reverse order of removal.



# TWEETER

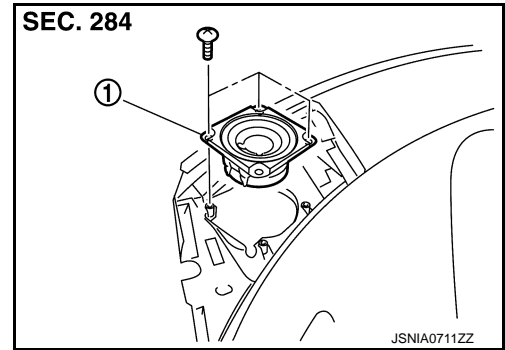
< REMOVAL AND INSTALLATION >

[BASE AUDIO]

## TWEETER

### Exploded View

INFOID:000000008280483



1. Tweeter

### Removal and Installation

INFOID:000000008280484

#### REMOVAL

1. Remove instrument panel. Refer to [JP-13, "Exploded View"](#).
2. Remove tweeter from instrument panel.

#### INSTALLATION

Install in the reverse order of removal.

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AV

# RADIO ANTENNA

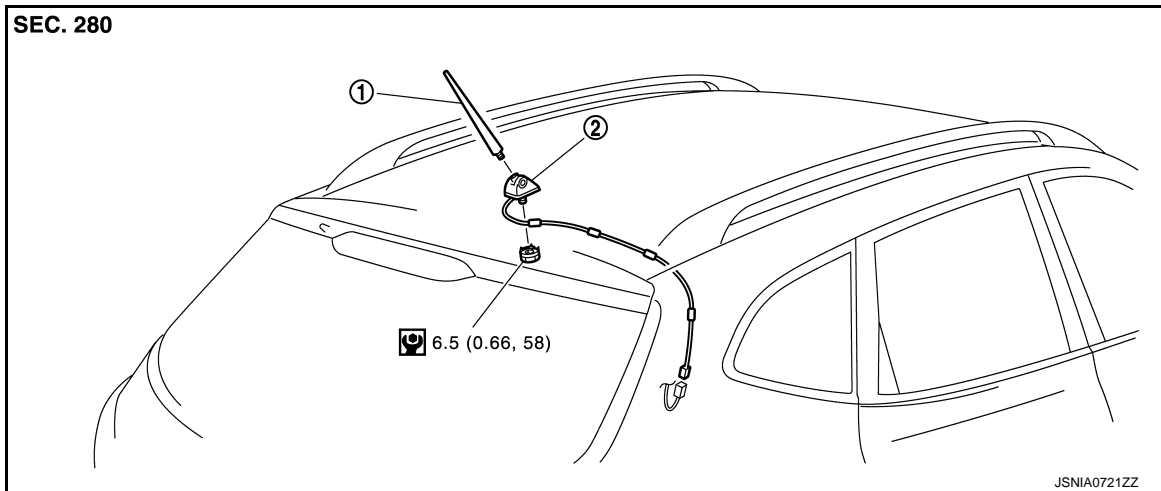
< REMOVAL AND INSTALLATION >

[BASE AUDIO]

## RADIO ANTENNA

### Exploded View

INFOID:000000008280485



1. Antenna rod
2. Antenna base

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

### Removal and Installation

INFOID:000000008280486

#### REMOVAL

1. Remove headlining assembly. Refer to [INT-24, "NORMAL ROOF : Exploded View"](#) (normal roof models) or [INT-27, "SUNROOF : Exploded View"](#) (sunroof models).
2. Remove nuts, and then remove antenna base.

#### INSTALLATION

Install in the reverse order of removal.

#### **CAUTION:**

**If the antenna base mounting nut is tightened looser than the specified torque, then this will lower the sensitivity of the antenna. On the other hand, if the nut is tightened tighter than the specified torque, then this will deform the roof panel.**

# TEL ADAPTER UNIT

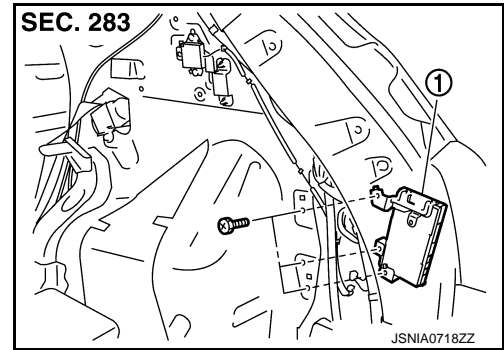
< REMOVAL AND INSTALLATION >

[BASE AUDIO]

## TEL ADAPTER UNIT

### Exploded View

INFOID:000000008280487



1. TEL adapter unit

### Removal and Installation

INFOID:000000008280488

#### REMOVAL

1. Remove luggage side lower finisher (RH). Refer to [INT-31, "Exploded View"](#).
2. Remove TEL adapter unit.

#### INSTALLATION

Install in the reverse order of removal.

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AV

# TEL ANTENNA

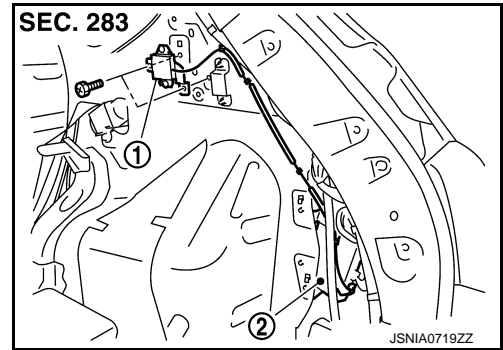
< REMOVAL AND INSTALLATION >

[BASE AUDIO]

## TEL ANTENNA

### Exploded View

INFOID:000000008280489



1. TEL antenna
2. TEL adapter unit

### Removal and Installation

INFOID:000000008280490

#### REMOVAL

1. Remove luggage side upper finisher (RH). Refer to [INT-31. "Exploded View"](#).
2. Remove TEL antenna.

#### INSTALLATION

Install in the reverse order of removal.

# MICROPHONE

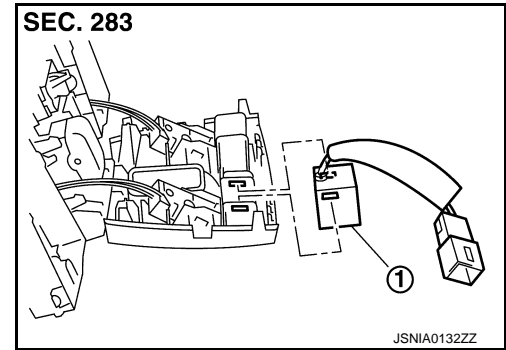
< REMOVAL AND INSTALLATION >

[BASE AUDIO]

## MICROPHONE

### Exploded View

INFOID:000000008280491



1. Microphone

### Removal and Installation

INFOID:000000008280492

#### REMOVAL

1. Remove map lamp assembly. Refer to [INT-24, "NORMAL ROOF : Exploded View"](#) (normal roof models) or [INT-27, "SUNROOF : Exploded View"](#) (sunroof models).
2. Remove microphone from map lamp assembly.

#### INSTALLATION

Install in the reverse order of removal.

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## IPOD ADAPTER

### Removal and Installation

INFOID:000000008280493

#### REMOVAL

1. Remove glove box assembly. Refer to [IP-13. "Exploded View"](#).
2. Remove iPod adapter connector and screw.
3. Remove iPod adapter and bracket from the vehicle as a single unit.
4. Remove bracket screw to remove iPod adapter.

#### INSTALLATION

Install in the reverse order of removal.

## IPOD CONNECTOR

### Removal and Installation

INFOID:000000008280494

#### REMOVAL

1. Remove center console assembly. Refer to [IP-22. "Exploded View"](#).
2. Push the pawl from the back of center console assembly to remove iPod connector.

#### INSTALLATION

Install in the reverse order of removal.

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# STEERING SWITCH

< REMOVAL AND INSTALLATION >

[BASE AUDIO]

---

## STEERING SWITCH

### Exploded View

INFOID:000000008280495

Refer to [SR-36. "Exploded View"](#) (for Mexico) or [SR-11. "Exploded View"](#) (except for Mexico).

### Removal and Installation

INFOID:000000008280496

#### REMOVAL

Refer to [SR-36. "Removal and Installation"](#) (for Mexico) or [SR-11. "Removal and Installation"](#) (except for Mexico).

#### INSTALLATION

Install in the reverse order of removal.



# ANTENNA FEEDER

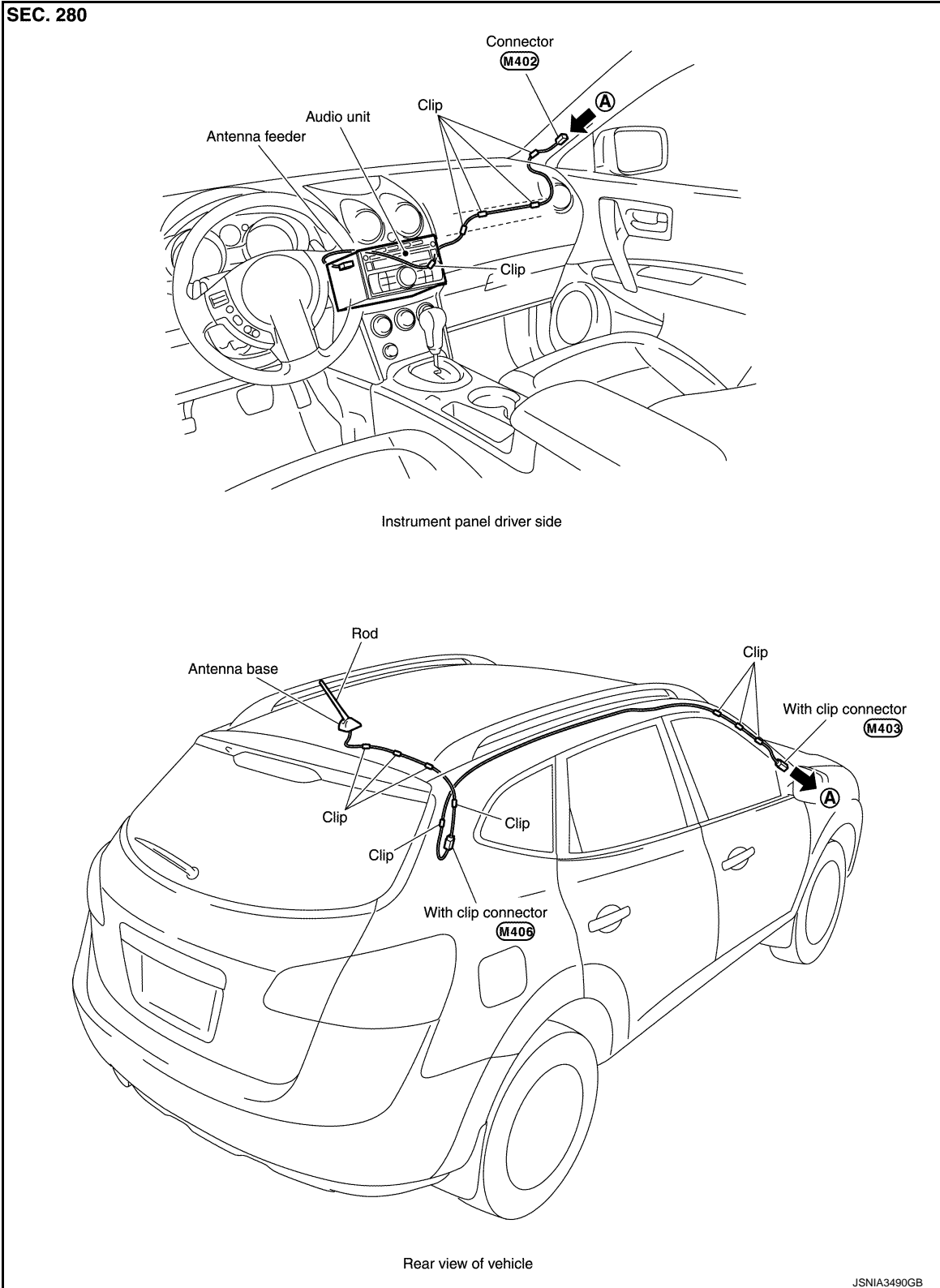
< REMOVAL AND INSTALLATION >

[BASE AUDIO]

## ANTENNA FEEDER

### Feeder Layout

INFOID:000000008280497



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**PRECAUTION****PRECAUTIONS  
FOR MEXICO****FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"**

INFOID:000000008280498

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

**WARNING:**

**Always observe the following items for preventing accidental activation.**

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

**Always observe the following items for preventing accidental activation.**

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

**EXCEPT FOR MEXICO****EXCEPT FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"**

INFOID:000000008280499

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

**WARNING:**

**Always observe the following items for preventing accidental activation.**

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

# PRECAUTIONS

< PRECAUTION >

[DISPLAY AUDIO]

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

## Precaution for Trouble Diagnosis

INFOID:000000008280500

### AV COMMUNICATION SYSTEM

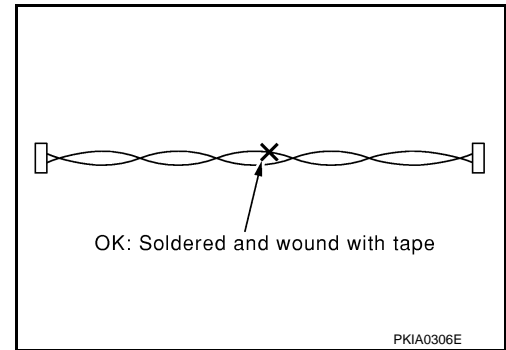
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

## Precaution for Harness Repair

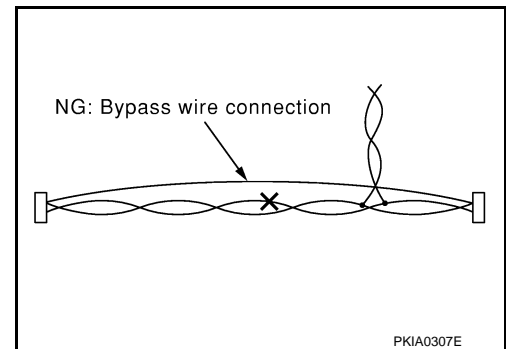
INFOID:000000008280501

### AV COMMUNICATION SYSTEM

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



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



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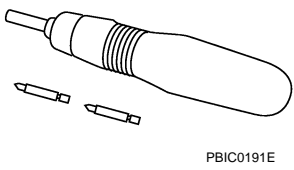
P

# PREPARATION

## PREPARATION

### Commercial Service Tools

INFOID:000000008280502

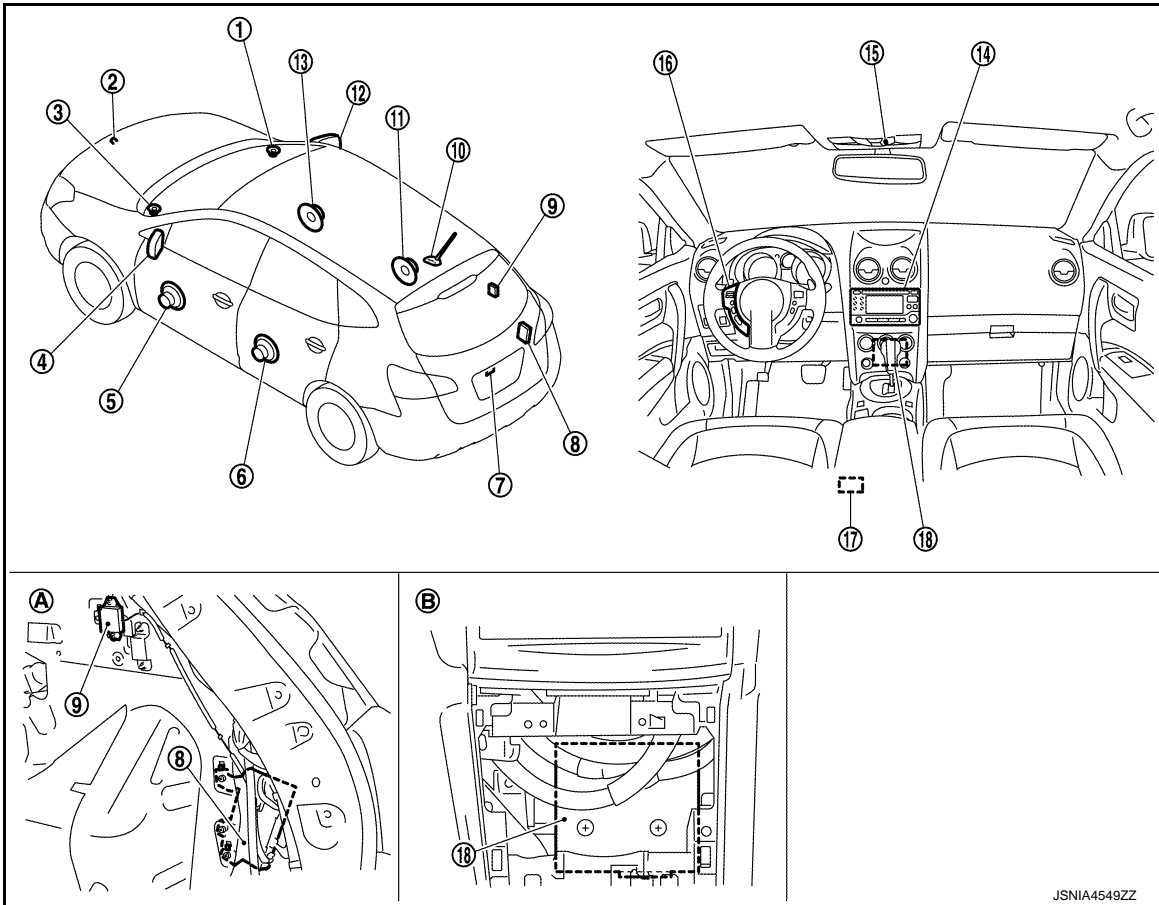
Tool name	Description
<p>Power tool</p>  <p>PBIC0191E</p>	<p>Loosening screws</p>

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:000000008280503



- |   |  |   |
|---|--|---|
| 1. Tweeter RH   | 2. Front camera (with around view monitor) | 3. Tweeter LH   |
| 4. Side camera LH (with around view monitor)          | 5. Front speaker LH                        | 6. Rear speaker LH  |
| Rear camera (with around view monitor)                | 8. TEL adapter unit                        | 9. TEL antenna  |
| 7. Rear view camera (with rear view monitor)          | 11. Rear speaker RH                        | 12. Side camera RH (with around view monitor)                   |
| 10. Antenna base (antenna amp. and-satellite antenna) | 14. Audio unit                             | 15. Microphone  |
| 13. Front speaker RH                                  | 17. USB connector                          | 18. Around view monitor control unit (with around view monitor) |
| 16. Steering switch                                   | B. Cluster lid D removed condition         |   |
| A. Luggage side LH                                    |  |   |

Component Description

INFOID:000000008280504

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# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

Part name	Description
Audio unit	<ul style="list-style-type: none"> <li>Controls audio, hands-free phone, USB connection, AUX connection, satellite radio and rear view monitor functions.</li> <li>Display unit is built in to audio unit.</li> </ul>
Front speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from audio unit.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
Tweeter	<ul style="list-style-type: none"> <li>Outputs sound signal from audio unit.</li> <li>Outputs high range sounds.</li> </ul>
Rear speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from audio unit.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
Steering switch	<p>WITH HANDS-FREE PHONE FUNCTION</p> <ul style="list-style-type: none"> <li>Audio system and hands-free phone system can be operated.</li> <li>Steering switch signals (operation signals) are output to audio unit through TEL adapter unit.</li> </ul> <p>WITHOUT HANDS-FREE PHONE FUNCTION</p> <ul style="list-style-type: none"> <li>Audio system can be operated.</li> <li>Steering switch signals (operation signals) are output to audio unit.</li> </ul>
Antenna base	<p>A radio antenna base integrated with radio antenna amp. and satellite radio antenna is adopted.</p> <p>ANTENNA AMP.</p> <ul style="list-style-type: none"> <li>Radio signal received by rod antenna is amplified and transmitted to audio unit.</li> <li>Power (antenna amp. ON signal) is supplied from audio unit.</li> </ul> <p>SATELLITE RADIO ANTENNA</p> <ul style="list-style-type: none"> <li>Receives satellite radio waves and outputs it to audio unit.</li> </ul>
TEL adapter unit	<ul style="list-style-type: none"> <li>Inputs the steering switch signal (operation signal) from the steering switch.</li> <li>Outputs the steering switch signal (operation signal) to audio unit.</li> <li>Inputs the TEL voice signal from TEL antenna during reception and outputs it to the audio unit.</li> <li>Inputs the TEL voice signal from microphone during speech recognition and outputs it to the TEL antenna.</li> <li>Audio unit and TEL adapter unit exchange data by AV communication.</li> </ul>
TEL antenna	Receives the TEL voice signal and outputs it to the TEL adapter unit.
Microphone	<ul style="list-style-type: none"> <li>Used for hands-free phone operation.</li> <li>Microphone signal is transmitted to TEL adapter unit.</li> <li>Power (microphone VCC) is supplied from TEL adapter unit.</li> </ul>
USB connector	Sound signal of USB input is transmitted to audio unit.
Rear view camera	<ul style="list-style-type: none"> <li>Camera power supply is input from audio unit.</li> <li>The image of vehicle rear view is transmitted to audio unit.</li> </ul>
Around view monitor control unit	<ul style="list-style-type: none"> <li>It supplies power to front camera, rear camera, and side camera. And then it superimposes the images from each camera and outputs them to audio unit.</li> <li>Superimpose the guiding line, predictive course line and warning message to the camera image that outputs to audio unit.</li> <li>Receives camera switch signal and AV switch signal from audio unit by hard wire.</li> <li>Outputs image switch signal to audio unit by hard wire.</li> <li>Receives vehicle speed signal and steering angle sensor signal by can communication, and receives reverse signal by hard wire.</li> </ul>
Front camera	It inputs the power supply from around view monitor control unit and outputs the image of the vehicle front to around view monitor control unit.
Rear camera	It inputs the power supply from around view monitor control unit and outputs the image of the vehicle rear to around view monitor control unit.
Side camera LH	It inputs the power supply from around view monitor control unit and outputs the image of the vehicle LH to around view monitor control unit.
Side camera RH	It inputs the power supply from around view monitor control unit and outputs the image of the vehicle RH to around view monitor control unit.
Steering angle sensor	It is connected to the around view monitor control unit and transmits the steering angle sensor signal via CAN communication.

# SYSTEM

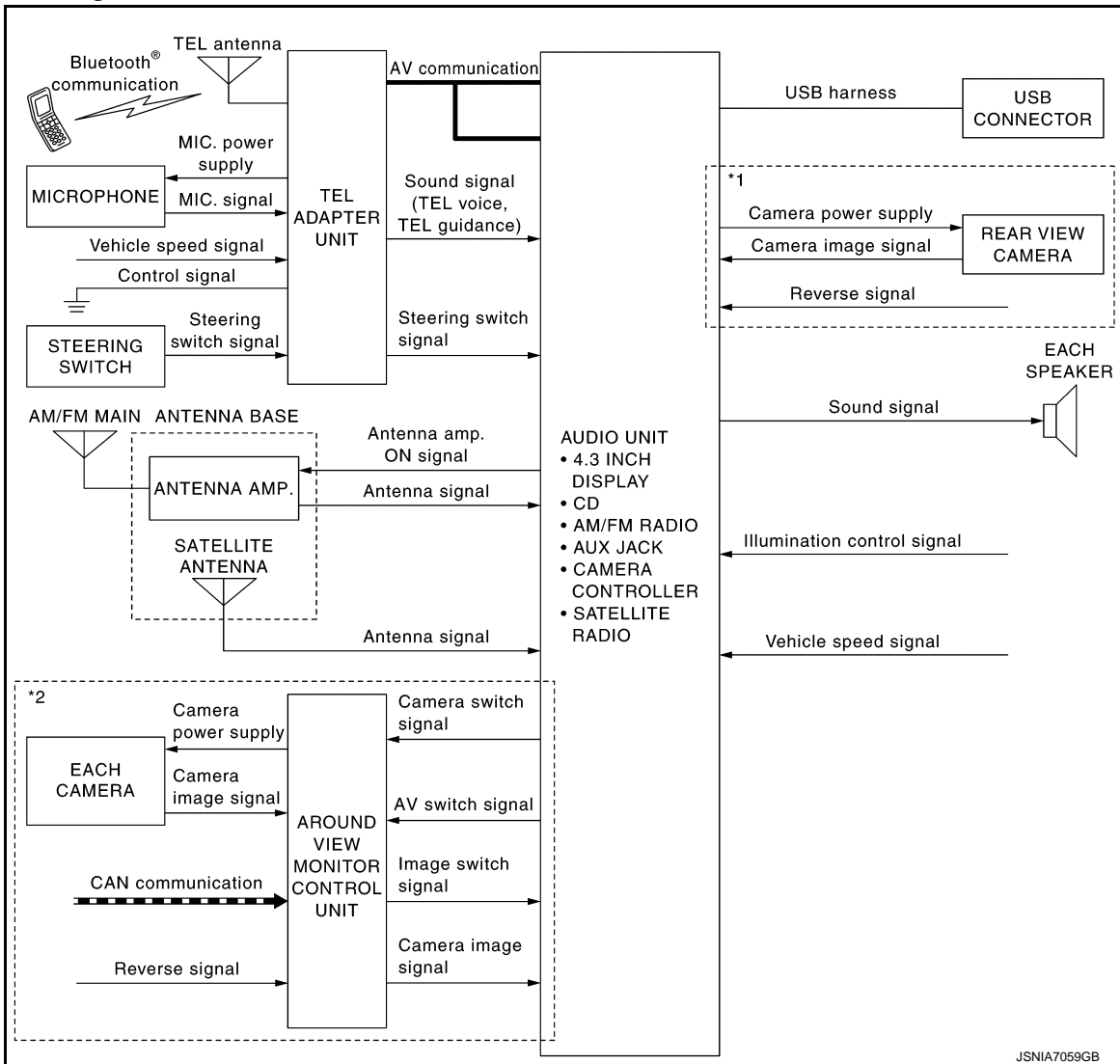
< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

## SYSTEM

### System Diagram

INFOID:000000008280505

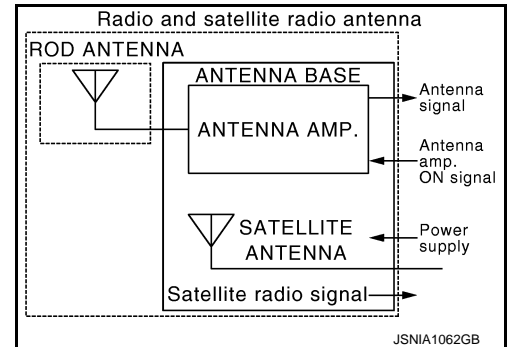


\*1: With rear view monitor

\*2: With around view monitor

**NOTE:**

An antenna base integrated with radio antenna amp. and satellite radio antenna is adopted.



### System Description

INFOID:000000008280506

#### DISPLAY AUDIO SYSTEM

Display audio system is equipped with the following functions (display unit is built in to audio unit).

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FUNCTION NAME
Audio function
Hands-free phone function
Rear view monitor function (with rear view monitor)
Around view monitor function (with around view monitor)

### Operating Signal

Display audio system operation can be performed with audio switch and steering switch.

## AUDIO FUNCTION

### Audio functions

FUNCTION
AM/FM radio
Satellite radio
CD
Auxiliary input
USB connection
Speed sensitive volume

### AM/FM Radio

- AM/FM radio tuner is built into audio unit.
- Radio signal is received by rod antenna, next they are amplified by antenna amp., and finally the they are input to audio unit. (Antenna amp. is built into antenna base.)
- Audio unit outputs the sound signal to each speaker.

### Satellite Radio

- Radio signal is received by satellite radio antenna and transmitted to audio unit. (Satellite radio antenna is built into antenna base.)
- Audio unit outputs the sound signal to each speaker.

### CD

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

### Auxiliary input

- When the external device is connected to the auxiliary (AUX) input jack of the audio unit, the external device inputs a sound signal to the audio unit.
- When AUX mode is selected, audio unit outputs sound signal to each speaker.

### USB Connection

- iPod® or music files in USB memory can be played.
- iPod® sound signals are transmitted from USB connector to each speaker via audio unit.
- iPod® is recharged when connected to USB connector.

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

### NOTE:

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

### Speed Sensitive Volume

- Volume level of this system gone up and down automatically in proportion to the vehicle speed.
- The control level can be selected by the customer.

## HANDS-FREE PHONE FUNCTION

- The connection between cellular phone and TEL adapter unit is performed with Bluetooth® communication.
- The voice guidance signal is input from the TEL adapter unit to the audio unit and output to the front speaker when operating the telephone.
- TEL adapter unit has the on board self-diagnosis function. Refer to [AV-84, "Diagnosis Description"](#).

### When Receiving A Call



# SYSTEM

## < SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

TEL voice signal received with the cellular phone is input from TEL antenna via TEL adapter unit to audio unit with Bluetooth® communication and output to the front speaker. The operation is performed with the steering switch or voice recognition function.

### When A Call Is Originated

Speech sound (TEL voice signal) is input from the microphone to the TEL adapter unit. It is input from the TEL antenna via Bluetooth® communication to the cellular phone. It is transmitted to the phone on the other side. The operation is performed with the steering switch or voice recognition function.

### REAR VIEW MONITOR FUNCTION (WITH REAR VIEW MONITOR)

- The audio unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the audio unit when power is supplied from the audio unit.
- The audio unit combines a warning message and fixed guide lines with an image received from the rear view camera to display a rear view camera image on the screen.

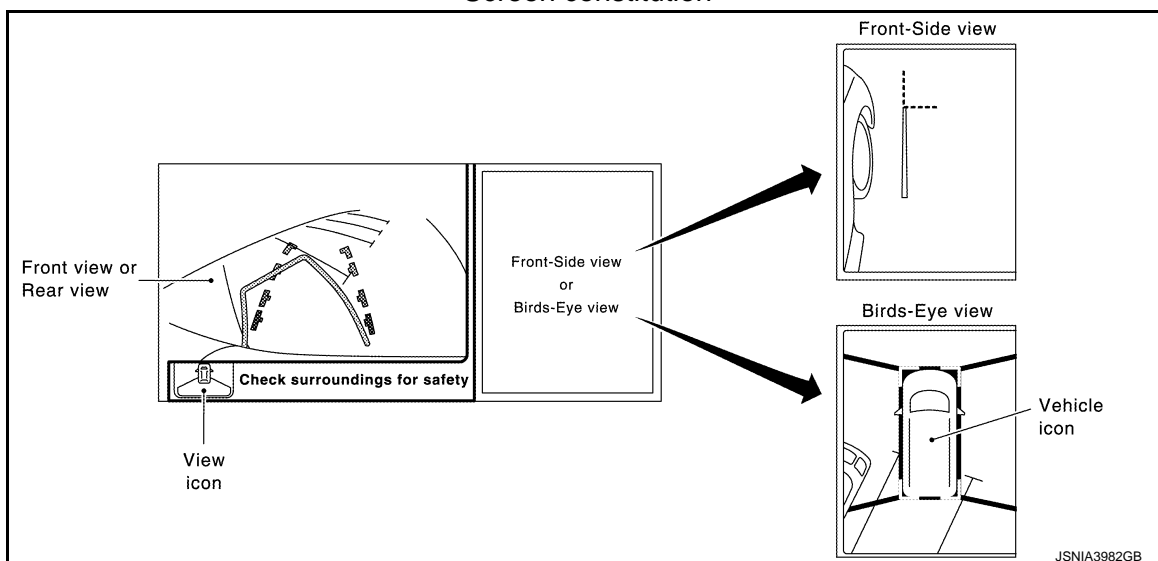
### AROUND VIEW MONITOR FUNCTION (WITH AROUND VIEW MONITOR)

- This system is equipped with wide-angle cameras on the front and rear of the vehicle and on both right and left door mirrors. The images from front view, rear view, front-side view (RH side), and birds-eye view that shows the view from the top of the vehicle are displayed to monitor the vehicle surroundings.
- Around view monitor control unit cuts out and expands the image received from each camera to create each view.
- In front view and rear view, the vehicle width, distance lines and predictive course lines are superimposed and displayed. In front-side view, the vehicle distance guiding line and vehicle width guiding line are displayed.
- The Birds-Eye view converts the images from 4 cameras into the overhead view and displays the status of the vehicle on display. The vehicle icon that are displayed on the Birds-Eye view display are rendered by around view monitor control unit.

### Around View Monitor Screen

- Around view monitor combines and displays the travel direction view and “Birds-Eye view”, “Front-Side view”.
- Around view monitor control unit renders the view icon and warning message on display. Language of warning message can be selected by CONSULT.
- Around view monitor control unit renders the view icon and warning message on display.

Screen constitution



### Operation Description

- Around view monitor operates by pressing the “DISP” switch of audio fascia switch or shifting the selector lever to the reverse position.
- When the selector lever is in any position other than the reverse position, the screen is switched to the around view monitor by pressing the “DISP” switch.
- The screen is switched to the around view monitor by shifting the selector lever to the reverse position.
- In the around view monitor, Birds-Eye view, Front-side view can be switched by pressing the “DISP” switch.

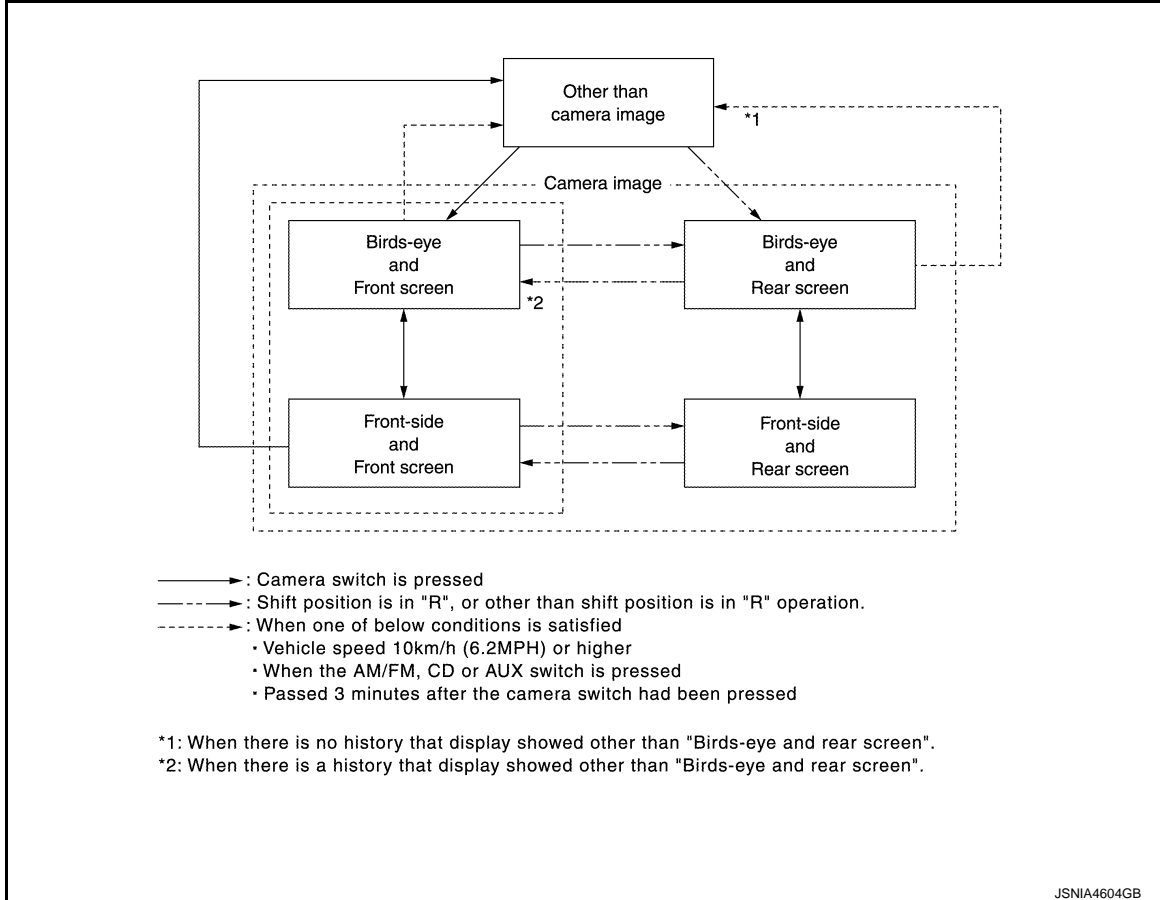
# SYSTEM

## < SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

- The around view monitor is cancelled 3 minutes after pressing the “DISP” switch, and then the screen returns to the screen before displaying the around view monitor when selector lever is in a position other than the reverse position.
- In the Birds-Eye view, the invisible area is displayed to show the border of 4 camera images. In addition, red fixed lines are displayed in 4 corners of the vehicle icon. After turning the ignition switch ON, the invisible area is highlighted with yellow and red fixed lines are blink only once.

Around view monitor screen transition



### FRONT VIEW

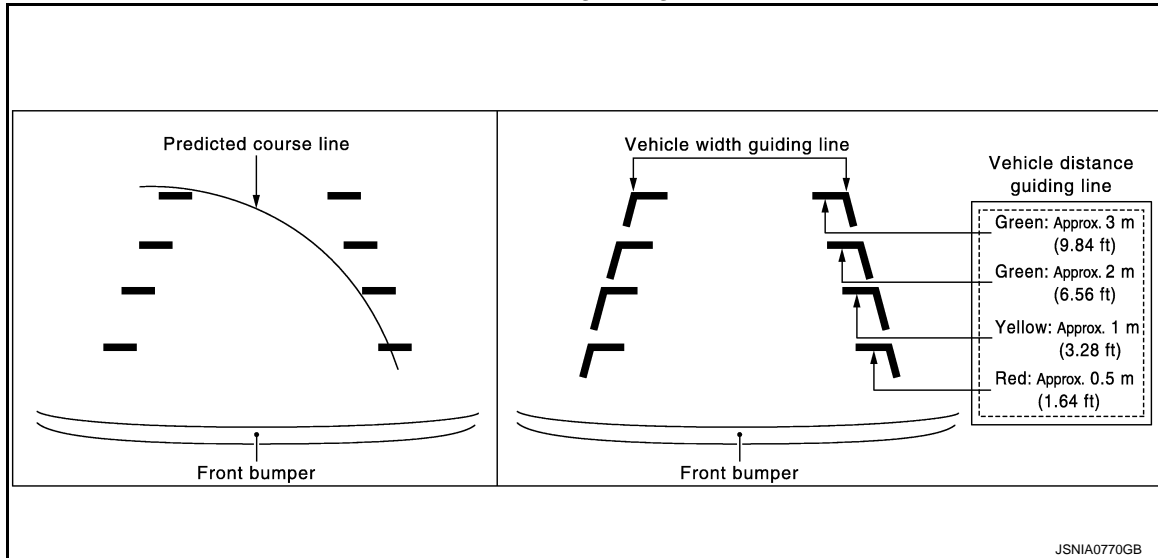
- The front view image is from the front camera.
- When the selector lever is in any position other than the reverse position, the front view is displayed by pressing the “DISP” switch. It improves the visibility of obstacles in front of the vehicle and helps driving by the images displayed from Birds-Eye view and Front-Side view.
- Display the vehicle width guiding line and vehicle distance guiding line in front view and display the predictive course line according to the steering angle.
- If the steering angle is within approximately 90 degrees, the predictive course lines on the left/right side are displayed. If the steering angle is exceeding approximately 90 degrees, only the predictive course line on the outside (in the opposite side of steering direction) is displayed.
- Around view monitor control unit receives the steering angle signal from steering angle sensor via CAN communication, and controls the direction and distance of the predictive course line.
- ON/OFF setting of predictive course line can be performed by CONSULT

# SYSTEM

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

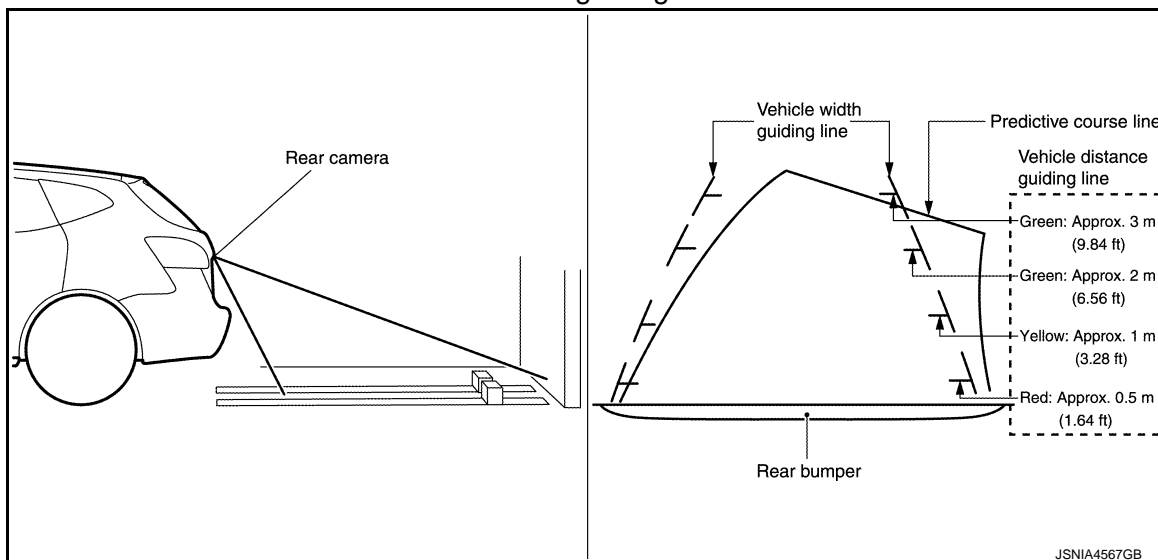
Front view guiding lines



## REAR VIEW

- The rear view image is from the rear camera.
- When the selector lever is in the reverse position, the rear view is displayed. Backing and parking are improved by the images from Birds-Eye view and Front-Side view.
- Display the vehicle width guiding line and vehicle distance guiding line in Rear view and display the predictive course line according to the steering angle.
- The predictive course line is not displayed at the steering neutral position.
- Around view monitor control unit receives the steering angle signal from steering angle sensor via CAN communication, and controls the direction and distance of the predictive course line.
- ON/OFF setting of predictive course line can be performed by CONSULT.

Rear view guiding lines



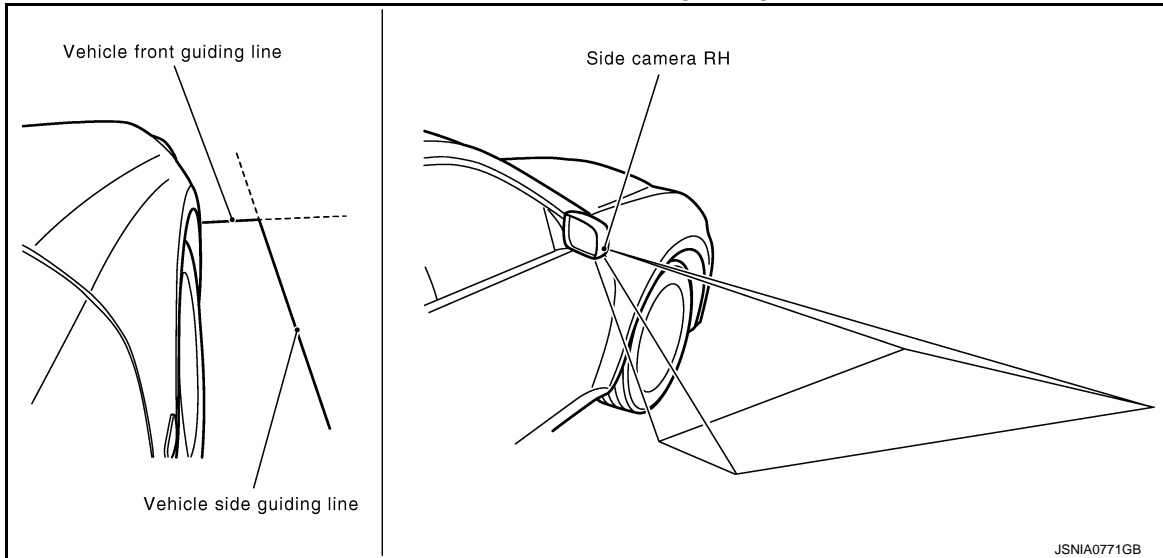
## FRONT-SIDE VIEW

- The front-side view image is from the side camera RH.
- In Front-Side view, display the vehicle distance guiding line and vehicle width guiding line.

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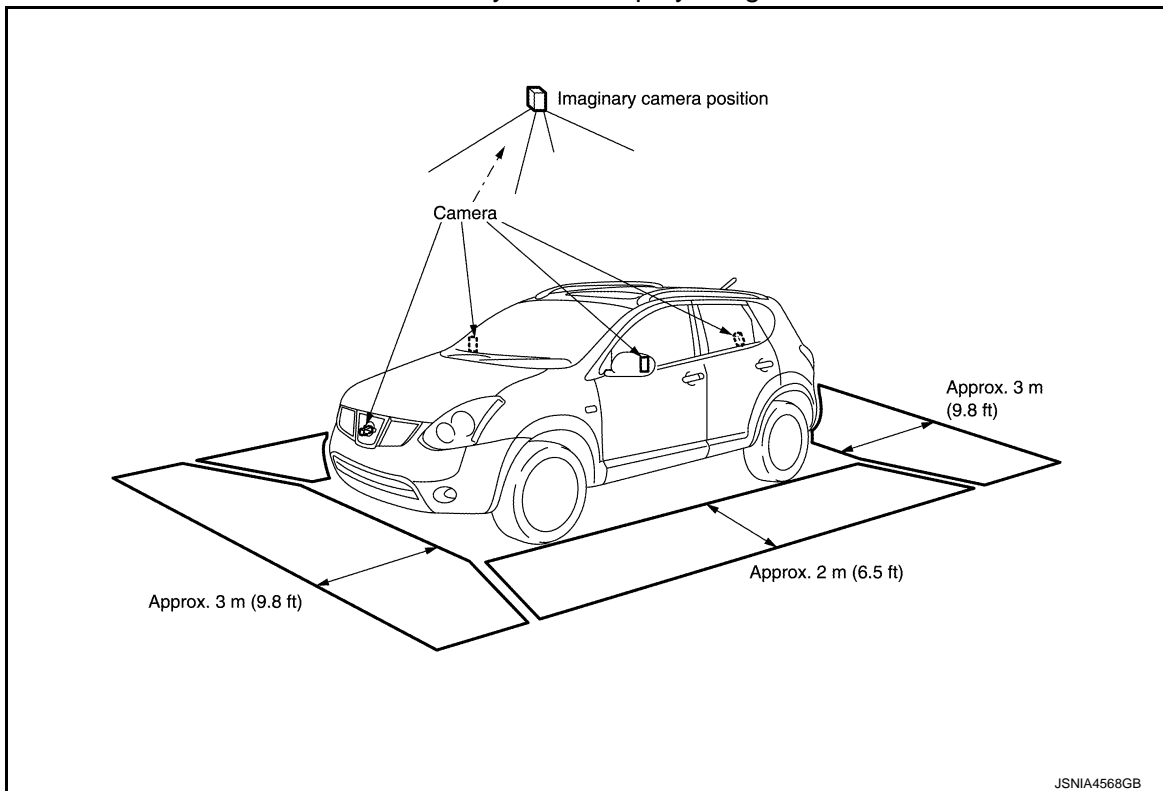
Front-side view area and guiding line



BIRDS-EYE VIEW

- The image from the 4 cameras is cut out and converted into the overhead view, and the surroundings of the vehicle is displayed in birds-eye view.
- In Birds-Eye view, the invisible area is displayed on the image to specify the boundary of the 4 cameras.

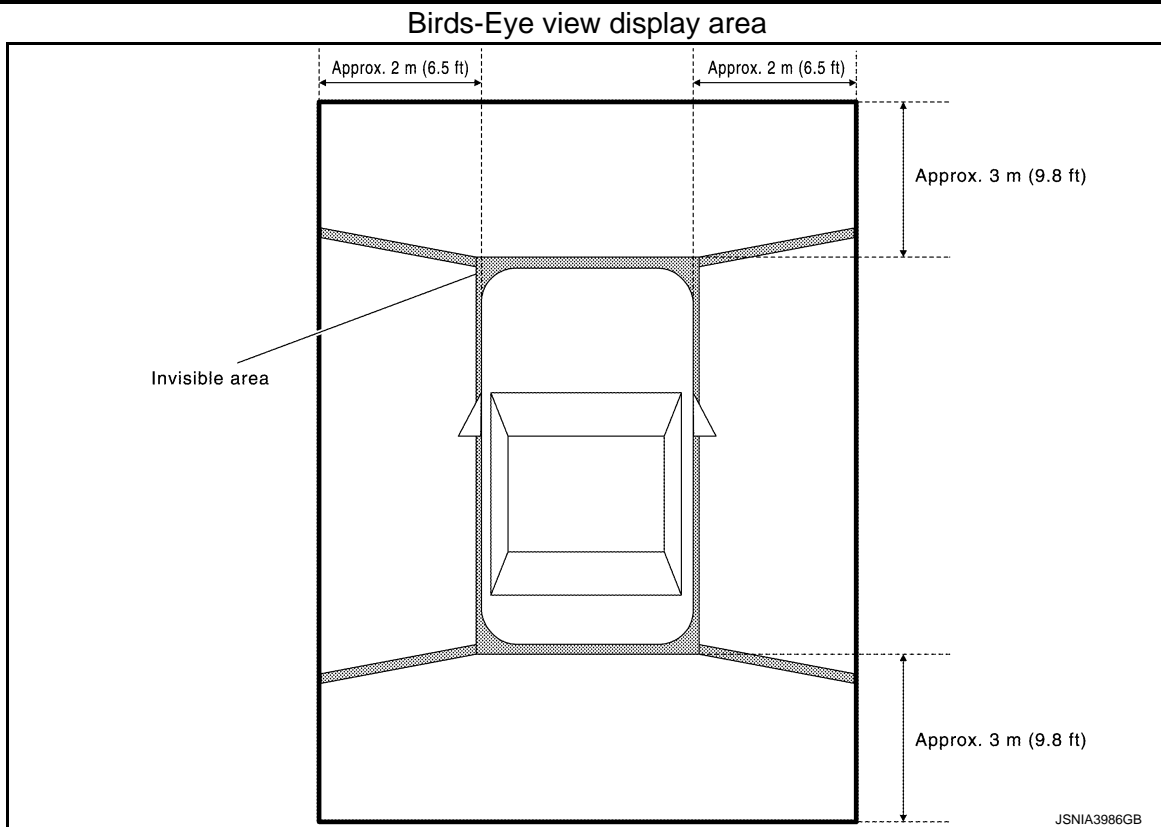
Birds-Eye view display image



# SYSTEM

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]



## Camera Image Operation Principle

- If the camera image calibration is incomplete, 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 audio unit via hard wire by pressing the "DISP" switch of audio unit fascia switch.
- Around view monitor control unit that receives the camera switch signal supplies the power to each camera and inputs the camera image from each camera.
- When the selector lever is in the reverse position, around view monitor control unit receives the reverse signal, supplies the power to each camera, and inputs the camera image from each camera.
- Around view monitor control unit that receives the camera image signal from each camera cuts out the required screen for each view, superimposes the camera image, vehicle icon, guiding lines, and outputs them to the audio unit.

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AV

# DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

## DIAGNOSIS SYSTEM (AUDIO UNIT)

### Description

INFOID:000000008280507

The audio unit diagnosis function starts up with audio switch operation and the audio unit performs a diagnosis for each unit in the system during the on board diagnosis.

### On Board Diagnosis Function

INFOID:000000008280508

#### ON BOARD DIAGNOSIS

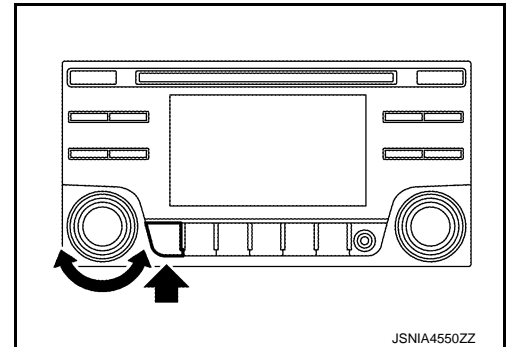
- The trouble diagnosis function has a self-diagnosis mode for conducting trouble diagnosis automatically and a confirmation/adjustment mode for operating manually.
- Self-diagnosis mode performs the audio unit diagnosis, and it indicates the results to the display.
- The confirmation/adjustment mode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

#### On Board Diagnosis Item

Mode		Description
Self Diagnosis		Audio unit diagnosis.
Confirmation/ Adjustment	Display Diagnosis	The following check functions are available: color tone check by color bar display, light and shade check by gray scale display.
	Vehicle Signals	Diagnosis of signals can be performed for vehicle speed, lights, reverse and vehicle recognition.
	Speaker Test	The connection of a speaker can be confirmed by test tone.
	Error History	The system malfunction and the frequency when occurring in the past are displayed. When the malfunctioning item is selected, the time and place that the selected malfunction last occurred are displayed.
	Camera System	Guiding line position that overlaps rear view camera image can be adjusted. (without around view monitor)
	AV COMM Diagnosis	The communication condition of each unit of display audio system can be monitored.
	Delete Unit Connection Log	Not used for this vehicle.
	Initialize Setting	Initializes the audio unit memory.

#### STARTING PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the "1" button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)



JSNIA4550ZZ

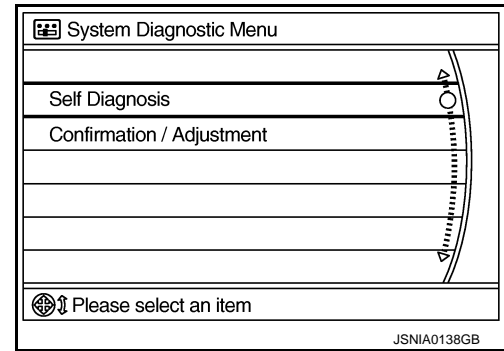
4. Shifting from current screen to system initial screen is performed by pressing "iPod MENU" button.

# DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

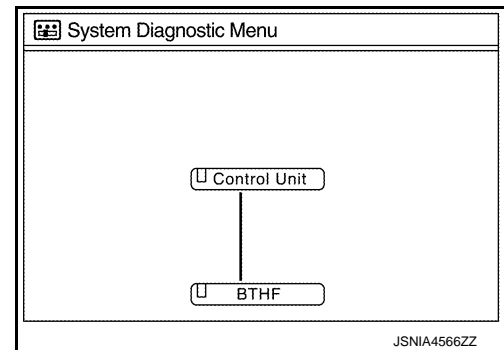
- The trouble diagnosis initial screen is displayed, and then the items of "Self Diagnosis" and "Confirmation/Adjustment" can be selected.



## SELF-DIAGNOSIS MODE

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

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

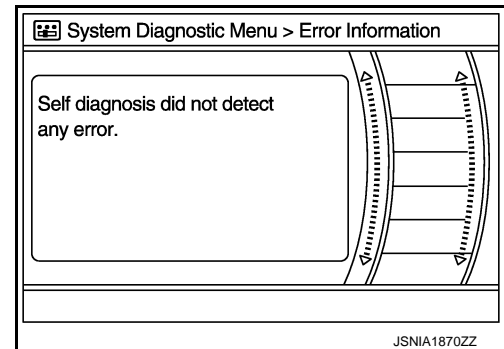


### NOTE:

Control unit (audio unit) and is displayed in red.

- Replace audio unit if "Self-Diagnosis did not run because of a control unit malfunction" is indicated. The symptom is audio unit internal error. Refer to [AV-146, "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 audio unit and each unit and the internal operation of the audio unit.
- If there is malfunction to the switch of the audio unit because the start condition of the diagnosis function is switch operation, the on board diagnosis function cannot be started.

## SELF-DIAGNOSIS RESULTS

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

Only Unit Part Is Displayed In Red.

# DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

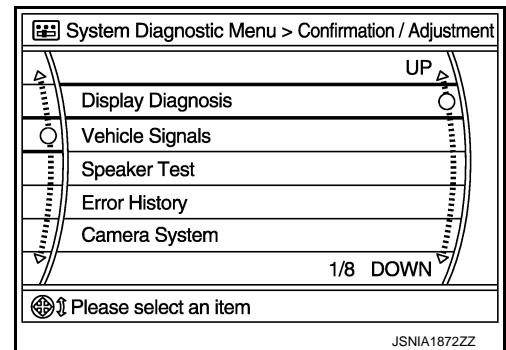
Screen switch	Description	Possible malfunction location / Action to take
Control unit	Malfunction is detected in audio unit power supply and ground circuits.	Check audio unit power supply and ground circuits. When detecting no malfunction in those components, replace audio unit. Refer to <a href="#">AV-146, "Removal and Installation"</a> .

A Connecting Cable Between Units Is Displayed In Yellow.

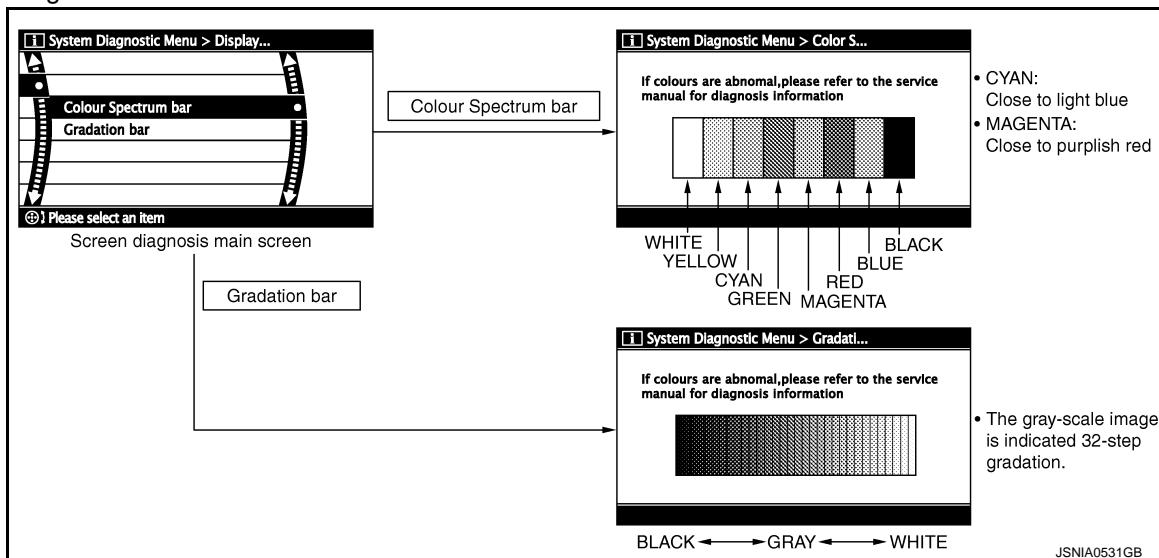
Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control unit ↔ BTHF	When either one of the following items is detected: <ul style="list-style-type: none"> <li>• TEL adapter unit power supply and ground circuits are malfunctioning.</li> <li>• AV communication circuits between audio unit and TEL adapter unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>• TEL adapter unit power supply and ground circuits.</li> <li>• AV communication circuits between audio unit and TEL adapter unit.</li> </ul>

## CONFIRMATION/ADJUSTMENT MODE

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



## Display Diagnosis



## Vehicle Signals

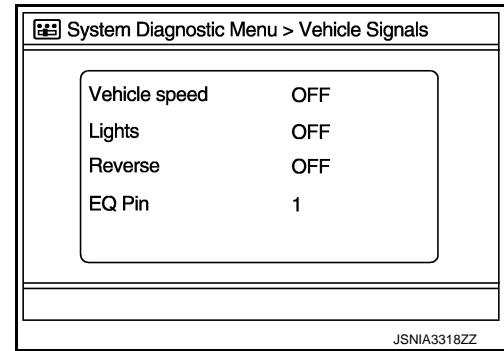


# DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

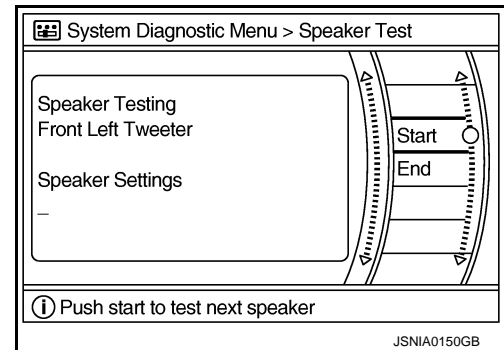
A comparison check can be made of each actual vehicle signal and the signals recognized by the system.



Diagnosis item	Display	Vehicle status	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
Lights	ON	Lighting switch is ON	—
	OFF	Lighting switch is OFF	
Reverse	ON	Shift position is in "R"	Changes in indication may be delayed. This is normal.
	OFF	Shift position is in other than "R"	
EQ Pin	8	Except for Canada and Mexico	Status of EQ profile selection signal.
	13	For Canada or Mexico	

## Speaker Test

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



## Error History

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

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

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

### Count up method A

- The counter is set to 40 if an error occurs. 1 is subtracted from the counter if the condition is normal at a next ignition ON cycle.
- The counter lower limit is 1. The counter can be reset (no error record display) with the "Delete log" switch.

### Count up method B

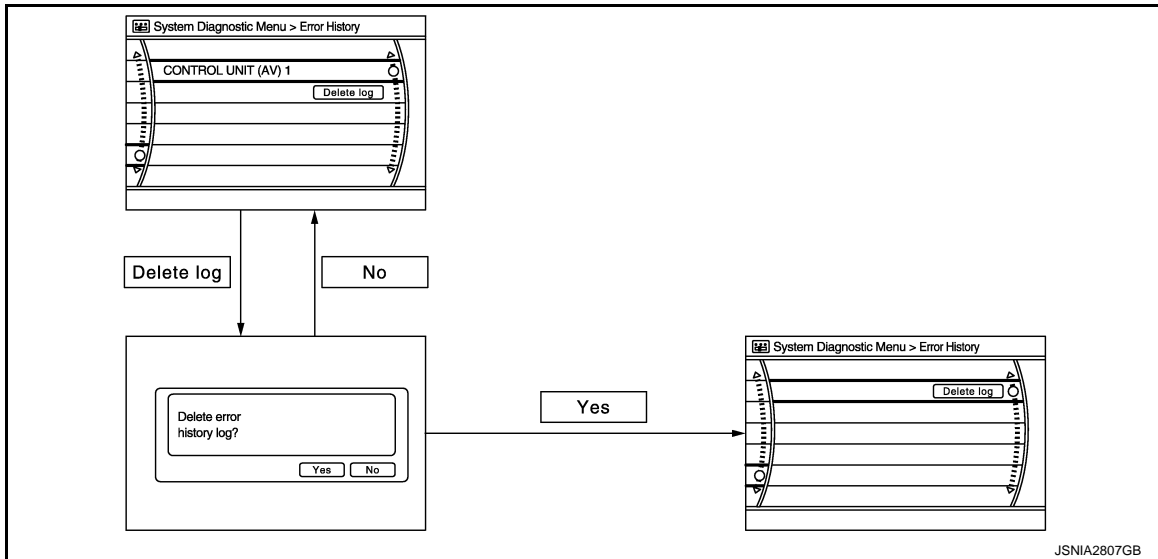
- The counter increases by 1 if an error occurs when ignition switch is ON. The counter will not decrease even if the condition is normal at the next ignition ON cycle.
- The counter upper limit is 50. Any counts exceeding 50 are ignored. The counter can be reset (no error record display) with the "Delete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

# DIAGNOSIS SYSTEM (AUDIO UNIT)

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

Display type of occurrence frequency	Error history display item
Count up method A	AV communication line, CONTROL UNIT (AV)
Count up method B	CAN Controller Memory Error



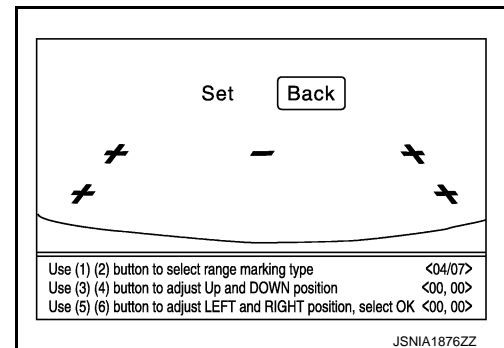
## Error item

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

Error item	Description	Possible malfunction factor/Action to take
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	Replace the audio unit. Refer to <a href="#">AV-146, "Removal and Installation"</a>
CAN Controller Memory Error	AV control unit malfunction is detected.	
<ul style="list-style-type: none"> <li>AV COMM CIRCUIT</li> <li>H/F Unit Connection Error</li> </ul>	When either one of the following items is detected: <ul style="list-style-type: none"> <li>TEL adapter unit power supply and ground circuits are malfunctioning.</li> <li>AV communication circuits between audio unit and TEL adapter unit are malfunctioning.</li> </ul>	<ul style="list-style-type: none"> <li>TEL adapter unit power supply and ground circuits.</li> <li>AV communication circuits between audio unit control unit and TEL adapter unit.</li> </ul>

## Camera System (without Around View Monitor)

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



## AV COMM Diagnosis

# DIAGNOSIS SYSTEM (AUDIO UNIT)

## < SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

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

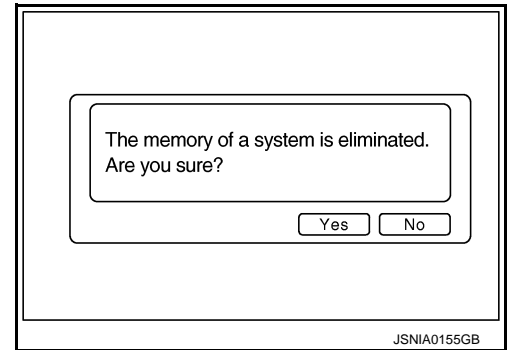
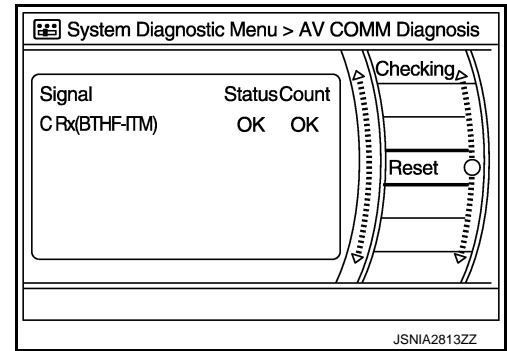
Items	Status (Current)	Counter (Past)
C Rx(BTHF-ITM)	OK / ???	OK / 0 – 39

**NOTE:**

“???” indicates UNKWN.

**Initialize Settings**

Deletes data stored from the audio unit.



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AV

# DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

## DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

### Description

INFOID:000000008280509

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

### Diagnosis Description

INFOID:000000008280510

#### ON BOARD DIAGNOSIS ITEM

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

#### CAUTION:

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

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

#### Self-diagnosis results

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

#### NOTE:

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

#### Self-diagnosis results

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

#### The Details of Error Count

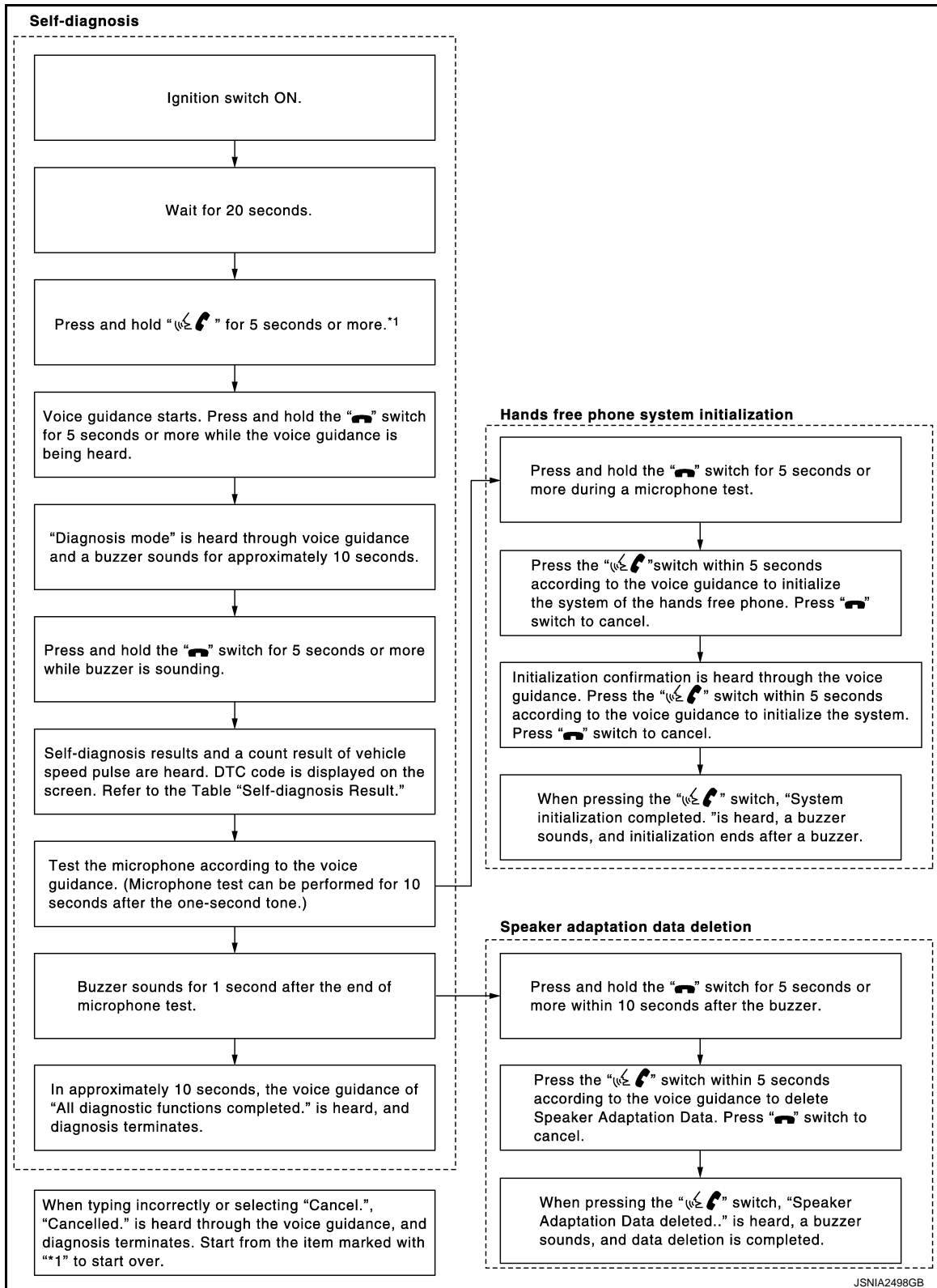
The error count guides "0" when the error occurs. The next time it counts up "1" if it is normal with the ignition switch ON. It continues the count up unless the initialization of hands-free phone system is performed.

# DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

## FLOW CHART OF TROUBLE DIAGNOSIS



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# DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

## DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

### CONSULT Function

INFOID:000000008280511

#### APPLICATION ITEMS

CONSULT can display each diagnostic item using the diagnostic test modes shown as follows:

Test mode	Function
Ecu Identification	Around view monitor control unit part number can be read.
Self Diagnostic Result	Around view monitor control unit checks the conditions and displays memorized error.
Data Monitor	Around view monitor control unit input/output data in real time.
Work support	Changes setting of each function.

#### ECU IDENTIFICATION

Displays the part number of around view monitor control unit.

#### SELF-DIAGNOSTIC RESULTS

For details, refer to [AV-98. "DTC Index"](#).

#### DATA MONITOR

##### NOTE:

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

Monitor Item	Display	Description
ST ANGLE SENSOR SIGNAL	ON/OFF	Input status of steering angle sensor signal is displayed by ON/OFF.
REVERSE SIGNAL	ON/OFF	Input status of reverse signal is displayed by ON/OFF in real time.
VEHICLE SPEED SIGNAL	ON/OFF	Input status of vehicle speed signal is displayed by ON/OFF.
CAMERA SWITCH SIGNAL	ON/OFF	Input status of camera switch signal is displayed by ON/OFF.
CAMERA OFF SIGNAL	ON/OFF	Input status of AV switch signal is displayed by ON/OFF.
ST ANGLE SENSOR TYPE	Absolute	Type of steering angle sensor is displayed. ("Absolute" is displayed on this vehicle.)
STEERING GEAR RATIO TYPE	Type 0	Type of steering gear ratio is displayed. ("Type 0" is displayed on this vehicle.)
STEERING POSITION	LHD	Steering position is displayed. ("LHD" is displayed on this vehicle.)
REAR CAMERA IMAGE SIGNAL	OK/NG	Input status of rear camera image signal is displayed by OK/NG in real time.
F-CAMERA IMAGE SIGNAL	OK/NG	Input status of front camera 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.
DR-SIDE CAMERA IMAGE SIG	OK/NG	Input status of side camera LH image signal is displayed by OK/NG in real time.

#### WORK SUPPORT

Work support item	Function
CALIBRATING CAMERA IMAGE (FRONT CAMERA)	Performs the calibration of front camera.
CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)	Performs the calibration of side camera RH.
CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)	Performs the calibration of side camera LH.
CALIBRATING CAMERA IMAGE (REAR CAMERA)	Performs the calibration of rear camera.
INITIALIZE CAMERA IMAGE CALIBRATION	The calibration can be initialized to NISSAN factory shipment condition.

# DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[DISPLAY AUDIO]

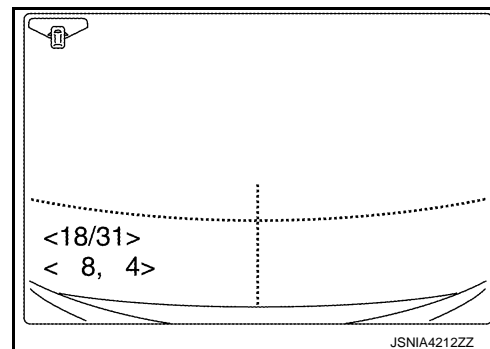
Work support item	Function
FINE TUNING OF BIRDS-EYE VIEW	The confirmation and adjustment of the difference between each camera can be performed.
SELECT LANGUAGE OF WARNING MESSAGE	Language of warning message shown during camera image display can be selected.
PREDICTIVE COURSE LINE DISPLAY	ON/OFF setting of predictive course line can be performed.
STEERING ANGLE SENSOR ADJUSTMENT	Steering angle sensor neutral position can be adjusted and registered.
NON-VIEWABLE AREA REMINDER	ON/OFF setting of the non-viewable area reminder can be performed.

Calibrating Camera Image (front camera, pass-side camera, dr-side camera, and rear camera)

Perform the calibration of camera image caused by the incorrect mounting position of each camera, etc. Always perform calibration after performing the following work.

- When each camera or each camera mount (e.g. front grille, door mirror, and others) is removed
- When replacing the around view monitor control unit

Refer to [AV-108, "Work Procedure"](#) for the calibration procedure.



Adjustment range	
Rotating direction	: 31 patterns (16 on the center)
Upper/lower direction	: (-99) – (+99)
Left/right direction	: (-99) – (+99)

Initialize Camera Image Calibration

The calibration can be initialized to NISSAN factory shipment condition.

Select Language of Warning Message

Language of warning message shown during camera image display can be selected.

Predictive Course Line Display

ON/OFF setting of predictive course line can be performed.

Steering Angle Sensor Adjustment

Steering angle sensor neutral position can be adjusted and registered.

**CAUTION:**

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

Non-Viewable Area Reminder

ON/OFF setting of the non-viewable area reminder can be performed.

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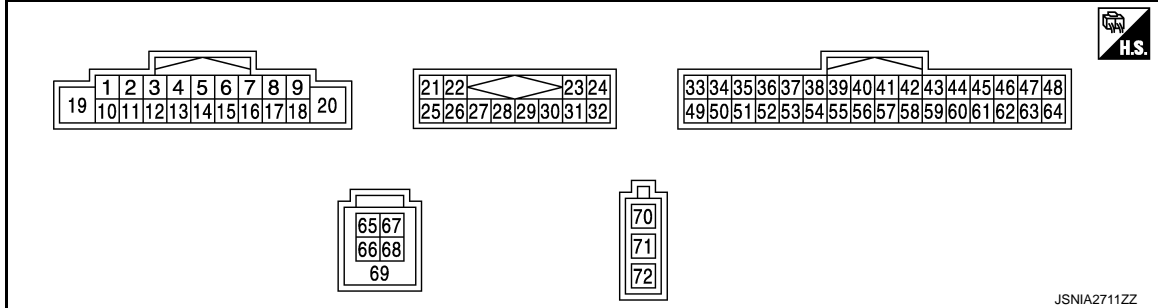
## ECU DIAGNOSIS INFORMATION

### AUDIO UNIT

#### Reference Value

INFOID:000000008280512

#### TERMINAL LAYOUT



#### PHYSICAL VALUES

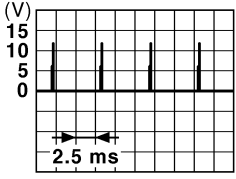
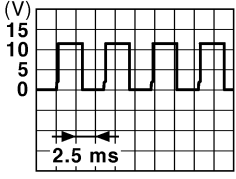
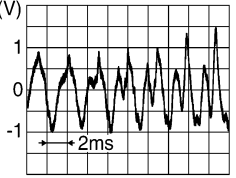
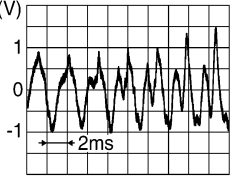

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/Output			
2 (R)	3 (G)	Sound signal front speaker LH	Output	Ignition switch ON	Sound output.	<p style="text-align: right; font-size: x-small;">SKIB3609E</p>
4 (V)	5 (LG)	Sound signal rear speaker LH	Output	Ignition switch ON	Sound output.	<p style="text-align: right; font-size: x-small;">SKIB3609E</p>
6 (BR)	15 (GR)	Steering switch signal A	Input	Ignition switch ON	Keep pressing  switch.	0 V
					Keep pressing SEEK UP switch.	1.3 V
					Keep pressing SEEK DOWN switch.	2.5 V
					Except for above.	5.3 V
7 (SB)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage



# AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO]

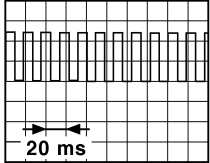
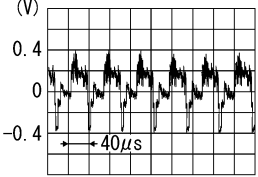

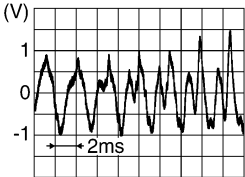
Terminal (Wire color)		Description		Condition	Reference value (Approx.)	
+	-	Signal name	Input/ Output			
9 (R)	8 (Y)	Illumination control signal	Input	Ignition switch ON	<ul style="list-style-type: none"> <li>Lighting switch 1ST.</li> <li>When meter illumination is maximum.</li> </ul> 	
				Ignition switch OFF	<ul style="list-style-type: none"> <li>Lighting switch 1ST.</li> <li>When meter illumination is step 11.</li> </ul> 	
					<ul style="list-style-type: none"> <li>Lighting switch 1ST.</li> <li>When meter illumination is minimum.</li> </ul> <p style="text-align: center;">12.0 V</p>	
11 (Y)	12 (W)	Sound signal front speaker RH	Output	Ignition switch ON	Sound output.	
13 (L)	14 (P)	Sound signal rear speaker RH	Output	Ignition switch ON	Sound output.	
16 (BG)	15 (GR)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	1.3 V
					Keep pressing  switch.	2.5 V
					Keep pressing SOURCE switch.	3.8 V
					Except for above.	5.3 V

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# AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
18 (L)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is ap- prox. 40 km/h (25 MPH).	<b>NOTE:</b> The maximum voltage varies de- pending on the specification (destination unit).   <small>JSNIA0012GB</small>
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
20 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
33	—	Shield	—	—	—	—
34 (W) <sup>*1</sup> (G) <sup>*2</sup>	Ground	Camera image signal	Input	Ignition switch ON	At camera image is dis- played.	 <small>SKIB2251J</small>
35 (R)	Ground	Camera power supply	Output	Ignition switch ON	At camera image is dis- played.	6.0 V
					Except for above.	0 V
36 (B)	Ground	Camera ground	—	Ignition switch ON	—	0 V
37 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
38 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
40 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
41 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
43	—	Shield	—	—	—	—
44 (BR)	45 (Y)	Sound signal (TEL voice, voice guid- ance)	Input	Ignition switch ON	During voice guide output with the  switch pressed.	 <small>SKIB3609E</small>
50 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V

# AUDIO UNIT

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
51 (G)	Ground	Reverse signal	Input	Ignition switch ON	Shift position is in R.	12.0 V
					Shift position is in other than R.	0 V
53 (B)	Ground	EQ4	—	Ignition switch ON	—	0 V
55 (B)	Ground	EQ2	—	Ignition switch ON	—	0 V
56 (B)	Ground	EQ1	—	Ignition switch ON	—	0 V
57 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
58 (GR)	Ground	Image switch signal	Input	Ignition switch ON	At camera image is dis- played.	6.0 V
					Except for above	0 V
59 (BR)	Ground	AV switch signal	Output	Ignition switch ON	Pressing the "FM-AM", "CD-AUX", "CD" or "AUX" switch	0 V
					Except for above	5.0 V
61 (V)	Ground	Camera switch signal	Output	Ignition switch ON	Pressing the "DISP" switch	0 V
					Except for above	5.0 V
65 (G)	—	USB ground	—	—	—	—
66 (R)	—	USB D- signal	—	—	—	—
67 (W)	—	V BUS signal	—	—	—	—
68 (L)	—	USB D+ signal	—	—	—	—
69	—	Shield	—	—	—	—
70	Ground	Antenna amp. ON signal	Output	Ignition switch ON	—	12.0 V
71	—	Antenna signal	Input	—	—	—
73	—	Satellite radio antenna sig- nal	Input	—	—	—

\*1: Except for Mexico

\*2: For Mexico

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# TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

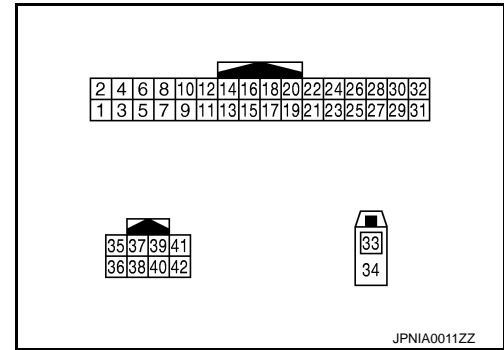
[DISPLAY AUDIO]

## TEL ADAPTER UNIT

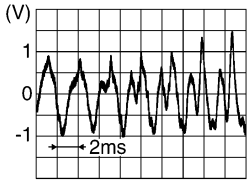

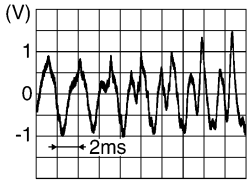

Reference Value

INFOID:000000008280513

### TERMINAL LAYOUT



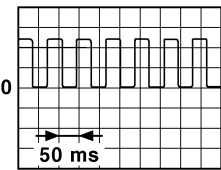
### PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (BR)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
2 (SB)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
3 (W)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
4 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
7 (B)	8	Microphone signal	Input	Ignition switch ON	Give a voice.	 SKIB3609E
9 (BR)	10 (Y)	Sound signal (TEL voice, voice guid- ance)	Output	Ignition switch ON	During voice guide output with the  switch pressed.	 SKIB3609E
12 (W)	14 (GR)	Steering switch signal A	Input	Ignition switch ON	Keep pressing  switch.	0 V
					Keep pressing SEEK UP switch.	1.2 V
					Keep pressing SEEK DOWN switch.	2.5 V
					Except for above.	5.0 V

# TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
13 (Y)	14 (GR)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	1.2 V
					Keep pressing  switch.	2.5 V
					Keep pressing SOURCE switch.	3.7 V
					Except for above.	5.0 V
17 (W)	19 (GR)	Steering switch signal A	Output	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing SEEK UP switch.	0.9 V
					Keep pressing SEEK DOWN switch.	1.9 V
					Except for above.	3.3 V
18 (L)	19 (GR)	Steering switch signal B	Output	Ignition switch ON	Keep pressing VOL DOWN switch.	0.9 V
					Keep pressing VOL UP switch.	1.9 V
					Except for above.	3.3 V
21 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
22 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
23 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
24 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
28 (L)	Ground	Vehicle speed signal (2-pulse)	Input	Ignition switch ON	When vehicle speed is ap- prox. 40 km/h (25 MPH)	<p><b>NOTE:</b> The maximum voltage varies de- pending on the specification (destination unit).</p>  <p style="text-align: right; font-size: small;">JSNIA0015GB</p>
29 (W)	Ground	Microphone power supply	Output	Ignition switch ON	—	5.0 V
33	—	TEL antenna signal	Input	—	Not connected to TEL an- tenna connector.	5.0 V
34	—	Shield	—	—	—	—

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## TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
35 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
36 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—

# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO]

## AROUND VIEW MONITOR CONTROL UNIT

### Reference Value

INFOID:000000008280514

### 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	Ignition switch ON	Steering angle sensor signal is input condition.	ON
		Except for above	OFF
REVERSE SIGNAL	Ignition switch ON	Shift position is in "R"	ON
		Other than shift position is in "R"	OFF
VEHICLE SPEED SIGNAL *1	Ignition switch ON	Vehicle speed signal is input condition.	ON
		Except for above	OFF
CAMERA SWITCH SIGNAL *1	Ignition switch ON	Pressing the "DISP" switch	ON
		Except for above	OFF
CAMERA OFF SIGNAL *1	Ignition switch ON	Pressing the "FM-AM", "CD-AUX", "XM", "CD" or "AUX" switch	ON
		Except for above	OFF
ST ANGLE SENSOR TYPE *2	Ignition switch ON	—	Absolute
STEERING GEAR RATIO TYPE *3	Ignition switch ON	—	Type 0
STEERING POSITION *4	Ignition switch ON	—	LHD
REAR CAMERA IMAGE SIGNAL	Ignition switch ON	Input status of rear camera image signal is normal.	OK
		Input status of rear camera image signal is not normal.	NG
F-CAMERA IMAGE SIGNAL	Ignition switch ON	Input status of front camera image signal is normal.	OK
		Input status of front camera image signal is not normal.	NG
PA-SIDE CAMERA IMAGE SIG	Ignition switch ON	Input status of side camera RH image signal is normal.	OK
		Input status of side camera RH image signal is not normal.	NG
DR-SIDE CAMERA IMAGE SIG	Ignition switch ON	Input status of side camera LH image signal is normal.	OK
		Input status of side camera LH image signal is not normal.	NG

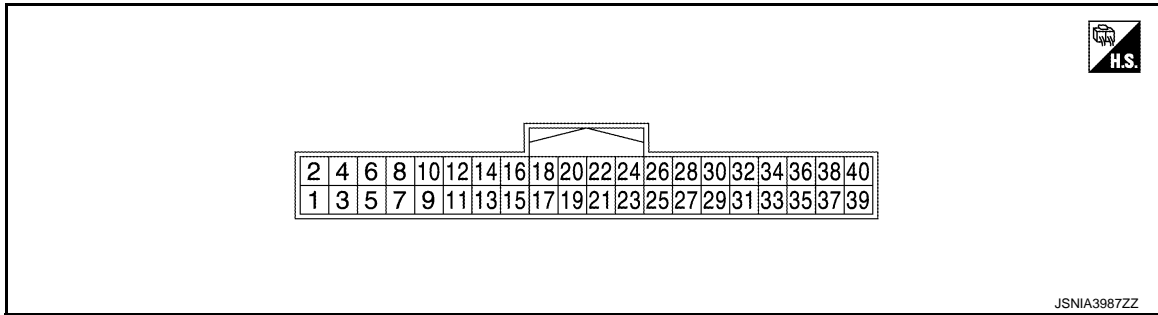
- \*1: Once the signal is input, it remains ON indication until CONSULT is finished.
- \*2: "Absolute" is always indicated on this vehicle.
- \*3: "Type 0" is always indicated on this vehicle.
- \*4: "LHD" is always indicated on this vehicle.

# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO]

## TERMINAL LAYOUT



## PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
4 (SB)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
8 (G)	Ground	Reverse signal	Input	Ignition switch ON	Shift position is in "R"	12.0 V
					Other than shift position is in "R"	0 V
9 (V)	Ground	Camera switch signal	Input	Ignition switch ON	Pressing the "DISP" switch	0 V
					Except for above	5.0 V
10 (P)	—	CAN-L	Input/ Output	—	—	—
12 (L)	—	CAN-H	Input/ Output	—	—	—
14 (GR)	Ground	Image switch signal	Output	Ignition switch ON	At camera image is displayed.	0 V
					Except for above	6.0 V
18 (BR)	Ground	AV switch signal (Camera off signal)	Input	Ignition switch ON	Pressing the "FM-AM", "CD-AUX", "CD", "AUX" "XM" switch	0 V
					Except for above	5.0 V
23	—	Shield	—	—	—	—
24 (G)	Ground	Camera image signal	Output	Ignition switch ON	At camera image is displayed.	
25 (B)	Ground	Rear camera ground	—	Ignition switch ON	—	0 V

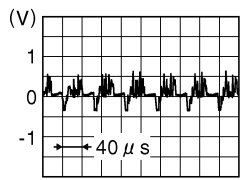
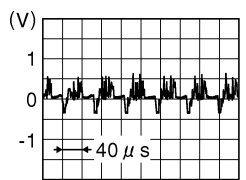
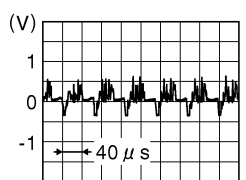
JSNIA0834GB



# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
26 (R)	Ground	Rear camera power supply	Output	Ignition switch ON	"DISP" switch is ON or shift position is "R".	6.2 V
27	—	Shield	—	—	—	—
28 (W)	Ground	Rear camera image signal	Input	Ignition switch ON	"DISP" switch is ON or shift position is "R".	
29 (G)	Ground	Side camera driver side ground	—	Ignition switch ON	—	0 V
30 (L)	Ground	Side camera driver side power supply	Output	Ignition switch ON	"DISP" switch is ON or shift position is "R".	6.2 V
31	—	Shield	—	—	—	—
32 (Y)	Ground	Side camera driver side image signal	Input	Ignition switch ON	"DISP" switch is ON or shift position is "R".	
33 (B)	Ground	Side camera passenger side ground	—	Ignition switch ON	—	0 V
34 (W)	Ground	Side camera passenger side power supply	Output	Ignition switch ON	"DISP" switch is ON or shift position is "R".	6.2 V
35	—	Shield	—	—	—	—
36 (R)	Ground	Side camera passenger side image signal	Input	Ignition switch ON	"DISP" switch is ON or shift position is "R".	
37 (V)	Ground	Front camera ground	—	Ignition switch ON	—	0 V
38 (LG)	Ground	Front camera power supply	Output	Ignition switch ON	"DISP" switch is ON or shift position is "R".	6.2 V

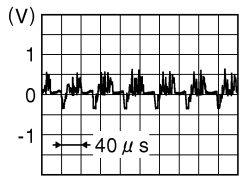
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AV

# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[DISPLAY AUDIO]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
39	—	Shield	—	—	—	—
40 (L)	Ground	Front camera image signal	Input	Ignition switch ON	"DISP" switch is ON or shift position is "R".	<div style="text-align: right;">  <p>(V)</p> <p>40 μs</p> <p style="text-align: right; font-size: small;">JSNIA0834GB</p> </div>

## DTC Index

INFOID:000000008280515

DTC	CONSULT display	Refer to
U0428	ST ANGLE SENSOR CALIBRATION	<a href="#">AV-115. "DTC Logic"</a>
U1000	CAN COMM CIRCUIT	<a href="#">AV-116. "DTC Logic"</a>
U1010	CONTROL UNIT (CAN)	<a href="#">AV-117. "DTC Logic"</a>
U1232	ST ANGLE SEN CALIB	<a href="#">AV-118. "DTC Logic"</a>

# DISPLAY AUDIO

< WIRING DIAGRAM >


[DISPLAY AUDIO]

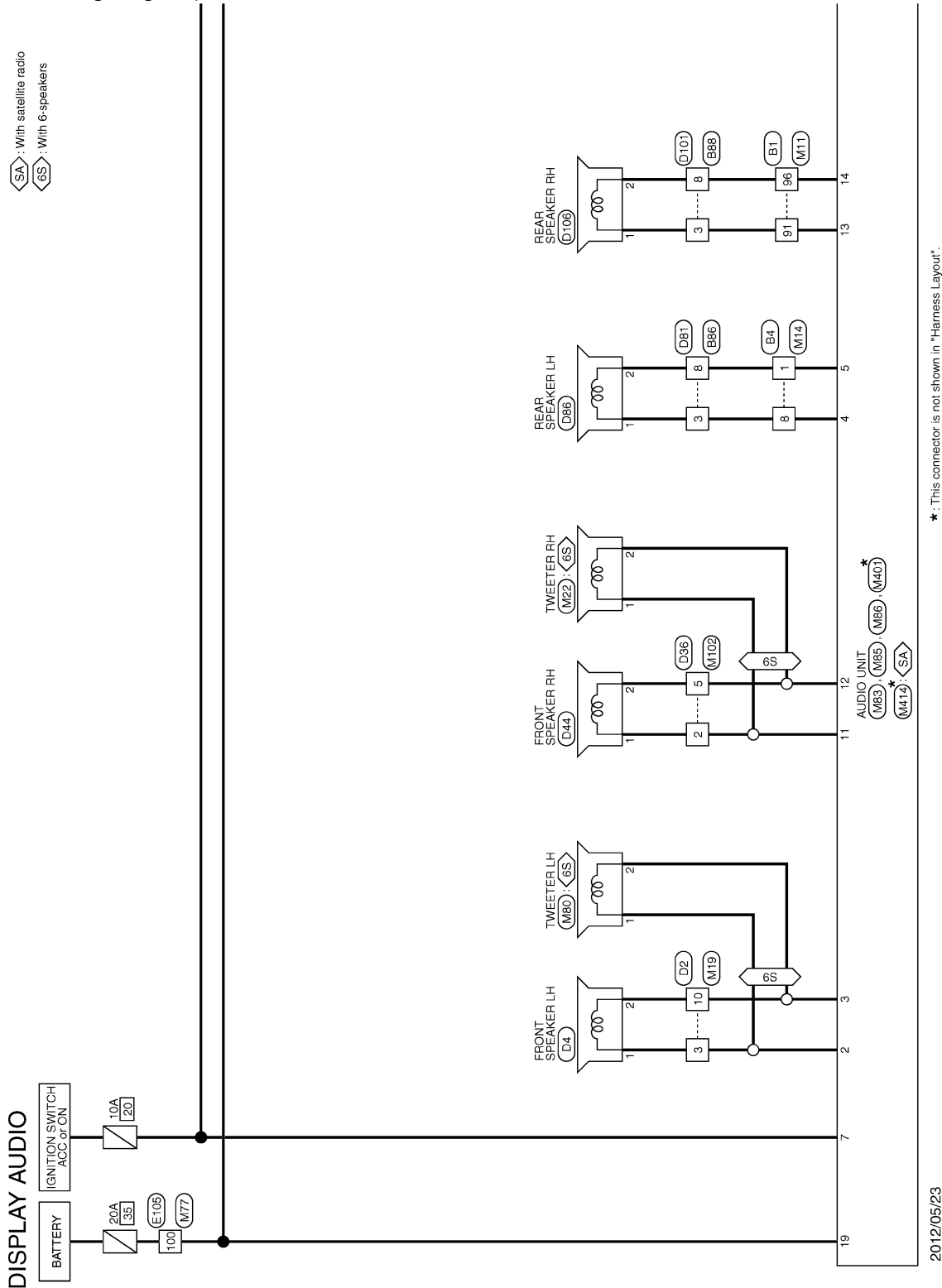
## WIRING DIAGRAM

### DISPLAY AUDIO

#### Wiring Diagram

INFOID:0000000008280516

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



2012/05/23

JRNWC2402GB

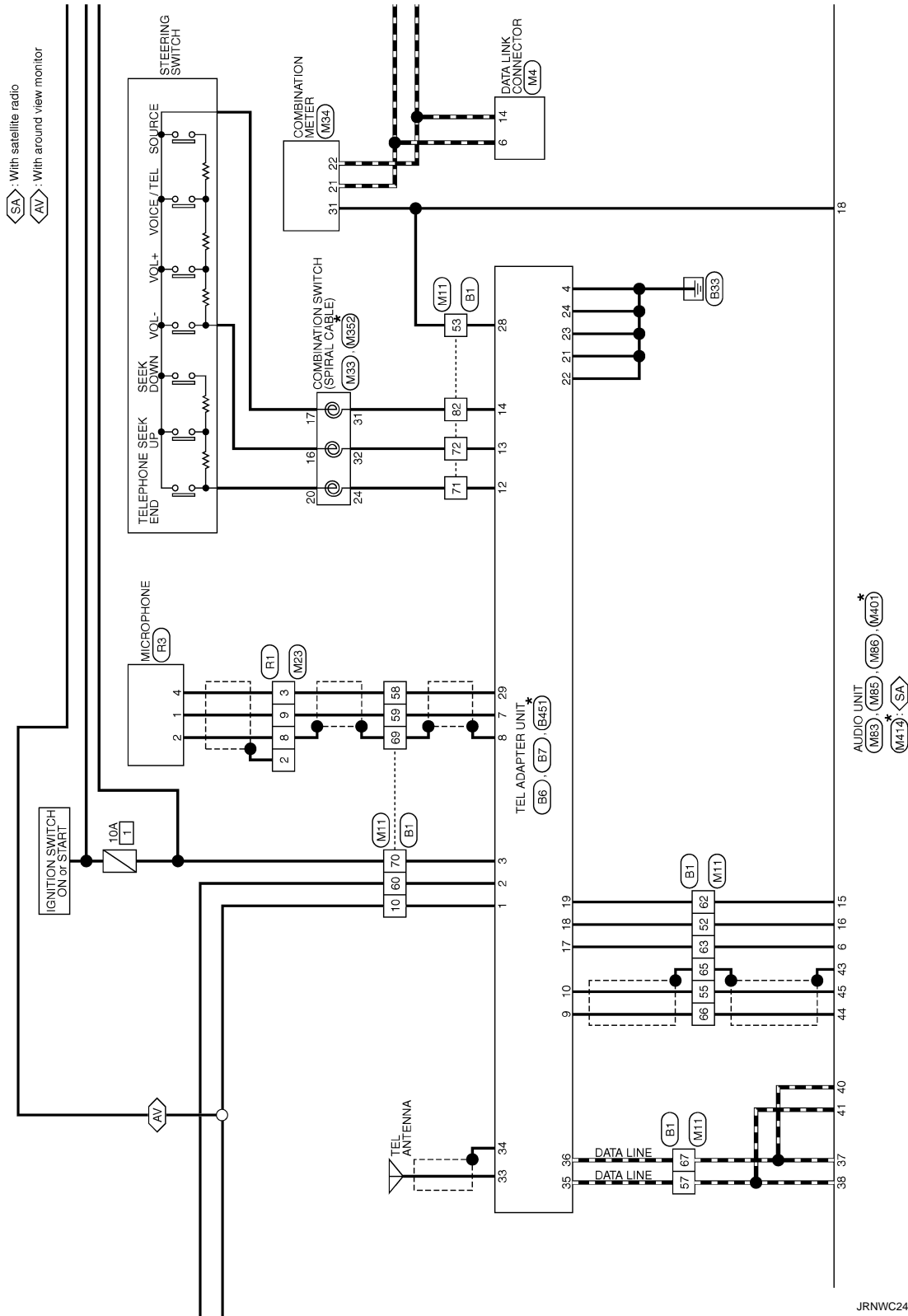
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# DISPLAY AUDIO

< WIRING DIAGRAM >

[DISPLAY AUDIO]



JRNWC2403GB

# DISPLAY AUDIO

< WIRING DIAGRAM >

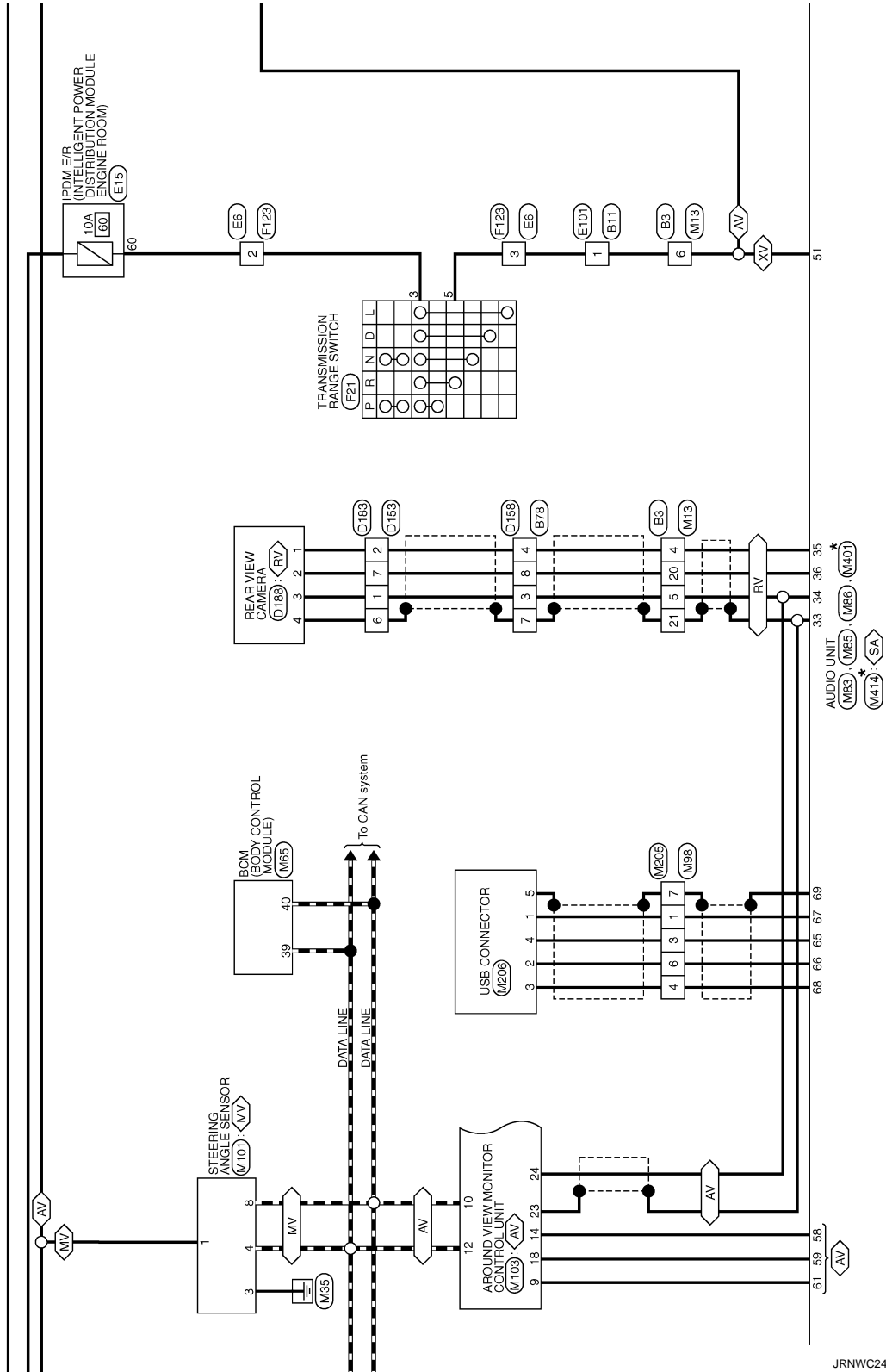
[DISPLAY AUDIO]

XV : Without around view monitor

SA : With satellite radio

RV : With rear view monitor

MV : For mexico with around view monitor



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

JRNWC2404GB

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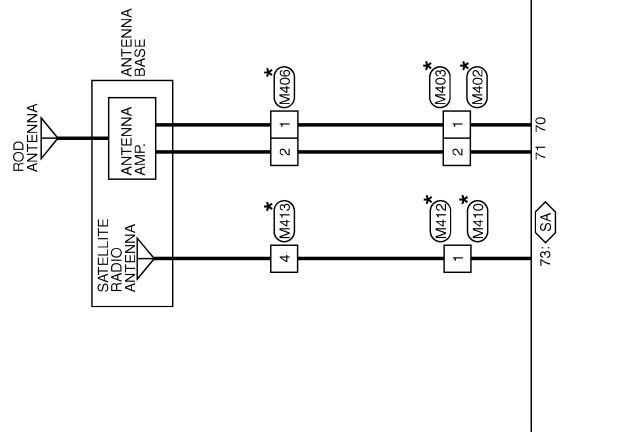
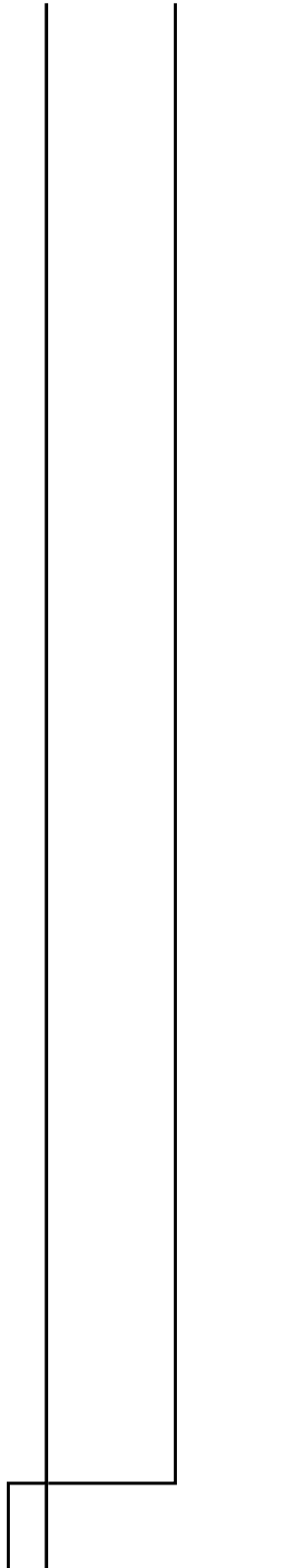
AV

# DISPLAY AUDIO

< WIRING DIAGRAM >

[DISPLAY AUDIO]

SA : With satellite radio  
CM : With Canada and Mexico  
RV : With rear view mirror  
AV : With around view monitor



JRNWC2405GB

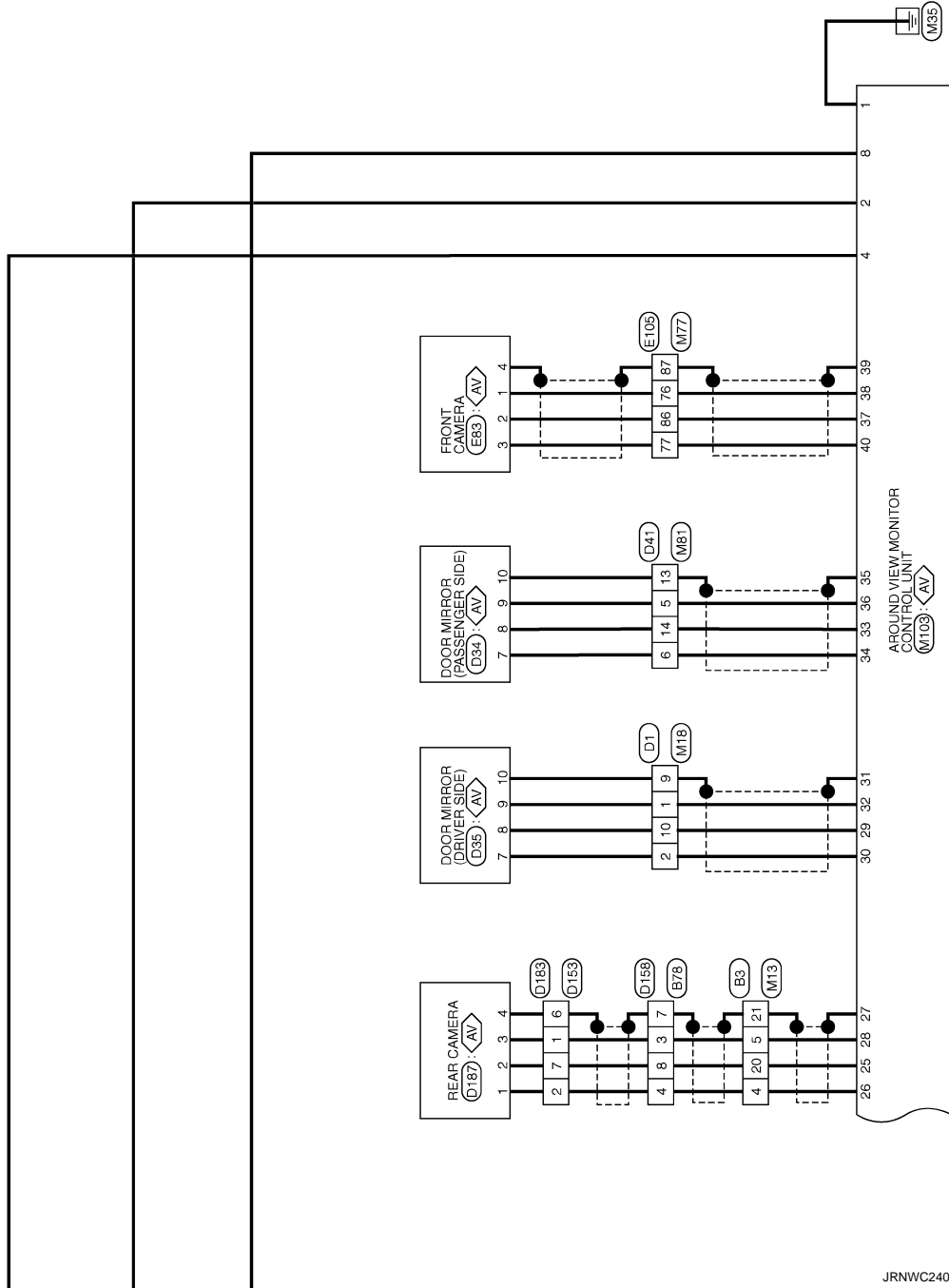
\*: This connector is not shown in "Harness Layout".

# DISPLAY AUDIO

< WIRING DIAGRAM >

[DISPLAY AUDIO]

AV : With around view monitor



JRNWC2406GB

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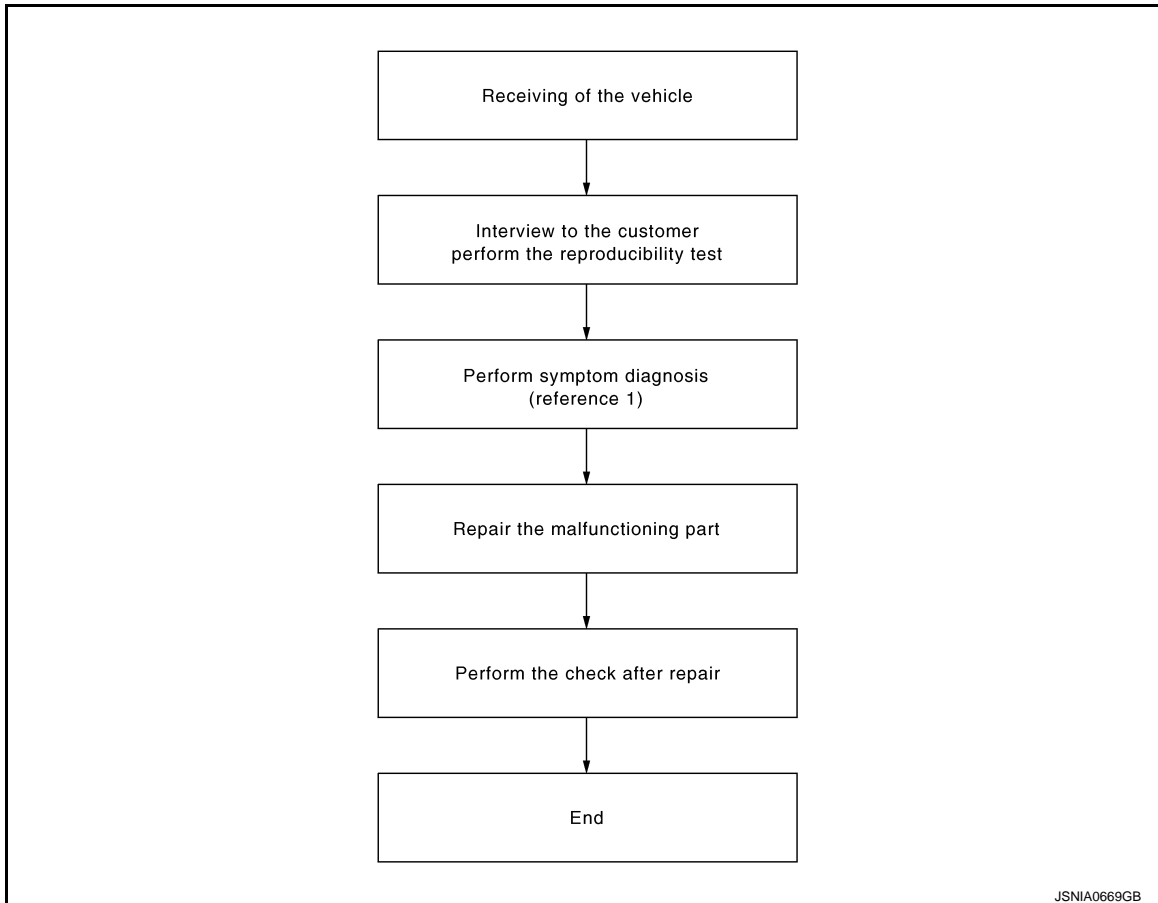
## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORKFLOW

Work Flow (without Around View Monitor)

INFOID:000000008280517

#### OVERALL SEQUENCE



JSNIA0669GB

Reference 1...Refer to [AV-138, "Symptom Table"](#) (audio system) or [AV-141, "Symptom Table"](#) (hands-free phone system).

#### DETAILED FLOW

### 1. CHECK SYMPTOM

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.

>> GO TO 2.

### 2. PERFORM DIAGNOSIS BY SYMPTOM

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-138, "Symptom Table"](#) (audio system) or [AV-141, "Symptom Table"](#) (hands-free phone system).

>> GO TO 3.

### 3. REPAIR OR REPLACE MALFUNCTIONING PARTS

Repair or replace the malfunctioning parts.

>> GO TO 4.



# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[DISPLAY AUDIO]

## 4. FINAL CHECK

Perform the operation to check that the malfunction symptom is solved or any other symptoms are present.

Is there any symptom?

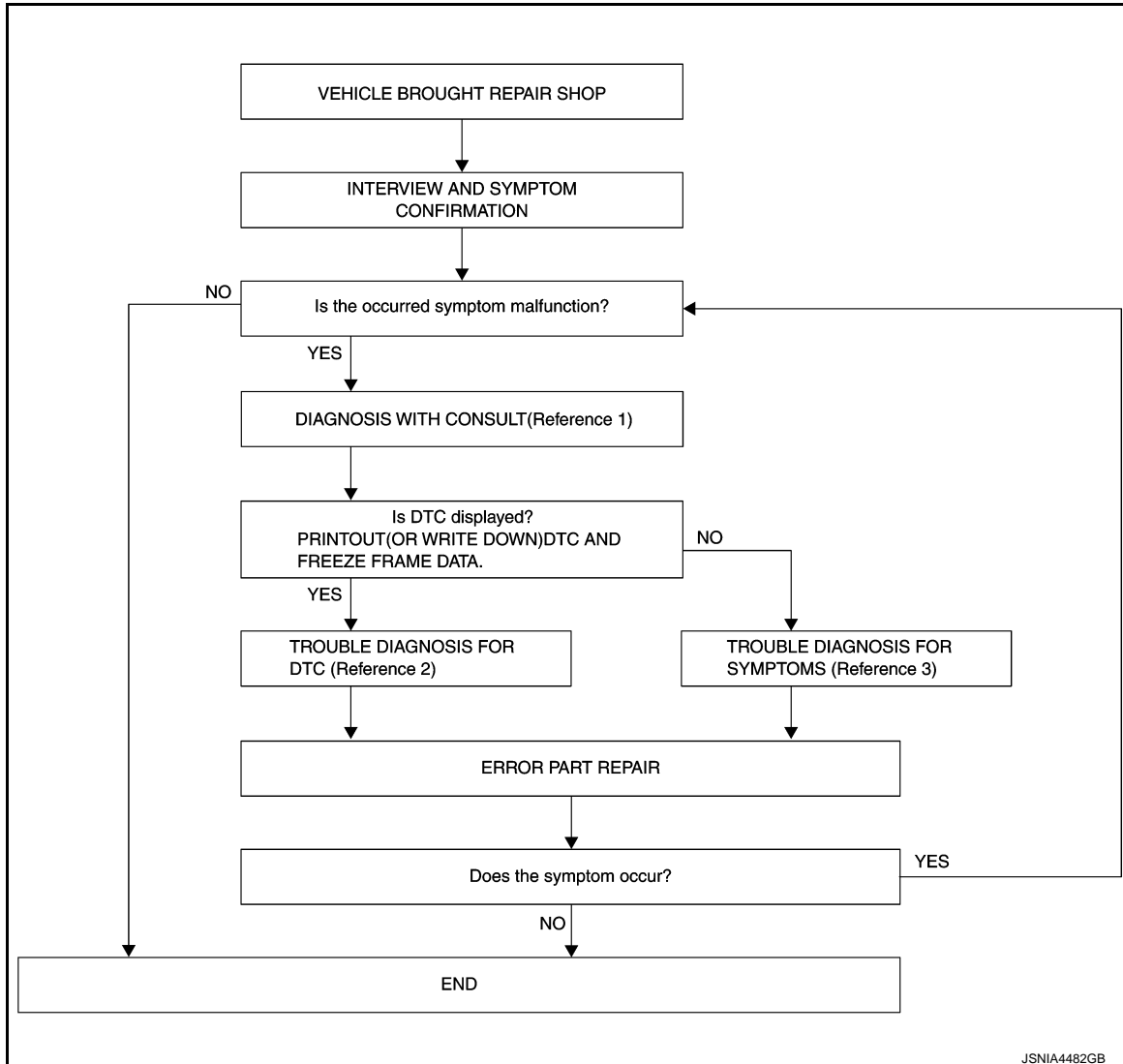
YES >> GO TO 2.

NO >> INSPECTION END

Work Flow (with Around View Monitor)

INFOID:000000008280518

### OVERALL SEQUENCE



- Reference 1... Refer to [AV-86, "CONSULT Function"](#).
- Reference 2... Refer to [AV-98, "DTC Index"](#).
- Reference 3... Refer to [AV-138, "Symptom Table"](#).

### DETAILED FLOW

#### 1. INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.

- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.

# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[DISPLAY AUDIO]

NO >> INSPECTION END

## 2. DIAGNOSIS WITH CONSULT

1. Connect CONSULT and perform a self-diagnosis for "AVM". Refer to [AV-86, "CONSULT Function"](#).

**NOTE:**

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

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

Is DTC displayed?

YES >> GO TO 3.

NO >> GO TO 4.

## 3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to [AV-98, "DTC Index"](#).

>> GO TO 5.

## 4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-138, "Symptom Table"](#).

>> GO TO 5.

## 5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for "AVM" with CONSULT.

**NOTE:**

Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.

3. Check that the symptom does not occur.

Does the symptom occur?

YES >> GO TO 1.

NO >> INSPECTION END

# PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT

< BASIC INSPECTION >

[DISPLAY AUDIO]

## PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT

### Description

INFOID:000000008280519

Adjust the center position of the predictive course line of the rear view monitor if it is shifted.

### Work Procedure

INFOID:000000008280520

#### 1.DRIVING

Drive the vehicle straight ahead 100 m (328.1 ft) or more at a speed of 30 km/h (18.6 MPH) or more.

>> END

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# CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

< BASIC INSPECTION >

[DISPLAY AUDIO]

## CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

### Description

INFOID:000000008280521

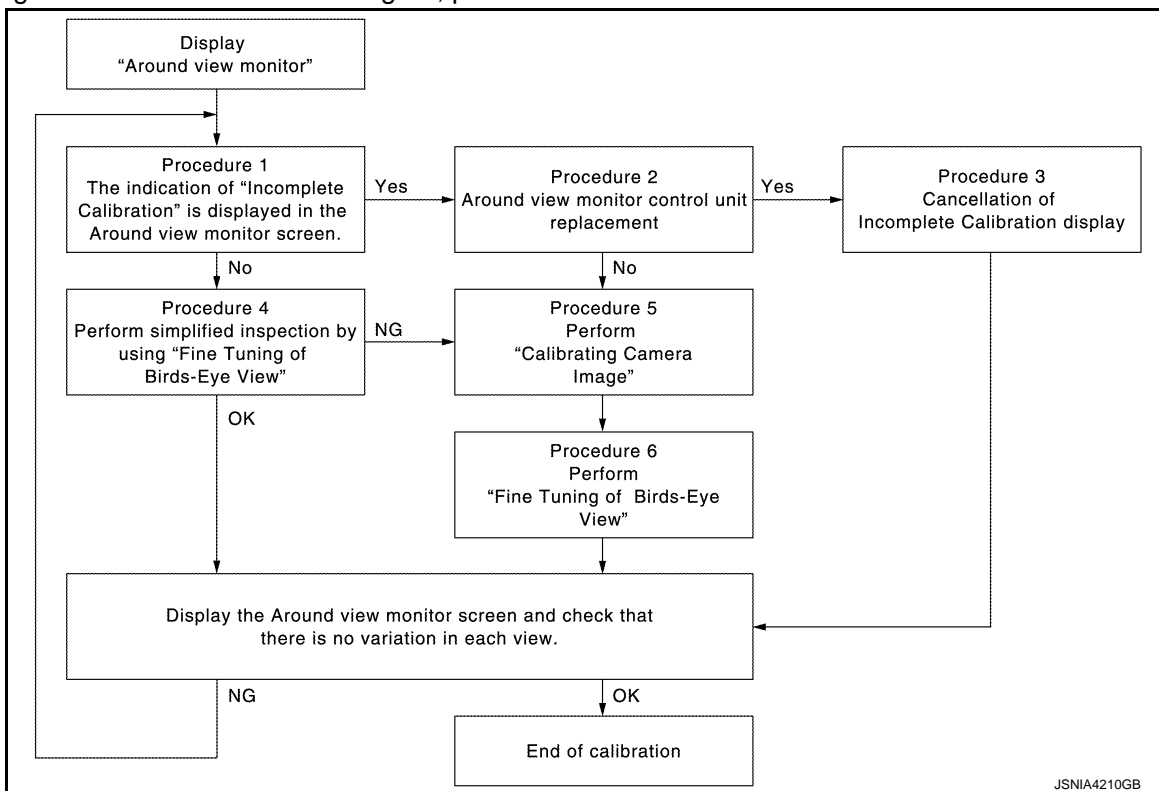
- Calibration must be performed after removing/replacing the cameras, removing parts (e.g. front grille, door mirror, and others) mounted on the cameras, or replacing the Around view monitor control unit.
- The use of CONSULT is required to perform calibration or writing of calibration results to the Around view monitor control unit.
- Align the white lines on the road near the vehicle at the boundary of each camera image by this camera calibration. The white lines far from the vehicle may not be aligned at the boundary of each camera image. The farther the line, the greater the difference is.

### Work Procedure

INFOID:000000008280522

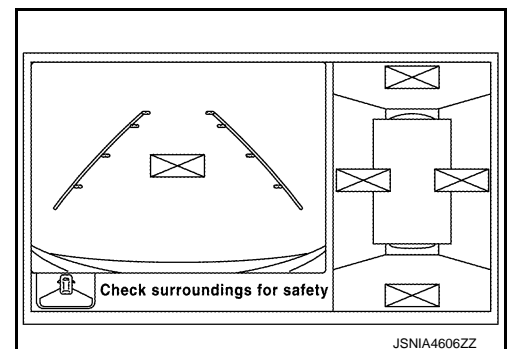
### CALIBRATION FLOWCHART

Following the flowchart shown in the figure, perform the calibration.



#### NOTE:

View in the incomplete calibration state is indicated by "⊠" on the around view monitor.



### CALIBRATION PROCEDURE

#### 1. AROUND VIEW MONITOR SCREEN CONFIRMATION

# CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

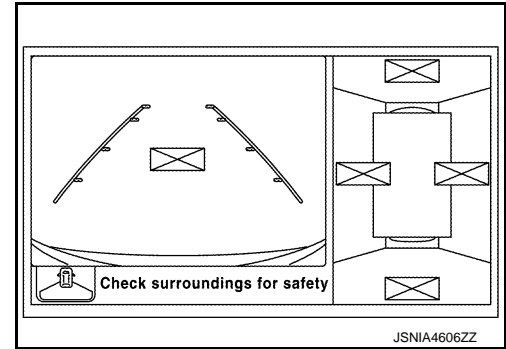
< BASIC INSPECTION >

[DISPLAY AUDIO]

Check that there is no indication of "Incomplete calibration".

Is the "Incomplete calibration" display visible?

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



## 2. CHECK THAT AROUND VIEW MONITOR CONTROL UNIT IS REPLACED

Check that the around view monitor control unit is replaced.

Is the around view monitor control unit replaced?

- YES >> GO TO 3.
- NO >> GO TO 5.

## 3. CANCEL THE INDICATION OF INCOMPLETE CALIBRATION (PERFORM THIS ONLY AFTER REPLACING AROUND VIEW MONITOR CONTROL UNIT.)

 CONSULT work support

1. On the CONSULT screen, touch "CALIBRATING CAMERA IMAGE (FRONT CAMERA)", "CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)", "CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)", or "CALIBRATING CAMERA IMAGE (REAR CAMERA)" to accept the selection.

**NOTE:**

To cancel the indication of Incomplete calibration, select items based on the target camera.

2. On the adjustment screen of each camera, touch "APPLY" button. After this, touch "OK" button.

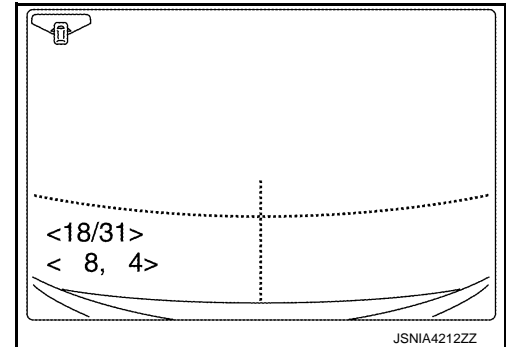
**CAUTION:**

- Never perform operations other than those mentioned above.
- Never perform "Initialize Camera Image Calibration".

3. Display the around view monitor screen to check that there is no errors, such as deviations among the camera images.

Is there a malfunction?

- YES >> Calibration end
- NO >> GO TO 1.



## 4. PERFORM SIMPLIFIED CONFIRMATION/ADJUSTMENT BY "FINE TUNING OF BIRDS-EYE VIEW"

1. Put target line 1 on the ground beside each axle using packing tape, etc.
2. Put target lines 2 equal to the vehicle total length + approximately 1.0 m (39.3 in) from the vehicle side (right and left) at approximately 30 cm (11.8 in) away from the vehicle (make the line as parallel with the vehicle as possible)

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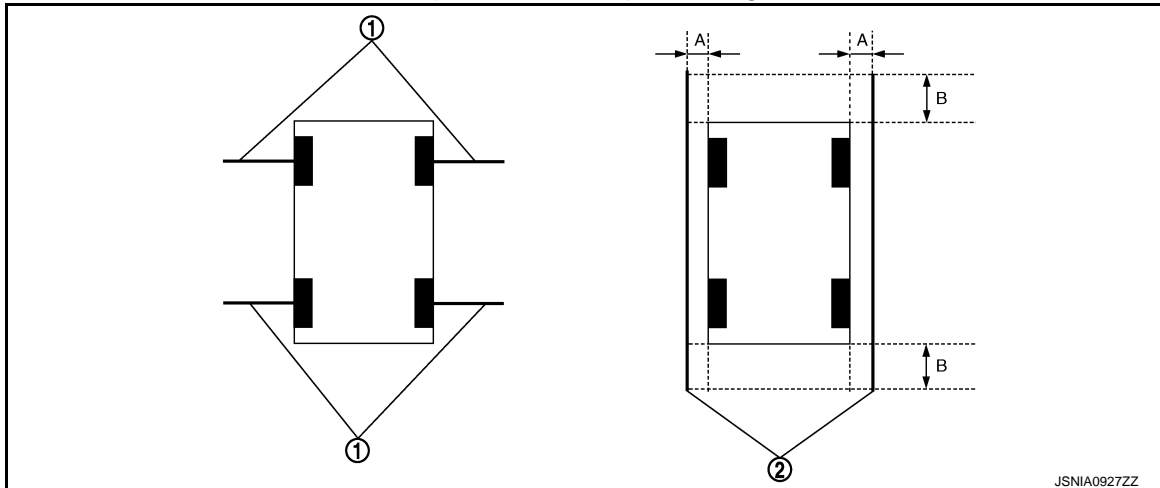
AV

# CALIBRATING CAMERA IMAGE (AROUND VIEW VIEW MONITOR)

< BASIC INSPECTION >

[DISPLAY AUDIO]

## Preparation of simplified target line



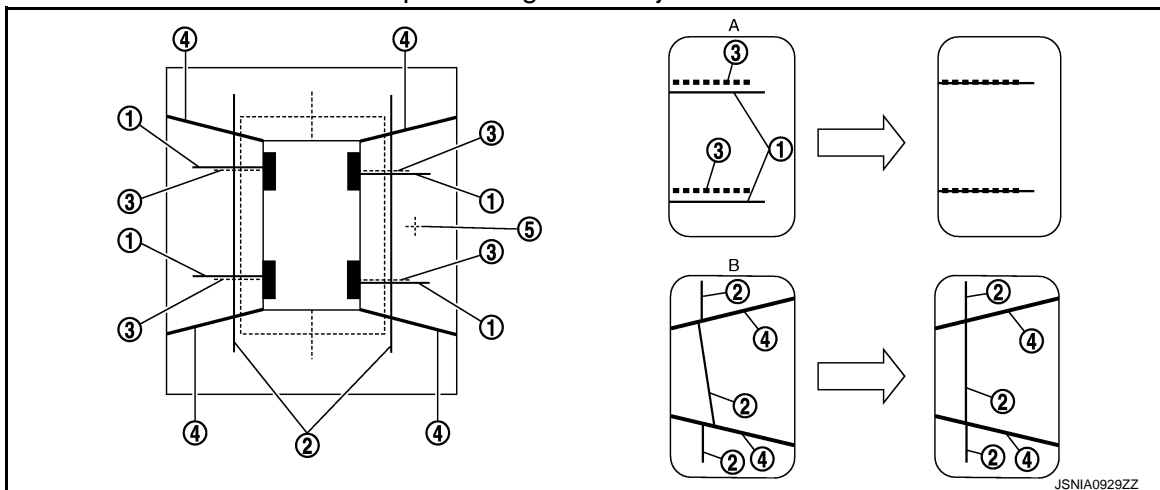
- |                            |                            |
|----------------------------|----------------------------|
| 1. Target lines 1          | 2. Target lines 2          |
| A. Approx. 30 cm (11.8 in) | B. Approx. 1.0 m (39.3 in) |

- CONSULT work support  
Touch "FINE TUNING OF BIRDS-EYE VIEW" on the CONSULT screen.
- On the CONSULT screen, touch "SELECT" button to select right or left camera and perform camera calibration as instructed below:
  - If the marker on the screen deviates from Target line 1, touch "AXIS X" button and "AXIS Y" button to adjust so that the marker is placed on the Target line 1.
  - If Target line 2 is misaligned among the cameras, adjust each camera image to bring Target line 2 into a straight line.

**CAUTION:**

Never adjust the front camera and rear camera. Only adjust the right and left cameras.

## Simplified target line adjustment method



- |   |   |                             |
|---|---|-----------------------------|
| 1. Target lines 1                               | 2. Target lines 2   | 3. Marker for target line 1 |
| 4. Boundary between cameras                     | 5. Crosshairs cursor (mark indicated the selected camera) |                             |
| A. Adjustment method for target lines 1 (right) | B. Adjustment method for target lines 2 (right)           |                             |

- Adjust right and left cameras. Touch "APPLY" on the CONSULT screen to display adjustment results.
- After adjusting right and left cameras, check that the marker is properly placed on the screen and there is no deviation in Target line 1.

**NOTE:**

- It can be initialized to the NISSAN factory default condition with "Initialize Camera Image Calibration".
- The adjustment value is cancelled on this mode by performing "Initialize Camera Image Calibration".

# CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

< BASIC INSPECTION >

[DISPLAY AUDIO]

Is the difference corrected?

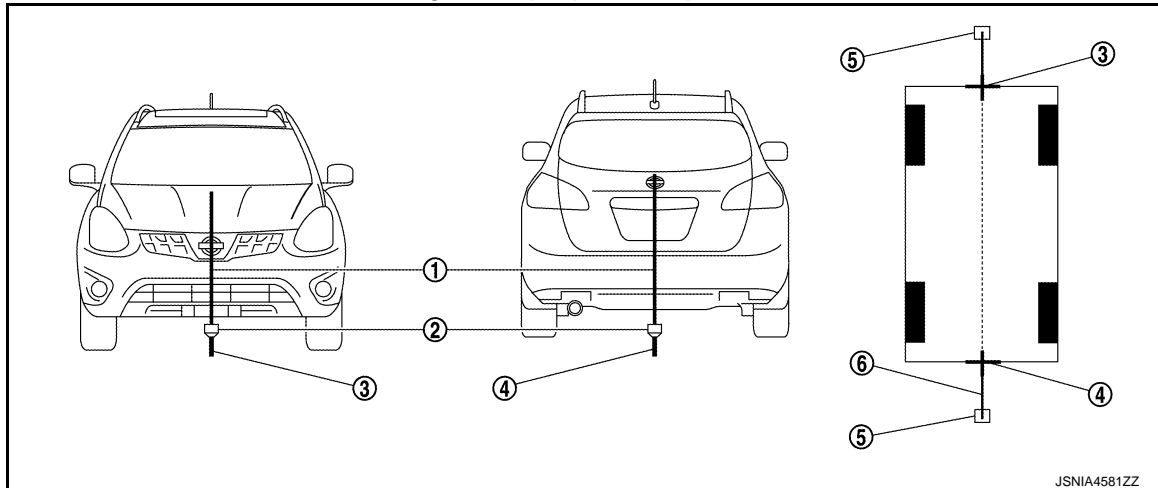
- YES >> On the CONSULT screen, touch "OK" button to complete writing to the around view monitor control unit.
- NO >> GO TO 5.

## 5.PERFORM "CALIBRATING CAMERA IMAGE"

Preparation of target line

1. Hang a string with a weight as shown in the figure. Put the points FM0, RM0 (mark) on the ground at the center of the vehicle front end and rear end with white packing tape or a pen.
2. Route the vinyl string under the vehicle, and then pull and fix it on the point approximately 1.0 m (39.9 in) to the front and rear of the vehicle through the points FM0 and RM0 using packing tape.

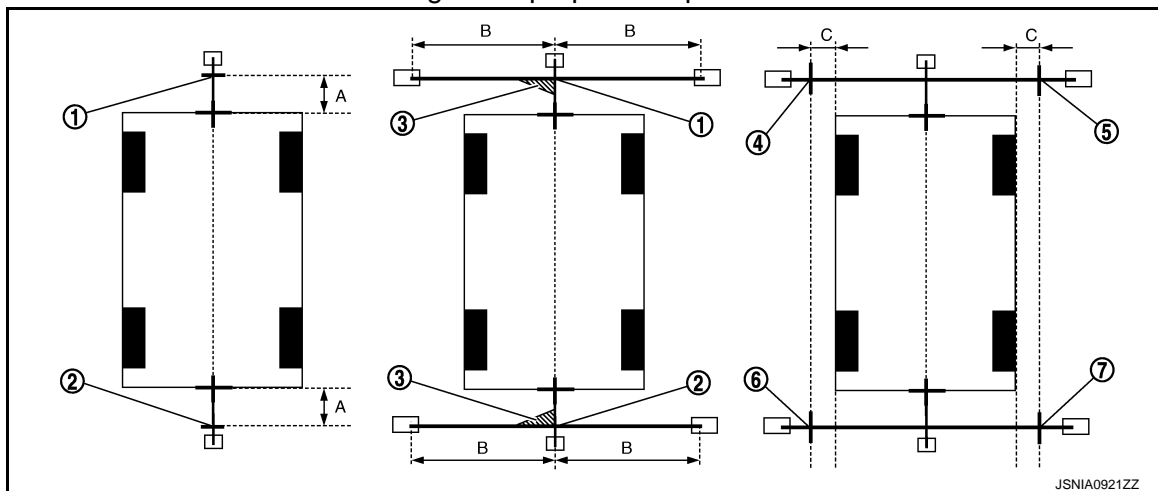
Target line preparation procedure 1



- |                     |   |                     |
|---------------------|---|---------------------|
| 1. Thread           | 2. Weight                                 | 3. Point FM0 (mark) |
| 4. Point RM0 (mark) | 5. Packing tape (to fix the vinyl string) | 6. Vinyl string     |

3. Put the points FM and RM (mark) 75 cm (29.5 in) from the points FM0 and RM0 individually.
4. Route the vinyl string through the points FM and RM using a triangle scale, and then fix it at approximately 1.5 m (59 in) on both sides with packing tape.
5. Put the points FL, FR, RL, and RR (mark) to both right and left [vehicle width / 2 + 30 cm (11.8 in)] from the points FM and RM.

Target line preparation procedure 2



- |                    |                    |                    |
|--------------------|--------------------|--------------------|
| 1. Point FM        | 2. Point RM        | 3. Triangle scale  |
| 4. Point FL (mark) | 5. Point FR (mark) | 6. Point RL (mark) |
|                    |                    | 7. Point RR (mark) |

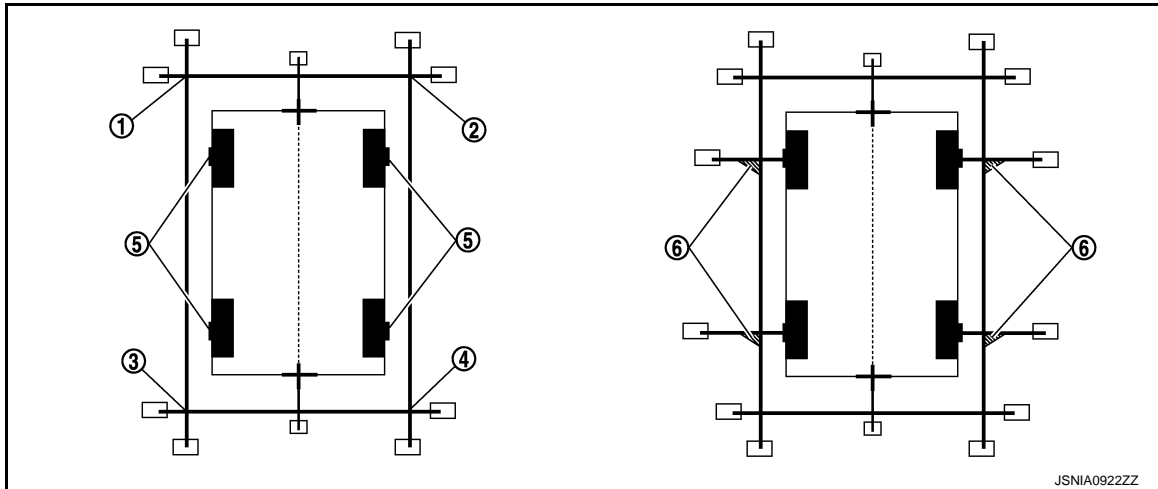
# CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

< BASIC INSPECTION >

[DISPLAY AUDIO]

7. Point RR (mark)
  - A. 75 cm (29.5 in)
  - B. Approx. 1.5 m (59 in)
  - C. 30 cm (11.8 in)  
[Vehicle width/ 2 + 30 cm (11.8 in) from the points FM and RM]
6. Draw the lines of the points FL – RL and FR – RR with vinyl string, and fix it with packing tape.
7. Put a mark on the center of each axle, draw vertical lines to the lines of the points FL – RL and FR – RR from the marks on the center of the axle using a triangle scale, and then fix the lines using packing tape.

Target line preparation procedure 3



- |             |                            |                   |
|-------------|----------------------------|-------------------|
| 1. Point FL | 2. Point FR                | 3. Point RL       |
| 4. Point RR | 5. Center position of axle | 6. Triangle scale |

Perform “Calibrating Camera Image”

CONSULT work support

1. On the CONSULT screen, touch “CALIBRATING CAMERA IMAGE (FRONT CAMERA)”, “CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)”, “CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)”, or “CALIBRATING CAMERA IMAGE (REAR CAMERA)” to accept the selection.

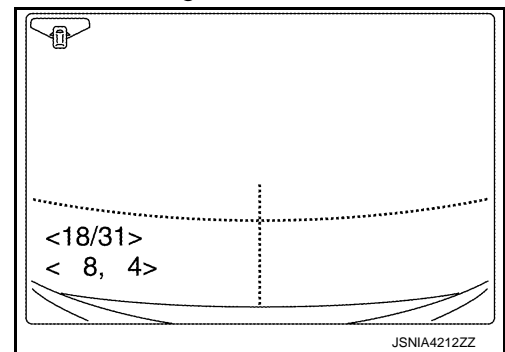
**NOTE:**

To cancel the indication of Incomplete calibration, select items based on the target camera.

2. On the adjustment screen of each camera, adjust the parameter by touching the “AXIS X” button, “AXIS Y” button, and “ROTATE” button to place the calibration marker shown on the camera screen on the target line drawn on the ground.

Adjustment range

Rotation direction (Center dial)	: 31 patterns (16 on the center)
Upper/lower direction (upper/lower switch)	: -22 – 22
Left direction (left/right switch)	: -22 – 22



3. Touch “APPLY” button on the CONSULT screen. “PRCSNG” is displayed and adjustment results are shown on the camera screen.

**CAUTION:**

Check that “PRCSNG” is displayed. Do never perform other operations while “PRCSNG” is displayed.

4. Touch “OK” button on the CONSULT screen. “PRCSNG” is displayed and adjustment results are written to the around view monitor control unit.

**CAUTION:**

Check that “PRCSNG” is displayed. Do never perform other operations while “PRCSNG” is displayed.

>> GO TO 6.

## 6. PERFORM “FINE TUNING OF BIRDS-EYE VIEW”



# CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

< BASIC INSPECTION >

[DISPLAY AUDIO]

This mode is designed to align the boundary between each camera image that could not be aligned in the "Calibrating Camera Image" mode.

CONSULT work support

1. Select "FINE TUNING OF BIRDS-EYE VIEW" by touching CONSULT screen.
2. On the adjustment screen of each camera, adjust the parameter by touching the "AXIS X" button, "AXIS Y" button, and "ROTATE" button to place the calibration marker shown on the camera screen on the target line drawn on the ground.

**NOTE:**

Touch "SELECT" button on the CONSULT screen to select the target camera.

3. Touch "APPLY" button on the CONSULT screen. "PRCSNG" is displayed and adjustment results are shown on the camera screen.

**CAUTION:**

**Check that "PRCSNG" is displayed. Do never perform other operations while "PRCSNG" is displayed.**

4. Touch "OK" button on the CONSULT screen. "PRCSNG" is displayed and adjustment results are written to the around view monitor control unit.

**CAUTION:**

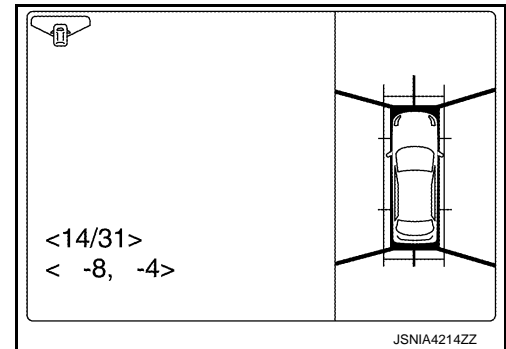
• Check that "PRCSNG" is displayed. Never perform other operations while "PRCSNG" is displayed.

• After pressing the "OK" button, never press buttons other than the "BACK" button.

**NOTE:**

- It can be initialized to the NISSAN factory default condition with "Initialize Camera Image Calibration".
- The adjustment value is cancelled in this mode by performing "Initialize Camera Image Calibration".

>> Calibration end



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AV

# ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

< BASIC INSPECTION >

[DISPLAY AUDIO]

---

## ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

### Description

INFOID:000000008280523

Adjustment of steering angle sensor neutral position is required after removing, installing, or replacing steering angle sensor. (With around view monitor)

### Work Procedure

INFOID:000000008280524

## ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

### 1. CHECK VEHICLE CONDITION

---

Park vehicle with steering wheel in the straight-ahead position.

Is the vehicle parked with steering wheel in the straight-ahead position?

YES >> GO TO 2.

NO >> Park vehicle with steering wheel in the straight-ahead position.

### 2. ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION

---

1. Connect CONSULT to the vehicle.
2. Start CONSULT and select "AVM", "WORK SUPPORT", and "STEERING ANGLE SENSOR ADJUSTMENT" in sequence.
3. Touch "START" to perform steering angle sensor neutral position.  
**CAUTION:**  
**Never touch the steering wheel during steering angle sensor adjustment.**
4. After a lapse of approximately 10 seconds, touch "END".
5. Turn ignition switch OFF. Turn it ON again.

>> GO TO 3.

### 3. SELF-DIAGNOSIS OF AV CONTROL UNIT

---

Perform self-diagnosis of around view monitor control unit to check that DTC "U0428" is not detected.

Is DTC "U1232" detected?

YES >> Perform adjustment again.

NO >> Completion of adjustment.

# U0428 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## DTC/CIRCUIT DIAGNOSIS

### U0428 STEERING ANGLE SENSOR

#### DTC Logic

INFOID:000000008280525

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U0428	ST ANGLE SENSOR CALIBRATION [U0428]	The neutral position adjustment of the steering angle sensor is incomplete.	Adjust neutral position of the steering angle sensor.

#### Diagnosis Procedure

INFOID:000000008280526

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

When U1232 is detected, adjust the neutral position of the steering angle sensor.

>> Perform adjustment of the neutral position of the steering angle sensor. Refer to [AV-86, "CONSULT Function"](#).

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# U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## U1000 CAN COMM CIRCUIT

### Description

INFOID:000000008280527

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-26. "CAN Communication Signal Chart"](#).

### DTC Logic

INFOID:000000008280528

### DTC DETECTION LOGIC

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

### Diagnosis Procedure

INFOID:000000008280529

#### 1. PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check "Self Diagnostic Result" of "AVM".

Is "CAN COMM CIRCUIT" displayed?

- YES >> Refer to [LAN-16. "Trouble Diagnosis Procedure"](#).  
NO >> Refer to [GI-46. "Intermittent Incident"](#).

# U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## U1010 CONTROL UNIT (CAN)

### DTC Logic

INFOID:000000008280530

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Probable malfunction factor
U1010	CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the around view monitor control unit if the malfunction occurs constantly. Refer to <a href="#">AV-154, "Removal and Installation"</a> .

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# U1232 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## U1232 STEERING ANGLE SENSOR

### DTC Logic

INFOID:000000008280531

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1232	ST ANGLE SEN CALIB [1232]	The neutral position registration of the steering angle sensor can not finish.	<ul style="list-style-type: none"><li>Steering angle sensor</li><li>Around view monitor control unit</li></ul>

### Diagnosis Procedure

INFOID:000000008280532

#### 1. REGISTER THE NEUTRAL POSITION OF THE STEERING ANGLE SENSOR

- Turn the ignition switch ON.
- Perform registration of the neutral position of the steering angle sensor. Refer to [AV-86, "CONSULT Function"](#).
- Check "Self Diagnostic Result" of "AVM" with CONSULT. Refer to [AV-86, "CONSULT Function"](#).

Is "ST ANGLE SEN CALIB" detected?

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

#### 2. CHECK STEERING ANGLE SENSOR

Check steering angle sensor.

Is the inspection result normal?

- YES >> Replace around view monitor control unit.  
NO >> Repair or replace malfunctioning parts.

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## POWER SUPPLY AND GROUND CIRCUIT

### AUDIO UNIT

#### AUDIO UNIT : Diagnosis Procedure

INFOID:000000008280533

#### 1.CHECK FUSE

Check that the following fuses of the audio unit are not blown.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	20

Is inspection result OK?

YES >> GO TO 2.

NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

#### 2.CHECK AUDIO UNIT POWER SUPPLY CIRCUIT

Check voltage between the audio unit and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Voltage
Battery power supply	M83	19	OFF	Battery voltage
ACC power supply		7	ACC	Battery voltage

Is inspection result OK?

YES >> GO TO 3.

NO >> Check harness between audio unit and fuse.

#### 3.CHECK GROUND CIRCUIT

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

Signal name	Connector	Terminal	Ignition switch position	Continuity
Ground	M83	20	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

## TEL ADAPTER UNIT

#### TEL ADAPTER UNIT : Diagnosis Procedure

INFOID:000000008280534

#### 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	20

Is the inspection result normal?

YES >> GO TO 2.

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

#### 2.CHECK POWER SUPPLY CIRCUIT

Check voltage between TEL adapter unit harness connector and ground.

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# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B6	1	OFF	Battery voltage
ACC power supply		2	ACC	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between TEL adapter unit and fuse.

## 3.CHECK GROUND CIRCUIT

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B6	4	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

## AROUND VIEW MONITOR CONTROL UNIT

### AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:000000008280535

## 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35

Is inspection result normal?

YES >> GO TO 2.

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

## 2.CHECK POWER SUPPLY CIRCUITS

Check voltage between around view monitor control unit harness connector and ground.

Signal name	Connector	Terminal	Ignition switch position	Value (Approx.)
Battery power supply	M103	2	OFF	Battery voltage

Is inspection result normal?

YES >> GO TO 3.

NO >> Check harness between around view monitor control unit and fuse.

## 3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector.
3. Check continuity between around view monitor control unit harness connector and ground.

Signal name	Connector	Terminal	Ignition switch position	Continuity
Ground	M103	1	OFF	Existed

Is inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.



# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## MICROPHONE SIGNAL CIRCUIT

### Description

INFOID:000000008280536

TEL adapter unit supplies power to microphone. The microphone transmits the sound voice to the TEL adapter unit.

### Diagnosis Procedure

INFOID:000000008280537

#### 1. CHECK CONTINUITY BETWEEN TEL ADAPTER UNIT AND MICROPHONE CIRCUIT

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

TEL adapter unit		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
B6	7	R3	1	Existed
	8		2	
	29		4	

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

TEL adapter unit		Ground	Continuity
Connector	Terminal		
B6	7		Not existed
	29		

Is inspection result OK?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK VOLTAGE MICROPHONE VCC

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

TEL adapter unit (+)		Ground (-)	Voltage (Approx.)
Connector	Terminal		
B6	29	Ground	5.0 V

Is inspection result OK?

YES >> GO TO 3.

NO >> Replace TEL adapter unit. Refer to [AV-151, "Exploded View"](#).

#### 3. CHECK MICROPHONE SIGNAL

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

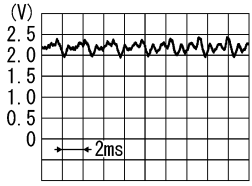
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# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

TEL adapter unit				Condition	Reference value
(+)		(-)			
Connector	Terminal	Connector	Terminal		
B6	7	B6	8	Give a voice.	 <p style="text-align: right; font-size: small;">PKIB5037J</p>

Is inspection result OK?

- YES >> Replace TEL adapter unit. Refer to [AV-151, "Exploded View"](#).
- NO >> Replace microphone. Refer to [AV-153, "Exploded View"](#).

# CONTROL SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## CONTROL SIGNAL CIRCUIT

### Description

INFOID:000000008280538

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

### Diagnosis Procedure

INFOID:000000008280539

#### 1. CHECK CONTINUITY CONTROL SIGNAL CIRCUIT

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

TEL adapter unit		Ground	Continuity
Connector	Terminals		
B6	21	Ground	Existed
	22		
	23		
	24		

Is the inspection result normal?

- YES >> Replace TEL adapter unit. Refer to [AV-151, "Exploded View"](#).  
NO >> Repair harness or connector.

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# CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## CAMERA IMAGE SIGNAL CIRCUIT

### Description

INFOID:000000008280540

- The audio unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the audio unit when power is supplied from the audio unit.

### Diagnosis Procedure

INFOID:000000008280541

#### 1. CHECK CONTINUITY CAMERA POWER SUPPLY CIRCUIT

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

Audio unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M85	35	D188	1	Existed

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

Audio unit		Ground	Continuity
Connector	Terminal		
M85	35		Not existed

Is inspection result normal?

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

#### 2. CHECK VOLTAGE CAMERA POWER SUPPLY

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

(+)		(-)	Condition	Voltage (Approx.)
Audio unit				
Connector	Terminal			
M85	35	Ground	Shift position is in "R".	6.0 V

Is inspection result normal?

- YES >> GO TO 3.  
NO >> Replace audio unit. Refer to [AV-146, "Removal and Installation"](#).

#### 3. CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

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

Audio unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M85	34	D188	3	Existed

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

# CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

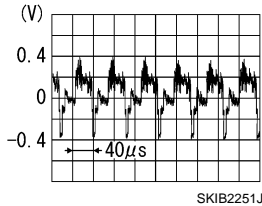
Audio unit		Ground	Continuity
Connector	Terminal		Not existed
M85	34		

Is inspection result normal?

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

## 4. CHECK CAMERA IMAGE SIGNAL

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

(+)		(-)	Condition	Reference value
Audio unit				
Connector	Terminal			
M85	34	Ground	At camera image is displayed.	

Is inspection result normal?

- YES >> Replace audio unit. Refer to [AV-146, "Removal and Installation"](#).
- NO >> Replace rear view camera. Refer to [AV-160, "Removal and Installation"](#).

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AV

# AV SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## AV SWITCH SIGNAL CIRCUIT

### Description

INFOID:000000008280542

The AV switch signal is transmitted from the audio unit to the around view monitor control unit and used to request the disabling of a camera image.

### Diagnosis Procedure

INFOID:000000008280543

#### 1. CHECK CONTINUITY AV SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect audio unit connector and around view monitor control unit connector.
3. Check continuity between audio unit harness connector and around view monitor control unit harness connector.

Audio unit		Around view monitor control unit		Continuity
Connector	Terminal	Connector	Terminal	
M85	59	M103	18	Existed

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

Audio unit		Ground	Continuity
Connector	Terminal		
M85	59		Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK AROUND VIEW MONITOR CONTROL UNIT VOLTAGE

1. Connect audio unit connector and around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(-)	Condition	Voltage (Approx.)
Connector	Terminal			
M103	18	Ground	Pressing the "FM·AM", "DISC" or "AUX" switch	0 V
			Except for above	5.0 V

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to [AV-154, "Removal and Installation"](#).

NO >> Replace audio unit. Refer to [AV-146, "Removal and Installation"](#).

# CAMERA SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## CAMERA SWITCH SIGNAL CIRCUIT

### Description

INFOID:000000008280544

The camera switch signal is transmitted from the audio unit to the around view monitor control unit and used to send information of the pressing of "DISP" switch.

### Diagnosis Procedure

INFOID:000000008280545

#### 1. CHECK CONTINUITY CAMERA SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect audio unit connector and around view monitor control unit connector.
3. Check continuity between audio unit harness connector and around view monitor control unit harness connector.

Audio unit		Around view monitor control unit		Continuity
Connector	Terminal	Connector	Terminal	
M85	61	M103	9	Existed

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

Audio unit		Ground	Continuity
Connector	Terminal		
M85	61		Not existed

Is the inspection result normal?

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

#### 2. CHECK AROUND VIEW MONITOR CONTROL UNIT VOLTAGE

1. Connect audio unit connector and around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+) Around view monitor control unit		(-)	Condition	Voltage (Approx.)
Connector	Terminal			
M103	9	Ground	Pressing the "FM-AM", "DISC" or "AUX" switch	0 V
			Except for above	5.0 V

Is the inspection result normal?

- YES >> Replace around view monitor control unit. Refer to [AV-154, "Removal and Installation"](#).  
NO >> Replace audio unit. Refer to [AV-146, "Removal and Installation"](#).

# IMAGE SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## IMAGE SWITCH SIGNAL CIRCUIT

### Description

INFOID:000000008280546

The image switch signal is transmitted from the around view monitor control unit to the audio unit and used to switch an image displayed on the audio unit to a camera image.

### Diagnosis Procedure

INFOID:000000008280547

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

1. Turn ignition switch OFF.
2. Disconnect audio unit connector and around view monitor control unit connector.
3. Check continuity between audio unit harness connector and around view monitor control unit harness connector.

Audio unit		Around view monitor control unit		Continuity
Connector	Terminal	Connector	Terminal	
M85	58	M103	14	Existed

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

Audio unit		Ground	Continuity
Connector	Terminal		
M85	58		Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK AROUND VIEW MONITOR CONTROL UNIT VOLTAGE

1. Connect audio unit connector and around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(-)	Condition	Voltage (Approx.)
Connector	Terminal			
M85	58	Ground	Pressing the "FM·AM", "DISC" or "AUX" switch	0 V
			Except for above	5.0 V

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to [AV-154, "Removal and Installation"](#).

NO >> Replace audio unit. Refer to [AV-146, "Removal and Installation"](#).



# STEERING SWITCH SIGNAL A CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## STEERING SWITCH SIGNAL A CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

### Description

INFOID:000000008280548

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

### Diagnosis Procedure

INFOID:000000008280549

#### 1. CHECK STEERING SWITCH SIGNAL A (STEERING SWITCH TO TEL ADAPTER UNIT) CIRCUIT

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

TEL adapter unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
B6	12	M33	24	Existed

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

TEL adapter unit		Ground	Continuity
Connector	Terminal		
B6	12		Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace spiral cable.

#### 3. CHECK TEL ADAPTER UNIT VOLTAGE

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

(+)		(-)		Voltage (Approx.)
TEL adapter unit				
Connector	Terminal	Connector	Terminal	
B6	12	B6	14	5.0 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace TEL adapter unit. Refer to [AV-151, "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-130, "Component Inspection"](#).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace steering switch. Refer to [AV-159, "Exploded View"](#).

# STEERING SWITCH SIGNAL A CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

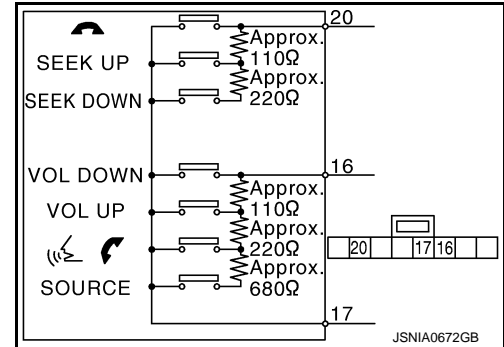
## Component Inspection

INFOID:000000008280550

Measure the resistance between the steering switch connector terminals 16 to 17 and 20 to 17.

Standard

Steering switch		Condition	Resistance Ω
Terminal	Terminal		
16	17	SOURCE switch ON	1000 – 1020
		switch ON	327 – 333
		VOL UP switch ON	109 – 111
		VOL DOWN switch ON	0
20	17	SEEK DOWN switch ON	327 – 333
		SEEK UP switch ON	109 – 111
		switch ON	0



# STEERING SWITCH SIGNAL B CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## STEERING SWITCH SIGNAL B CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

### Description

INFOID:000000008280551

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

### Diagnosis Procedure

INFOID:000000008280552

#### 1. CHECK STEERING SWITCH SIGNAL B (STEERING SWITCH TO TEL ADAPTER UNIT) CIRCUIT

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

TEL adapter unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
B6	13	M33	32	Existed

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

TEL adapter unit		Ground	Continuity
Connector	Terminal		
B6	13		Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace spiral cable.

#### 3. CHECK TEL ADAPTER UNIT VOLTAGE

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

(+)		(-)		Voltage (Approx.)
TEL adapter unit				
Connector	Terminal	Connector	Terminal	
B6	13	B6	14	5.0 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace TEL adapter unit. Refer to [AV-151, "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-132, "Component Inspection"](#).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace steering switch. Refer to [AV-159, "Exploded View"](#).

# STEERING SWITCH SIGNAL B CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

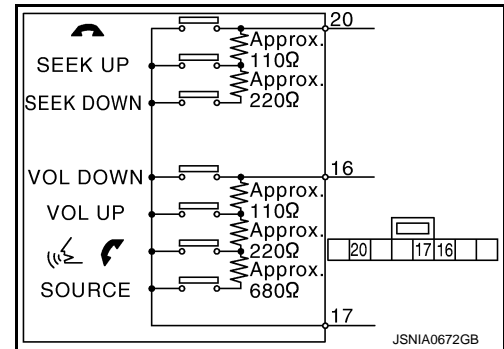
## Component Inspection

INFOID:000000008280553

Measure the resistance between the steering switch connector terminals 16 to 17 and 20 to 17.

Standard

Steering switch		Condition	Resistance Ω
Terminal	Terminal		
16	17	SOURCE switch ON	1000 – 1020
		SEEK DOWN switch ON	327 – 333
		VOL UP switch ON	109 – 111
		VOL DOWN switch ON	0
20	17	SEEK DOWN switch ON	327 – 333
		SEEK UP switch ON	109 – 111
		SOURCE switch ON	0



JSNIA0672GB

# STEERING SWITCH SIGNAL GND CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## STEERING SWITCH SIGNAL GND CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

### Description

INFOID:000000008280554

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

### Diagnosis Procedure

INFOID:000000008280555

#### 1. CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

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

TEL adapter unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
B6	14	M33	31	Existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace spiral cable.

#### 3. CHECK GROUND CIRCUIT

1. Connect TEL adapter unit connector.
2. Check continuity between TEL adapter unit harness connector and ground.

TEL adapter unit		Ground	Continuity
Connector	Terminal		
B6	14		Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace TEL adapter unit. Refer to [AV-151, "Exploded View"](#).

#### 4. CHECK STEERING SWITCH

Check steering switch. Refer to [AV-133, "Component Inspection"](#).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace steering switch. Refer to [AV-159, "Exploded View"](#)

### Component Inspection

INFOID:000000008280556



Measure the resistance between the steering switch connector terminals 16 to 17 and 20 to 17.

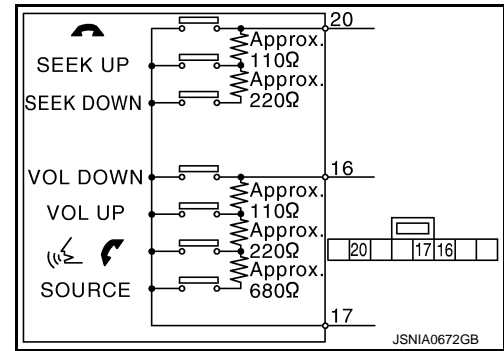
# STEERING SWITCH SIGNAL GND CIRCUIT (STEERING SWITCH TO TEL ADAPTER UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

Standard

Steering switch		Condition	Resistance Ω
Terminal	Terminal		
16	17	SOURCE switch ON	1000 – 1020
		 switch ON	327 – 333
		VOL UP switch ON	109 – 111
		VOL DOWN switch ON	0
20	17	SEEK DOWN switch ON	327 – 333
		SEEK UP switch ON	109 – 111
		 switch ON	0



# STEERING SWITCH SIGNAL A CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## STEERING SWITCH SIGNAL A CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

### Description

INFOID:000000008280557

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

### Diagnosis Procedure

INFOID:000000008280558

#### 1. CHECK STEERING SWITCH SIGNAL A CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

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

Audio unit		TEL adapter unit		Continuity
Connector	Terminal	Connector	Terminal	
M83	6	B6	17	Existed

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

Audio unit		Ground	Continuity
Connector	Terminal		
M83	6		Not existed

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK AUDIO UNIT VOLTAGE

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

(+)		(-)		Voltage (Approx.)
Audio unit				
Connector	Terminal	Connector	Terminal	
M83	6	M83	15	3.3 V

Is inspection result normal?

YES >> Replace TEL adapter unit. Refer to [AV-151, "Exploded View"](#).

NO >> Replace audio unit. Refer to [AV-146, "Removal and Installation"](#).

# STEERING SWITCH SIGNAL B CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## STEERING SWITCH SIGNAL B CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

### Description

INFOID:000000008280559

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

### Diagnosis Procedure

INFOID:000000008280560

#### 1. CHECK STEERING SWITCH SIGNAL B CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

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

Audio unit		TEL adapter unit		Continuity
Connector	Terminal	Connector	Terminal	
M83	16	B6	18	Existed

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

Audio unit		Ground	Continuity
Connector	Terminal		
M83	16		Not existed

#### Is inspection result normal?

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

#### 2. CHECK AUDIO UNIT VOLTAGE

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

(+)		(-)		Voltage (Approx.)
Audio unit				
Connector	Terminal	Connector	Terminal	
M83	16	M83	15	3.3 V

#### Is inspection result normal?

- YES >> Replace TEL adapter unit. Refer to [AV-151, "Exploded View"](#).  
 NO >> Replace audio unit. Refer to [AV-146, "Removal and Installation"](#).



# STEERING SWITCH SIGNAL GND CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[DISPLAY AUDIO]

## STEERING SWITCH SIGNAL GND CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

### Description

INFOID:000000008280561

- Transmits the steering switch signal to TEL adapter unit.
- Transmits the steering switch signal to audio unit via TEL adapter unit.

### Diagnosis Procedure

INFOID:000000008280562

#### 1. CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT (TEL ADAPTER UNIT TO AUDIO UNIT)

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

Audio unit		TEL adapter unit		Continuity
Connector	Terminal	Connector	Terminal	
M83	15	B6	19	Existed

#### Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK GROUND CIRCUIT

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

Audio unit		Ground	Continuity
Connector	Terminal		
M83	15		Existed

#### Is inspection result normal?

YES >> Replace TEL adapter unit. Refer to [AV-151, "Exploded View"](#).

NO >> Replace audio unit. Refer to [AV-146, "Removal and Installation"](#).

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AV

# AUDIO SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO]

## SYMPTOM DIAGNOSIS

### AUDIO SYSTEM SYMPTOMS

#### Symptom Table

INFOID:000000008280572

#### AUDIO SYSTEM

Symptoms	Check items	Possible malfunction location / Action to take
Audio unit does not start.	—	Audio unit power supply and ground circuit. Refer to <a href="#">AV-119, "AUDIO UNIT : Diagnosis Procedure"</a> .
No sound comes out.	No sound from all speakers.	Audio unit power supply and ground circuit. Refer to <a href="#">AV-119, "AUDIO UNIT : Diagnosis Procedure"</a> .
	Only a certain speaker (front right, front left, rear right, or rear left) does not output sound.	<ul style="list-style-type: none"> <li>Poor connector connection of speaker.</li> <li>Sound signal circuit malfunction between audio unit and speaker.</li> <li>Malfunction in speaker.</li> <li>Malfunction in audio unit.</li> </ul>
Noise is mixed with audio.	Noise comes out from all speaker.	Malfunction in audio unit.
	Noise comes out only from a certain speaker (front right, front left, rear right, or rear left).	<ul style="list-style-type: none"> <li>Poor connector connection of speaker.</li> <li>Sound signal circuit malfunction between audio unit and speaker.</li> <li>Malfunction in speaker.</li> <li>Poor installation of speaker (e.g. backlash and looseness)</li> <li>Malfunction in audio unit.</li> </ul>
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	<ul style="list-style-type: none"> <li>Poor connector connection of antenna or antenna feeder.</li> <li>Loose antenna base mounting nut. Refer to <a href="#">AV-150, "Exploded View"</a>.</li> </ul>
Radio is not received or poor reception.	<ul style="list-style-type: none"> <li>Other audio sounds are normal.</li> <li>Any radio cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no obstacles generating external noises).</li> </ul>	<ul style="list-style-type: none"> <li>Antenna amp. ON signal circuit malfunction.</li> <li>Poor connector connection of antenna or antenna feeder.</li> <li>Loose antenna base mounting nut. Refer to <a href="#">AV-150, "Exploded View"</a>.</li> </ul>
Satellite radio is not received.	It change to satellite radio mode.	<ul style="list-style-type: none"> <li>Poor connector connection of audio unit.</li> <li>Loose antenna base mounting nut. Refer to <a href="#">AV-150, "Exploded View"</a>.</li> </ul>
	It does not change to satellite radio mode.	Audio unit power supply and ground circuit. Refer to <a href="#">AV-119, "AUDIO UNIT : Diagnosis Procedure"</a> .

#### RELATED TO USB

##### NOTE:

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

Symptoms	Check items	Possible malfunction location / Action to take
iPod® or USB memory can not be recognized.	—	<ul style="list-style-type: none"> <li>USB harness malfunction.</li> <li>USB connector malfunction.</li> </ul>

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

#### RELATED TO CAMERA

##### Rear View Monitor

# AUDIO SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO]

Symptoms	Check items	Probable malfunction location
Camera image is not shown.	The guide line display is normal.	Camera image signal circuit. Refer to <a href="#">AV-124, "Diagnosis Procedure"</a> .
Camera image does not switch.	"Reverse" is not turned ON on "Vehicle Signals" screen of "Confirmation/Adjustment".	Reverse signal circuit malfunction.
	"Reverse" is turned ON on "Vehicle Signals" screen of "Confirmation/Adjustment".	Replace audio unit. Refer to <a href="#">AV-146, "Removal and Installation"</a> .

## Around View Monitor

Symptoms	Check items	Probable malfunction location / Action to take
It does not switch to camera image even when the "DISP" switch is pressed or the shift position is in "R".	A beeping sound is not generated when the "DISP" switch is pressed.	Camera switch signal circuit. Refer to <a href="#">AV-127, "Diagnosis Procedure"</a> .
	A beeping sound is generated when the "DISP" switch is pressed.	Image switch signal circuit. Refer to <a href="#">AV-128, "Diagnosis Procedure"</a> .
The screen switches when pressing the "DISP" switch or the shift position is in "R", however, all views are not displayed.	—	Camera image signal circuit. Refer to <a href="#">AV-124, "Diagnosis Procedure"</a> .
It cannot be switched to rear view monitor even when the shift position is in "R".	The front view image is normal.	Reverse signal circuit (around view monitor control unit).
The predictive course line display in front view and rear view is malfunctioning.	—	Perform "Self Diagnostic Result" of "AVM" with CONSULT. Refer to <a href="#">AV-86, "CONSULT Function"</a> .
<ul style="list-style-type: none"> <li>• The front view screen is not displayed.</li> <li>• The front of Birds-Eye view screen is not displayed.</li> </ul>	—	
<ul style="list-style-type: none"> <li>• The rear view screen is not displayed.</li> <li>• The rear of Birds-Eye view screen is not displayed.</li> </ul>	—	
<ul style="list-style-type: none"> <li>• The front-side screen is not displayed.</li> <li>• The passenger side of Birds-Eye view screen is not displayed.</li> </ul>	—	
The driver side of Birds-eye view screen is not displayed.	—	
When shift position is in other than "R", the front-side and front screen or the Birds-Eye view and front screen remain displaying even if the vehicle speed increases.	—	
	—	



## RELATED TO STEERING SWITCH

With Around View Monitor

# AUDIO SYSTEM SYMPTOMS

< SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO]

Symptoms	Possible malfunction location / Action to take
All steering switches are not operated.	Steering switch signal ground circuit. (steering switch to TEL adapter unit) Refer to <a href="#">AV-133, "Diagnosis Procedure"</a> .
"SOURCE", "SEEK UP", "VOL UP", "SEEK DOWN" and "VOL DOWN" switches are not operated.	Steering switch signal ground circuit. (TEL adapter unit to audio unit) Refer to <a href="#">AV-137, "Diagnosis Procedure"</a> .
Only specified switch cannot be operated.	Replace steering switch. Refer to <a href="#">AV-159, "Exploded View"</a> .
"  ", "SEEK UP" and "SEEK DOWN" switches are not operated.	Steering switch signal A circuit. (steering switch to TEL adapter unit) Refer to <a href="#">AV-129, "Diagnosis Procedure"</a> .
"SEEK UP" and "SEEK DOWN" switches are not operated.	Steering switch signal A circuit. (TEL adapter unit to audio unit) Refer to <a href="#">AV-135, "Diagnosis Procedure"</a> .
"  ", "SOURCE", "VOL UP" and "VOL DOWN" switches are not operated.	Steering switch signal B circuit. (steering switch to TEL adapter unit) Refer to <a href="#">AV-131, "Diagnosis Procedure"</a> .
"SOURCE", "VOL UP" and "VOL DOWN" switches are not operated.	Steering switch signal B circuit. (TEL adapter unit to audio unit) Refer to <a href="#">AV-136, "Diagnosis Procedure"</a> .

## Without Around View Monitor

Symptoms	Possible malfunction location / Action to take
All steering switches are not operated.	Steering switch signal ground circuit. (steering switch to audio unit) Refer to <a href="#">AV-133, "Diagnosis Procedure"</a> .
"SOURCE", "SEEK UP", "VOL UP", "PWR", "SEEK DOWN", "VOL DOWN" switches are not operated.	Steering switch signal ground circuit. Refer to <a href="#">AV-137, "Diagnosis Procedure"</a> .
Only specified switch cannot be operated.	Replace steering switch. Refer to <a href="#">AV-159, "Exploded View"</a> .
"SOURCE", "SEEK UP", "VOL UP" switches are not operated.	Steering switch signal A circuit. (steering switch to audio unit) Refer to <a href="#">AV-129, "Diagnosis Procedure"</a> .
"PWR", "SEEK DOWN", "VOL DOWN" switches are not operated.	Steering switch signal B circuit. (steering switch to audio unit) Refer to <a href="#">AV-131, "Diagnosis Procedure"</a> .

# HANDS-FREE PHONE SYMPTOMS

< SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO]

## HANDS-FREE PHONE SYMPTOMS

### Symptom Table

INFOID:000000008280573

#### RELATED TO HANDS-FREE PHONE (EXCEPT FOR MEXICO)

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

#### Check Compatibility

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.

Symptoms	Check items	Possible malfunction location/Action to take
Does not recognize cellular phone connection.	Repeat the registration of cellular phone.	TEL adapter unit
Hands-free phone cannot be established.	<ul style="list-style-type: none"> <li>• Both the reception and the speech cannot be performed.</li> <li>• Audio cannot be operated by steering switch.</li> </ul>	<ul style="list-style-type: none"> <li>• TEL adapter unit power supply and ground circuit. Refer to <a href="#">AV-119, "TEL ADAPTER UNIT : Diagnosis Procedure"</a>.</li> <li>• Control signal circuit. Refer to <a href="#">AV-123, "Diagnosis Procedure"</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>• Both the reception and the speech cannot be performed.</li> <li>• Audio can be operated by steering switch.</li> </ul>	AV communication circuit between audio unit and TEL adapter unit.
The other party's voice cannot be heard by hands-free phone.	Audio system sound is normal.	Sound signal (TEL voice, TEL guidance) circuit
	Audio system sound does not sound.	Refer to <a href="#">AV-138, "Symptom Table"</a> .
Originating sound is not heard by the other party with hands-free phone communication.	Voice recognition function is normal.	TEL adapter unit
	Voice recognition function does not work.	Microphone signal circuit. Refer to <a href="#">AV-121, "Diagnosis Procedure"</a> .

#### RELATED TO HANDS-FREE PHONE (FOR MEXICO)



# HANDS-FREE PHONE SYMPTOMS

< SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO]

Symptoms	Check items	Possible malfunction location/Action to take
Does not recognize cellular phone connection.	Repeat the registration of cellular phone.	TEL adapter unit
Hands-free phone cannot be established.	<ul style="list-style-type: none"> <li>Both the reception and the speech cannot be performed.</li> <li>Audio cannot be operated by steering switch.</li> </ul>	<ul style="list-style-type: none"> <li>TEL adapter unit power supply and ground circuit. Refer to <a href="#">AV-119, "TEL ADAPTER UNIT : Diagnosis Procedure"</a>.</li> <li>Control signal circuit Refer to <a href="#">AV-123, "Diagnosis Procedure"</a>.</li> </ul>
	<ul style="list-style-type: none"> <li>Both the reception and the speech cannot be performed.</li> <li>Audio can be operated by steering switch.</li> </ul>	AV communication circuit between audio unit and TEL adapter unit.
The other party's voice cannot be heard by hands-free phone.	Audio system sound is normal.	Sound signal (TEL voice, TEL guidance) circuit
	Audio system sound does not sound.	Refer to <a href="#">AV-138, "Symptom Table"</a> .
Originating sound is not heard by the other party with hands-free phone communication.	Voice recognition function is normal.	TEL adapter unit
	Voice recognition function does not work.	Microphone signal circuit. Refer to <a href="#">AV-121, "Diagnosis Procedure"</a> .

## RELATED TO STEERING SWITCH

Symptoms	Possible malfunction location / Action to take
All steering switches are not operated.	Steering switch signal ground circuit. (steering switch to TEL adapter unit) Refer to <a href="#">AV-133, "Diagnosis Procedure"</a> .
Only specified switch cannot be operated.	Replace steering switch. Refer to <a href="#">AV-159, "Exploded View"</a> .
"  , "SOURCE", "VOL UP" and "VOL DOWN" switches are not operated.	Steering switch signal A circuit. (steering switch to TEL adapter unit) Refer to <a href="#">AV-129, "Diagnosis Procedure"</a> .
"SEEK UP" and "SEEK DOWN" and "  " switches are not operated.	Steering switch signal B circuit. (steering switch to TEL adapter unit) Refer to <a href="#">AV-131, "Diagnosis Procedure"</a> .

# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO]

## NORMAL OPERATING CONDITION

### Description

INFOID:000000008280574

#### RELATED TO AUDIO

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

**NOTE:**

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA) or could be incorrectly mastered by the customer on a computer.
- Check that 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.

Symptoms	Cause and Counter measure
Cannot play	Check if the disc or USB device was inserted correctly.
	Check that the disc 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.
	Files with extensions other than “.MP3 (.mp3)”, “.WMA (.wma)”, “.AAC (.aac)” or “.M4A (.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 compressed audio 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 disc is scratched or dirty.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the disc or USB device, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width, etc., might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities of data, such as for high bit rate data.
Move immediately to the next song when playing.	If an unsupported compressed audio file has been given a supported extension like “.MP3”, or when play is prohibited by copyright protection, the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the writing software, so the files might not play in the desired order.
	Random/Shuffle may be active on the audio system or on a USB device.
Poor reception only from a certain radio broadcast station.	Check incoming radio wave signal strength of applicable broadcast station.
Buzz/rattle sound from speaker	The majority of rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the rattle.

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

**NOTE:**

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

#### RELATED TO TELEPHONE (WITH HANDS-FREE PHONE SYSTEM)

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO]

Symptoms	Cause and Counter measure
System fails to interpret the command correctly.	1. Ensure that the command format 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. Refer to <a href="#">AV-84, "Diagnosis Description"</a> .
The system consistently selects the wrong entry from the phone book.	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the "List Names" command.
	2. Replace one of the names being confused with a new name.

### RELATED TO HANDS-FREE PHONE (EXCEPT FOR MEXICO)

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

### RELATED TO HANDS-FREE PHONE (FOR MEXICO)



# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[DISPLAY AUDIO]

Symptom	Cause and Counter measure
Cannot use hands-free phone	Customer will not be able to use a hands-free phone under the following conditions. <ul style="list-style-type: none"> <li>The vehicle is outside of the telephone service area.</li> <li>The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area.</li> <li>The cellular phone is locked to prevent it from being dialed.</li> </ul> <b>NOTE:</b> While a cellular phone is connected through the Bluetooth wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth Hands-Free Phone System cannot charge cellular phones.
The other party's voice cannot be heard by hands-free phone.	When the radio wave condition is not ideal or ambient sound is too loud, it may be difficult to hear the other person's voice during a call.
Poor sound quality	Do not place the cellular phone in an area surrounded by metal or far away from the in-vehicle phone module to prevent tone quality degradation and wireless connection disruption.

## RELATED TO SONAR

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

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## REMOVAL AND INSTALLATION

### AUDIO UNIT

#### Removal and Installation

INFOID:000000008280575

#### REMOVAL

1. Remove cluster lid C. Refer to [JP-13, "Exploded View"](#).
2. Remove audio unit mounting screws.
3. Pull out audio unit, remove harness clip, and then disconnect antenna feeder and harness connectors.
4. Remove audio unit and bracket as a unit.
5. Remove brackets from audio unit.

#### INSTALLATION

Install in the reverse order of removal.

# FRONT SPEAKER

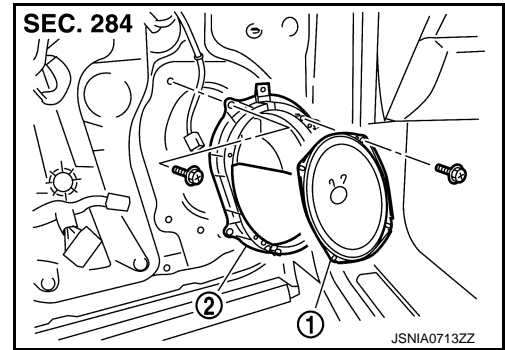
< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO]

## FRONT SPEAKER

### Exploded View

INFOID:000000008280576



1. Front speaker
2. Bracket

### Removal and Installation

INFOID:000000008280577

#### REMOVAL

1. Remove front door finisher. Refer to [INT-12. "FRONT DOOR FINISHER : Exploded View"](#).
2. Remove front door speaker from bracket.

#### INSTALLATION

Install in the reverse order of removal.

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# REAR SPEAKER

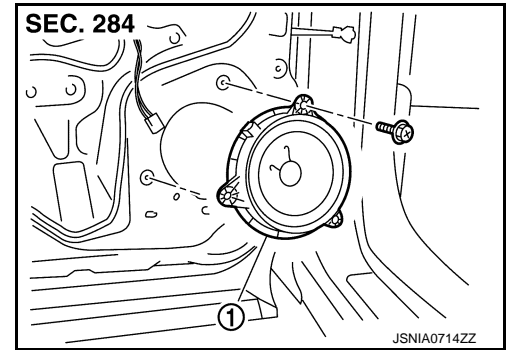
< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO]

## REAR SPEAKER

### Exploded View

INFOID:000000008280578



1. Rear speaker

### Removal and Installation

INFOID:000000008280579

#### REMOVAL

1. Remove rear door finisher. Refer to [INT-15. "REAR DOOR FINISHER : Exploded View"](#).
2. Remove rear speaker.

#### INSTALLATION

Install in the reverse order of removal.

# TWEETER

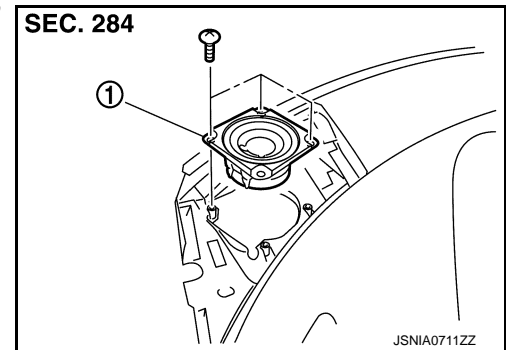
< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO]

## TWEETER

### Exploded View

INFOID:000000008280580



1. Tweeter

### Removal and Installation

INFOID:000000008280581

#### REMOVAL

1. Remove instrument panel. Refer to [JP-13, "Exploded View"](#).
2. Remove tweeter from instrument panel.

#### INSTALLATION

Install in the reverse order of removal.

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# RADIO & SATELLITE RADIO ANTENNA

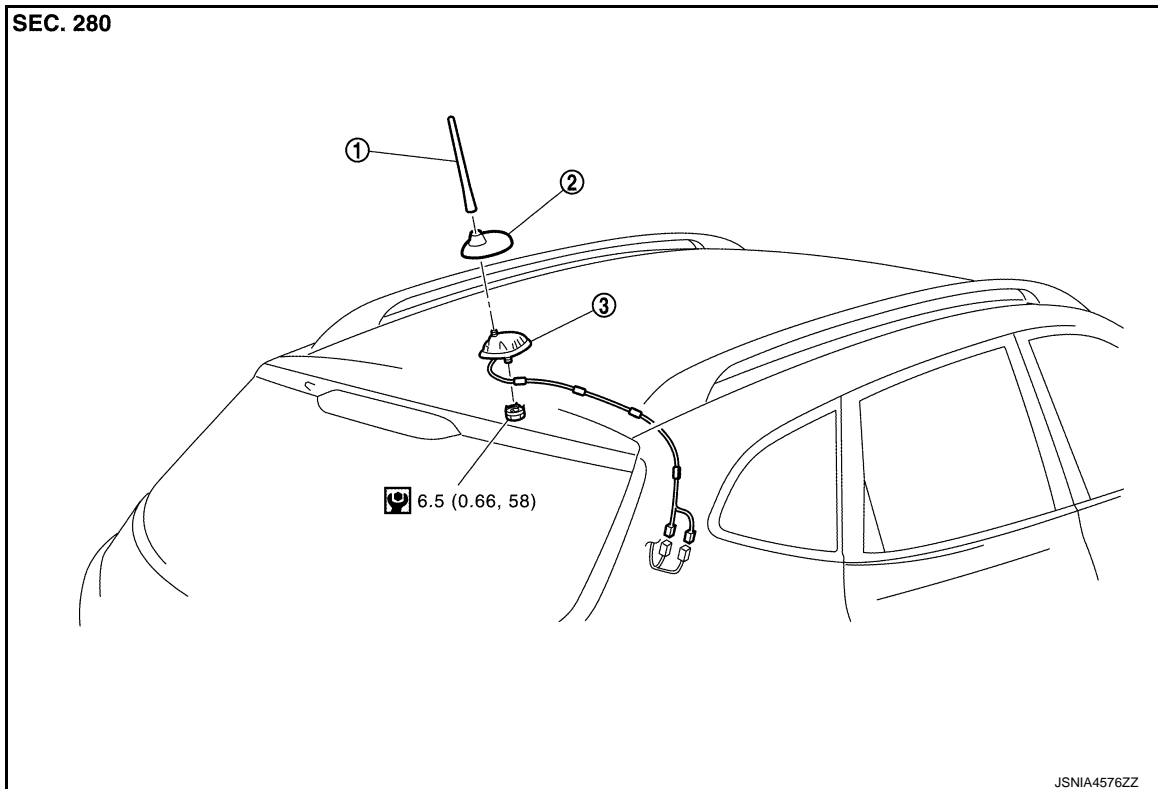
< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO]

## RADIO & SATELLITE RADIO ANTENNA

### Exploded View

INFOID:000000008280582



1. Antenna rod

2. Cover

3. Antenna base

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

### Removal and Installation

INFOID:000000008280583

#### REMOVAL

1. Remove headlining assembly. Refer to [INT-24. "NORMAL ROOF : Exploded View"](#) (normal roof models) or [INT-27. "SUNROOF : Exploded View"](#) (sunroof models).
2. Remove nuts, and then remove antenna rod (1), cover (2), and antenna base (3).

#### INSTALLATION

Install in the reverse order of removal.

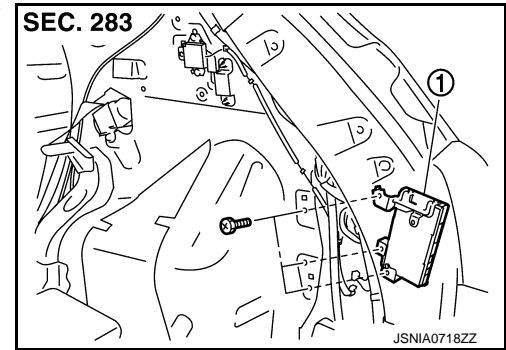
#### CAUTION:

**If the antenna base mounting nut is tightened looser than the specified torque, then this will lower the sensitivity of the antenna. On the other hand, if the nut is tightened tighter than the specified torque, then this will deform the roof panel.**

## TEL ADAPTER UNIT

### Exploded View

INFOID:000000008280584



1. TEL adapter unit

### Removal and Installation

INFOID:000000008280585

#### REMOVAL

1. Remove luggage side lower finisher (RH). Refer to [INT-31, "Exploded View"](#).
2. Remove TEL adapter unit.

#### INSTALLATION

Install in the reverse order of removal.

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# TEL ANTENNA

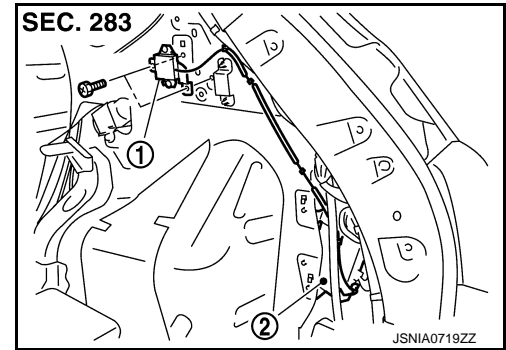
< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO]

## TEL ANTENNA

### Exploded View

INFOID:000000008280586



1. TEL antenna
2. TEL adapter unit

### Removal and Installation

INFOID:000000008280587

#### REMOVAL

1. Remove luggage side upper finisher (RH). Refer to [INT-31. "Exploded View"](#).
2. Remove TEL antenna.

#### INSTALLATION

Install in the reverse order of removal.



# MICROPHONE

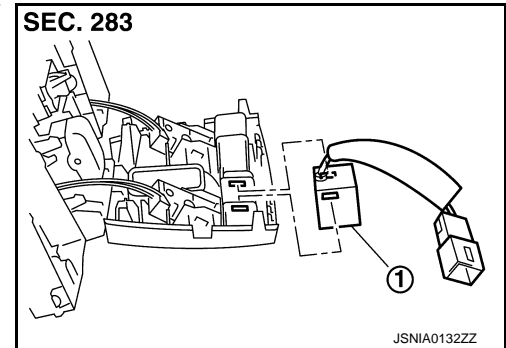
< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO]

## MICROPHONE

### Exploded View

INFOID:000000008280588



1. Microphone

### Removal and Installation

INFOID:000000008280589

#### REMOVAL

1. Remove map lamp assembly. Refer to [INT-24, "NORMAL ROOF : Exploded View"](#) (normal roof models) or [INT-27, "SUNROOF : Exploded View"](#) (sunroof models).
2. Remove microphone from map lamp assembly.

#### INSTALLATION

Install in the reverse order of removal.

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# AROUND VIEW MONITOR CONTROL UNIT

< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO]

## AROUND VIEW MONITOR CONTROL UNIT

### Removal and Installation

INFOID:000000008280590

#### REMOVAL

1. Remove cluster lid D. Refer to [IP-14, "Removal And Installation"](#).
2. Remove around view monitor control unit mounting screws.
3. Disconnect around view monitor control unit connector to remove around view monitor control unit.

#### INSTALLATION

1. Install in the reverse order of removal.
2. Perform camera image calibration. Refer to [AV-108, "Work Procedure"](#).

#### **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.
- When replacing around view monitor control unit, make sure adjust neutral position of steering angle sensor. Refer to [AV-114, "Work Procedure"](#).

## FRONT CAMERA

### Removal and Installation

INFOID:000000008280591

#### REMOVAL

1. Remove front grille. Refer to [EXT-19, "Removal and Installation"](#).
2. Remove front camera mounting screws to remove front camera from front grille.

#### INSTALLATION

1. Install in the reverse order of removal.
2. Perform camera image calibration. Refer to [AV-108, "Work Procedure"](#).

#### **CAUTION:**

**Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.**

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## REAR CAMERA

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### Removal and Installation

INFOID:000000008280592

#### REMOVAL

1. Remove back door finisher. Refer to [INT-34, "Exploded View"](#).
2. Remove rear camera screws to remove rear camera.

#### INSTALLATION

1. Install in the reverse order of removal.
2. Perform camera image calibration. Refer to [AV-108, "Work Procedure"](#).

#### **CAUTION:**

**Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.**

## SIDE CAMERA

### Removal and Installation

INFOID:000000008280593

#### REMOVAL

1. Remove bracket assembly from housing. Refer to [MIR-20, "DOOR MIRROR ASSEMBLY : Disassembly and Assembly"](#).
2. Remove screw to remove side camera from housing.

#### INSTALLATION

1. Install in the reverse order of removal.
2. Perform camera image calibration. Refer to [AV-108, "Work Procedure"](#).

**CAUTION:**

**Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.**

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# STEERING ANGLE SENSOR

< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO]

## STEERING ANGLE SENSOR

### Removal and Installation

INFOID:000000008280594

#### REMOVAL

1. Remove spiral cable assembly. Refer to [SR-14, "Removal and Installation"](#) (EXCEPT FOR MEXICO) or [SR-39, "Removal and Installation"](#) (FOR MEXICO) .
2. Remove steering angle sensor from spiral cable assembly.

#### INSTALLATION

1. Install in the reverse order of removal.
2. Perform adjustment of the neutral position of the steering angle sensor. Refer to or [AV-86, "CONSULT Function"](#).

# STEERING SWITCH

< REMOVAL AND INSTALLATION >

[DISPLAY AUDIO]

## STEERING SWITCH

### Exploded View

INFOID:000000008280595

Refer to [SR-36. "Exploded View"](#) (for Mexico) or [SR-11. "Exploded View"](#) (except for Mexico).

### Removal and Installation

INFOID:000000008280596

#### REMOVAL

Refer to [SR-36. "Removal and Installation"](#) (for Mexico) or [SR-11. "Removal and Installation"](#) (except for Mexico).

#### INSTALLATION

Install in the reverse order of removal.

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## REAR VIEW CAMERA

### Removal and Installation

INFOID:000000008280597

#### REMOVAL

1. Remove back door finisher. Refer to [INT-34, "Exploded View"](#).
2. Remove rear view camera screws to remove rear view camera.

#### INSTALLATION

Install in the reverse order of removal.

#### NOTE:

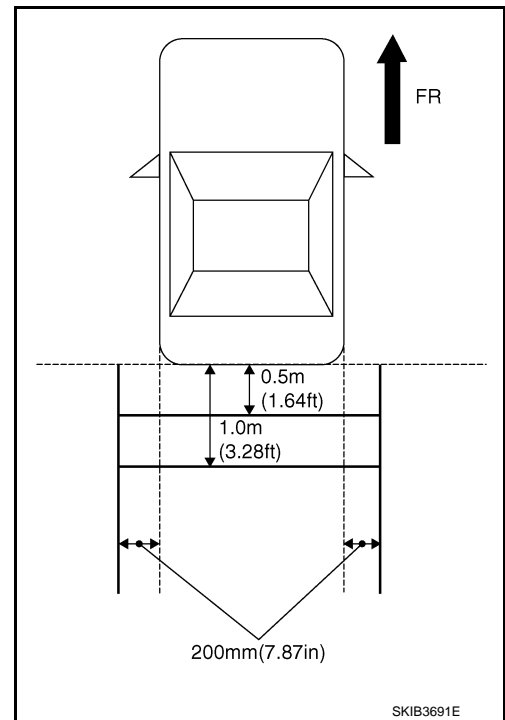
Adjust the guide line position if the guide line position is shifted after installing the rear view camera. Refer to [AV-160, "Adjustment"](#).

### Adjustment

INFOID:000000008280598

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

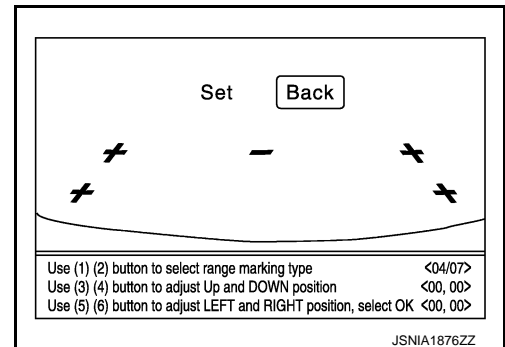
1. Draw lines on rearward area of the vehicle passing through the following points: 200 mm (7.87 in) from both sides of the vehicle, and 0.5 m (1.64 ft), 1.0 m (3.28 ft) from the rear end of the bumper.
2. Set into "Camera system" mode of Confirmation / Adjustment mode.



3. Press "1" or "2" switches, and then select the guiding line pattern so that its angle is aligned with the correction line of the rear of the vehicle.

**Selected pattern : 7**

4. Make fine adjustment to the correction line of the rear of the vehicle with "3", "4", "5" or "6" switches so that its position is aligned with the guiding line. Press "PUSH ENTER" switch and record the adjusted guiding line position to the camera control unit.



**Up/Down adjustment range : (-20) – (20)**

**Left/Right adjustment range : (-20) – (20)**

#### CAUTION:

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



## USB CONNECTOR

### Removal and Installation

INFOID:000000008280599

#### REMOVAL

1. Remove center console assembly. Refer to [IP-22. "Exploded View"](#).
2. Push the pawl from the back of center console assembly to remove USB connector.

#### INSTALLATION

Install in the reverse order of removal.

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# ANTENNA FEEDER

< REMOVAL AND INSTALLATION >

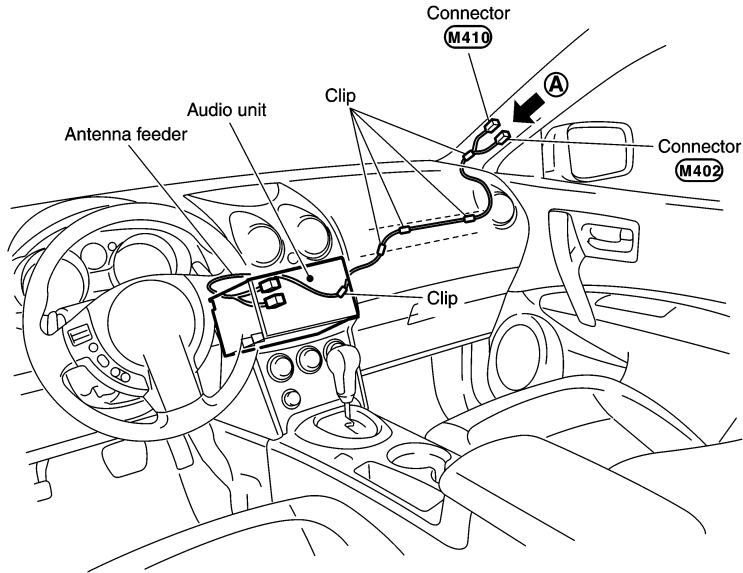
[DISPLAY AUDIO]

## ANTENNA FEEDER

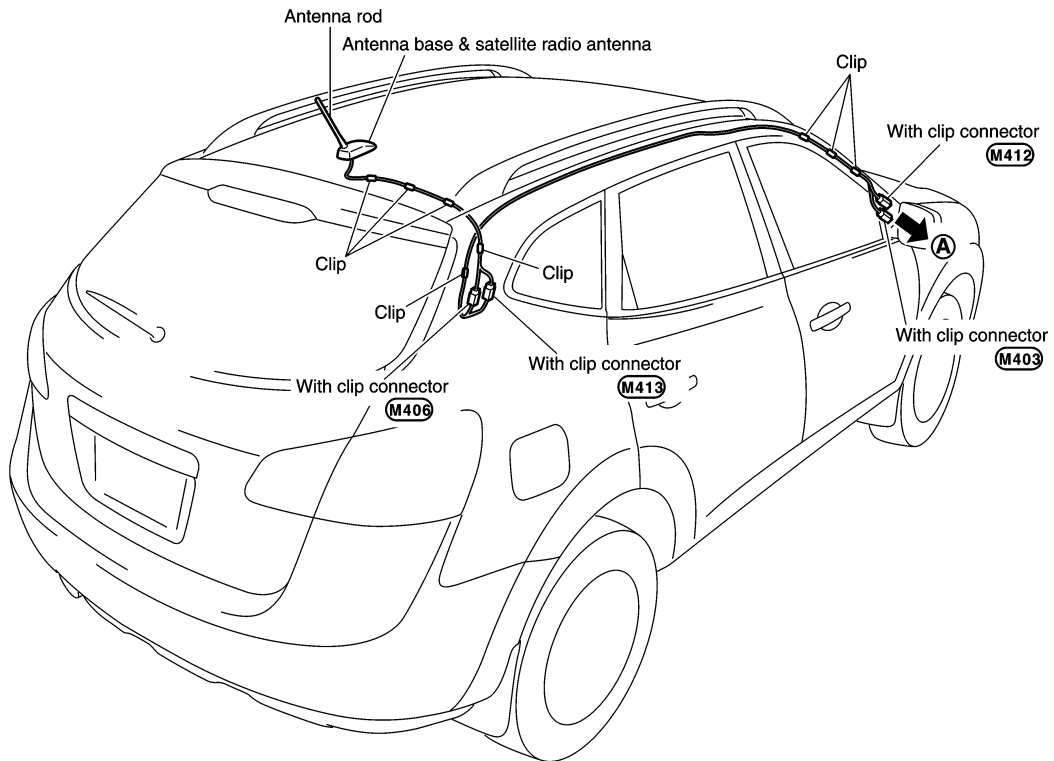
### Feeder Layout

INFOID:000000008280600

SEC. 280



Instrument panel driver side



Rear view of vehicle

JSNIA4579GB

PRECAUTION

PRECAUTIONS  
FOR MEXICO

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

INFOID:000000008280601

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

**WARNING:**

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

**WARNING:**

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

EXCEPT FOR MEXICO

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

INFOID:000000008280602

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

**WARNING:**

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

**WARNING:**

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# PRECAUTIONS

< PRECAUTION >

[BASE AUDIO WITH NAVIGATION]

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

## Precaution for Trouble Diagnosis

INFOID:000000008280603

### AV COMMUNICATION SYSTEM

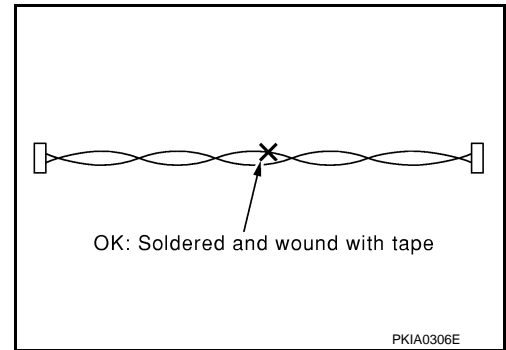
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

## Precaution for Harness Repair

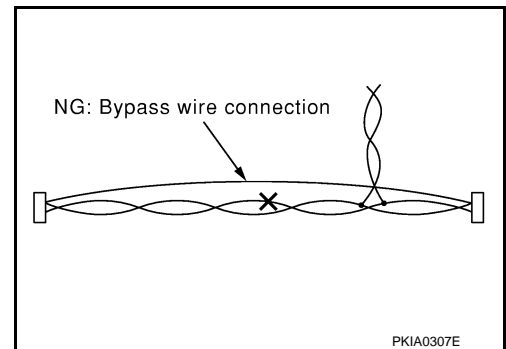
INFOID:000000008280604

### AV COMMUNICATION SYSTEM

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



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



# PREPARATION

< PREPARATION >

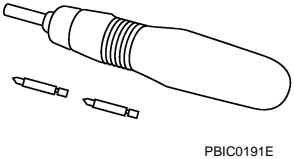
[BASE AUDIO WITH NAVIGATION]

## PREPARATION

### PREPARATION

#### Commercial Service Tools

INFOID:000000008280605

Tool name	Description
Power tool  PBIC0191E	Loosening screws

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# COMPONENT PARTS

< SYSTEM DESCRIPTION >

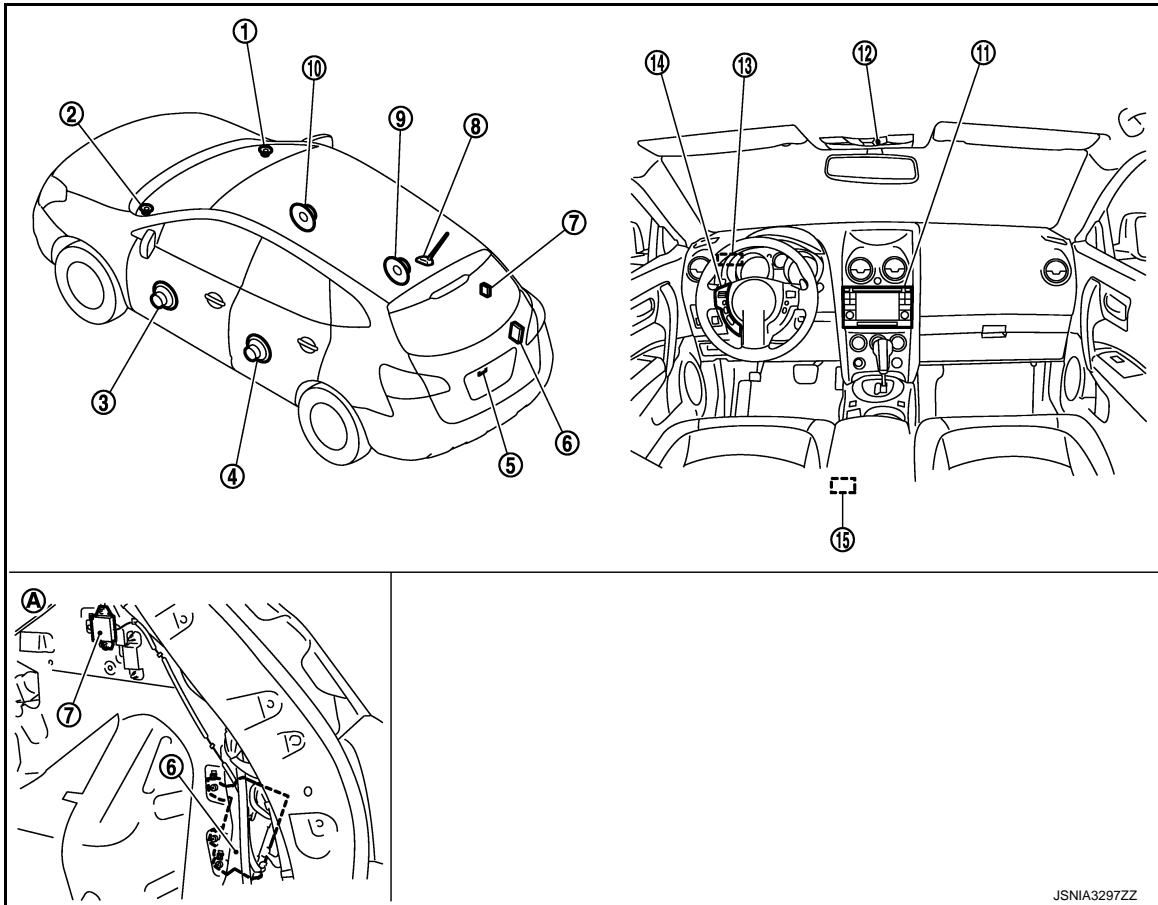
[BASE AUDIO WITH NAVIGATION]

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000008280606



JSNIA3297ZZ

- |                      |  |                                |
|----------------------|--|--------------------------------|
| 1. Tweeter RH        | 2. Tweeter LH  | 3. Front speaker LH            |
| 4. Rear speaker LH   | 5. Rear view camera                                  | 6. TEL adapter unit            |
| 7. TEL antenna       | 8. Antenna base (antenna amp. and satellite antenna) | 9. Rear speaker RH             |
| 10. Front speaker RH | 11. NAVI control unit                                | 12. Microphone                 |
| 13. GPS antenna      | 14. Steering switch                                  | 15. USB connector and AUX jack |
| A. Luggage side RH   |  |                                |

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[BASE AUDIO WITH NAVIGATION]

## Component Description

INFOID:000000008280607

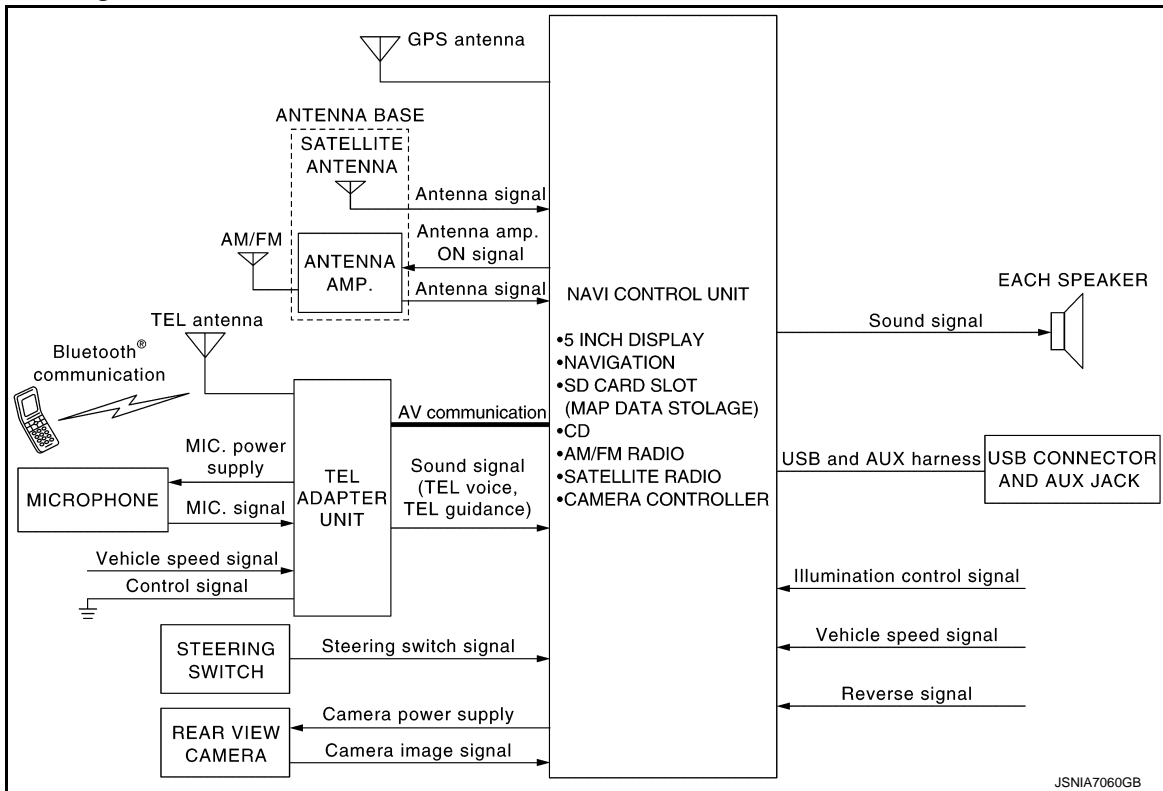
Part name	Description
NAVI control unit	<ul style="list-style-type: none"> <li>Operational switch of navigation system and audio system are integrated.</li> <li>Includes the audio, navigation, satellite radio, rear view monitor, USB connection and AUX connection functions.</li> <li>Map data can be loaded from the SD-card inserted in the built-in SD-card slot.</li> <li>Sound signals are output to each speaker.</li> <li>It inputs the illumination signals that are required for the display dimming control.</li> <li>It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake).</li> <li>Touch panel function can be operated for each system by touching a display directly.</li> <li>It supplies power to rear view camera.</li> <li>Camera image signal is input from rear view camera.</li> </ul>
Map SD-card	A collection of Map data.
Front speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from NAVI control unit.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
Tweeter	<ul style="list-style-type: none"> <li>Outputs sound signal from NAVI control unit.</li> <li>Outputs high range sounds.</li> </ul>
Rear speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from NAVI control unit.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
Steering switch	<ul style="list-style-type: none"> <li>Operations for audio and hands-free phone are possible.</li> <li>Steering switch signal (operation signal) is output to NAVI control unit.</li> </ul>
TEL adapter unit	<ul style="list-style-type: none"> <li>Inputs the TEL voice signal from TEL antenna and outputs it to the NAVI control unit.</li> <li>It is connected with the NAVI control unit via AV communication and controlled with the NAVI control unit.</li> </ul>
Microphone	<ul style="list-style-type: none"> <li>Used for hands-free phone operation.</li> <li>Microphone signal is transmitted to TEL adapter unit.</li> <li>Power (microphone VCC) is supplied from TEL adapter unit.</li> </ul>
GPS antenna	GPS signal is received and transmitted to NAVI control unit.
Antenna base	<p>A radio antenna base integrated with radio antenna amp. and satellite radio antenna is adopted.</p> <p>ANTENNA AMP.</p> <ul style="list-style-type: none"> <li>Radio signal received by rod antenna is amplified and transmitted to NAVI control unit.</li> <li>Power (antenna amp. ON signal) is supplied from NAVI control unit.</li> </ul> <p>SATELLITE RADIO ANTENNA</p> <ul style="list-style-type: none"> <li>Receives satellite radio waves and outputs it to NAVI control unit.</li> </ul>
Rear view camera	<ul style="list-style-type: none"> <li>Camera power supply is input from NAVI control unit.</li> <li>The image of vehicle rear view is transmitted to NAVI control unit.</li> </ul>
USB connector and AUX jack	<ul style="list-style-type: none"> <li>Sound signal of auxiliary input is transmitted to NAVI control unit.</li> <li>Sound signal of USB input is transmitted to NAVI control unit.</li> </ul>

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SYSTEM

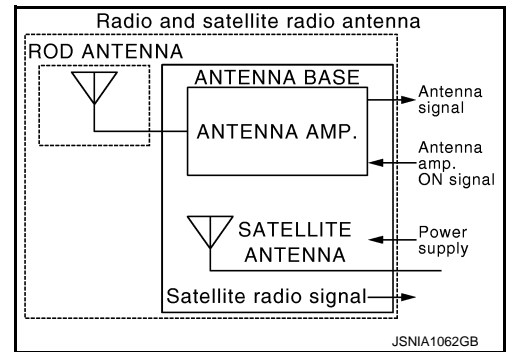
System Diagram

INFOID:000000008280608



NOTE:

An antenna base integrated with radio antenna amp. and satellite radio antenna is adopted.



System Description

INFOID:000000008280609

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

Audio function and display are built into NAVI control unit.

This navigation has the following functions.

- Map data on SD-card.
- Full support for playback of music from iPod® and USB device.
- High resolution color 5 inch display with touch panel function.
- FM/AM twin digital tuner.
- USB mass storage connection.
- Satellite radio.
- Hands-free phone system.

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

NAVIGATION SYSTEM FUNCTION

Description

- The navigation system can be operated by control panel of the NAVI control unit and display (touch panel) of the NAVI control unit.



# SYSTEM

## < SYSTEM DESCRIPTION >

## [BASE AUDIO WITH NAVIGATION]

- Guide sound during the operation of the navigation system is output from NAVI control unit to front speaker.
- NAVI 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 NAVI control unit.

### POSITION DETECTION PRINCIPLE

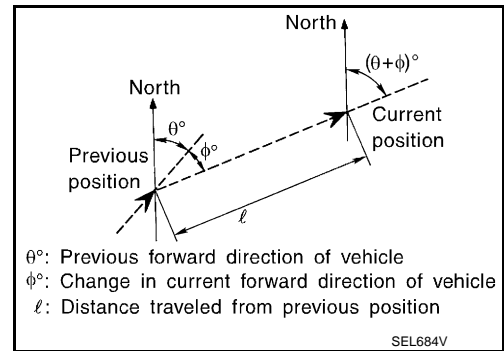
The navigation system periodically calculates the vehicle's current position according to the following three signals:

- 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 by 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  
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.

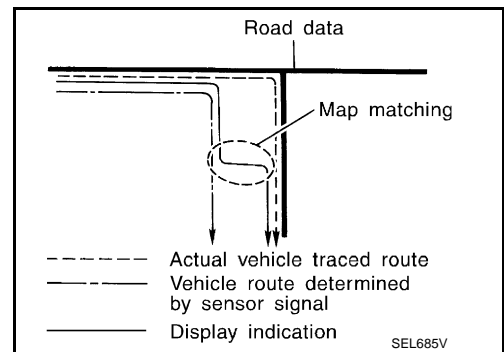
More accurate traveling direction is detected because priorities are set for the signals from these two devices according to the situation.

### MAP-MATCHING

Map-matching compares a current location detected by the method in the "Location Detection Principle" with a 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 this case, the vehicle mark on the display must be corrected manually.

# SYSTEM

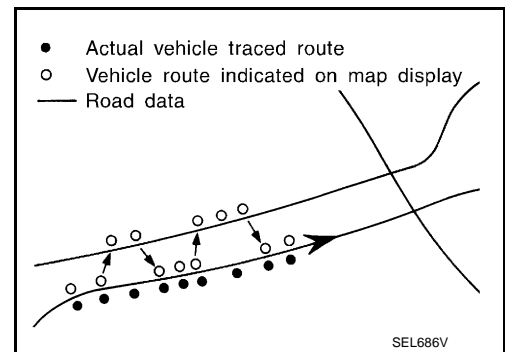
## < SYSTEM DESCRIPTION >

## [BASE AUDIO WITH NAVIGATION]

- 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.

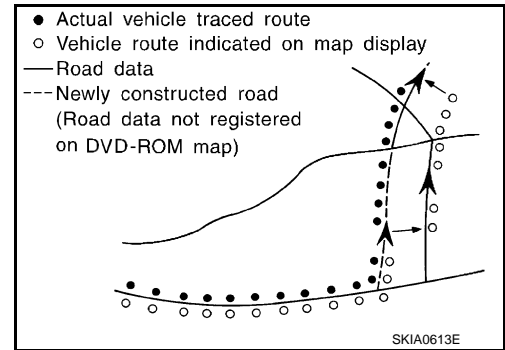
They are of the same priority if two roads are running in parallel. Therefore, the vehicle mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road.



- 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.

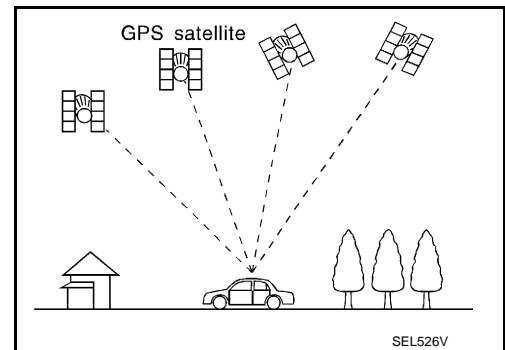
- Effective range for comparing the vehicle position and travel direction calculated by the distance and direction with the road data read from the map SD-card is limited. Therefore, correction by map-matching is not possible when there is an excessive gap between current vehicle position and the position on the map.



### GPS (Global Positioning System)

GPS (Global Positioning System) is developed for and is controlled by the US Department of Defense. The system utilizes GPS satellites (NAVSTAR), transmitting out radio waves while flying on an orbit around the earth at an altitude of approximately 21,000 km (13,049 mile).

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



Accuracy of the GPS will deteriorate under the following conditions:

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

### NOTE:

- The detection result has an error of approximately 10 m (32.81 ft) even with a high-precision three dimensional positioning.
- There may be cases when the accuracy is lowered and radio waves are stopped intentionally because the GPS satellite signal is controlled by the US trace control center.

### SATELLITE RADIO FUNCTION

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

### AUXILIARY INPUT FUNCTION

- Sound can be output from an external device by connecting a device with USB connector and AUX jack.

# SYSTEM

## < SYSTEM DESCRIPTION >

## [BASE AUDIO WITH NAVIGATION]

- AUX sound signals are transmitted to each speaker via NAVI control unit.

### REAR VIEW MONITOR FUNCTION

#### Camera Image Operation Principle

- The NAVI control unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the NAVI control unit when power is supplied from the NAVI control unit.
- The NAVI control unit combines a warning message and fixed guide lines with an image received from the rear view camera to display a rear view camera image on the screen.

### USB CONNECTION FUNCTION

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

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

#### **NOTE:**

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

### SPEED SENSITIVE VOLUME SYSTEM

- Volume level of this system goes up and down automatically in proportion to the vehicle speed.
- The control level can be selected by the customer.

### HANDS-FREE PHONE SYSTEM

- TEL adapter unit is controlled with AV communication from NAVI control unit.
- The connection between cellular phone and TEL adapter unit is performed with Bluetooth® communication.
- The voice guidance signal is input from the TEL adapter unit to the NAVI control unit and output to the front speaker when operating the cellular phone.
- TEL adapter unit has the on board self-diagnosis function. Refer to [AV-175. "Diagnosis Description"](#).

#### When A Call Is Originated

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

#### When Receiving A Call

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

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# DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BASE AUDIO WITH NAVIGATION]

## DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)

### Diagnosis Description

INFOID:000000008280610

#### On-Board Diagnosis Item

- On-board diagnosis is performed in service test mode.
- On-board diagnosis checks if the system operates normally.

#### Service test mode

Mode	Item	Content	
Service version	—	The version data of the parts is shown displayed.	
Service radio	FM monitor	The Change Mediator monitors the dynamic values of the current tuner. If the band is switched within the radio monitor context, the active monitor is switched as well.	
	AM monitor		
	XM monitor	The version data is displayed.	
	XM functions	<ul style="list-style-type: none"><li>• Clear XM Chipset NVM</li><li>• Reset all XM settings</li><li>• XM CBM debug mode ON/OFF</li><li>• External Diag mode ON/OFF</li></ul> The current system status is displayed.	
Service configuration	Touch Display Calibration	—	The function allows connection of the position detection accuracy of the touch panel.

# DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BASE AUDIO WITH NAVIGATION]

Mode	Item	Content	
Service system status	Running system status	<ul style="list-style-type: none"> <li>• SD card slot access</li> <li>• Power Supply</li> <li>• Speed Signal</li> <li>• Direction Signal</li> <li>• Illumination Signal</li> <li>• GPS Antenna</li> <li>• BTHFU Status</li> <li>• Radio Antenna</li> <li>• USB Device</li> <li>• iPod® firmware version</li> <li>• Steering wheel key</li> </ul>	The current system status is displayed.
	System history	<ul style="list-style-type: none"> <li>• SD-card Slot - Sub-Unit Connection Malfunction</li> <li>• Programming Error</li> <li>• Radio-Antenna Circuit Malfunction</li> <li>• FM-Antenna 1 Connection Malfunction</li> <li>• GPS Antenna Circuit Malfunction</li> <li>• CD-Drive Mechanical Malfunction</li> <li>• CD Read Malfunction</li> <li>• Power Supply voltage: Lower Limit Exceeded</li> <li>• Power Supply voltage: Upper Limit Exceeded</li> <li>• Reduced system Functionality due to over temperature</li> <li>• Display switched OFF due to over temperature</li> <li>• SD card removed without being de-mounted</li> <li>• Codeplug missing</li> </ul>	The history of the system status is reported in the report memory, displayed.
	Speaker test 100 Hz	—	This activates a sequence of test tone outputs to the four speaker lines one after the other for 1 second. The frequency can be chosen by user selection (100 Hz and 4 kHz).
	Speaker test 4 kHz	—	
	Display test	—	This provides a test sequence where test displays (plain colored display: e.g. white, black, red, blue, green) are shown one after the other. The respective color is shown for an indicated period of time (parameter). After the display test, the design of the display previously available is stored. While the screen shows a plain colored display, a pixel malfunction may be detected.

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# DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)

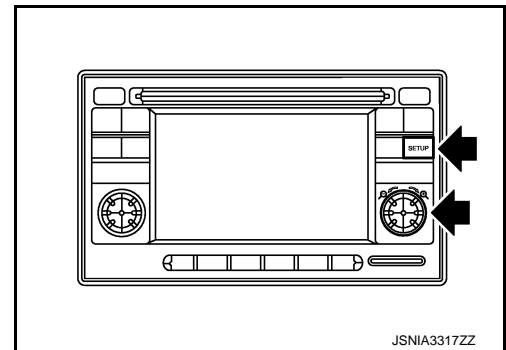
< SYSTEM DESCRIPTION >

[BASE AUDIO WITH NAVIGATION]

Mode	Item	Content
Service system configuration	<ul style="list-style-type: none"><li>• 2/4 pulse speed</li><li>• Clock ON/OFF</li><li>• Camera guidelines</li><li>• Equalizing settings</li><li>• RF tuning</li><li>• Antenna type</li><li>• Sound system</li><li>• Sub Out</li><li>• Steering wheel</li></ul>	The device is configured by a connected hardware circuit. The parameter is influenced.
Self test	<ul style="list-style-type: none"><li>• SD-card Access Malfunction</li><li>• Radio-Antenna Circuit Malfunction</li><li>• GPS Antenna Circuit Malfunction</li><li>• XM Antenna Circuit Malfunction</li></ul>	A system self test is executed: the result is stored into the error memory which is shown afterwards as a list of codes of the detected malfunctions.

## METHOD OF STARTING

1. Start the engine.
2. Turn OFF audio.
3. While pressing the "SET UP" switch, turn the MENU dial counterclockwise 3 clicks or more first, then clockwise and counterclockwise 3 clicks or more, respectively. (After the diagnosis mode starts, the initial screen of the diagnosis mode appears.)



## END ON-BOARD DIAGNOSIS

Turn OFF ignition switch.

# DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

[BASE AUDIO WITH NAVIGATION]

## DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

### Description

INFOID:000000008280611

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

### Diagnosis Description

INFOID:000000008280612

#### ON BOARD DIAGNOSIS ITEM

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

#### CAUTION:

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

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

#### Self-diagnosis results

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

#### NOTE:

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

#### Self-diagnosis results

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

#### The Details of Error Count

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

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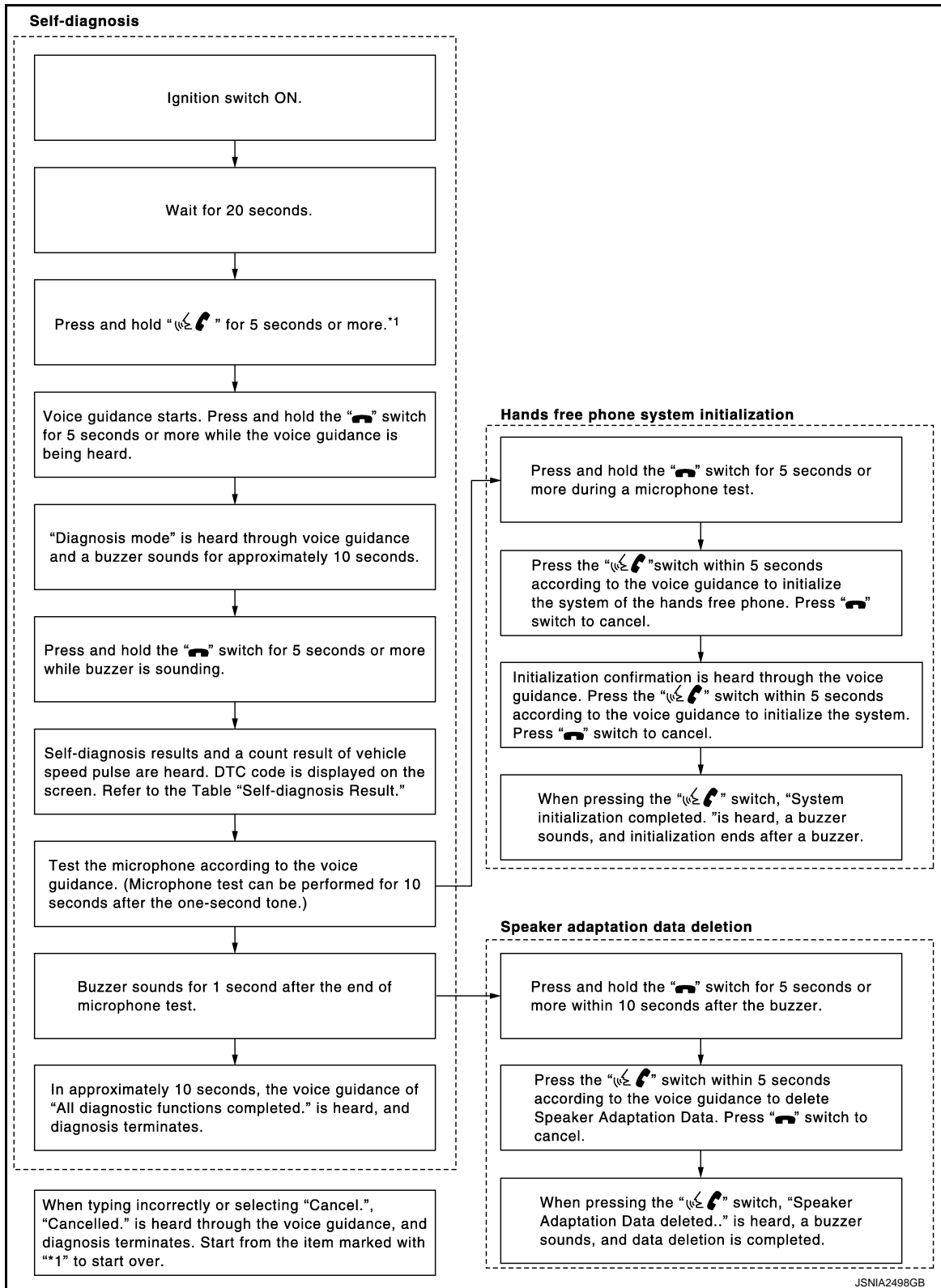
AV

# DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

[BASE AUDIO WITH NAVIGATION]

## FLOW CHART OF TROUBLE DIAGNOSIS





# NAVI CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITH NAVIGATION]

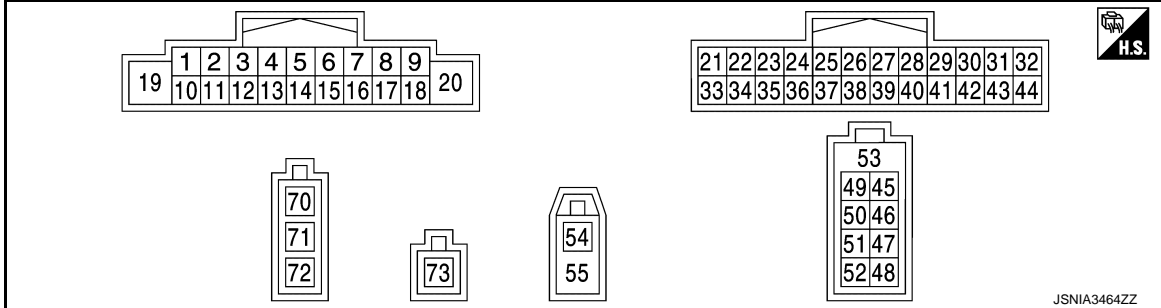
## ECU DIAGNOSIS INFORMATION

### NAVI CONTROL UNIT

Reference Value

INFOID:000000008280613

#### TERMINAL LAYOUT



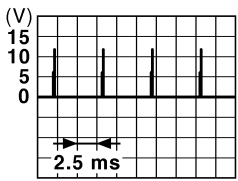
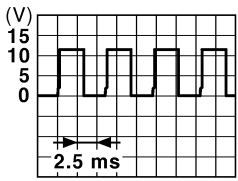
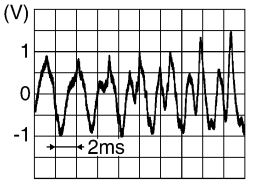
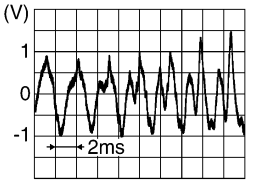
#### PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/Output			
2 (R)	3 (G)	Sound signal front speaker LH	Output	Ignition switch ON	Sound output.	<p>SKIB3609E</p>
4 (V)	5 (LG)	Sound signal rear speaker LH	Output	Ignition switch ON	Sound output.	<p>SKIB3609E</p>
6 (BR)	15 (GR)	Steering switch signal A	Input	Ignition switch ON	Keep pressing  switch	0 V
					Keep pressing SEEK UP switch	1.4 V
					Keep pressing SEEK DOWN switch	2.5 V
					Except for above.	5.0 V
7 (SB)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage

# NAVI CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

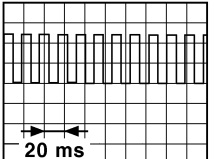

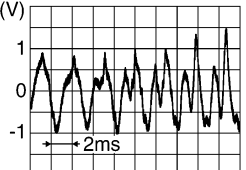
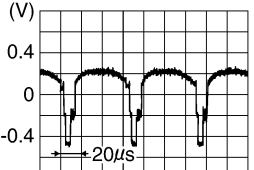
[BASE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)	
+	-	Signal name	Input/ Output			
9 (R)	8 (Y)	Illumination control signal	Input	Ignition switch ON	<ul style="list-style-type: none"> <li>Lighting switch 1ST</li> <li>When meter illumination is maximum</li> </ul> 	
				Ignition switch ON	<ul style="list-style-type: none"> <li>Lighting switch 1ST</li> <li>When meter illumination is step 11</li> </ul> 	
				Ignition switch ON	<ul style="list-style-type: none"> <li>Lighting switch 1ST</li> <li>When meter illumination is minimum</li> </ul> <p style="text-align: center;">12 V</p>	
11 (Y)	12 (W)	Sound signal front speaker RH	Output	Ignition switch ON	Sound output.	
13 (L)	14 (P)	Sound signal rear speaker RH	Output	Ignition switch ON	Sound output.	
16 (BG)	15 (GR)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
				Ignition switch ON	Keep pressing VOL UP switch.	1.4 V
				Ignition switch ON	Keep pressing  switch	2.5 V
				Ignition switch ON	Keep pressing VOL UP switch.	3.4 V
				Ignition switch ON	Except for above.	5.0 V

# NAVI CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
18 (L)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is ap- prox. 40 km/h (25 MPH)
					<p><b>NOTE:</b> The maximum voltage varies de- pending on the specification (destination unit).</p>  <p style="text-align: right; font-size: small;">JSNIA0012GB</p>
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—
20 (B)	Ground	Ground	—	Ignition switch ON	—
22 (B)	Ground	EQ2	—	Ignition switch ON	—
23 (B)	Ground	EQ3	—	Ignition switch ON	—
25 (G)	Ground	Reverse signal	Input	Ignition switch ON	Selector lever is in R posi- tion.
					Selector lever is in other than R position.
34 (BR)	35 (Y)	Sound signal (TEL voice, voice guid- ance)	Output	Ignition switch ON	During voice guide output with the  switch pressed.
					 <p style="text-align: right; font-size: small;">SKIB3609E</p>
36 (B)	Ground	Ground	—	Ignition switch ON	—
37	—	Shield	—	—	—
38 (SB)	—	AV communication signal (H)	Input/ Output	—	—
39 (LG)	—	AV communication signal (L)	Input/ Output	—	—
41 (W)	Ground	Camera image signal	Input	Ignition switch ON	At rear view camera image displayed
					 <p style="text-align: right; font-size: small;">SKIB0827E</p>
42	—	Shield	—	—	—

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# NAVI CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
43 (R)	Ground	Camera power supply	Output	Ignition switch ON	At rear view camera image is displayed.	6.0 V
					Except for above.	0 V
44 (B)	Ground	Camera ground	—	Ignition switch ON	—	0 V
45 (G)	—	USB ground	—	—	—	—
46 (R)	—	USB D- signal	Input/ Output	—	—	—
47 (L)	—	USB D+ signal	Input/ Output	—	—	—
48 (W)	—	V BUS signal	Output	—	—	—
49 (W)	—	AUX sound signal LH	Input	—	—	—
50 (G)	—	AUX sound signal RH	Input	—	—	—
51 (R)	—	AUX sound signal ground	—	—	—	—
53	—	Shield	—	—	—	—
54	Ground	GPS antenna signal	Input	ON	Not connected to GPS an- tenna connector.	5.0 V
55	—	Shield	—	—	—	—
70	Ground	Antenna amp. ON signal	Output	Ignition switch ON	—	12.0 V
71	—	Antenna signal	Input	—	—	—
73	—	Satellite radio antenna sig- nal	Input	—	—	—

# TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

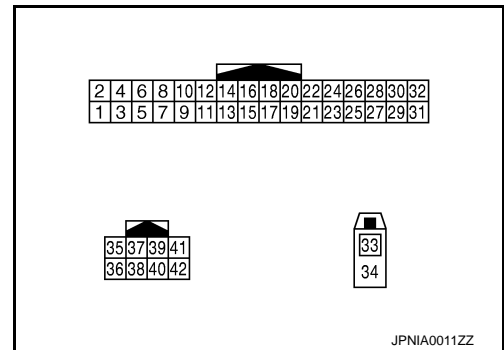
[BASE AUDIO WITH NAVIGATION]

## TEL ADAPTER UNIT

Reference Value

INFOID:000000008280614

TERMINAL LAYOUT



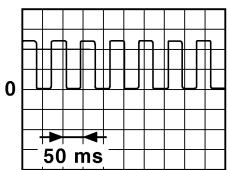
PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/Output			
1 (BR)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
2 (SB)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
3 (W)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
4 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
7 (B)	8	Microphone signal	Input	Ignition switch ON	Give a voice.	
9 (BR)	10 (Y)	Sound signal (TEL voice, voice guidance)	Output	Ignition switch ON	During voice guide output with the  switch pressed.	
20 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
22 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V

# TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

[BASE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
23 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
27 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
28 (G)	Ground	Vehicle speed signal (2-pulse)	Input	Ignition switch ON	When vehicle speed is ap- prox. 40 km/h (25 MPH)	<p><b>NOTE:</b> The maximum voltage varies de- pending on the specification (destination unit).</p>  <p style="text-align: right; font-size: small;">JSNIA0015GB</p>
29 (W)	Ground	Microphone power supply	Output	Ignition switch ON	—	5.0 V
33	—	TEL antenna signal	Input	—	Not connected to TEL an- tenna connector.	5.0 V
34	—	Shield	—	—	—	—
35 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
36 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
39 (LG)	—	Data line	—	—	—	—
40 (LG)	—	Data line	—	—	—	—
41 (SB)	—	Data line	—	—	—	—
42 (SB)	—	Data line	—	—	—	—

# BASE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >


[BASE AUDIO WITH NAVIGATION]

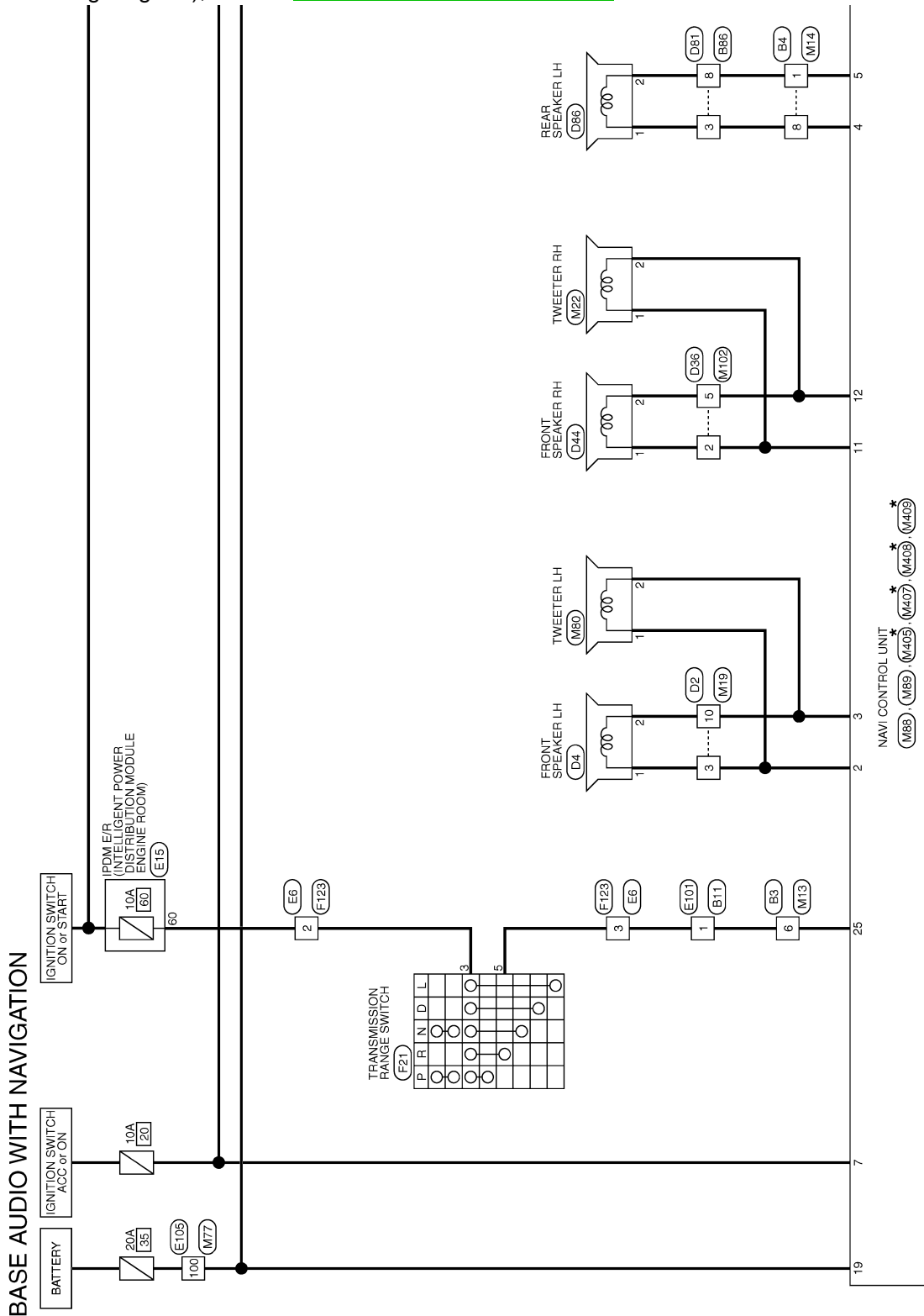
## WIRING DIAGRAM

### BASE AUDIO WITH NAVIGATION

#### Wiring Diagram

INFOID:000000008280615

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



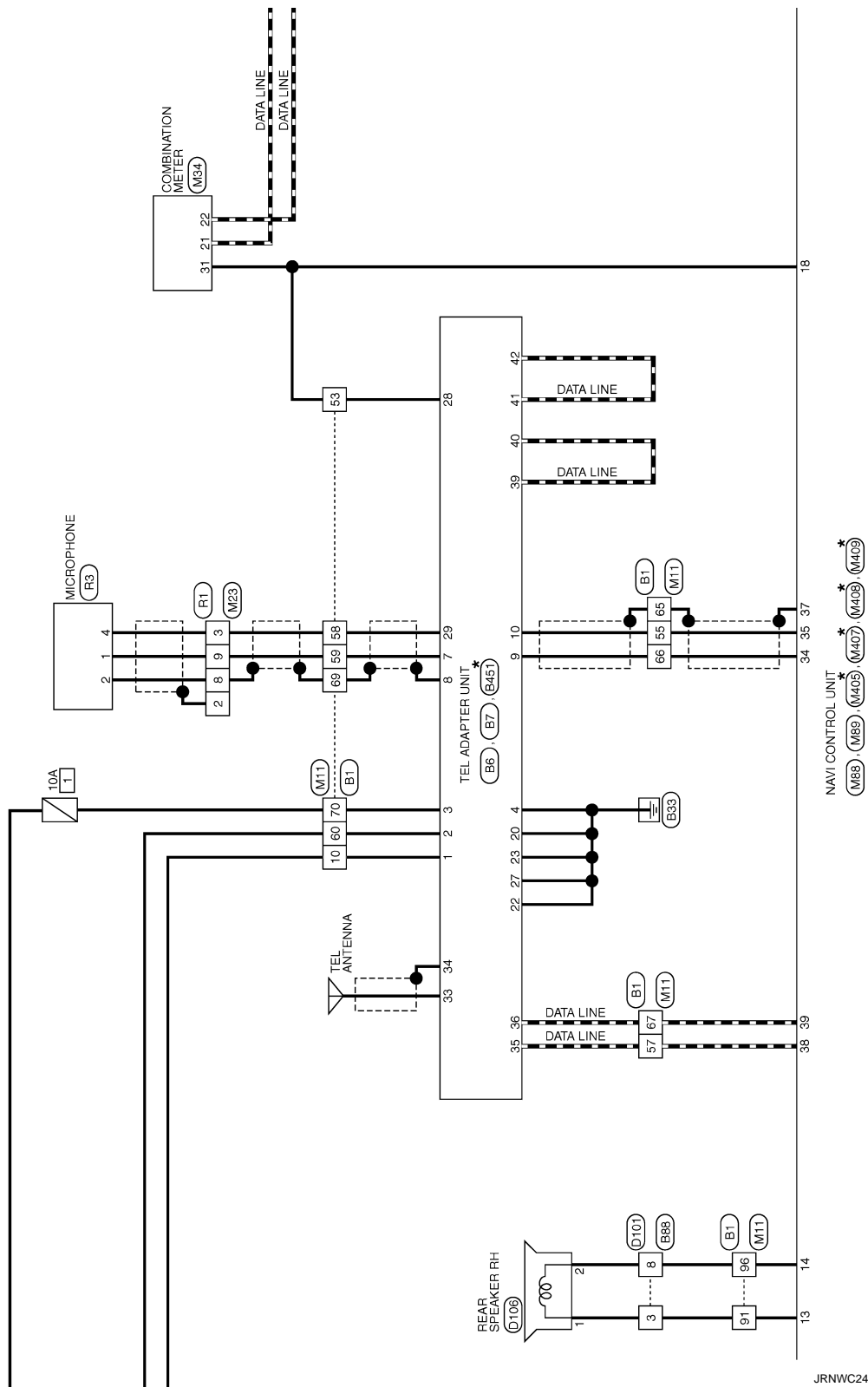
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# BASE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[BASE AUDIO WITH NAVIGATION]



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

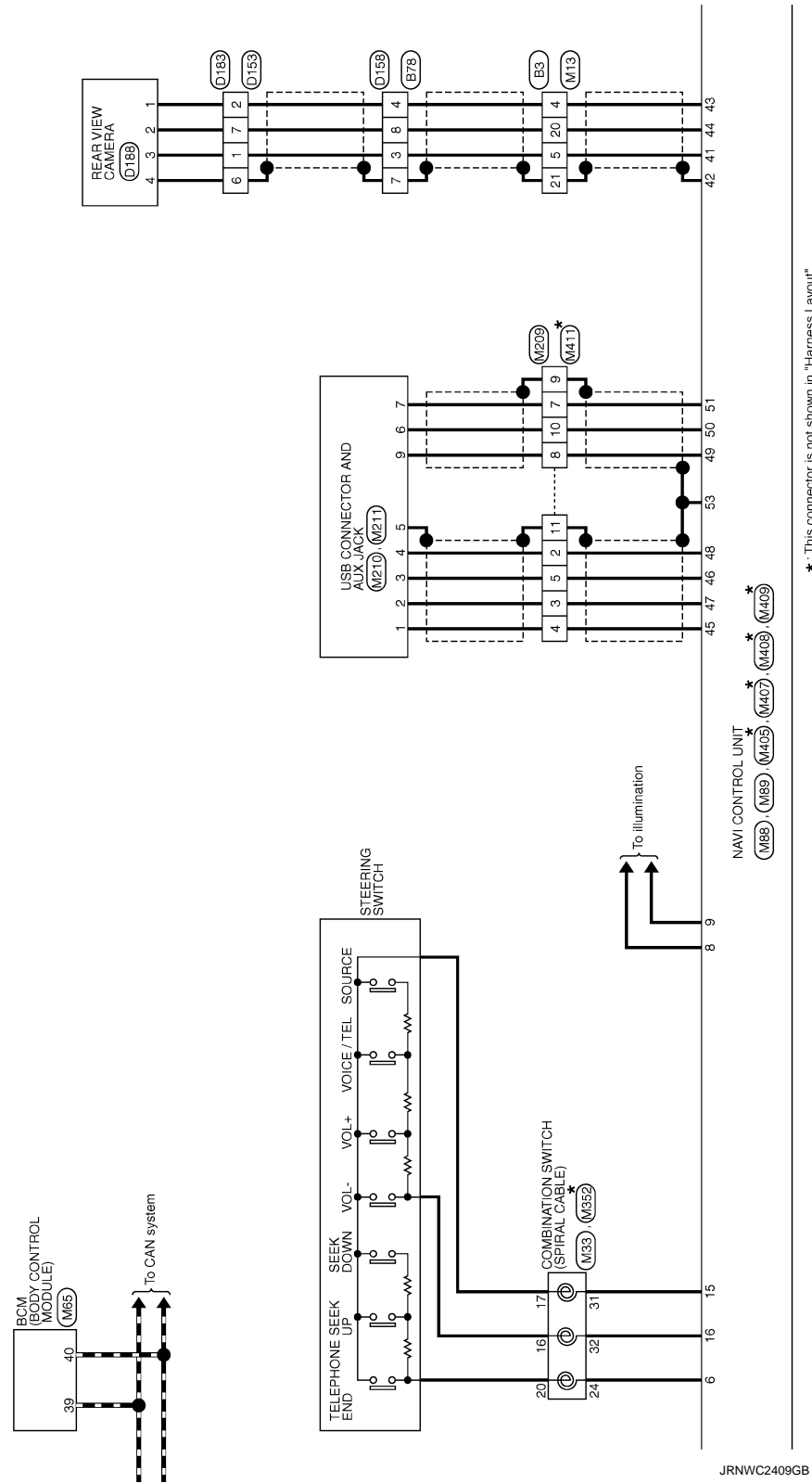
JRNWC2408GB



# BASE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[BASE AUDIO WITH NAVIGATION]



JRNWC2409GB

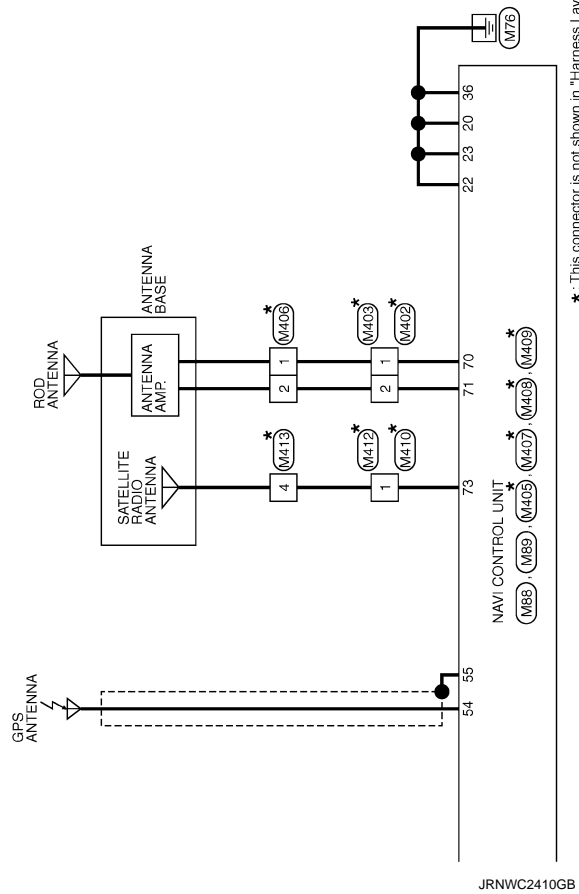
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# BASE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[BASE AUDIO WITH NAVIGATION]



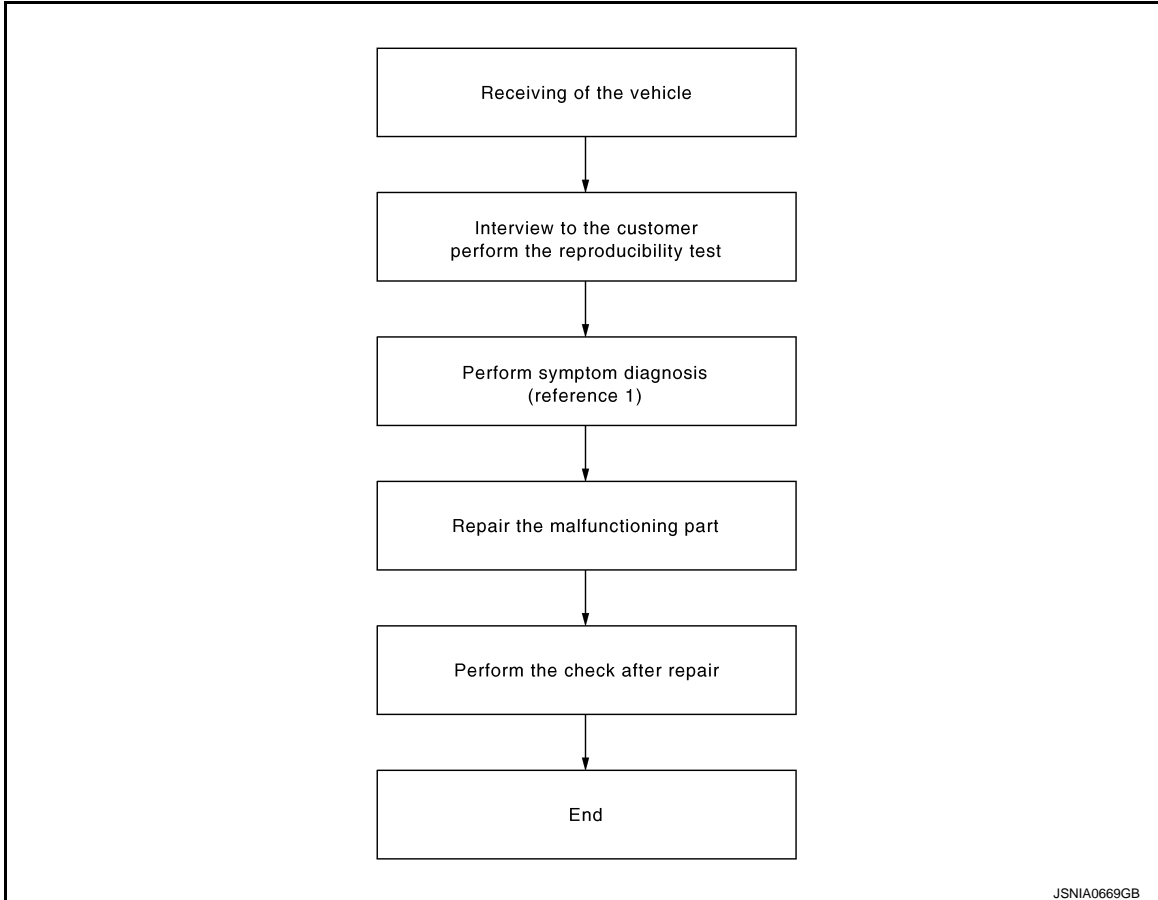
**BASIC INSPECTION**

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000008280616

OVERALL SEQUENCE



Reference 1...Refer to [AV-202, "Symptom Table"](#) (navigation system) or [AV-205, "Symptom Table"](#) (hands-free phone system).

DETAILED FLOW

**1. CHECK SYMPTOM**

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.

>> GO TO 2.

**2. PERFORM DIAGNOSIS BY SYMPTOM**

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-202, "Symptom Table"](#) (navigation system) or [AV-205, "Symptom Table"](#) (hands-free phone system).

>> GO TO 3.

**3. REPAIR OR REPLACE MALFUNCTIONING PARTS**

Repair or replace the malfunctioning parts.

>> GO TO 4.

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## DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[BASE AUDIO WITH NAVIGATION]

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### 4. FINAL CHECK

---

Perform the operation to check that the malfunction symptom is solved or any other symptoms are present.

Is there any symptom?

YES >> GO TO 2.

NO >> INSPECTION END

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

## DTC/CIRCUIT DIAGNOSIS

### POWER SUPPLY AND GROUND CIRCUIT

#### NAVI CONTROL UNIT

#### NAVI CONTROL UNIT : Diagnosis Procedure

INFOID:000000008280617

#### 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	20

Is inspection result OK?

YES >> GO TO 2.

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

#### 2.CHECK POWER SUPPLY CIRCUIT

Check voltage between NAVI control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M88	19	OFF	Battery voltage
ACC power supply	M88	7	ACC	Battery voltage

Is inspection result OK?

YES >> GO TO 3.

NO >> Check harness between NAVI control unit and fuse.

#### 3.CHECK GROUND CIRCUIT

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M88	20	OFF	Existed.
	M89	36		

Is inspection result OK?

YES >> INSPECTION END

NO >> Repair harness or connector.

### TEL ADAPTER UNIT

#### TEL ADAPTER UNIT : Diagnosis Procedure

INFOID:000000008280618

#### 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	20

Is the inspection result normal?

YES >> GO TO 2.

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

#### 2.CHECK POWER SUPPLY CIRCUIT

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## POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

Check voltage between TEL adapter unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B6	1	OFF	Battery voltage
ACC power supply		2	ACC	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between TEL adapter unit and fuse.

### 3. CHECK GROUND CIRCUIT

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B6	4	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

## MICROPHONE SIGNAL CIRCUIT

### Description

INFOID:000000008280619

TEL adapter unit supplies power to microphone. The microphone transmits the sound voice to the TEL adapter unit.

### Diagnosis Procedure

INFOID:000000008280620

#### 1.CHECK CONTINUITY BETWEEN TEL ADAPTER UNIT AND MICROPHONE CIRCUIT

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

TEL adapter unit		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
B6	7	R3	1	Existed
	8		2	
	29		4	

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

TEL adapter unit		Ground	Continuity
Connector	Terminal		
B6	7		Not existed
	29		

Is inspection result OK?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2.CHECK VOLTAGE MICROPHONE VCC

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

(+) TEL adapter unit		(-)	Voltage (Approx.)
Connector	Terminal		
B6	29	Ground	5.0 V

Is inspection result OK?

YES >> GO TO 3.

NO >> Replace TEL adapter unit. Refer to [AV-219. "Exploded View"](#).

#### 3.CHECK MICROPHONE SIGNAL

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

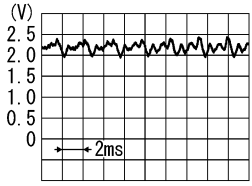
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# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

TEL adapter unit				Condition	Reference value
(+)		(-)			
Connector	Terminal	Connector	Terminal		
B6	7	B6	8	Give a voice.	 <p style="text-align: right; font-size: small;">PKIB5037J</p>

Is inspection result OK?

- YES >> Replace TEL adapter unit. Refer to [AV-219, "Exploded View"](#).
- NO >> Replace microphone. Refer to [AV-221, "Exploded View"](#).



# CONTROL SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

## CONTROL SIGNAL CIRCUIT

### Description

INFOID:000000008280621

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

### Diagnosis Procedure

INFOID:000000008280622

#### 1. CHECK CONTINUITY CONTROL SIGNAL CIRCUIT

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

TEL adapter unit		Ground	Continuity
Connector	Terminals		
B6	20	Ground	Existed
	22		
	23		
	27		

Is the inspection result normal?

- YES >> Replace TEL adapter unit. Refer to [AV-219, "Exploded View"](#).  
NO >> Repair harness or connector.

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# CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

## CAMERA IMAGE SIGNAL CIRCUIT

### Description

INFOID:000000008280623

- The NAVI control unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the NAVI control unit when power is supplied from the NAVI control unit.

### Diagnosis Procedure

INFOID:000000008280624

#### 1. CHECK CONTINUITY CAMERA POWER SUPPLY CIRCUIT

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

NAVI control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M89	43	D188	1	Existed

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

NAVI control unit		Ground	Continuity
Connector	Terminal		
M89	43		Not existed

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK VOLTAGE CAMERA POWER SUPPLY

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

(+)		(-)	Condition	Voltage (Approx.)
Connector	Terminal			
M89	43	Ground	Shift position is in "R".	6.0 V

Is inspection result normal?

YES >> GO TO 3.

NO >> Replace NAVI control unit. Refer to [AV-212, "Removal and Installation"](#).

#### 3. CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

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

NAVI control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M89	41	D188	3	Existed

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

# CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

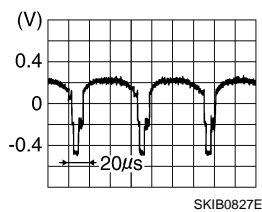
NAVI control unit		Ground	Continuity
Connector	Terminal		
M89	41		Not existed

Is inspection result normal?

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

## 4. CHECK CAMERA IMAGE SIGNAL

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

(+)		(-)	Condition	Reference value
NAVI control unit				
Connector	Terminal			
M89	41	Ground	At rear view camera image is displayed.	

Is inspection result normal?

- YES >> Replace NAVI control unit. Refer to [AV-212, "Removal and Installation"](#).
- NO >> Replace rear view camera. Refer to [AV-223, "Removal and Installation"](#).

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# STEERING SWITCH SIGNAL A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

## STEERING SWITCH SIGNAL A CIRCUIT

### Description

INFOID:000000008280625

Transmits the steering switch signal to NAVI control unit.

### Diagnosis Procedure

INFOID:000000008280626

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

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

NAVI control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M88	6	M33	24	Existed

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

NAVI control unit		Ground	Continuity
Connector	Terminal		
M88	6		Not existed

Is the inspection result normal?

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

#### 2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Replace spiral cable.

#### 3. CHECK NAVI CONTROL UNIT VOLTAGE

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

(+)		(-)		Voltage (Approx.)
NAVI control unit				
Connector	Terminal	Connector	Terminal	
M88	6	M88	15	5.0 V

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace NAVI control unit. Refer to [AV-212, "Removal and Installation"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-196, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [AV-222, "Exploded View"](#).

### Component Inspection

INFOID:000000008280627

Measure the resistance between the steering switch connector terminals 16 to 17 and 20 to 17.

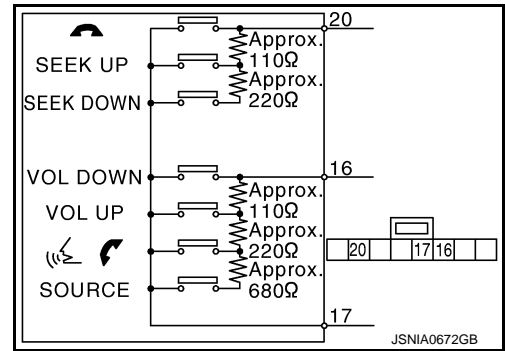
# STEERING SWITCH SIGNAL A CIRCUIT

[BASE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

Standard

Steering switch		Condition	Resistance Ω
Terminal	Terminal		
16	17	SOURCE switch ON	1000 – 1020
		switch ON	327 – 333
		VOL UP switch ON	109 – 111
		VOL DOWN switch ON	0
20	17	SEEK DOWN switch ON	327 – 333
		SEEK UP switch ON	109 – 111
		switch ON	0



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# STEERING SWITCH SIGNAL B CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

## STEERING SWITCH SIGNAL B CIRCUIT

### Description

INFOID:000000008280628

Transmits the steering switch signal to NAVI control unit.

### Diagnosis Procedure

INFOID:000000008280629

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

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

NAVI control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M88	16	M33	32	Existed

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

NAVI control unit		Ground	Continuity
Connector	Terminal		
M88	16		Not existed

Is the inspection result normal?

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

#### 2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Replace spiral cable.

#### 3. CHECK NAVI CONTROL UNIT VOLTAGE

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

(+)		(-)		Voltage (Approx.)
NAVI control unit				
Connector	Terminal	Connector	Terminal	
M88	16	M88	15	5.0 V

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace NAVI control unit. Refer to [AV-212, "Removal and Installation"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-198, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [AV-222, "Exploded View"](#).

### Component Inspection

INFOID:000000008280630

Measure the resistance between the steering switch connector terminals 16 to 17 and 20 to 17.

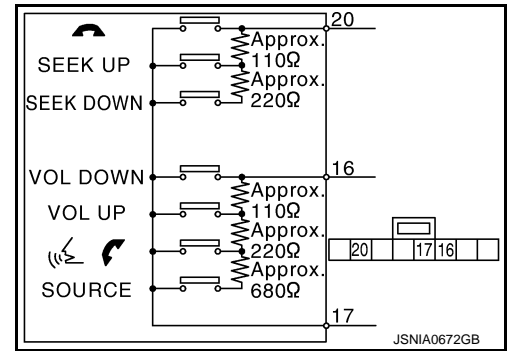
# STEERING SWITCH SIGNAL B CIRCUIT

[BASE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

Standard

Steering switch		Condition	Resistance Ω
Terminal	Terminal		
16	17	SOURCE switch ON	1000 – 1020
		switch ON	327 – 333
		VOL UP switch ON	109 – 111
		VOL DOWN switch ON	0
20	17	SEEK DOWN switch ON	327 – 333
		SEEK UP switch ON	109 – 111
		switch ON	0



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# STEERING SWITCH GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

## STEERING SWITCH GROUND CIRCUIT

### Description

INFOID:000000008280631

Transmits the steering switch signal to NAVI control unit.

### Diagnosis Procedure

INFOID:000000008280632

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

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

NAVI control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M88	15	M33	31	Existed

Is the inspection result normal?

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

#### 2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Replace spiral cable.

#### 3. CHECK GROUND CIRCUIT

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

NAVI control unit		Ground	Continuity
Connector	Terminal		
M88	15		Existed

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace NAVI control unit. Refer to [AV-212, "Removal and Installation"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-200, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [AV-222, "Exploded View"](#).

### Component Inspection

INFOID:000000008280633

Measure the resistance between the steering switch connector terminals 16 to 17 and 20 to 17.



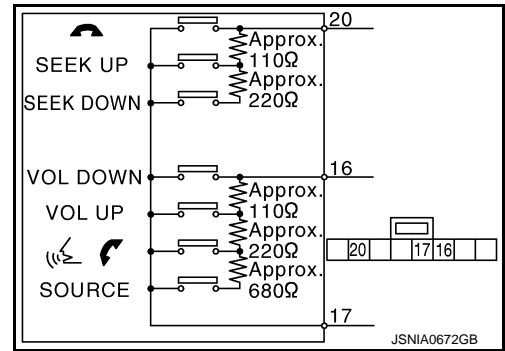
# STEERING SWITCH GROUND CIRCUIT

[BASE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

Standard

Steering switch		Condition	Resistance Ω
Terminal	Terminal		
16	17	SOURCE switch ON	1000 – 1020
		switch ON	327 – 333
		VOL UP switch ON	109 – 111
		VOL DOWN switch ON	0
20	17	SEEK DOWN switch ON	327 – 333
		SEEK UP switch ON	109 – 111
		switch ON	0



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## SYMPTOM DIAGNOSIS

### NAVIGATION SYSTEM

#### Symptom Table

INFOID:000000008280634

#### RELATED TO NAVIGATION

**NOTE:**

Combined part of AV switch and NAVI control unit.

Symptoms	Check items	Probable malfunction location / Action to take	
Display does not turn ON.	All switches cannot be operated.	NAVI control unit power supply and ground circuit. Refer to <a href="#">AV-189. "NAVI CONTROL UNIT : Diagnosis Procedure"</a> .	
	All switches can be operated.	NAVI control unit	
All switches cannot be operated.	Display does not turn ON.	NAVI control unit power supply and ground circuit. Refer to <a href="#">AV-189. "NAVI CONTROL UNIT : Diagnosis Procedure"</a> .	
	Display turn ON.	NAVI control unit	
Only specified switch cannot be operated.	-	NAVI control unit	
Map screen is not displayed. (RGB image other than map is normal.)	<ul style="list-style-type: none"> <li>• Check that the map SD-card is in the SD-card slot.</li> <li>• Check "SD Card Access" in "SERVICE SYSTEM SELF TEST", "SERVICE MENU".</li> </ul>	"OK" is displayed for "SD Card Access". Map SD-card	
		"OK" is not displayed for "SD Card Access". <ul style="list-style-type: none"> <li>• NAVI control unit</li> <li>• Map SD-card</li> </ul>	
Voice guidance is not heard.	Audio sound is normal.	NAVI control unit	
Display does not dim.	Check "Illumination Signal" in "SERVICE SYSTEM STATUS", "SERVICE MENU".	"Illumination Signal" reaches 100% when the lighting switch is ON.	NAVI control unit
		"Illumination Signal" does not reach 100% when the lighting switch is ON.	Illumination control signal circuit
Vehicle icon does not move.	Check "Speed Signal" in "SERVICE SYSTEM STATUS", "SERVICE MENU".	A value of "Speed Signal" changes according to vehicle speeds.	NAVI control unit
		A value of "Speed Signal" does not change according to vehicle speeds.	Vehicle speed signal circuit
Map matching is not complete GPS icon is not displayed	Check "GPS Antenna" in "SERVICE SYSTEM SELF TEST", "SERVICE MENU".	"Connected" is displayed for "GPS Antenna".	NAVI control unit
		"Connected" is not displayed for "GPS Antenna".	GPS antenna
Traffic information (XM Traffic) is not received.	Check "XM Antenna" in "SERVICE SYSTEM SELF TEST", "SERVICE MENU".	"Detected" is displayed for "XM Antenna".	NAVI control unit
		"Detected" is not displayed for "XM Antenna".	<ul style="list-style-type: none"> <li>• Antenna base</li> <li>• Antenna feeder</li> </ul>

#### RELATED TO AUDIO

# NAVIGATION SYSTEM

< SYMPTOM DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

Symptoms	Check items	Possible malfunction location / Action to take
NAVI control unit does not start.	—	NAVI control unit power supply and ground circuit. Refer to <a href="#">AV-189, "NAVI CONTROL UNIT : Diagnosis Procedure"</a> .
No sound comes out.	No sound from all speakers.	NAVI control unit power supply and ground circuit. Refer to <a href="#">AV-189, "NAVI CONTROL UNIT : Diagnosis Procedure"</a> .
	Only a certain speaker (front right, front left, rear right, or rear left) does not output sound.	<ul style="list-style-type: none"> <li>Poor connector connection of speaker.</li> <li>Sound signal circuit malfunction between NAVI control unit and speaker.</li> <li>Malfunction in speaker.</li> <li>Malfunction in NAVI control unit.</li> </ul>
Noise is mixed with audio.	Noise comes out from all speaker.	Malfunction in NAVI control unit.
	Noise comes out only from a certain speaker (front right, front left, rear right, or rear left).	<ul style="list-style-type: none"> <li>Poor connector connection of speaker.</li> <li>Sound signal circuit malfunction between NAVI control unit and speaker.</li> <li>Malfunction in speaker.</li> <li>Poor installation of speaker (e.g. backlash and looseness)</li> <li>Malfunction in NAVI control unit.</li> </ul>
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	<ul style="list-style-type: none"> <li>Poor connector connection of antenna or antenna feeder.</li> <li>Loose antenna base mounting nut. Refer to <a href="#">AV-216, "Exploded View"</a>.</li> </ul>
Radio is not received or poor reception.	<ul style="list-style-type: none"> <li>Other audio sounds are normal.</li> <li>Any radio cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no obstacles generating external noises).</li> </ul>	<ul style="list-style-type: none"> <li>Antenna amp. ON signal circuit malfunction.</li> <li>Poor connector connection of antenna or antenna feeder.</li> <li>Loose antenna base mounting nut. Refer to <a href="#">AV-216, "Exploded View"</a>.</li> </ul>
Satellite radio is not received.	It change to satellite radio mode.	<ul style="list-style-type: none"> <li>Poor connector connection NAVI control unit.</li> <li>Loose antenna base mounting nut. Refer to <a href="#">AV-216, "Exploded View"</a>.</li> </ul>
	It does not change to satellite radio mode.	NAVI control unit power supply and ground circuit. Refer to <a href="#">AV-189, "NAVI CONTROL UNIT : Diagnosis Procedure"</a> .

## RELATED TO USB

### NOTE:

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

Symptoms	Check items	Probable malfunction location / Action to take
iPod® or USB memory can not be recognized.	With iPod or USB memory Connected, check "USB Device" in "SERVICE STATUS", "SERVICE MENU".	<ul style="list-style-type: none"> <li>USB and AUX harness</li> <li>USB connector and AUX jack</li> <li>NAVI control unit</li> </ul>
		<ul style="list-style-type: none"> <li>USB and AUX harness</li> <li>USB connector and AUX jack</li> </ul>

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

## RELATED TO AUXILIARY INPUT

### NOTE:

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

Symptoms	Check items	Probable malfunction location
No voice sound is heard when AUX mode is selected.	Voice sound is heard when other modes are selected.	<ul style="list-style-type: none"> <li>USB and AUX harness</li> <li>USB connector and AUX jack</li> </ul>

## RELATED TO STEERING SWITCH

# NAVIGATION SYSTEM

< SYMPTOM DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

Symptoms	Possible malfunction location / Action to take
All steering switches are not operated.	Steering switch signal ground circuit. Refer to <a href="#">AV-200, "Diagnosis Procedure"</a> .
Only specified switch cannot be operated.	Steering switch
"SEEK UP", "SEEK DOWN" and "🔊" switches are not operated.	Steering switch signal A circuit. Refer to <a href="#">AV-196, "Diagnosis Procedure"</a> .
"🔊", "VOL UP", "VOL DOWN" and "SOURCE" switches are not operated.	Steering switch signal B circuit. Refer to <a href="#">AV-198, "Diagnosis Procedure"</a> .
The steering switch operates improperly. (The above phenomena excluded.)	<ul style="list-style-type: none"> <li>• EQ1 circuit</li> <li>• EQ3 circuit</li> </ul>

## RELATED TO CAMERA

Symptoms	Check items	Probable malfunction location / Action to take	
Camera image is not shown.	The guide line display is normal.	<ul style="list-style-type: none"> <li>• Rear view camera image signal circuit</li> <li>• Rear view camera power supply and ground circuits</li> </ul> Refer to <a href="#">AV-194, "Diagnosis Procedure"</a> .	
The screen is not switched to camera image.	Check "Direction Signal" in "SERVICE SYSTEM STATUS", "SERVICE MENU".	"Reverse" is displayed for "Direction Signal" when the shift lever is in R.	NAVI control unit
		"Reverse" is not displayed for "Direction Signal" when the shift lever is in R.	Reverse signal circuit
The guide line display is malfunctioning.	—	<ul style="list-style-type: none"> <li>• EQ2 circuit</li> <li>• EQ3 circuit</li> </ul>	

# HANDS-FREE PHONE SYMPTOMS

< SYMPTOM DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

## HANDS-FREE PHONE SYMPTOMS

### Symptom Table

INFOID:000000008280635

#### RELATED TO HANDS-FREE PHONE (EXCEPT FOR MEXICO)

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

#### Check Compatibility

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.

Symptoms	Check items	Possible malfunction location/Action to take
Does not recognize cellular phone connection.	Repeat the registration of cellular phone.	TEL adapter unit
Hands-free phone cannot be established.	—	<ul style="list-style-type: none"> <li>• TEL adapter unit power supply and ground circuit. Refer to <a href="#">AV-189, "TEL ADAPTER UNIT : Diagnosis Procedure"</a>.</li> <li>• Control signal circuit. Refer to <a href="#">AV-193, "Diagnosis Procedure"</a>.</li> <li>• AV communication circuit between NAVI control unit and TEL adapter unit.</li> </ul>
The other party's voice cannot be heard by hands-free phone.	Audio system sound is normal.	Sound signal (TEL voice, TEL guidance) circuit
	Audio system sound does not sound.	Refer to <a href="#">AV-202, "Symptom Table"</a> .
Originating sound is not heard by the other party with hands-free phone communication.	Voice recognition function is normal.	TEL adapter unit
	Voice recognition function does not work.	Microphone signal circuit. Refer to <a href="#">AV-191, "Diagnosis Procedure"</a> .

#### RELATED TO HANDS-FREE PHONE (FOR MEXICO)



# HANDS-FREE PHONE SYMPTOMS

< SYMPTOM DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

Symptoms	Check items	Possible malfunction location/Action to take
Does not recognize cellular phone connection.	Repeat the registration of cellular phone.	TEL adapter unit
Hands-free phone cannot be established.	—	<ul style="list-style-type: none"> <li>TEL adapter unit power supply and ground circuit. Refer to <a href="#">AV-189, "TEL ADAPTER UNIT : Diagnosis Procedure"</a>.</li> <li>Control signal circuit. Refer to <a href="#">AV-193, "Diagnosis Procedure"</a>.</li> <li>AV communication circuit between NAVI control unit and TEL adapter unit.</li> </ul>
The other party's voice cannot be heard by hands-free phone.	Audio system sound is normal.	Sound signal (TEL voice, TEL guidance) circuit
	Audio system sound does not sound.	Refer to <a href="#">AV-202, "Symptom Table"</a> .
Originating sound is not heard by the other party with hands-free phone communication.	Voice recognition function is normal.	TEL adapter unit
	Voice recognition function does not work.	Microphone signal circuit. Refer to <a href="#">AV-191, "Diagnosis Procedure"</a> .

## RELATED TO STEERING SWITCH

Symptoms	Possible malfunction location / Action to take
All steering switches are not operated.	Steering switch signal ground circuit. Refer to <a href="#">AV-200, "Diagnosis Procedure"</a> .
Only specified switch cannot be operated.	Replace steering switch. Refer to <a href="#">AV-222, "Exploded View"</a> .
"SEEK UP", "SEEK DOWN" and "  " switches are not operated.	Steering switch signal A circuit. Refer to <a href="#">AV-196, "Diagnosis Procedure"</a> .
"  ", "VOL UP", "VOL DOWN" and "SOURCE" switches are not operated.	Steering switch signal B circuit. Refer to <a href="#">AV-198, "Diagnosis Procedure"</a> .
The steering switch operates improperly. (The above phenomena excluded.)	<ul style="list-style-type: none"> <li>EQ1 circuit</li> <li>EQ3 circuit</li> </ul>

# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

## NORMAL OPERATING CONDITION

### Description

INFOID:000000008280636

**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 display is turned off.	Press "☀/☾" to turn on 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 voice guidance volume level.
No map is displayed on the screen.	The map SD-card is not inserted.	Insert the map SD-card correctly.
	A screen other than map screen is displayed.	Press "MAP".
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the navigation system.

**NOTE:**

Locations stored in the Address Book and other memory functions may be lost if the vehicle's battery is disconnected or becomes discharged. If this occurs, service the vehicle's battery as necessary and re-enter the information in the Address Book.

### RELATED TO AUDIO

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

**NOTE:**

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

Symptom	Cause and Counter measure
Cannot play	Check if the CD was inserted correctly.
	Check if the CD is scratched or dirty.
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.
	If there is a mixture of music CD files (CD-DA data) and MP3/WMA files on a CD, only the music CD files (CD-DA data) will be played.
	Files with extensions other than ".MP3", ".WMA", ".mp3", or ".wma" cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format, This may occur depending on the variation or the setting of MP3/WMA writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the CD.
Check if the CD is protected by copyright.	

## NORMAL OPERATING CONDITION

**[BASE AUDIO WITH NAVIGATION]**

### < SYMPTOM DIAGNOSIS >

Symptom	Cause and Counter measure
Poor sound quality	Check if the CD is scratched or dirty.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA CD, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.
Move immediately to the next song when playing	When a non-MP3/WMA file has been given an extension of ".MP3", ".WMA", ".mp3" or ".wma", or when play is prohibited by copyright protection, the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.
Poor reception only from a certain radio broadcast station.	Check incoming radio wave signal strength of applicable broadcast station.
Buzz/rattle sound from speaker	The majority of rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the rattle.

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

**NOTE:**

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

### MAP SD-CARD

Symptom	Possible cause	Possible solution
The message "Error" appears.	The SD-card is not recognized by the system.	Check the map SD-card data. Files can be lost.
		If you see any damage, replace the map SD-card.

### RELATED TO ROUTE CALCULATION AND VISUAL GUIDANCE

Symptom	Possible cause	Possible solution
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 cancelled.	Turn on the route guidance.
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.
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 a global route calculation based on multiple route calculations.
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.	Reset the destination to a main or ordinary road, and recalculate the route.



## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

Symptom	Possible cause	Possible solution
The landmark information does not correspond to the actual information.	This may be caused by insufficient or incorrect data on the map SD-card.	Updated information will be included in the next version of the map SD-card.
The suggested route does not exactly connect to the starting point, waypoints, or destination.	There is no data for route calculation closes to these locations.	Set the starting point, waypoints and destination on a main road, and perform route calculation.

### RELATED TO VEHICLE ICON

Symptom	Possible cause	Possible solution
Names of roads and locations differ between 2D and 3D view.	This is because the quantity of the displayed information is reduced so that the screen does not become difficult to read. There is also a chance that the names of roads or locations may be displayed several times, and that the names appearing on the screen may be different because of a processing procedure.	This is not a malfunction.
The vehicle icon is not displayed in the correct position.	The vehicle was transported after the ignition switch was pressed off, for example, by a ferry or car transporter.	Drive the vehicle for a while on a road where GPS signals can be received.
	The position and direction of the vehicle icon may be incorrect depending on the driving environments and the levels of positioning accuracy of the navigation system.	This is not a malfunction. Drive the vehicle for a while to automatically correct the position and direction of the vehicle icon.
When the vehicle is travelling on a new road, the vehicle icon is located on another nearby road.	The system automatically places the vehicle icon on the nearest available road, because the new road is not stored in the map data.	Updated road information will be included in the next version of the map SD-card.
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.
	The map data has an error 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 SD-card.

### RELATED TO VOICE GUIDANCE

Symptom	Possible cause	Possible solution
Voice guidance is not available	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 guide is set to off.	Turn voice guidance ON.
	Route guidance is set to off.	Route guidance is set to ON.
The guidance contact does not correspond to the actual condition.	The contact of voice guidance may vary, depending on the types of intersections at which turn are made.	Follow all traffic rules and regulations.

### RELATED TO TRAFFIC INFORMATION

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

Symptom	Possible cause	Possible solution
The traffic information is not displayed	The traffic information is not set to on.	Set the traffic information to on.
	You are in an area where traffic information is not available	Scroll to an area where traffic information is available
	You have not subscribed to XM NavTraffic or, your subscription to XM NavTraffic has expired.	Check your subscription status of XM NavTraffic.
	The map scale is set at a level where the display of icons is impossible.	Check that the map scale is set at a level in which the display of icons is possible.
With the automatic detour route search ON, no detour route is set to avoid congested areas.	There is no faster route compared to the current route, based on the road network and traffic information.	The automatic detour search is not intended for avoiding traffic jams. It searches for the fastest route taking into consideration such things as traffic jams.
The route does not avoid road section with traffic information stating it is closed due to road construction.	The navigation system is designed not to avoid this event because the actual period of closure may differ from the declared roadwork period.	Observe the actual road condition and follow the instructions on road for detour when necessary. If the road closure is for certain, use detour function and set the detour distance to avoid the closed road section.
Traffic information displayed differs from information from other media (e.g. radio).	Other media may use different information sources.	Observe the actual road conditions and regulations. Always observe safe driving practices and follow all traffic regulations.

### RELATED TO TELEPHONE

Symptoms	Cause and Counter measure
System fails to interpret the command correctly.	1. Ensure that the command format 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. Refer to <a href="#">AV-175, "Diagnosis Description"</a> .
The system consistently selects the wrong entry from the phone book.	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the "List Names" command.
	2. Replace one of the names being confused with a new name.

### RELATED TO HANDS-FREE PHONE (EXCEPT FOR MEXICO)

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BASE AUDIO WITH NAVIGATION]

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

### RELATED TO HANDS-FREE PHONE (FOR MEXICO)

Symptom	Cause and Counter measure	H
Cannot use hands-free phone	<p>Customer will not be able to use a hands-free phone under the following conditions.</p> <ul style="list-style-type: none"> <li>• The vehicle is outside of the telephone service area.</li> <li>• The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area.</li> <li>• The cellular phone is locked to prevent it from being dialed.</li> </ul> <p><b>NOTE:</b> While a cellular phone is connected through the Bluetooth wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth Hands-Free Phone System cannot charge cellular phones.</p>	I J K
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.	L
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.	M

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## REMOVAL AND INSTALLATION

### NAVI CONTROL UNIT

#### Removal and Installation

INFOID:000000008280637

#### REMOVAL

1. Remove cluster lid C. Refer to [JP-13. "Exploded View"](#).
2. Remove NAVI control unit mounting screws.
3. Pull out NAVI control unit, remove harness clip, and then disconnect antenna feeder and harness connectors.
4. Remove NAVI control unit and bracket as a unit.
5. Remove brackets from NAVI control unit.

#### INSTALLATION

Install in the reverse order of removal.

# FRONT SPEAKER

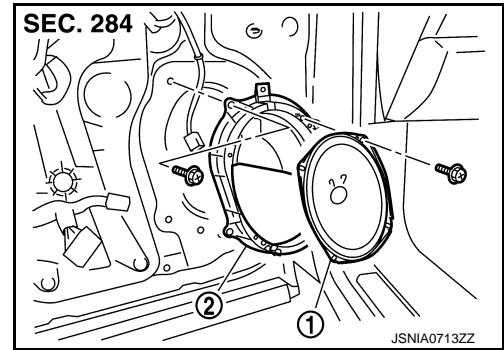
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH NAVIGATION]

## FRONT SPEAKER

### Exploded View

INFOID:000000008280638



1. Front speaker
2. Bracket

### Removal and Installation

INFOID:000000008280639

#### REMOVAL

1. Remove front door finisher. Refer to [INT-12. "FRONT DOOR FINISHER : Exploded View"](#).
2. Remove front door speaker from bracket.

#### INSTALLATION

Install in the reverse order of removal.

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## REAR SPEAKER

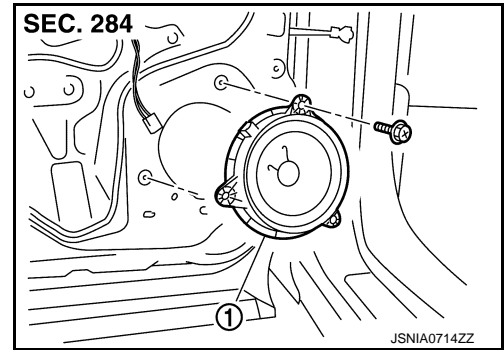
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH NAVIGATION]

### REAR SPEAKER

Exploded View

INFOID:000000008280640



1. Rear speaker

### Removal and Installation

INFOID:000000008280641

#### REMOVAL

1. Remove rear door finisher. Refer to [INT-15. "REAR DOOR FINISHER : Exploded View"](#).
2. Remove rear speaker.

#### INSTALLATION

Install in the reverse order of removal.

# TWEETER

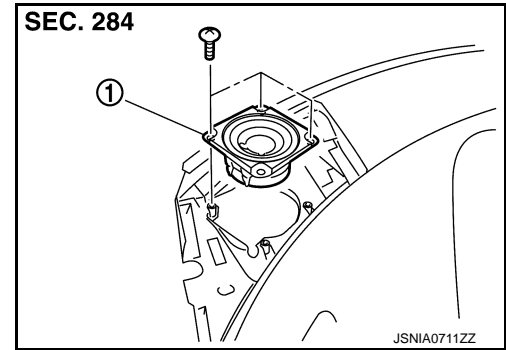
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH NAVIGATION]

## TWEETER

### Exploded View

INFOID:000000008280642



1. Tweeter

### Removal and Installation

INFOID:000000008280643

#### REMOVAL

1. Remove instrument panel. Refer to [JP-13, "Exploded View"](#).
2. Remove tweeter from instrument panel.

#### INSTALLATION

Install in the reverse order of removal.

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# RADIO & SATELLITE RADIO ANTENNA

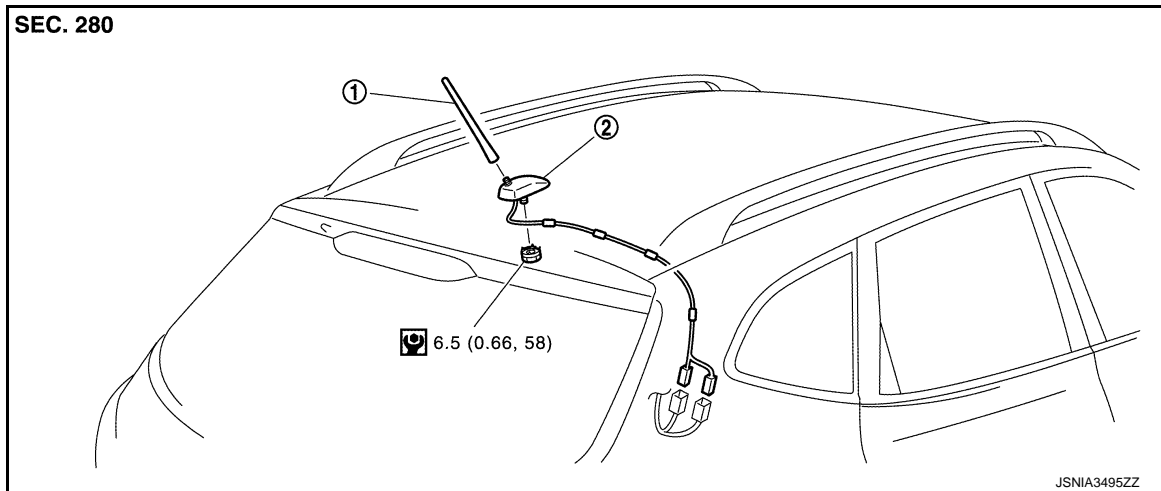
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH NAVIGATION]

## RADIO & SATELLITE RADIO ANTENNA

### Exploded View

INFOID:000000008280644



1. Antenna rod
2. Antenna base

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

### Removal and Installation

INFOID:000000008280645

#### REMOVAL

1. Remove headlining assembly. Refer to [INT-24, "NORMAL ROOF : Exploded View"](#) (normal roof models) or [INT-27, "SUNROOF : Exploded View"](#) (sunroof models).
2. Remove nuts, and then remove antenna base.

#### INSTALLATION

Install in the reverse order of removal.

#### **CAUTION:**

**If the antenna base mounting nut is tightened looser than the specified torque, then this will lower the sensitivity of the antenna. On the other hand, if the nut is tightened tighter than the specified torque, then this will deform the roof panel.**



# GPS ANTENNA

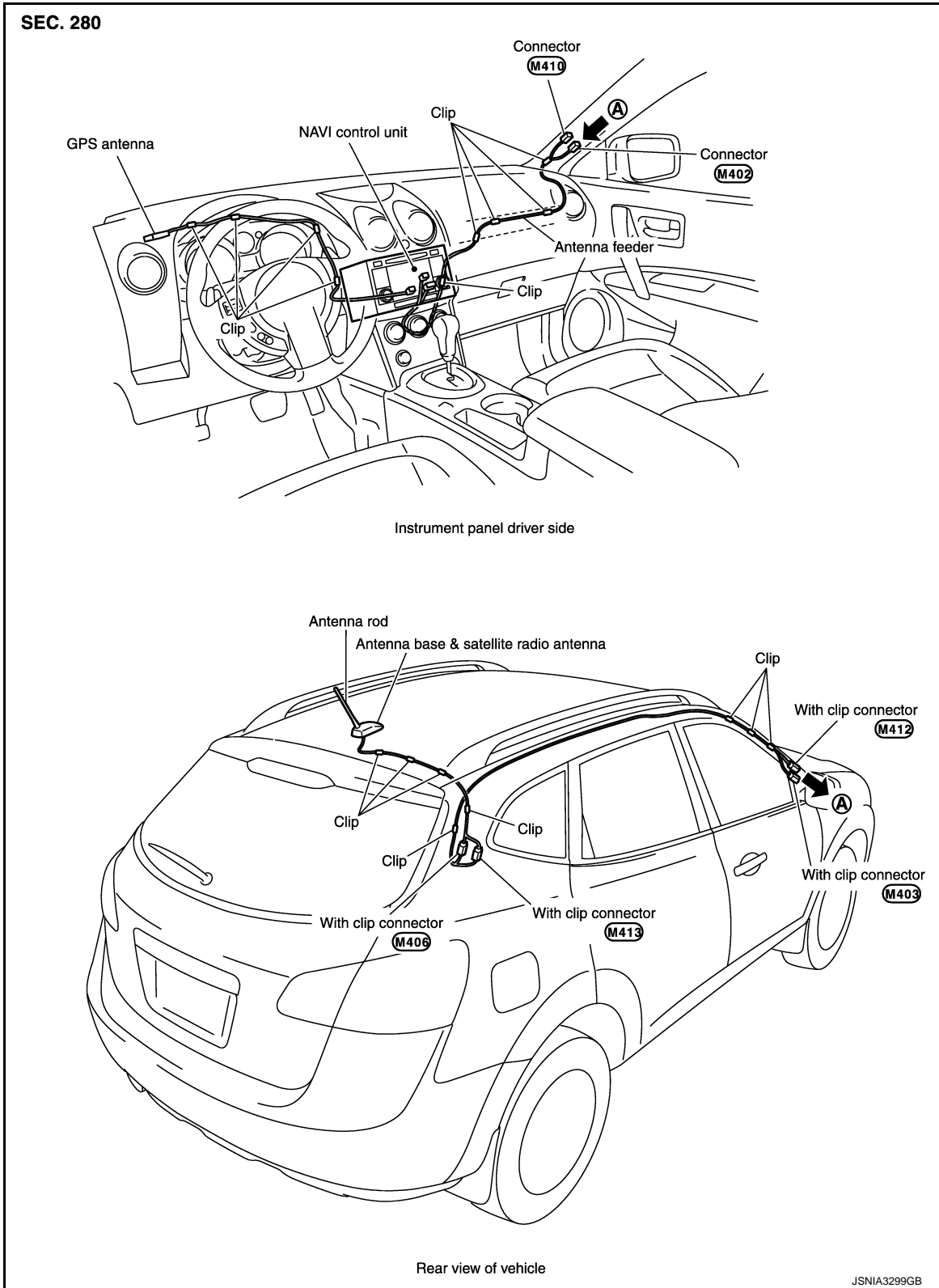
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH NAVIGATION]

## GPS ANTENNA

### Feeder Layout

INFOID:000000008280646



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### Removal and Installation

INFOID:000000008280647

#### REMOVAL

1. Remove instrument panel. Refer to [JP-13. "Exploded View"](#).

## GPS ANTENNA

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH NAVIGATION]

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2. Remove GPS antenna screw to remove GPS antenna.

### INSTALLATION

Install in the reverse order of removal.

# TEL ADAPTER UNIT

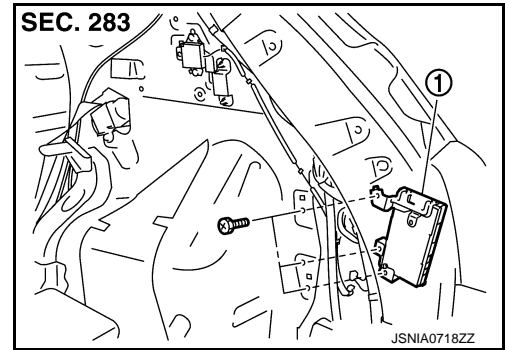
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH NAVIGATION]

## TEL ADAPTER UNIT

### Exploded View

INFOID:000000008280648



1. TEL adapter unit

### Removal and Installation

INFOID:000000008280649

#### REMOVAL

1. Remove luggage side lower finisher (RH). Refer to [INT-31, "Exploded View"](#).
2. Remove TEL adapter unit.

#### INSTALLATION

Install in the reverse order of removal.

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# TEL ANTENNA

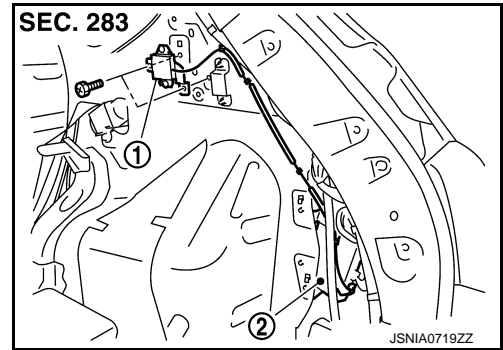
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH NAVIGATION]

## TEL ANTENNA

### Exploded View

INFOID:000000008280650



1. TEL antenna
2. TEL adapter unit

### Removal and Installation

INFOID:000000008280651

#### REMOVAL

1. Remove luggage side upper finisher (RH). Refer to [INT-31. "Exploded View"](#).
2. Remove TEL antenna.

#### INSTALLATION

Install in the reverse order of removal.

# MICROPHONE

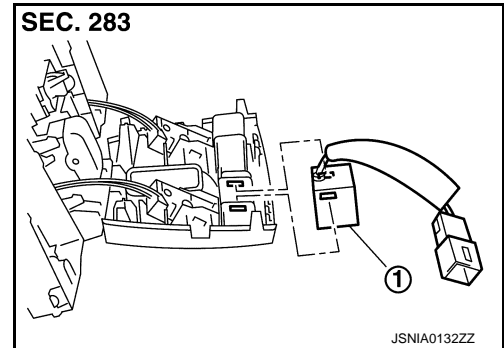
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH NAVIGATION]

## MICROPHONE

### Exploded View

INFOID:000000008280652



1. Microphone

### Removal and Installation

INFOID:000000008280653

#### REMOVAL

1. Remove map lamp assembly. Refer to [INT-24, "NORMAL ROOF : Exploded View"](#) (normal roof models) or [INT-27, "SUNROOF : Exploded View"](#) (sunroof models).
2. Remove microphone from map lamp assembly.

#### INSTALLATION

Install in the reverse order of removal.

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## STEERING SWITCH

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH NAVIGATION]

---

### STEERING SWITCH

#### Exploded View

INFOID:000000008280654

Refer to [SR-11, "Exploded View"](#).

#### Removal and Installation

INFOID:000000008280655

#### REMOVAL

Refer to [SR-11, "Removal and Installation"](#).

#### INSTALLATION

Install in the reverse order of removal.

# REAR VIEW CAMERA

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH NAVIGATION]

## REAR VIEW CAMERA

### Removal and Installation

INFOID:000000008280656

#### REMOVAL

1. Remove back door finisher. Refer to [INT-34, "Exploded View"](#).
2. Remove rear view camera screws to remove rear view camera.

#### INSTALLATION

Install in the reverse order of removal.

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## USB CONNECTOR AND AUX JACK

< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH NAVIGATION]

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### USB CONNECTOR AND AUX JACK

#### Removal and Installation

INFOID:000000008280657

#### REMOVAL

1. Remove center console assembly. Refer to [IP-22. "Exploded View"](#).
2. Push the pawl from the back of center console assembly to remove USB connector and AUX jack.

#### INSTALLATION

Install in the reverse order of removal.



# ANTENNA FEEDER

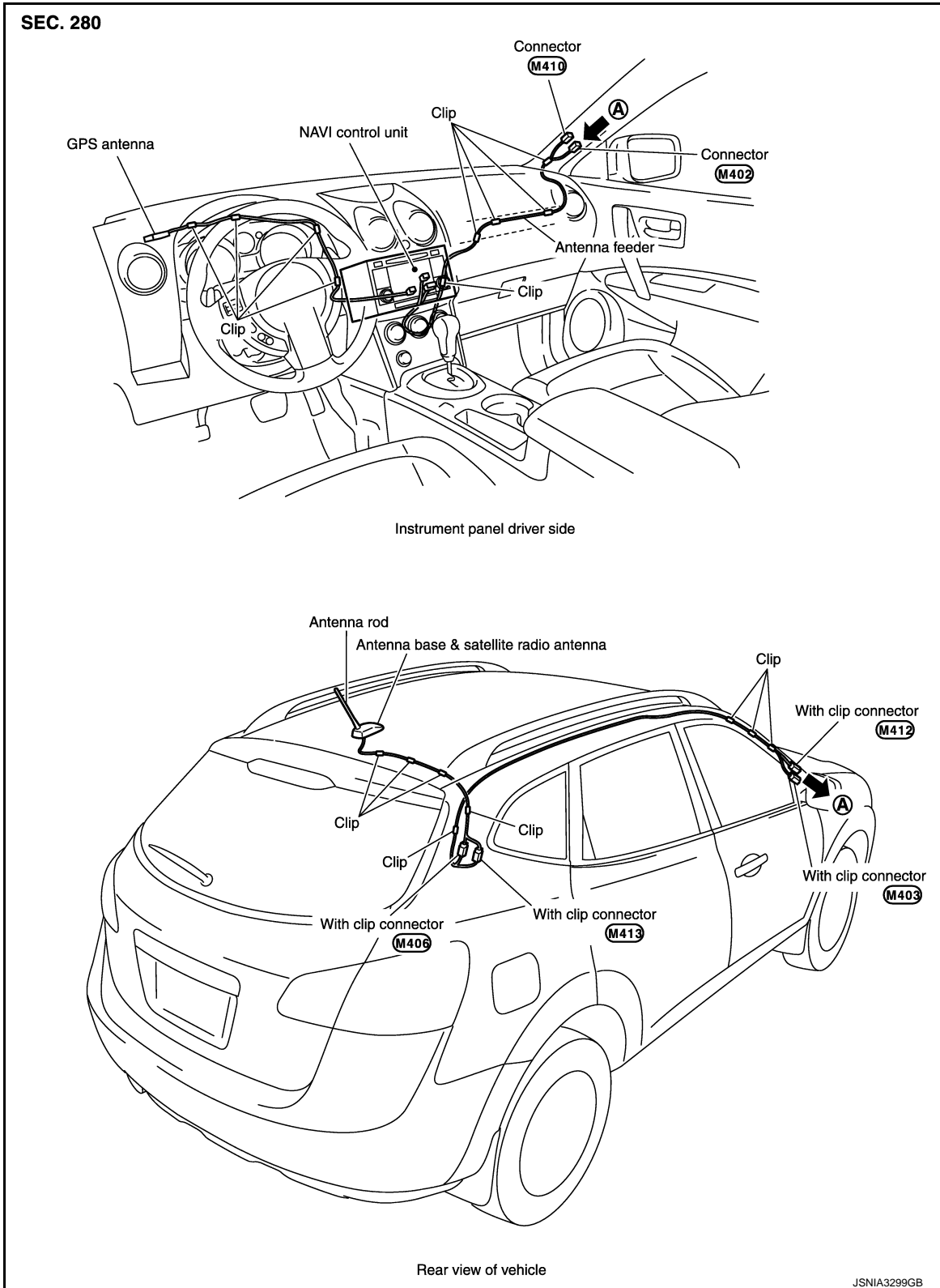
< REMOVAL AND INSTALLATION >

[BASE AUDIO WITH NAVIGATION]

## ANTENNA FEEDER

### Feeder Layout

INFOID:000000008280658



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**PRECAUTION****PRECAUTIONS  
FOR MEXICO****FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"**

INFOID:000000008280659

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

**WARNING:**

**Always observe the following items for preventing accidental activation.**

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

**Always observe the following items for preventing accidental activation.**

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

**EXCEPT FOR MEXICO****EXCEPT FOR MEXICO : Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"**

INFOID:000000008280660

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

**WARNING:**

**Always observe the following items for preventing accidental activation.**

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".**
- **Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.**

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

# PRECAUTIONS

< PRECAUTION >

[BOSE AUDIO WITH NAVIGATION]

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

## Precaution for Trouble Diagnosis

INFOID:000000008280661

### AV COMMUNICATION SYSTEM

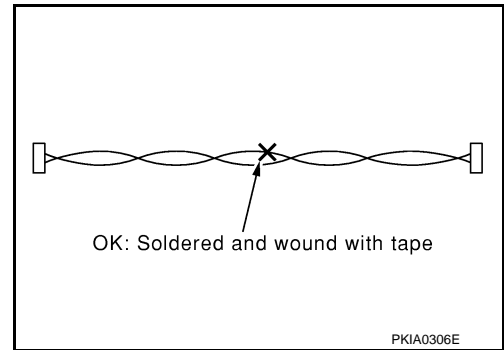
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

## Precaution for Harness Repair

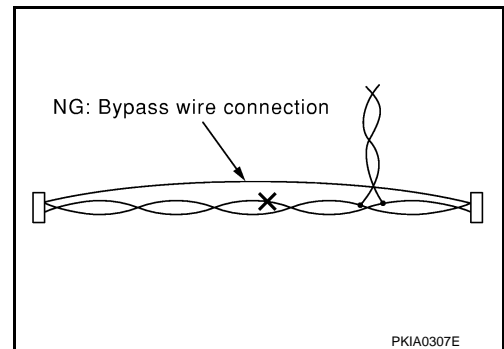
INFOID:000000008280662

### AV COMMUNICATION SYSTEM

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



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



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# PREPARATION

< PREPARATION >

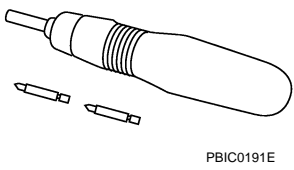
[BOSE AUDIO WITH NAVIGATION]

## PREPARATION

### PREPARATION

#### Commercial Service Tools

INFOID:000000008280663

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

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

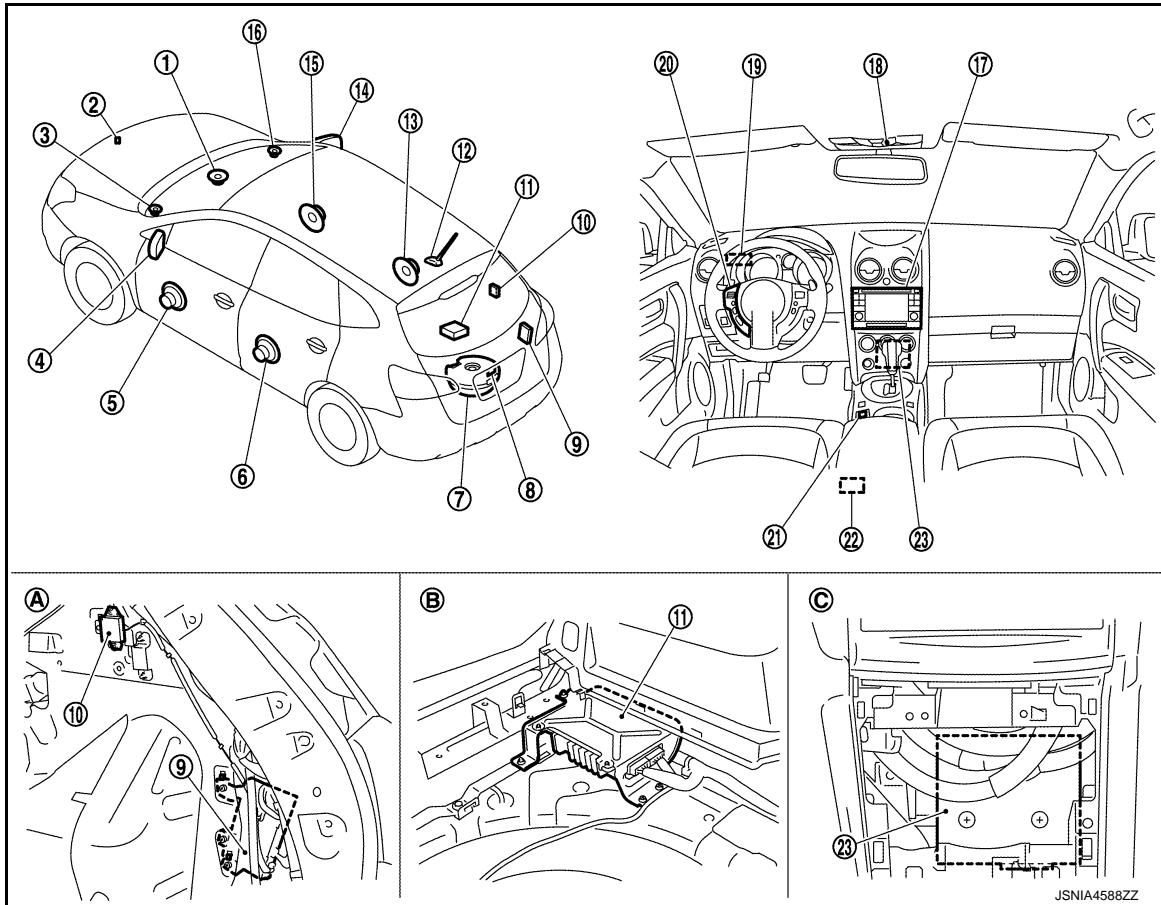
[BOSE AUDIO WITH NAVIGATION]

## SYSTEM DESCRIPTION

### COMPONENT PARTS

#### Component Parts Location

INFOID:000000008280664



- |  |   |   |
|--|---|---|
| 1. Center speaker                            | 2. Front camera (with around view monitor)                      | 3. Tweeter LH   |
| 4. Side camera LH (with around view monitor) | 5. Front speaker LH   | 6. Rear speaker LH  |
| 7. Woofer                                    | Rear camera (with around view monitor)                          | 9. TEL adapter unit                                       |
| 10. TEL antenna                              | 8. Rear view camera (with rear view monitor)                    | 12. Antenna base (antenna amp. and satellite antenna)     |
| 13. Rear speaker RH                          | 11. BOSE amp.   | 15. Front speaker RH                                      |
| 16. Tweeter RH                               | 14. Side camera RH (with around view monitor)                   | 17. NAVI control unit                                     |
| 19. GPS antenna                              | 17. NAVI control unit   | 18. Microphone  |
| 22. USB connector and AUX jack               | 20. Steering switch   | 21. Around view monitor switch (with around view monitor) |
| A. Luggage side RH                           | 23. Around view monitor control unit (with around view monitor) | C. Cluster lid D removed condition                        |
|  | B. Luggage side RH  |   |

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# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

## Component Description

INFOID:000000008280665

Part name	Description
NAVI control unit	<ul style="list-style-type: none"> <li>Operational switch of navigation system and audio system are integrated.</li> <li>Includes the audio, navigation, satellite radio, around view monitor, rear view monitor, USB connection and AUX connection functions.</li> <li>Map data can be loaded from the SD-card inserted in the built-in SD-card slot.</li> <li>Sound signals are output to BOSE amp.</li> <li>It inputs the illumination signals that are required for the display dimming control.</li> <li>It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake).</li> <li>Touch panel function can be operated for each system by touching a display directly.</li> <li>Camera image signal is input from around view monitor control unit.</li> <li>Image switch signal is input from around view monitor control unit.</li> <li>It supplies power to rear view camera.</li> <li>Camera image signal is input from rear view camera.</li> </ul>
Map SD-card	A collection of Map data.
Front speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
Tweeter	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs high range sounds.</li> </ul>
Center speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs high and mid range sounds.</li> </ul>
Rear speaker	<ul style="list-style-type: none"> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs high, mid and low range sounds.</li> </ul>
Woofers	<ul style="list-style-type: none"> <li>Woofers amp. ON signal is input from BOSE amp.</li> <li>Outputs sound signal from BOSE amp.</li> <li>Outputs low range sounds.</li> </ul>
BOSE amp.	<ul style="list-style-type: none"> <li>Inputs BOSE amp. ON signal and sound signal from NAVI control unit.</li> <li>Outputs sound signal to each speaker, and outputs woofers amp. ON signal and sound signal to woofers.</li> </ul>
Steering switch	<ul style="list-style-type: none"> <li>Operations for audio and hands-free phone are possible.</li> <li>Steering switch signal (operation signal) is output to NAVI control unit.</li> </ul>
TEL adapter unit	<ul style="list-style-type: none"> <li>Inputs the TEL voice signal from TEL antenna and outputs it to the NAVI control unit.</li> <li>It is connected with the NAVI control unit via AV communication and controlled with the NAVI control unit.</li> </ul>
TEL antenna	Receives the TEL voice signal and outputs it to the TEL adapter unit.
Microphone	<ul style="list-style-type: none"> <li>Used for hands-free phone operation.</li> <li>Microphone signal is transmitted to TEL adapter unit.</li> <li>Power (microphone VCC) is supplied from TEL adapter unit.</li> </ul>
GPS antenna	GPS signal is received and transmitted to NAVI control unit.
Antenna base	<p>A radio antenna base integrated with radio antenna amp. and satellite radio antenna is adopted.</p> <p>ANTENNA AMP.</p> <ul style="list-style-type: none"> <li>Radio signal received by rod antenna is amplified and transmitted to NAVI control unit.</li> <li>Power (antenna amp. ON signal) is supplied from NAVI control unit.</li> </ul> <p>SATELLITE RADIO ANTENNA</p> <ul style="list-style-type: none"> <li>Receives satellite radio waves and outputs it to NAVI control unit.</li> </ul>
USB connector and AUX jack	<ul style="list-style-type: none"> <li>Sound signal of auxiliary input is transmitted to NAVI control unit.</li> <li>Sound signal of USB input is transmitted to NAVI control unit.</li> </ul>
Rear view camera	<ul style="list-style-type: none"> <li>Camera power supply is input from NAVI control unit.</li> <li>The image of vehicle rear view is transmitted to NAVI control unit.</li> </ul>

## COMPONENT PARTS

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

Part name	Description
Around view monitor control unit	<ul style="list-style-type: none"> <li>• It supplies power to front camera, rear camera, and side camera. And then it superimposes the images from each camera and outputs them to NAVI control unit.</li> <li>• Superimpose the guiding line, predictive course line and warning message to the camera image that outputs to NAVI control unit.</li> <li>• Receives camera switch signal from around view monitor switch by hard wire.</li> <li>• Outputs image switch signal to NAVI control unit by hard wire.</li> <li>• Receives vehicle speed signal and steering angle sensor signal by can communication, and receives reverse signal by hard wire.</li> </ul>
Front camera	It inputs the power supply from around view monitor control unit and outputs the image of the vehicle front to around view monitor control unit.
Rear camera	It inputs the power supply from around view monitor control unit and outputs the image of the vehicle rear to around view monitor control unit.
Side camera LH	It inputs the power supply from around view monitor control unit and outputs the image of the vehicle LH to around view monitor control unit.
Side camera RH	It inputs the power supply from around view monitor control unit and outputs the image of the vehicle RH to around view monitor control unit.
Around view monitor control switch	Outputs camera switch signal to around view monitor control unit by hard wire.
Steering angle sensor	It is connected to the around view monitor control unit and transmits the steering angle sensor signal via CAN communication.

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# SYSTEM

< SYSTEM DESCRIPTION >

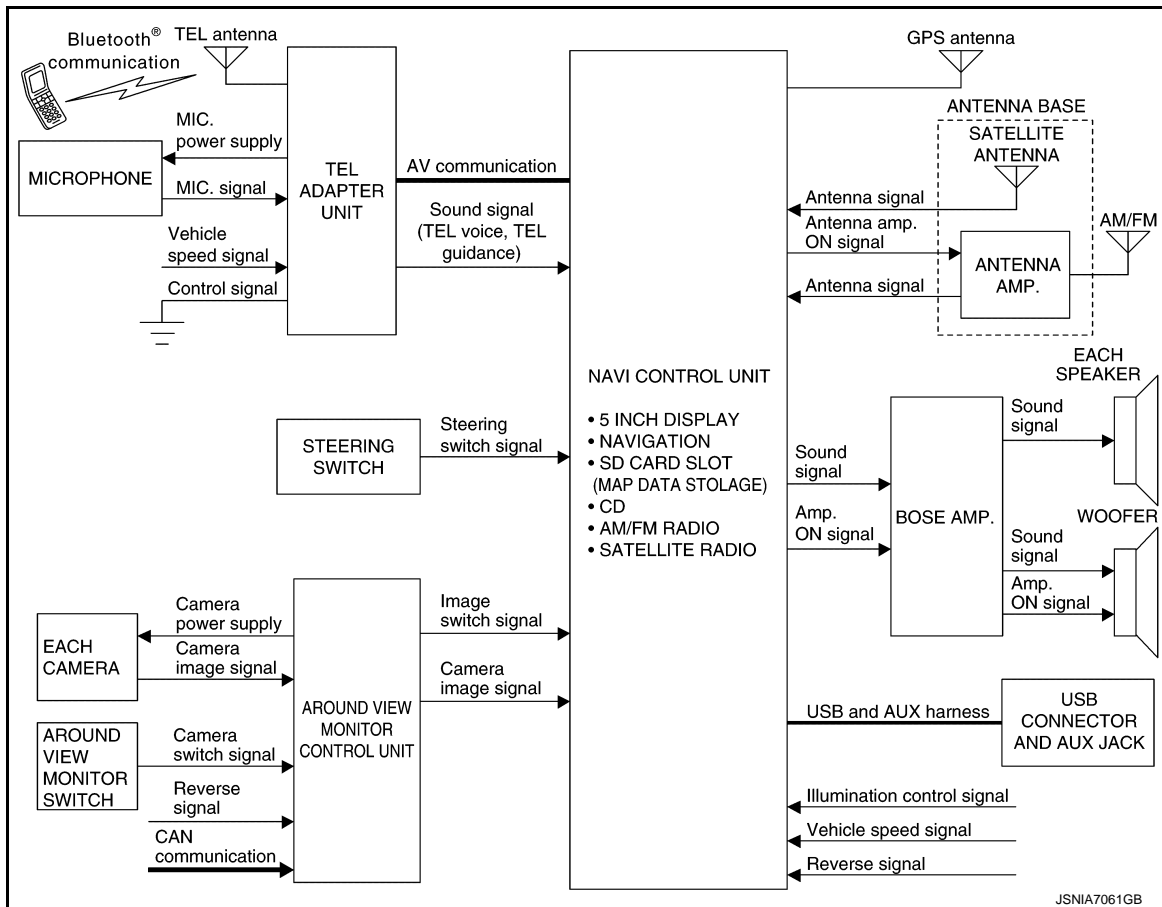
[BOSE AUDIO WITH NAVIGATION]

## SYSTEM

### System Diagram

INFOID:000000008280666

### WITH AROUND VIEW MONITOR



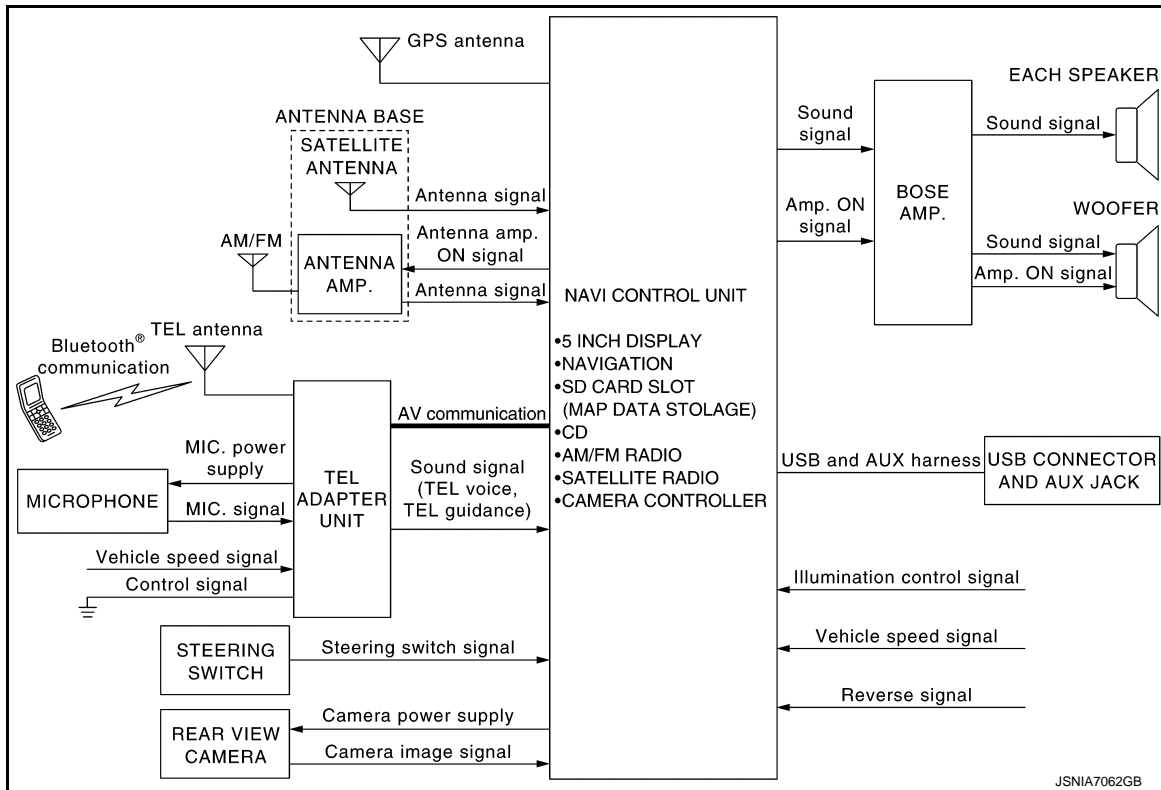


# SYSTEM

< SYSTEM DESCRIPTION >

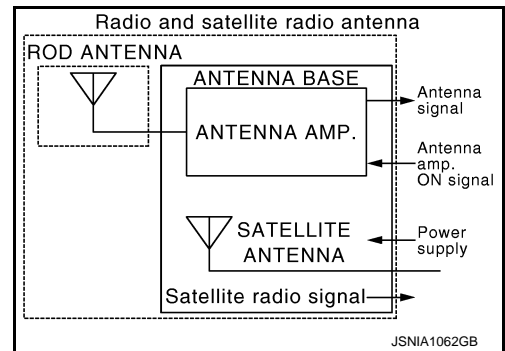
[BOSE AUDIO WITH NAVIGATION]

WITH REAR VIEW MONITOR



**NOTE:**

An antenna base integrated with radio antenna amp. and satellite radio antenna is adopted.



## System Description

INFOID:000000008280667

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

Audio function and display are built into NAVI control unit.

This navigation has the following functions.

- Map data on SD-card.
- Full support for playback of music from iPod® and USB device.
- High resolution color 5 inch display with touch panel function.
- FM/AM twin digital tuner.
- USB mass storage connection.
- Satellite radio.
- Hands-free phone system.

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

## NAVIGATION SYSTEM FUNCTION

### Description

- The navigation system can be operated by control panel of the NAVI control unit and display (touch panel) of the NAVI control unit.
- Guide sound during the operation of the navigation system is output from NAVI control unit to front speaker.

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AV

# SYSTEM

## [BOSE AUDIO WITH NAVIGATION]

### < SYSTEM DESCRIPTION >

- NAVI 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 NAVI control unit.

#### POSITION DETECTION PRINCIPLE

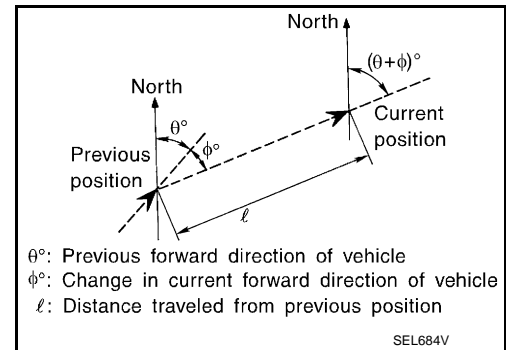
The navigation system periodically calculates the vehicle's current position according to the following three signals:

- 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 by 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  
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.

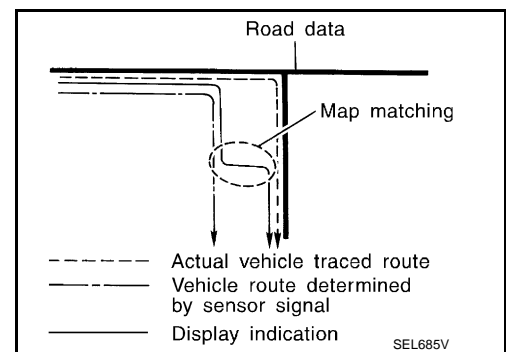
More accurate traveling direction is detected because priorities are set for the signals from these two devices according to the situation.

#### MAP-MATCHING

Map-matching compares a current location detected by the method in the "Location Detection Principle" with a 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 this case, the vehicle mark on the display must be corrected manually.

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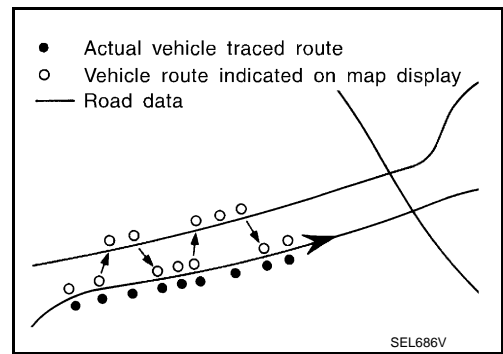
## < SYSTEM DESCRIPTION >

## [BOSE AUDIO WITH NAVIGATION]

- 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.

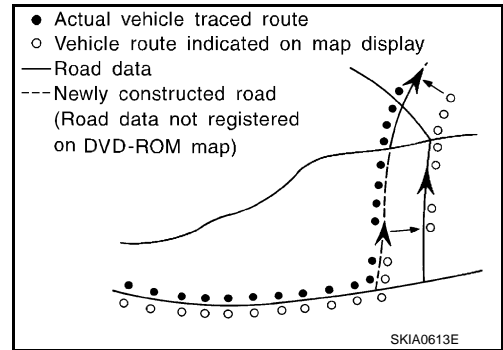
They are of the same priority if two roads are running in parallel. Therefore, the vehicle mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road.



- 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.

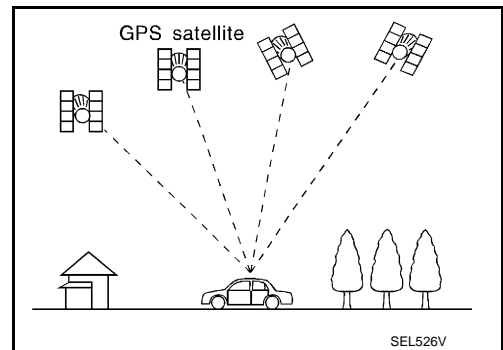
- Effective range for comparing the vehicle position and travel direction calculated by the distance and direction with the road data read from the map SD-card is limited. Therefore, correction by map-matching is not possible when there is an excessive gap between current vehicle position and the position on the map.



### GPS (Global Positioning System)

GPS (Global Positioning System) is developed for and is controlled by the US Department of Defense. The system utilizes GPS satellites (NAVSTAR), transmitting out radio waves while flying on an orbit around the earth at an altitude of approximately 21,000 km (13,049 mile).

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



Accuracy of the GPS will deteriorate under the following conditions:

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

### NOTE:

- The detection result has an error of approximately 10 m (32.81 ft) even with a high-precision three dimensional positioning.
- There may be cases when the accuracy is lowered and radio waves are stopped intentionally because the GPS satellite signal is controlled by the US trace control center.

### SATELLITE RADIO FUNCTION

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

### AUXILIARY INPUT FUNCTION

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## < SYSTEM DESCRIPTION >

## [BOSE AUDIO WITH NAVIGATION]

- Sound can be output from an external device by connecting a device with USB connector and AUX jack.
- AUX sound signals are transmitted to each speaker via NAVI control unit and BOSE amp.

### REAR VIEW MONITOR FUNCTION (WITH REAR VIEW MONITOR)

#### Camera Image Operation Principle

- The NAVI control unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the NAVI control unit when power is supplied from the NAVI control unit.
- The NAVI control unit combines a warning message and fixed guide lines with an image received from the rear view camera to display a rear view camera image on the screen.

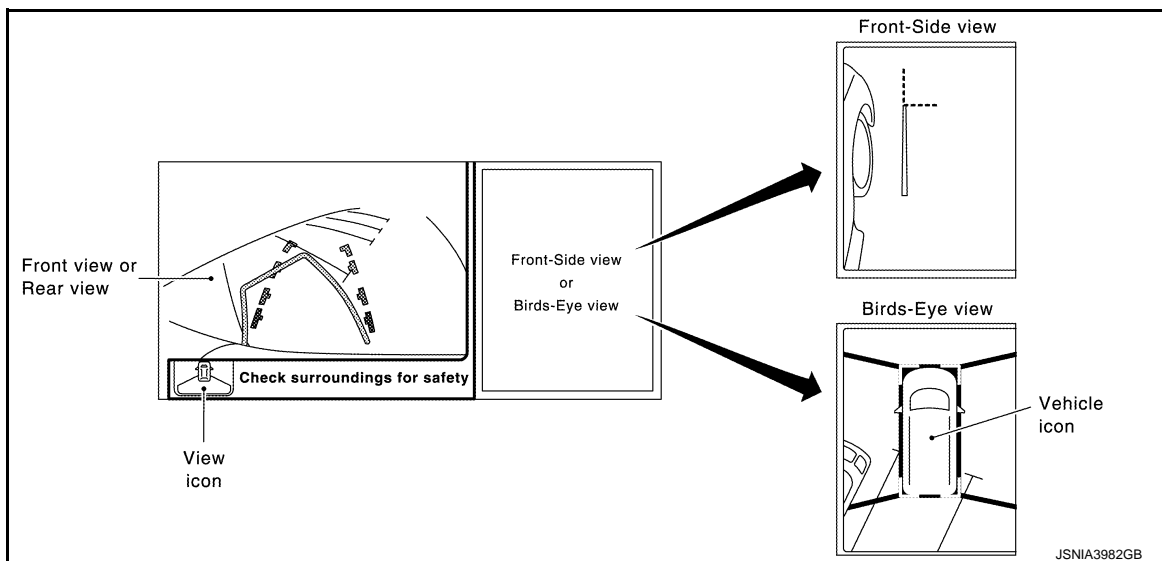
### AROUND VIEW MONITOR FUNCTION (WITH AROUND VIEW MONITOR)

- This system is equipped with wide-angle cameras on the front and rear of the vehicle and on both right and left door mirrors. The images from front view, rear view, front-side view (RH side), and birds-eye view that shows the view from the top of the vehicle are displayed to monitor the vehicle surroundings.
- Around view monitor control unit cuts out and expands the image received from each camera to create each view.
- In front view and rear view, the vehicle width, distance lines and predictive course lines are superimposed and displayed. In front-side view, the vehicle distance guiding line and vehicle width guiding line are displayed.
- The Birds-Eye view converts the images from 4 cameras into the overhead view and displays the status of the vehicle on display. The vehicle icon that are displayed on the Birds-Eye view display are rendered by around view monitor control unit.

#### Around View Monitor Screen

- Around view monitor combines and displays the travel direction view and “Birds-Eye view”, “Front-Side view”.
- Around view monitor control unit renders the view icon and warning message on display. Language of warning message can be selected by CONSULT.
- Around view monitor control unit renders the view icon and warning message on display.

Screen constitution



#### Operation Description

- Around view monitor operates by pressing the “CAMERA” switch (around view monitor switch) or shifting the selector lever to the reverse position.
- When the selector lever is in any position other than the reverse position, the screen is switched to the around view monitor by pressing the “CAMERA” switch (around view monitor switch).
- The screen is switched to the around view monitor by shifting the selector lever to the reverse position.
- In the around view monitor, Birds-Eye view, Front-side view can be switched by pressing the “CAMERA” switch (around view monitor switch).
- The around view monitor is cancelled 3 minutes after pressing the “CAMERA” switch (around view monitor switch), and then the screen returns to the screen before displaying the around view monitor when selector lever is in a position other than the reverse position.

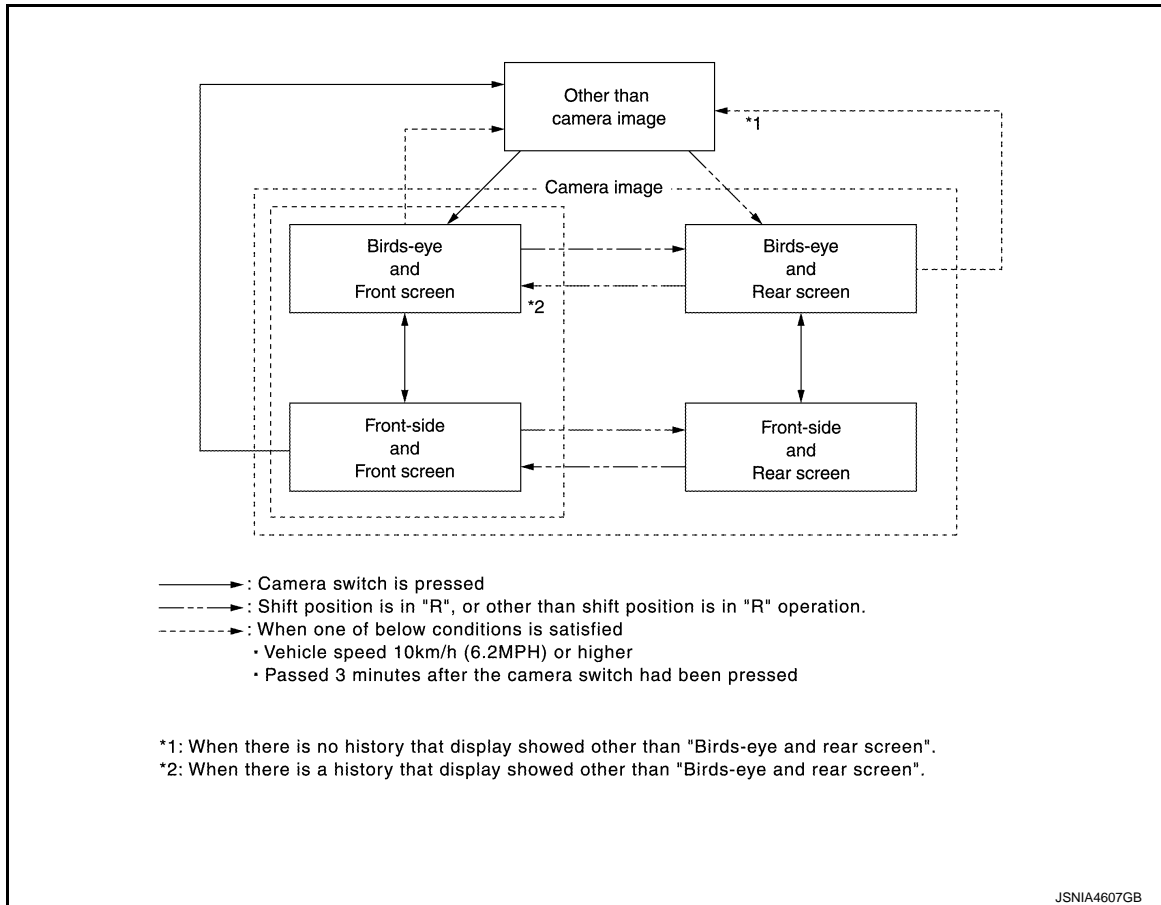
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## [BOSE AUDIO WITH NAVIGATION]

- In the Birds-Eye view, the invisible area is displayed to show the border of 4 camera images. In addition, red fixed lines are displayed in 4 corners of the vehicle icon. After turning the ignition switch ON, the invisible area is highlighted with yellow and red fixed lines are blink only once.

Around view monitor screen transition



### FRONT VIEW

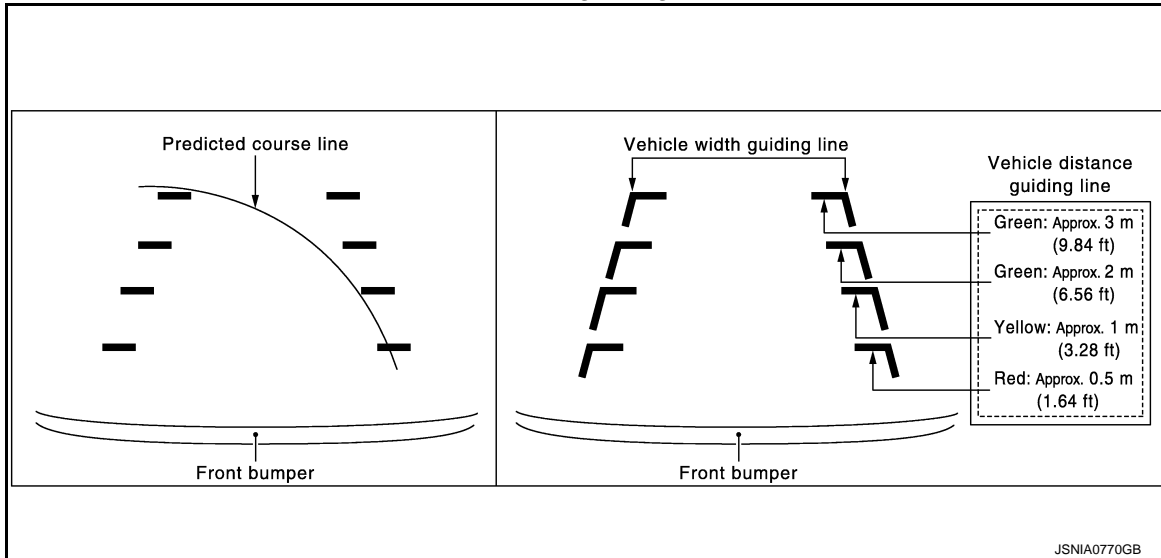
- The front view image is from the front camera.
- When the selector lever is in any position other than the reverse position, the front view is displayed by pressing the "CAMERA" switch. It improves the visibility of obstacles in front of the vehicle and helps driving by the images displayed from Birds-Eye view and Front-Side view.
- Display the vehicle width guiding line and vehicle distance guiding line in front view and display the predictive course line according to the steering angle.
- If the steering angle is within approximately 90 degrees, the predictive course lines on the left/right side are displayed. If the steering angle is exceeding approximately 90 degrees, only the predictive course line on the outside (in the opposite side of steering direction) is displayed.
- Around view monitor control unit receives the steering angle signal from steering angle sensor via CAN communication, and controls the direction and distance of the predictive course line.
- ON/OFF setting of predictive course line can be performed by CONSULT

# SYSTEM

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[BOSE AUDIO WITH NAVIGATION]

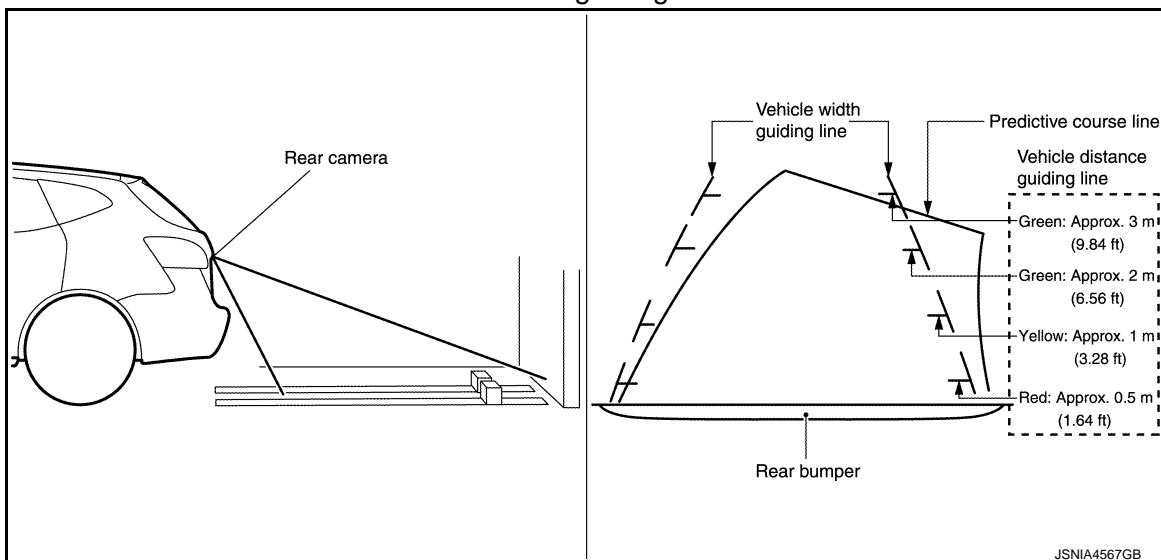
Front view guiding lines



## REAR VIEW

- The rear view image is from the rear camera.
- When the selector lever is in the reverse position, the rear view is displayed. Backing and parking are improved by the images from Birds-Eye view and Front-Side view.
- Display the vehicle width guiding line and vehicle distance guiding line in Rear view and display the predictive course line according to the steering angle.
- The predictive course line is not displayed at the steering neutral position.
- Around view monitor control unit receives the steering angle signal from steering angle sensor via CAN communication, and controls the direction and distance of the predictive course line.
- ON/OFF setting of predictive course line can be performed by CONSULT

Rear view guiding lines



## FRONT-SIDE VIEW

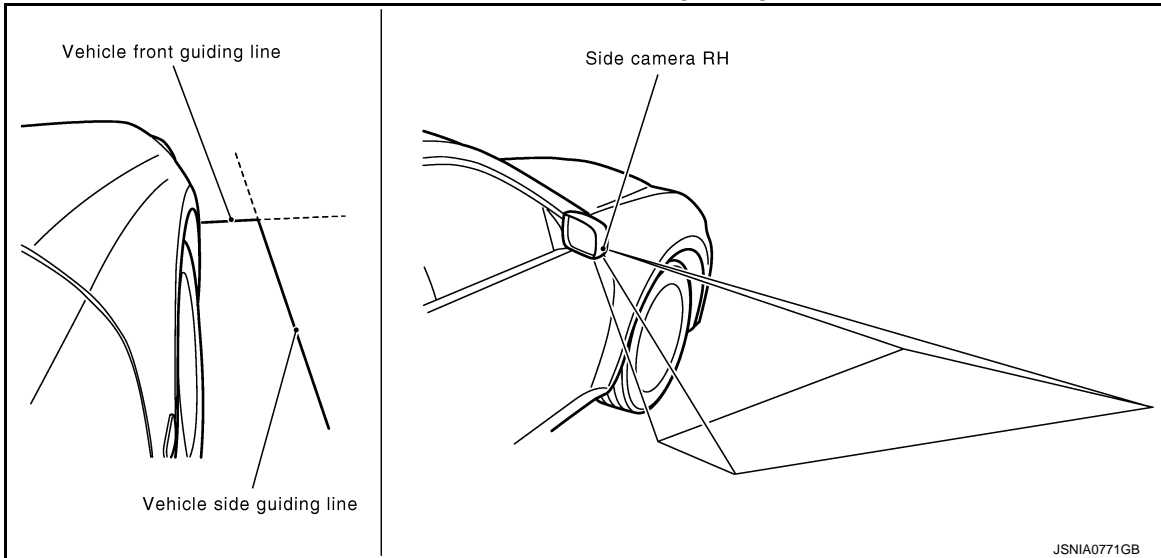
- The front-side view image is from the side camera RH.
- In Front-Side view, display the vehicle distance guiding line and vehicle width guiding line.

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[BOSE AUDIO WITH NAVIGATION]

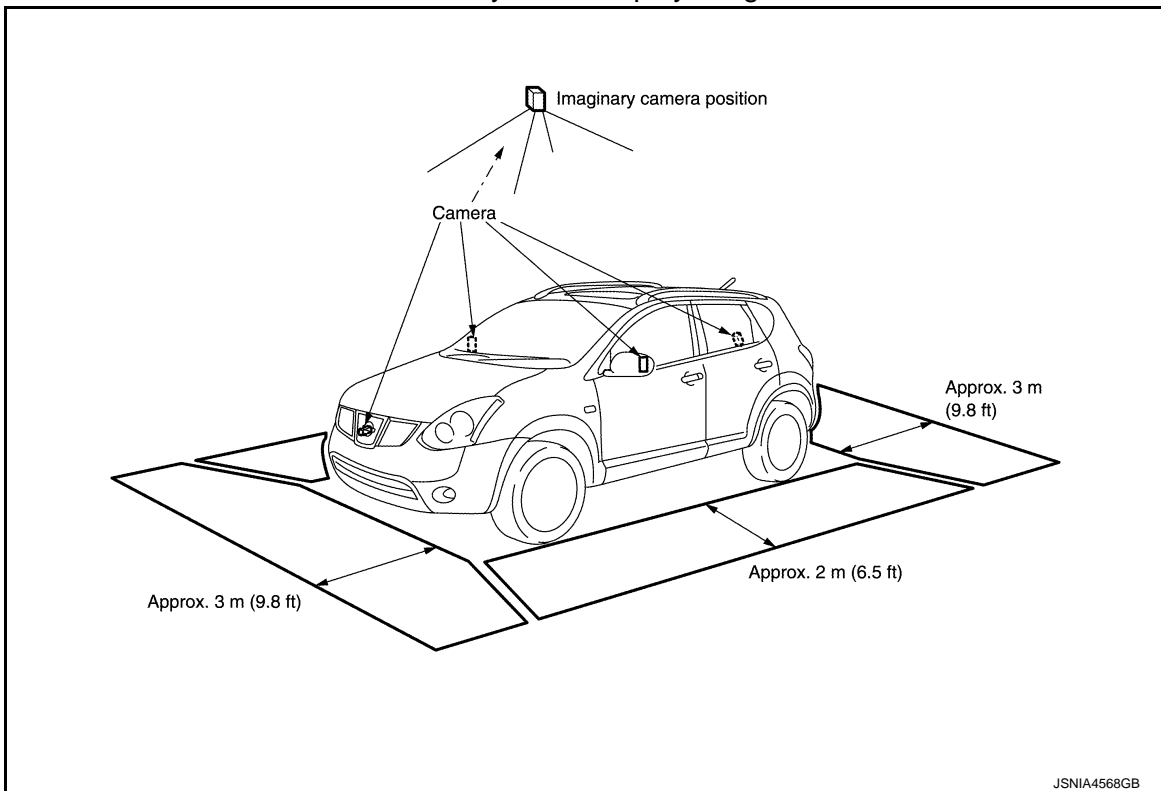
Front-side view area and guiding line



## BIRDS-EYE VIEW

- The image from the 4 cameras is cut out and converted into the overhead view, and the surroundings of the vehicle is displayed in birds-eye view.
- In Birds-Eye view, the invisible area is displayed on the image to specify the boundary of the 4 cameras.

Birds-Eye view display image

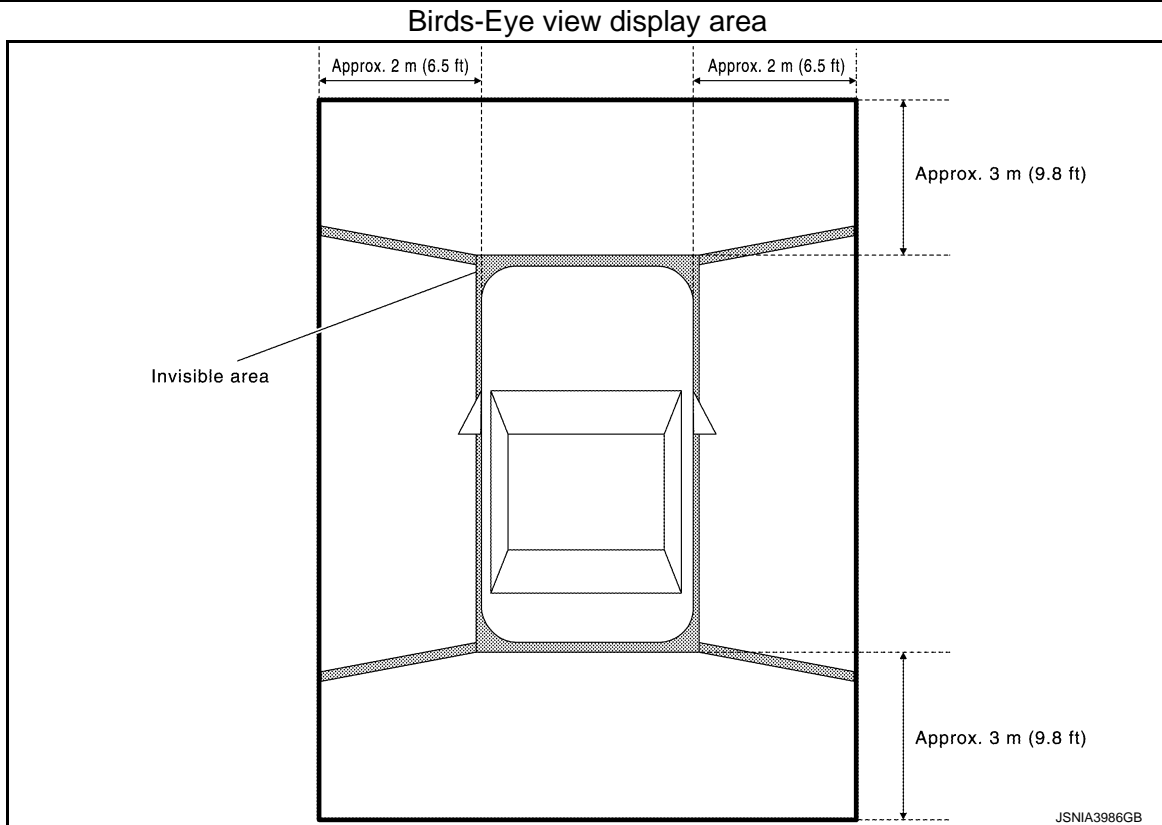


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[BOSE AUDIO WITH NAVIGATION]



## Camera Image Operation Principle

- If the camera image calibration is incomplete, 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 via hard wire by pressing the “CAMERA” switch.
- Around view monitor control unit that receives the camera switch signal supplies the power to each camera and inputs the camera image from each camera.
- When the selector lever is in the reverse position, around view monitor control unit receives the reverse signal, supplies the power to each camera, and inputs the camera image from each camera.
- Around view monitor control unit that receives the camera image signal from each camera cuts out the required screen for each view, superimposes the camera image, vehicle icon, guiding lines, and outputs them to the NAVI control unit.

## USB CONNECTION FUNCTION

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

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

### NOTE:

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

## SPEED SENSITIVE VOLUME SYSTEM

- Volume level of this system goes up and down automatically in proportion to the vehicle speed.
- The control level can be selected by the customer.

## HANDS-FREE PHONE SYSTEM

- TEL adapter unit is controlled with AV communication from NAVI control unit.
- The connection between cellular phone and TEL adapter unit is performed with Bluetooth® communication.
- The voice guidance signal is input from the TEL adapter unit to the NAVI control unit and output via BOSE amp. to the front speaker when operating the cellular phone.
- TEL adapter unit has the on board self-diagnosis function. Refer to [AV-245. "Diagnosis Description"](#).



# SYSTEM

## [BOSE AUDIO WITH NAVIGATION]

### < SYSTEM DESCRIPTION >

#### When A Call Is Originated

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

#### When Receiving A Call

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

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# DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

## DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)

### Diagnosis Description

INFOID:000000008280668

#### On-Board Diagnosis Item

- On-board diagnosis is performed in service test mode.
- On-board diagnosis checks if the system operates normally.

#### Service test mode

Mode	Item	Content	
Service version	—	The version data of the parts is shown displayed.	
Service radio	FM monitor	The Change Mediator monitors the dynamic values of the current tuner. If the band is switched within the radio monitor context, the active monitor is switched as well.	
	AM monitor		
	XM monitor	The version data is displayed.	
	XM functions	<ul style="list-style-type: none"><li>• Clear XM Chipset NVM</li><li>• Reset all XM settings</li><li>• XM CBM debug mode ON/OFF</li><li>• External Diag mode ON/OFF</li></ul> The current system status is displayed.	
Service configuration	Touch Display Calibration	—	The function allows connection of the position detection accuracy of the touch panel.

# DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

Mode	Item	Content	
Service system status	Running system status	<ul style="list-style-type: none"> <li>• SD card slot access</li> <li>• Power Supply</li> <li>• Speed Signal</li> <li>• Direction Signal</li> <li>• Illumination Signal</li> <li>• GPS Antenna</li> <li>• BTHFU Status</li> <li>• Radio Antenna</li> <li>• USB Device</li> <li>• iPod® firmware version</li> <li>• Steering wheel key</li> </ul>	The current system status is displayed.
	System history	<ul style="list-style-type: none"> <li>• SD-card Slot - Sub-Unit Connection Malfunction</li> <li>• Programming Error</li> <li>• Radio-Antenna Circuit Malfunction</li> <li>• FM-Antenna 1 Connection Malfunction</li> <li>• GPS Antenna Circuit Malfunction</li> <li>• CD-Drive Mechanical Malfunction</li> <li>• CD Read Malfunction</li> <li>• Power Supply voltage: Lower Limit Exceeded</li> <li>• Power Supply voltage: Upper Limit Exceeded</li> <li>• Reduced system Functionality due to over temperature</li> <li>• Display switched OFF due to over temperature</li> <li>• SD card removed without being de-mounted</li> <li>• Codeplug missing</li> </ul>	The history of the system status is reported in the report memory, displayed.
	Speaker test 100 Hz	—	This activates a sequence of test tone outputs to the four speaker lines one after the other for 1 second. The frequency can be chosen by user selection (100 Hz and 4 kHz).
	Speaker test 4 kHz	—	
Display test	—	This provides a test sequence where test displays (plain colored display: e.g. white, black, red, blue, green) are shown one after the other. The respective color is shown for an indicated period of time (parameter). After the display test, the design of the display previously available is stored. While the screen shows a plain colored display, a pixel malfunction may be detected.	

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# DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)

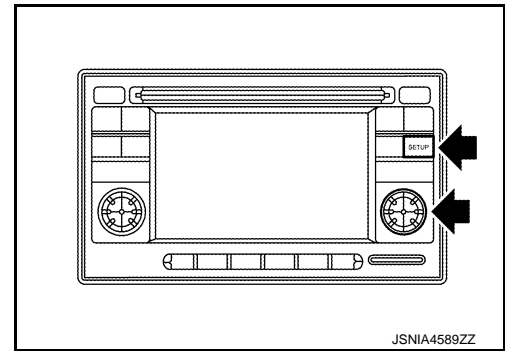
< SYSTEM DESCRIPTION >

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Mode	Item	Content
Service system configuration	<ul style="list-style-type: none"><li>• 2/4 pulse speed</li><li>• Clock ON/OFF</li><li>• Equalizing settings</li><li>• RF tuning</li><li>• Antenna type</li><li>• Sound system</li><li>• Sub Out</li><li>• Steering wheel</li></ul>	The device is configured by a connected hardware circuit. The parameter is influenced.
Self test	<ul style="list-style-type: none"><li>• SD-card Access Malfunction</li><li>• Radio-Antenna Circuit Malfunction</li><li>• GPS Antenna Circuit Malfunction</li><li>• XM Antenna Circuit Malfunction</li></ul>	A system self test is executed: the result is stored into the error memory which is shown afterwards as a list of codes of the detected malfunctions.

## METHOD OF STARTING

1. Start the engine.
2. Turn OFF audio.
3. While pressing the "SET UP" switch, turn the MENU dial counterclockwise 3 clicks or more first, then clockwise and counterclockwise 3 clicks or more, respectively. (After the diagnosis mode starts, the initial screen of the diagnosis mode appears.)



## END ON-BOARD DIAGNOSIS

Turn OFF ignition switch.

# DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

## DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

### Description

INFOID:000000008280669

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

### Diagnosis Description

INFOID:000000008280670

#### ON BOARD DIAGNOSIS ITEM

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

#### CAUTION:

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

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

#### Self-diagnosis results

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

#### NOTE:

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

#### Self-diagnosis results

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

#### The Details of Error Count

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

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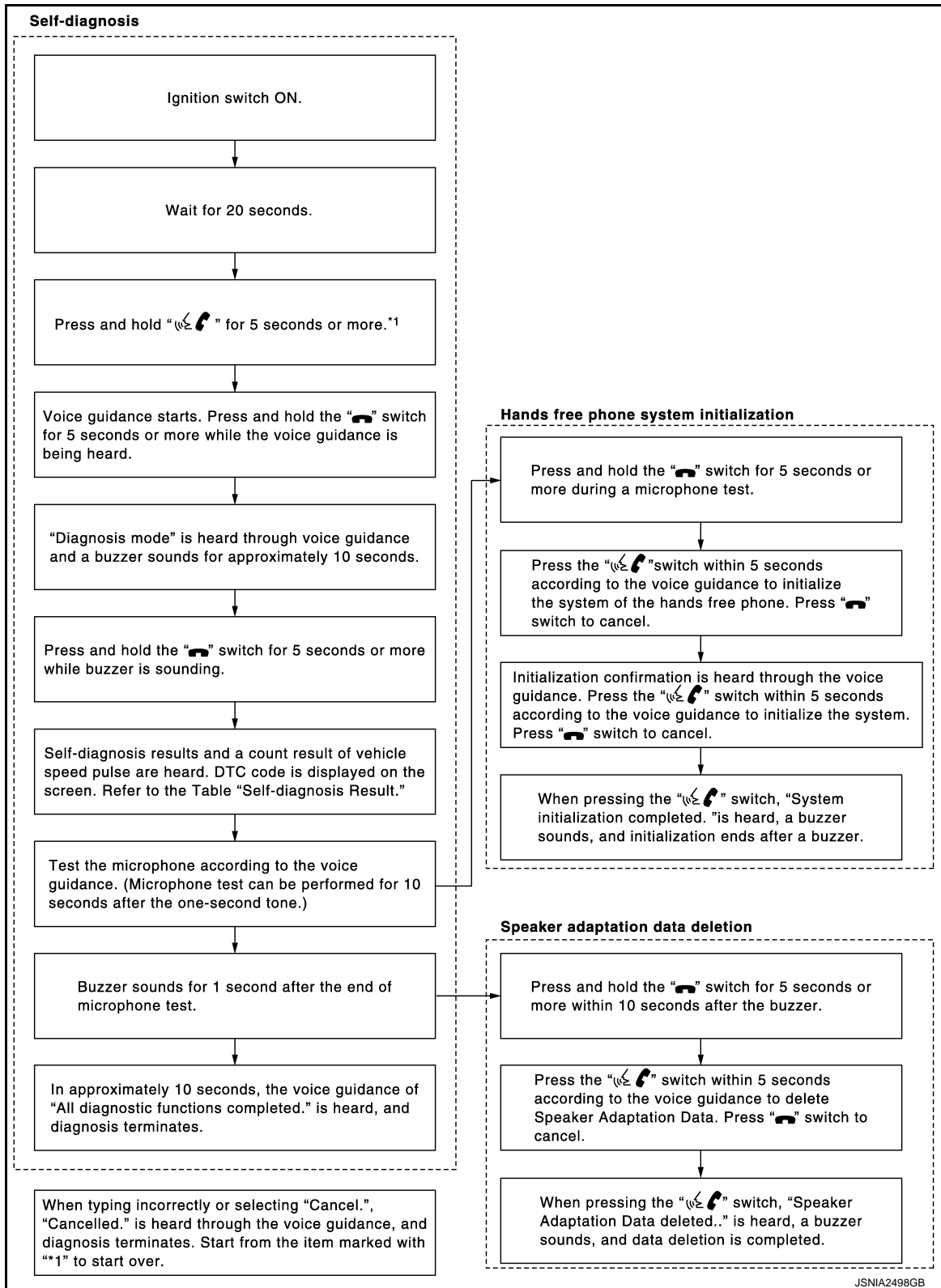
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# DIAGNOSIS SYSTEM (TEL ADAPTER UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

## FLOW CHART OF TROUBLE DIAGNOSIS



# DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

## DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

### CONSULT Function

INFOID:000000008280671

### APPLICATION ITEMS

CONSULT can display each diagnostic item using the diagnostic test modes shown as follows:

Test mode	Function
Ecu Identification	Around view monitor control unit part number can be read.
Self Diagnostic Result	Around view monitor control unit checks the conditions and displays memorized error.
Data Monitor	Around view monitor control unit input/output data in real time.
Work support	Changes setting of each function.

### ECU IDENTIFICATION

Displays the part number of around view monitor control unit.

### SELF-DIAGNOSTIC RESULTS

For details, refer to [AV-261, "DTC Index"](#).

### DATA MONITOR

#### NOTE:

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

Monitor Item	Display	Description
ST ANGLE SENSOR SIGNAL	ON/OFF	Input status of steering angle sensor signal is displayed by ON/OFF.
REVERSE SIGNAL	ON/OFF	Input status of reverse signal is displayed by ON/OFF in real time.
VEHICLE SPEED SIGNAL	ON/OFF	Input status of vehicle speed signal is displayed by ON/OFF.
CAMERA SWITCH SIGNAL	ON/OFF	Input status of camera switch signal is displayed by ON/OFF.
CAMERA OFF SIGNAL	OFF	This item is displayed, but cannot be monitored.
ST ANGLE SENSOR TYPE	Absolute	Type of steering angle sensor is displayed. ("Absolute" is displayed on this vehicle.)
STEERING GEAR RATIO TYPE	Type 0	Type of steering gear ratio is displayed. ("Type 0" is displayed on this vehicle.)
STEERING POSITION	LHD	Steering position is displayed. ("LHD" is displayed on this vehicle.)
REAR CAMERA IMAGE SIGNAL	OK/NG	Input status of rear camera image signal is displayed by OK/NG in real time.
F-CAMERA IMAGE SIGNAL	OK/NG	Input status of front camera 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.
DR-SIDE CAMERA IMAGE SIG	OK/NG	Input status of side camera LH image signal is displayed by OK/NG in real time.

### WORK SUPPORT

Work support item	Function
CALIBRATING CAMERA IMAGE (FRONT CAMERA)	Performs the calibration of front camera.
CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)	Performs the calibration of side camera RH.
CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)	Performs the calibration of side camera LH.
CALIBRATING CAMERA IMAGE (REAR CAMERA)	Performs the calibration of rear camera.
INITIALIZE CAMERA IMAGE CALIBRATION	The calibration can be initialized to NISSAN factory shipment condition.

# DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

< SYSTEM DESCRIPTION >

[BOSE AUDIO WITH NAVIGATION]

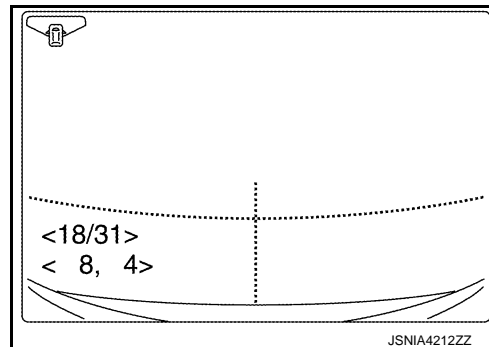
Work support item	Function
FINE TUNING OF BIRDS-EYE VIEW	The confirmation and adjustment of the difference between each camera can be performed.
SELECT LANGUAGE OF WARNING MESSAGE	Language of warning message shown during camera image display can be selected.
PREDICTIVE COURSE LINE DISPLAY	ON/OFF setting of predictive course line can be performed.
STEERING ANGLE SENSOR ADJUSTMENT	Steering angle sensor neutral position can be adjusted and registered.
NON-VIEWABLE AREA REMINDER	ON/OFF setting of the non-viewable area reminder can be performed.

Calibrating Camera Image (front camera, pass-side camera, dr-side camera, and rear camera)

Perform the calibration of camera image caused by the incorrect mounting position of each camera, etc. Always perform calibration after performing the following work.

- When each camera or each camera mount (e.g. front grille, door mirror, and others) is removed
- When replacing the around view monitor control unit

Refer to [AV-270. "Work Procedure"](#) for the calibration procedure.



Adjustment range

Rotating direction : 31 patterns (16 on the center)

Upper/lower direction : (-22) – (+22)

Left/right direction : (-22) – (+22)

Initialize Camera Image Calibration

The calibration can be initialized to NISSAN factory shipment condition.

Predictive Course Line Display

ON/OFF setting of predictive course line can be performed.

Steering Angle Sensor Adjustment

Steering angle sensor neutral position can be adjusted and registered.

**CAUTION:**

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

Non-Viewable Area Reminder

ON/OFF setting of the non-viewable area reminder can be performed.



# NAVI CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

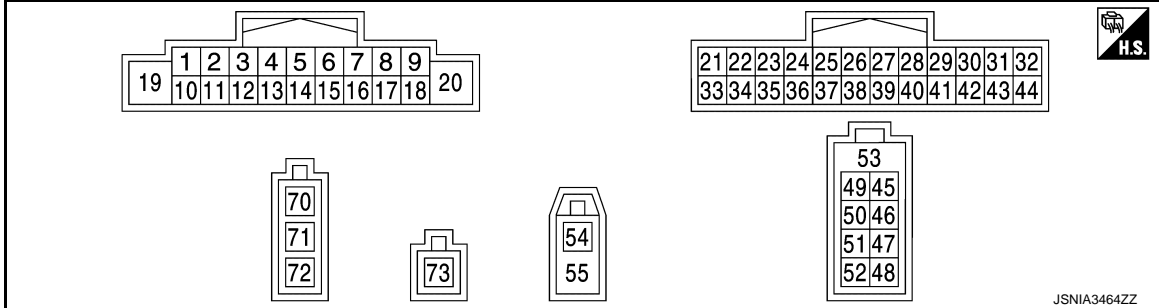
## ECU DIAGNOSIS INFORMATION

### NAVI CONTROL UNIT

Reference Value

INFOID:000000008280672

#### TERMINAL LAYOUT



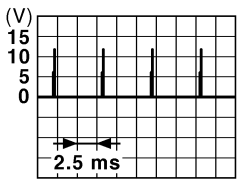
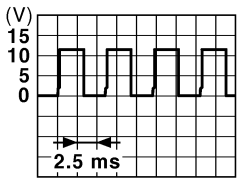
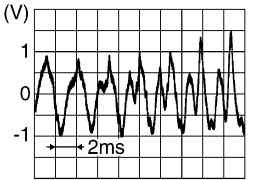
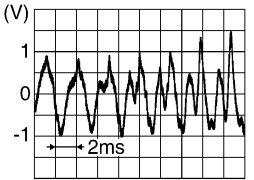

#### PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Reference value (Approx.)	
+	-	Signal name	Input/ Output			
1 (BR)	Ground	BOSE amp. ON signal	Output	Ignition switch ON	—  12.0 V	
2 (R)	3 (G)	Sound signal front LH	Output	Ignition switch ON	Sound output.   SKIB3609E	
4 (V)	5 (LG)	Sound signal rear LH	Output	Ignition switch ON	Sound output.   SKIB3609E	
6 (BR)	15 (GR)	Steering switch signal A	Input	Ignition switch ON	Keep pressing  switch	0 V
					Keep pressing SEEK UP switch	1.4 V
					Keep pressing SEEK DOWN switch	2.5 V
					Except for above.	5.0 V
7 (SB)	Ground	ACC power supply	Input	Ignition switch ACC	—  Battery voltage	

# NAVI CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

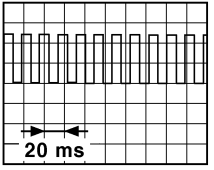

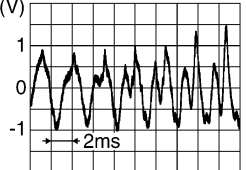
[BOSE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)	
+	-	Signal name	Input/ Output			
9 (R)	8 (Y)	Illumination control signal	Input	Ignition switch ON	<ul style="list-style-type: none"> <li>• Lighting switch 1ST</li> <li>• When meter illumination is maximum</li> </ul> 	
				Ignition switch ON	<ul style="list-style-type: none"> <li>• Lighting switch 1ST</li> <li>• When meter illumination is step 11</li> </ul> 	
				Ignition switch ON	<ul style="list-style-type: none"> <li>• Lighting switch 1ST</li> <li>• When meter illumination is minimum</li> </ul> <p style="text-align: center;">12 V</p>	
11 (B)	12 (W)	Sound signal front RH	Output	Ignition switch ON	Sound output.	
13 (L)	14 (P)	Sound signal rear RH	Output	Ignition switch ON	Sound output.	
16 (BG)	15 (GR)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
				Ignition switch ON	Keep pressing VOL UP switch.	1.4 V
				Ignition switch ON	Keep pressing  switch	2.5 V
				Ignition switch ON	Keep pressing VOL UP switch.	3.4 V
				Ignition switch ON	Except for above.	5.0 V

# NAVI CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition	Reference value (Approx.)
+	-	Signal name	Input/ Output		
18 (L)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is ap- prox. 40 km/h (25 MPH)
					<p><b>NOTE:</b> The maximum voltage varies de- pending on the specification (destination unit).</p>  <p style="text-align: right; font-size: small;">JSNIA0012GB</p>
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—
20 (B)	Ground	Ground	—	Ignition switch ON	—
21 (B)	Ground	EQ1	—	Ignition switch ON	—
22 (B)	Ground	EQ2	—	Ignition switch ON	—
23 (B)	Ground	EQ3	—	Ignition switch ON	—
25 (G)	Ground	Reverse signal	Input	Ignition switch ON	Selector lever is in R posi- tion.
					Selector lever is in other than R position.
29 (LG)	Ground	Image switch signal	Input	Ignition switch ON	At camera images is dis- played.
					Except for above
34 (BR)	35 (Y)	Sound signal (TEL voice, voice guid- ance)	Output	Ignition switch ON	During voice guide output with the  switch pressed.
					 <p style="text-align: right; font-size: small;">SKIB3609E</p>
36 (B)	Ground	Ground	—	Ignition switch ON	—
37	—	Shield	—	—	—
38 (SB)	—	AV communication signal (H)	Input/ Output	—	—
39 (LG)	—	AV communication signal (L)	Input/ Output	—	—

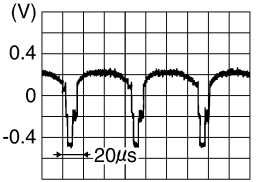
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# NAVI CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
41 (G)	Ground	Camera image signal	Input	Ignition switch ON	At camera images is displayed.	 <p style="text-align: right; font-size: small;">SKIB0827E</p>
42	—	Shield	—	—	—	—
43 (R)	Ground	Camera power supply	Output	Ignition switch ON	At camera images is displayed.	6.0 V
					Except for above.	0 V
44 (B)	Ground	Camera ground	—	Ignition switch ON	—	0 V
45 (G)	—	USB ground	—	—	—	—
46 (R)	—	USB D- signal	Input/ Output	—	—	—
47 (L)	—	USB D+ signal	Input/ Output	—	—	—
48 (W)	—	V BUS signal	Output	—	—	—
49 (W)	—	AUX sound signal LH	Input	—	—	—
50 (G)	—	AUX sound signal RH	Input	—	—	—
51 (R)	—	AUX sound signal ground	—	—	—	—
53	—	Shield	—	—	—	—
54	Ground	GPS antenna signal	Input	ON	Not connected to GPS antenna connector.	5.0 V
55	—	Shield	—	—	—	—
70	Ground	Antenna amp. ON signal	Output	Ignition switch ON	—	12.0 V
71	—	Antenna signal	Input	—	—	—
73	—	Satellite radio antenna signal	Input	—	—	—

# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

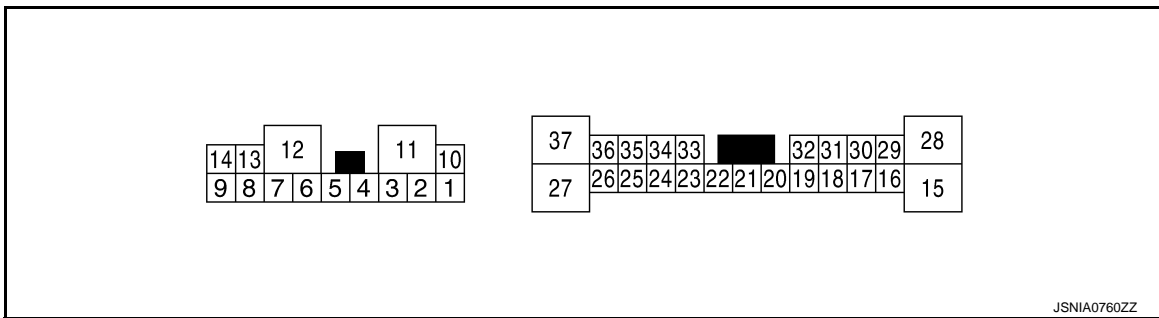
[BOSE AUDIO WITH NAVIGATION]

## BOSE AMP.

Reference Value

INFOID:000000008280673

### TERMINAL LAYOUT



### PHYSICAL VALUES

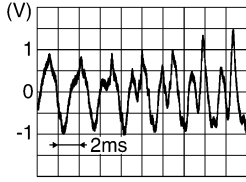
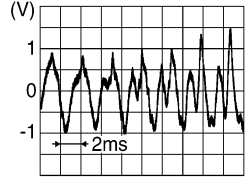
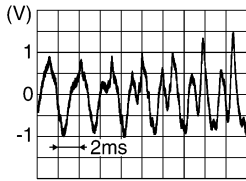
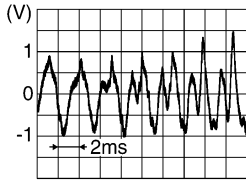
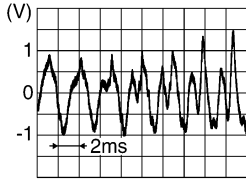
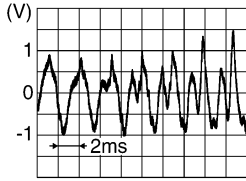
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (L)	10 (R)	Sound signal rear speaker LH	Output	Ignition switch ON	Sound output	<p>SKIB3609E</p>
2 (GR)	3 (Y)	Sound signal rear speaker RH	Output	Ignition switch ON	Sound output	<p>SKIB3609E</p>
4 (B)	5 (P)	Sound signal front speaker LH	Output	Ignition switch ON	Sound output	<p>SKIB3609E</p>
6 (BR)	7 (GR)	Sound signal tweeter LH	Output	Ignition switch ON	Sound output	<p>SKIB3609E</p>

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# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

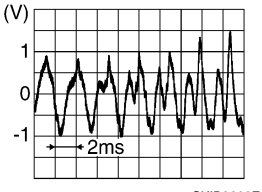
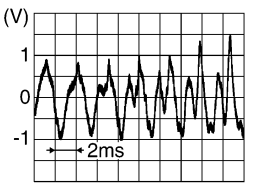
[BOSE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
8 (G)	13 (R)	Sound signal front speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
9 (Y)	14 (BR)	Sound signal woofer	Output	Ignition switch ON	Sound output	 SKIB3609E
11 (W)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
15 (V)	28 (LG)	Sound signal center speak- er	Output	Ignition switch ON	Sound output	 SKIB3609E
18 (R)	32 (G)	Sound signal front LH	Input	Ignition switch ON	Sound output	 SKIB3609E
19 (B)	20 (W)	Sound signal front RH	Input	Ignition switch ON	Sound output	 SKIB3609E
21 (V)	22 (LG)	Sound signal rear LH	Input	Ignition switch ON	Sound output	 SKIB3609E

# BOSE AMP.

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
23 (W)	33 (R)	Sound signal rear RH	Input	Ignition switch ON	Sound output	
25 (G)	Ground	Woofer Amp. ON signal	Output	Ignition switch ACC	—	12.0 V
31 (L)	Ground	BOSE amp. ON signal	Input	Ignition switch ACC	—	12.0 V
37 (Y)	27 (W)	Sound signal tweeter RH	Output	Ignition switch ON	Sound output	

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# TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

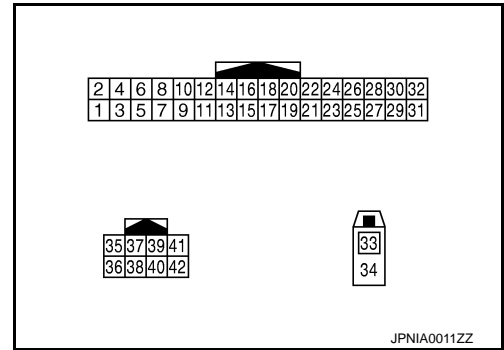
[BOSE AUDIO WITH NAVIGATION]

## TEL ADAPTER UNIT

Reference Value

INFOID:000000008280674

TERMINAL LAYOUT



PHYSICAL VALUES

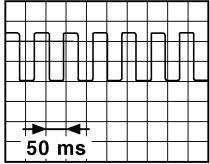
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (BR)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
2 (SB)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
3 (W)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
4 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
7 (B)	8	Microphone signal	Input	Ignition switch ON	Give a voice.	
9 (BR)	10 (Y)	Sound signal (TEL voice, voice guid- ance)	Output	Ignition switch ON	During voice guide output with the  switch pressed.	
20 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
22 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V



# TEL ADAPTER UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
23 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
27 (B)	Ground	Control signal	—	Ignition switch ON	—	0 V
28 (G)	Ground	Vehicle speed signal (2-pulse)	Input	Ignition switch ON	When vehicle speed is ap- prox. 40 km/h (25 MPH)	<p><b>NOTE:</b> The maximum voltage varies de- pending on the specification (destination unit).</p>  <p style="text-align: right; font-size: small;">JSNIA0015GB</p>
29 (W)	Ground	Microphone power supply	Output	Ignition switch ON	—	5.0 V
33	—	TEL antenna signal	Input	—	Not connected to TEL an- tenna connector.	5.0 V
34	—	Shield	—	—	—	—
35 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
36 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
39 (LG)	—	Data line	—	—	—	—
40 (LG)	—	Data line	—	—	—	—
41 (SB)	—	Data line	—	—	—	—
42 (SB)	—	Data line	—	—	—	—

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# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

## AROUND VIEW MONITOR CONTROL UNIT

### Reference Value

INFOID:000000008280675

#### 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	Ignition switch ON	Steering angle sensor signal is input condition.	ON
		Except for above	OFF
REVERSE SIGNAL	Ignition switch ON	Shift position is in "R"	ON
		Other than shift position is in "R"	OFF
VEHICLE SPEED SIGNAL *1	Ignition switch ON	Vehicle speed signal is input condition.	ON
		Except for above	OFF
CAMERA SWITCH SIGNAL *1	Ignition switch ON	Pressing the "CAMERA" switch	ON
		Except for above	OFF
CAMERA OFF SIGNAL *2	Ignition switch ON	—	OFF
ST ANGLE SENSOR TYPE*3	Ignition switch ON	—	Absolute
STEERING GEAR RATIO TYPE*4	Ignition switch ON	—	Type 0
STEERING POSITION*5	Ignition switch ON	—	LHD
REAR CAMERA IMAGE SIGNAL	Ignition switch ON	Input status of rear camera image signal is normal.	OK
		Input status of rear camera image signal is not normal.	NG
F-CAMERA IMAGE SIGNAL	Ignition switch ON	Input status of front camera image signal is normal.	OK
		Input status of front camera image signal is not normal.	NG
PA-SIDE CAMERA IMAGE SIG	Ignition switch ON	Input status of side camera RH image signal is normal.	OK
		Input status of side camera RH image signal is not normal.	NG
DR-SIDE CAMERA IMAGE SIG	Ignition switch ON	Input status of side camera LH image signal is normal.	OK
		Input status of side camera LH image signal is not normal.	NG

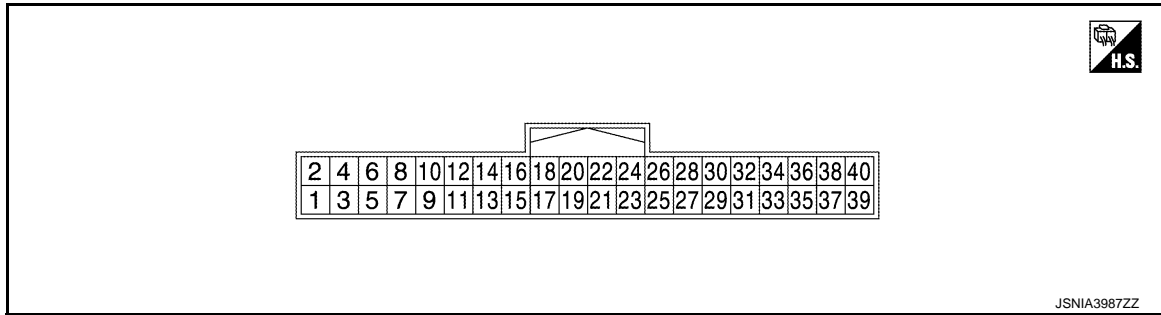
- \*1: Once the signal is input, it remains ON indication until CONSULT is finished.
- \*2: This item is displayed, but not used.
- \*3: "Absolute" is always indicated on this vehicle.
- \*4: "Type 0" is always indicated on this vehicle.
- \*5: "LHD" is always indicated on this vehicle.

# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

## TERMINAL LAYOUT



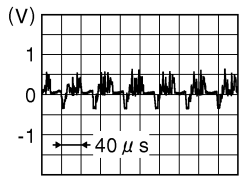
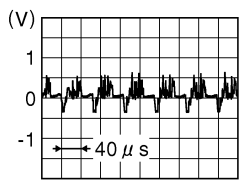
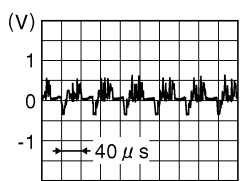
## PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
4 (SB)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
8 (G)	Ground	Reverse signal	Input	Ignition switch ON	Shift position is in "R"	12.0 V
					Other than shift position is in "R"	0 V
9 (V)	Ground	Camera switch signal	Input	Ignition switch ON	Pressing the "CAMERA" switch (around view monitor switch)	0 V
					Except for above	5.0 V
10 (P)	—	CAN-L	Input/ Output	—	—	—
12 (L)	—	CAN-H	Input/ Output	—	—	—
16 (LG)	Ground	Image switch signal	Output	Ignition switch ON	At camera image is dis- played.	0 V
					Except for above	6.0 V
23	—	Shield	—	—	—	—
24 (G)	Ground	Camera image signal	Output	Ignition switch ON	At camera image is dis- played.	
25 (B)	Ground	Rear camera ground	—	Ignition switch ON	—	0 V
26 (R)	Ground	Rear camera power supply	Output	Ignition switch ON	"CAMERA" switch (around view monitor switch) is ON or shift position is "R".	6.2 V

# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

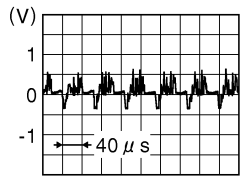
[BOSE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
27	—	Shield	—	—	—	—
28 (W)	Ground	Rear camera image signal	Input	Ignition switch ON	“CAMERA” switch (around view monitor switch) is ON or shift position is “R”.	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>
29 (G)	Ground	Side camera driver side ground	—	Ignition switch ON	—	0 V
30 (L)	Ground	Side camera driver side power supply	Output	Ignition switch ON	“CAMERA” switch (around view monitor switch) is ON or shift position is “R”.	6.2 V
31	—	Shield	—	—	—	—
32 (Y)	Ground	Side camera driver side image signal	Input	Ignition switch ON	“CAMERA” switch (around view monitor switch) is ON or shift position is “R”.	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>
33 (B)	Ground	Side camera passenger side ground	—	Ignition switch ON	—	0 V
34 (W)	Ground	Side camera passenger side power supply	Output	Ignition switch ON	“CAMERA” switch (around view monitor switch) is ON or shift position is “R”.	6.2 V
35	—	Shield	—	—	—	—
36 (R)	Ground	Side camera passenger side image signal	Input	Ignition switch ON	“CAMERA” switch (around view monitor switch) is ON or shift position is “R”.	 <p style="text-align: right; font-size: small;">JSNIA0834GB</p>
37 (V)	Ground	Front camera ground	—	Ignition switch ON	—	0 V
38 (LG)	Ground	Front camera power supply	Output	Ignition switch ON	“CAMERA” switch (around view monitor switch) is ON or shift position is “R”.	6.2 V

# AROUND VIEW MONITOR CONTROL UNIT

< ECU DIAGNOSIS INFORMATION >

[BOSE AUDIO WITH NAVIGATION]

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	-	Signal name	Input/ Output			
39	—	Shield	—	—	—	—
40 (L)	Ground	Front camera image signal	Input	Ignition switch ON	“CAMERA” switch (around view monitor switch) is ON or shift position is “R”.	<div style="text-align: center;">  <p>(V)</p> <p>40 µs</p> <p style="text-align: right; font-size: small;">JSNIA0834GB</p> </div>

## DTC Index

INFOID:000000008280676

DTC	CONSULT display	Refer to
U0428	ST ANGLE SENSOR CALIBRATION	<a href="#">AV-276. "DTC Logic"</a>
U1000	CAN COMM CIRCUIT	<a href="#">AV-277. "DTC Logic"</a>
U1010	CONTROL UNIT (CAN)	<a href="#">AV-278. "DTC Logic"</a>
U1232	ST ANGLE SEN CALIB	<a href="#">AV-279. "DTC Logic"</a>

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
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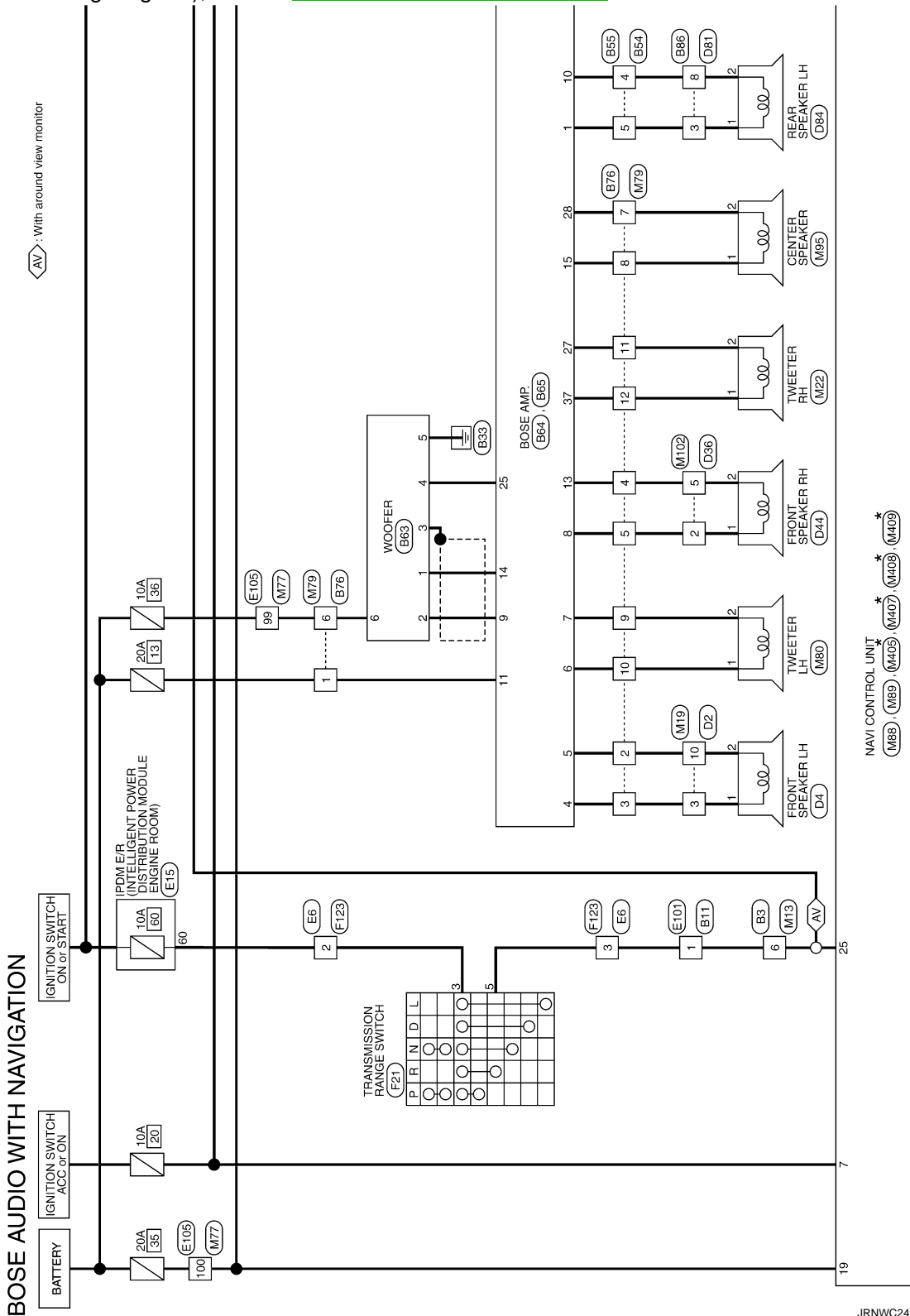
# WIRING DIAGRAM

## BOSE AUDIO WITH NAVIGATION

### Wiring Diagram

INFOID:0000000008280677

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

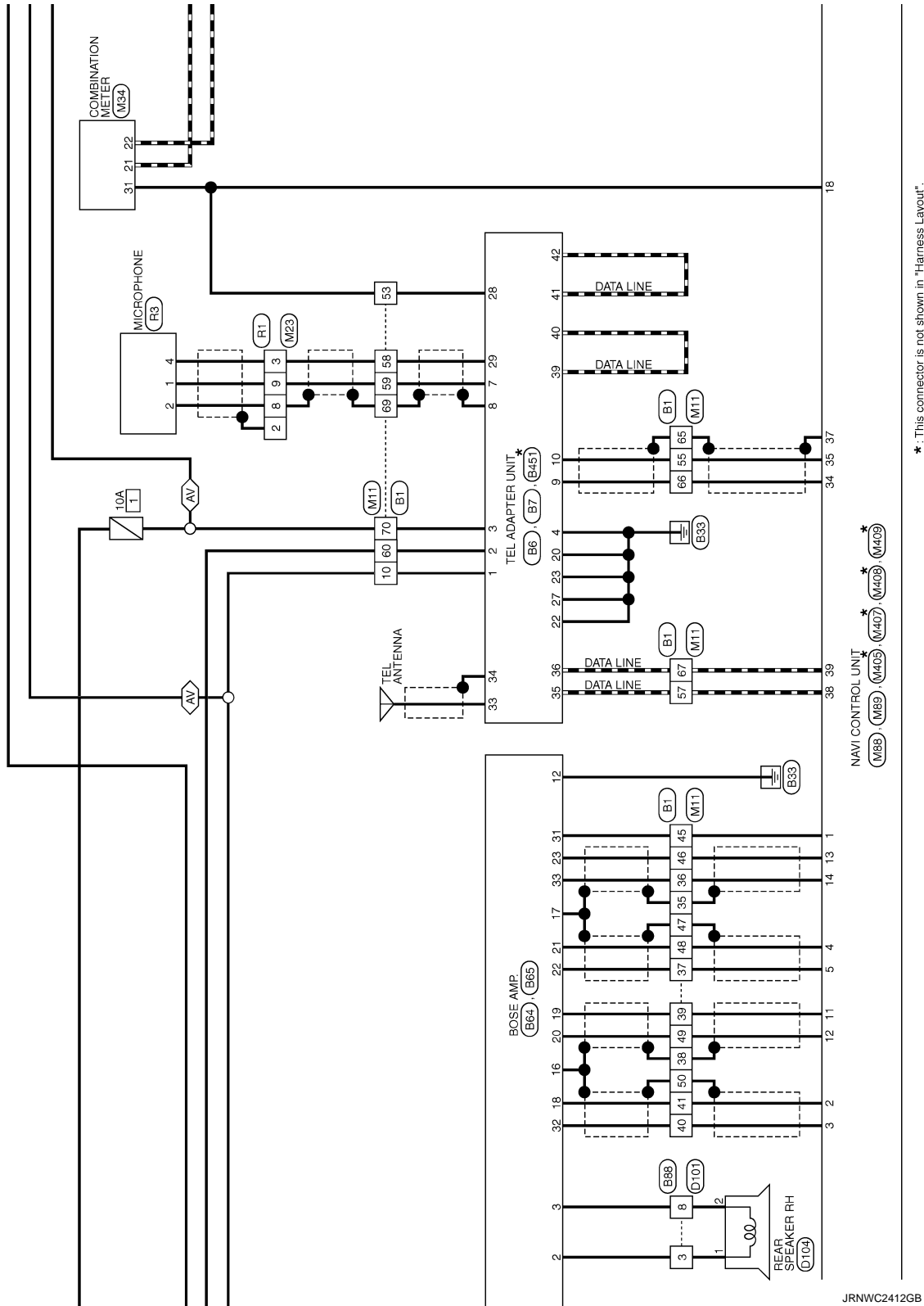


\*: This connector is not shown in "Harness Layout".

# BOSE AUDIO WITH NAVIGATION

[BOSE AUDIO WITH NAVIGATION]

< WIRING DIAGRAM >



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

JRNWC2412GB

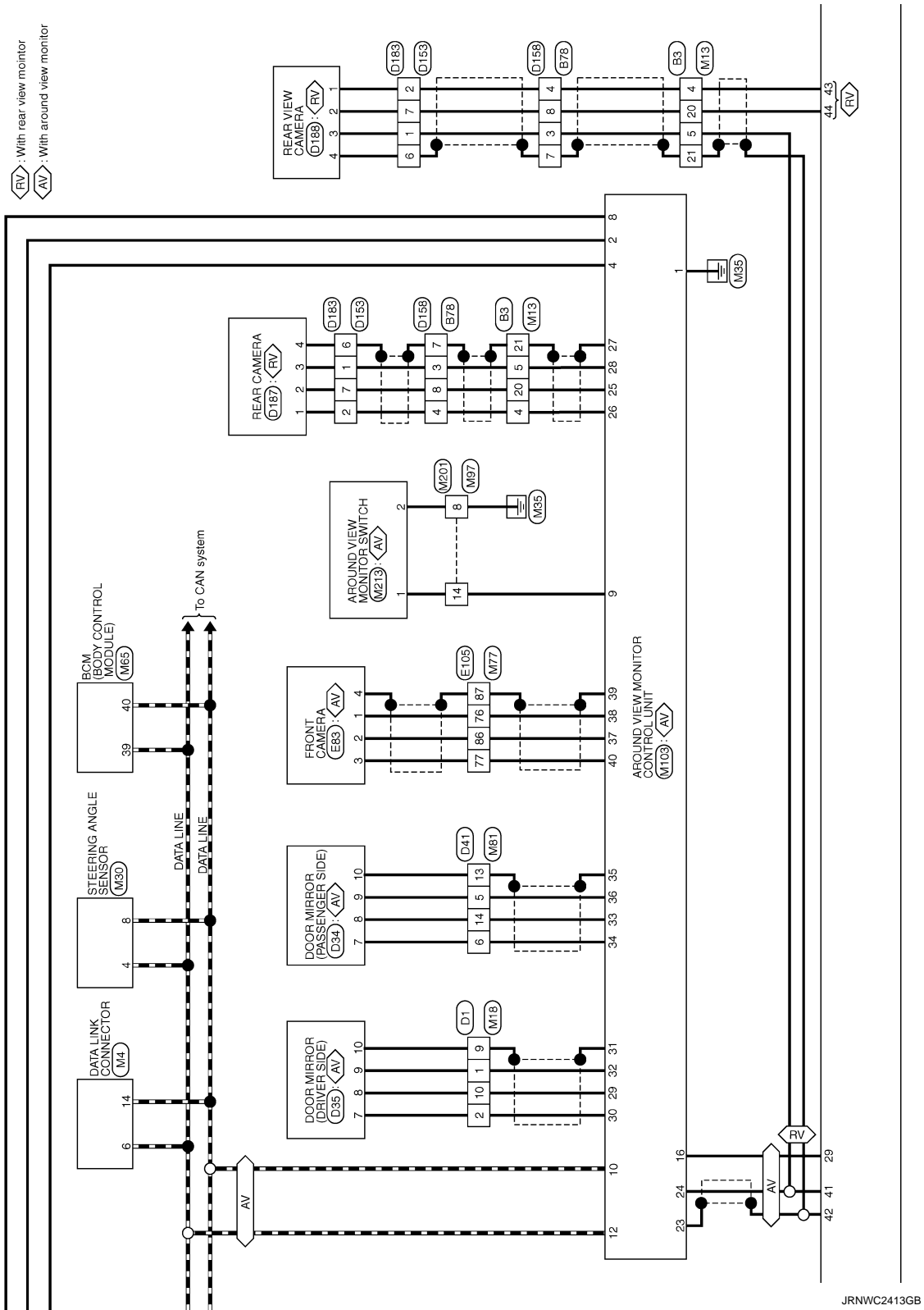
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# BOSE AUDIO WITH NAVIGATION

[BOSE AUDIO WITH NAVIGATION]

< WIRING DIAGRAM >



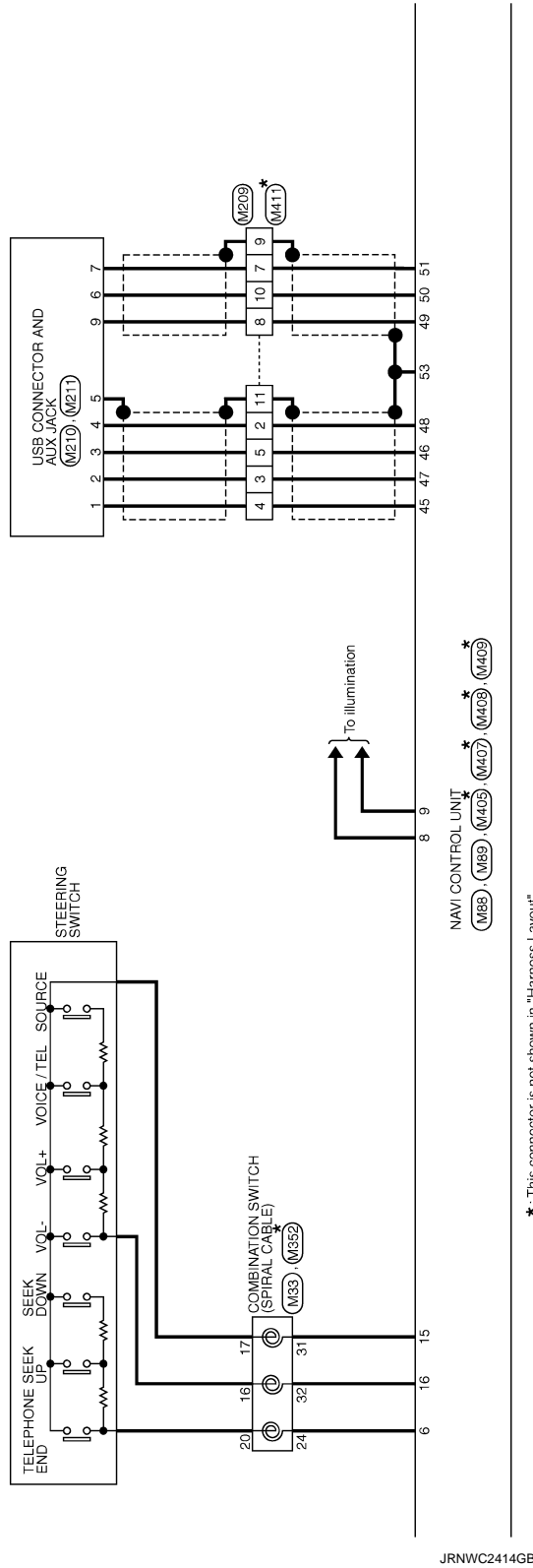
JRNWC2413GB



# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[BOSE AUDIO WITH NAVIGATION]



JRNWC2414GB

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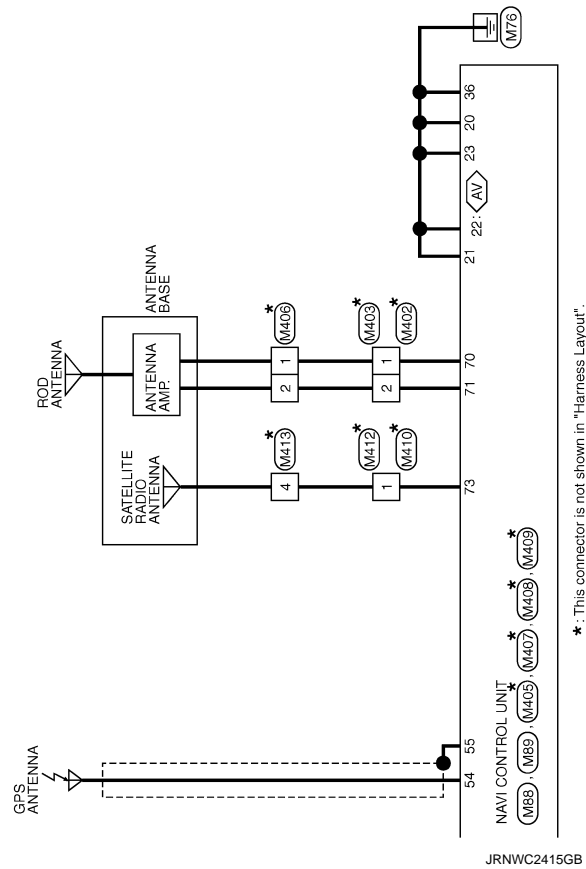
AV

# BOSE AUDIO WITH NAVIGATION

< WIRING DIAGRAM >

[BOSE AUDIO WITH NAVIGATION]

AV : With around view monitor



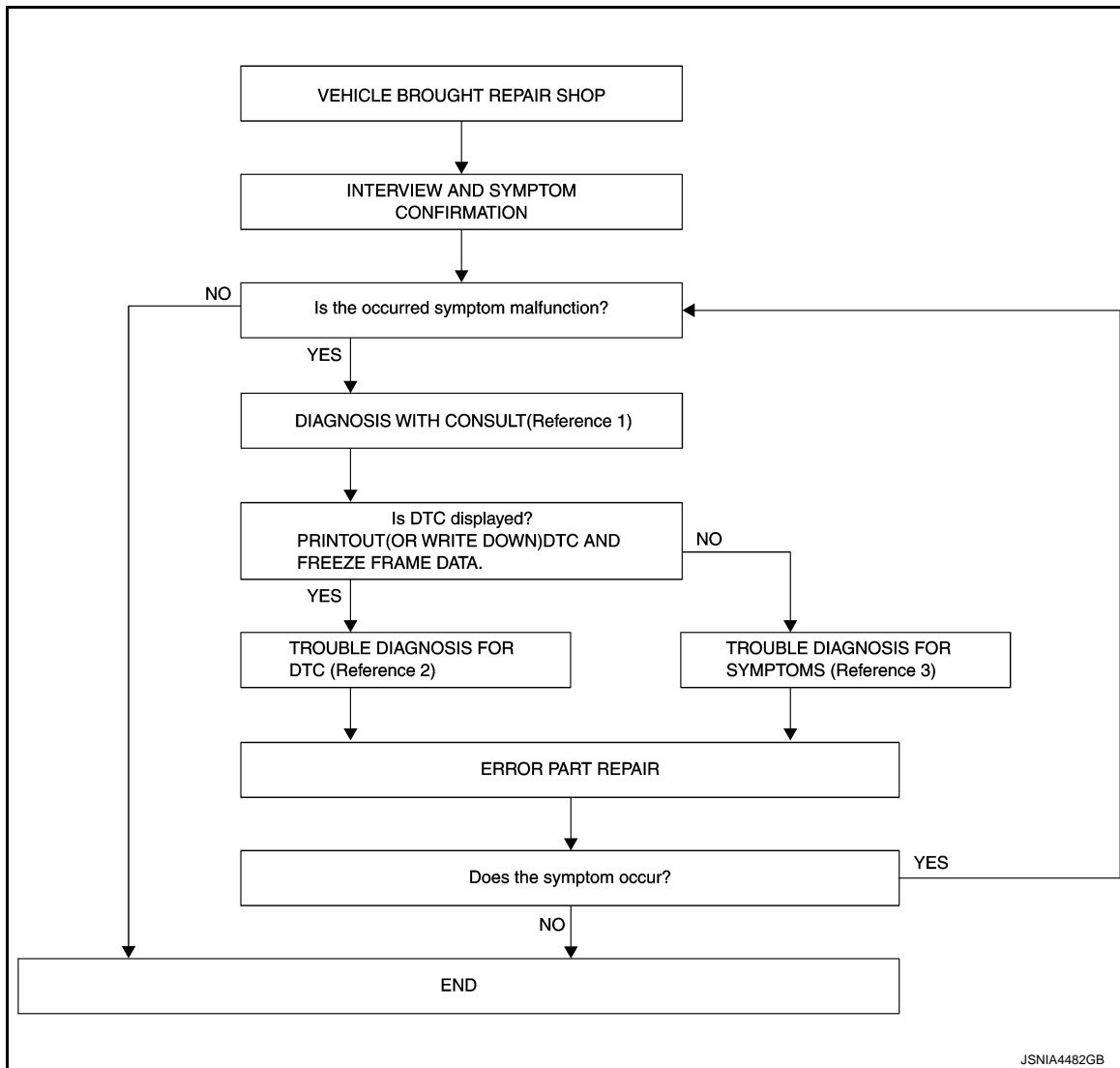
**BASIC INSPECTION**

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:000000008280678

OVERALL SEQUENCE



- Reference 1... Refer to [AV-247. "CONSULT Function"](#).
- Reference 2... Refer to [AV-261. "DTC Index"](#).
- Reference 3... Refer to [AV-301. "Symptom Table"](#).

DETAILED FLOW

**1. INTERVIEW AND SYMPTOM CONFIRMATION**

Check the malfunction symptoms by performing the following items.

- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

YES >> GO TO 2.

NO >> INSPECTION END

**2. DIAGNOSIS WITH CONSULT**

# DIAGNOSIS AND REPAIR WORKFLOW

[BOSE AUDIO WITH NAVIGATION]

< BASIC INSPECTION >

1. Connect CONSULT and perform a self-diagnosis for "AVM". Refer to [AV-247, "CONSULT Function"](#).

**NOTE:**

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

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

Is DTC displayed?

YES >> GO TO 3.

NO >> GO TO 4.

## 3. TROUBLE DIAGNOSIS FOR DTC

---

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to [AV-261, "DTC Index"](#).

>> GO TO 5.

## 4. TROUBLE DIAGNOSIS FOR SYMPTOMS

---

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to [AV-301, "Symptom Table"](#).

>> GO TO 5.

## 5. ERROR PART REPAIR

---

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for "AVM" with CONSULT.

**NOTE:**  
Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

Does the symptom occur?

YES >> GO TO 1.

NO >> INSPECTION END

# PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT

< BASIC INSPECTION >

[BOSE AUDIO WITH NAVIGATION]

## PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT

### Description

INFOID:000000008280679

Adjust the center position of the predictive course line of the rear view monitor if it is shifted.

### Work Procedure

INFOID:000000008280680

#### 1.DRIVING

Drive the vehicle straight ahead 100 m (328.1 ft) or more at a speed of 30 km/h (18.6 MPH) or more.

>> END

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# CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

< BASIC INSPECTION >

[BOSE AUDIO WITH NAVIGATION]

## CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

### Description

INFOID:000000008280681

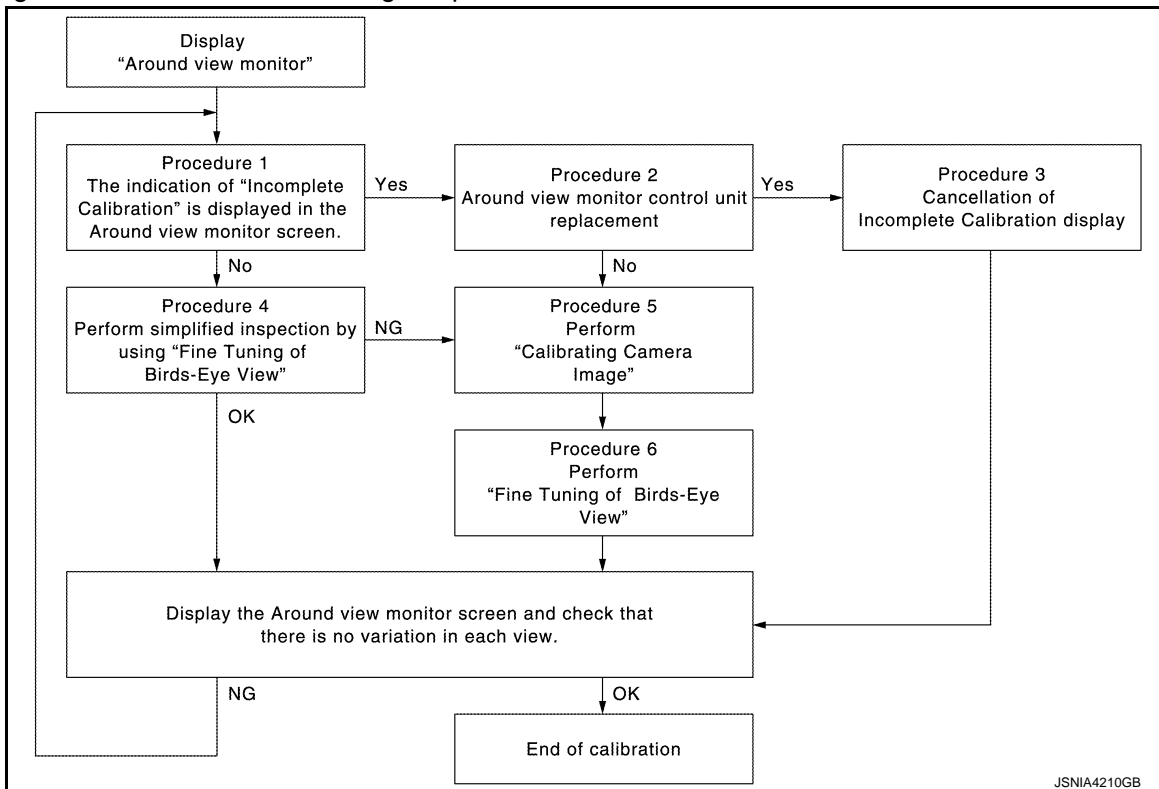
- Calibration must be performed after removing/replacing the cameras, removing parts (e.g. front grille, door mirror, and others) mounted on the cameras, or replacing the Around view monitor control unit.
- The use of CONSULT is required to perform calibration or writing of calibration results to the Around view monitor control unit.
- Align the white lines on the road near the vehicle at the boundary of each camera image by this camera calibration. The white lines far from the vehicle may not be aligned at the boundary of each camera image. The farther the line, the greater the difference is.

### Work Procedure

INFOID:000000008280682

### CALIBRATION FLOWCHART

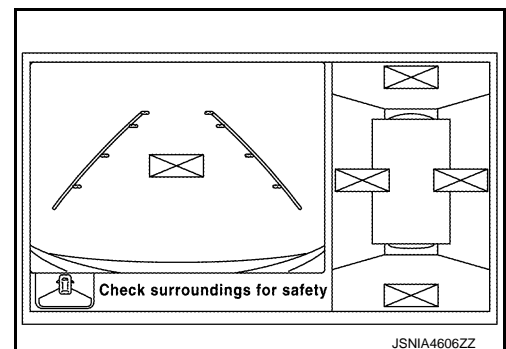
Following the flowchart shown in the figure, perform the calibration.



JSNIA4210GB

### NOTE:

View in the incomplete calibration state is indicated by "⊠" on the around view monitor.



JSNIA4606ZZ

### CALIBRATION PROCEDURE

#### 1. AROUND VIEW MONITOR SCREEN CONFIRMATION

# CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

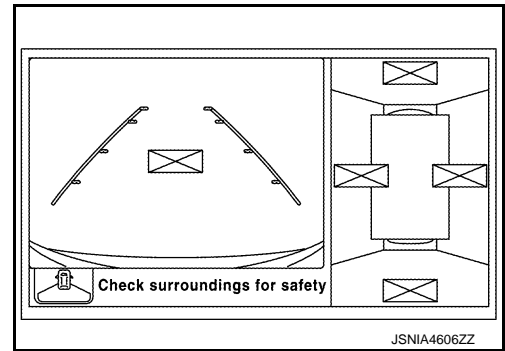
< BASIC INSPECTION >

[BOSE AUDIO WITH NAVIGATION]

Check that there is no indication of "Incomplete calibration".

Is the "Incomplete calibration" display visible?

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



## 2. CHECK THAT AROUND VIEW MONITOR CONTROL UNIT IS REPLACED

Check that the around view monitor control unit is replaced.

Is the around view monitor control unit replaced?

- YES >> GO TO 3.
- NO >> GO TO 5.

## 3. CANCEL THE INDICATION OF INCOMPLETE CALIBRATION (PERFORM THIS ONLY AFTER REPLACING AROUND VIEW MONITOR CONTROL UNIT.)

CONSULT work support

1. On the CONSULT screen, touch "CALIBRATING CAMERA IMAGE (FRONT CAMERA)", "CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)", "CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)", or "CALIBRATING CAMERA IMAGE (REAR CAMERA)" to accept the selection.

### NOTE:

To cancel the indication of Incomplete calibration, select items based on the target camera.

2. On the adjustment screen of each camera, touch "APPLY" button. After this, touch "OK" button.

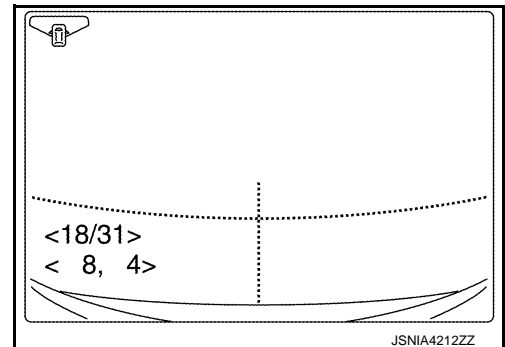
### CAUTION:

- Never perform operations other than those mentioned above.
- Never perform "Initialize Camera Image Calibration".

3. Display the around view monitor screen to check that there is no errors, such as deviations among the camera images.

Is there a malfunction?

- YES >> Calibration end
- NO >> GO TO 1.



## 4. PERFORM SIMPLIFIED CONFIRMATION/ADJUSTMENT BY "FINE TUNING OF BIRDS-EYE VIEW"

1. Put target line 1 on the ground beside each axle using packing tape, etc.
2. Put target lines 2 equal to the vehicle total length + approximately 1.0 m (39.3 in) from the vehicle side (right and left) at approximately 30 cm (11.8 in) away from the vehicle (make the line as parallel with the vehicle as possible)

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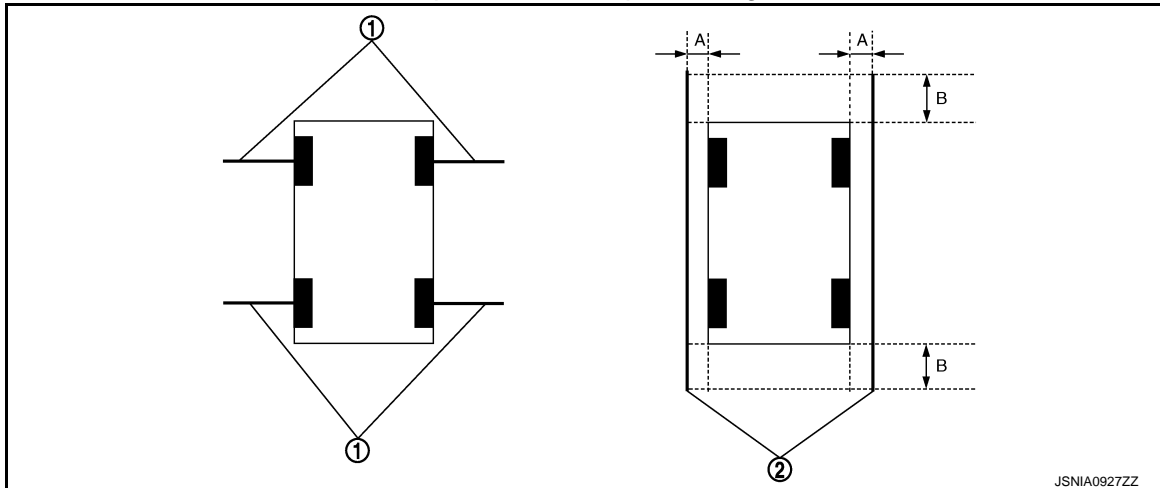
AV

# CALIBRATING CAMERA IMAGE (AROUND VIEW VIEW MONITOR)

< BASIC INSPECTION >

[BOSE AUDIO WITH NAVIGATION]

## Preparation of simplified target line



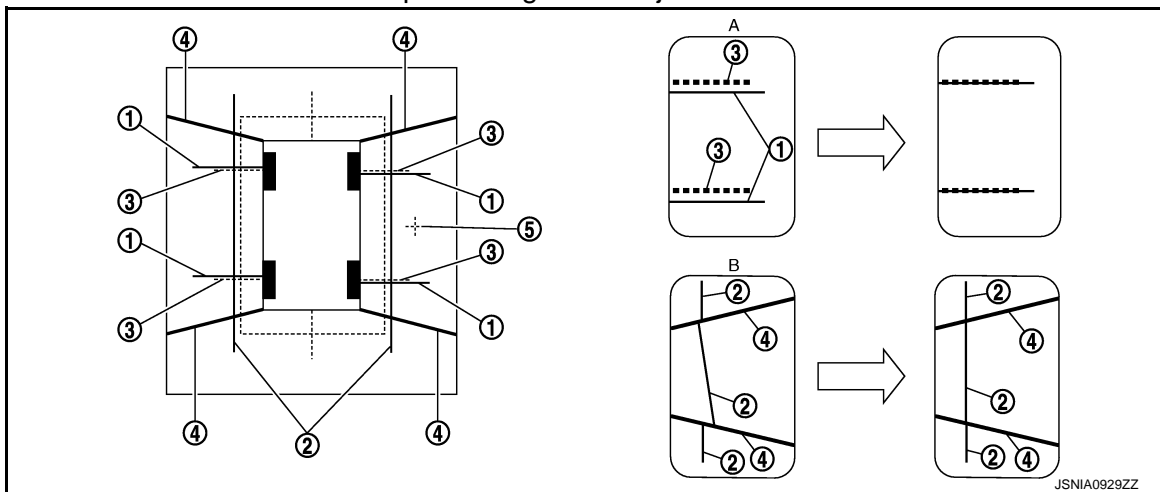
- |                            |                            |
|----------------------------|----------------------------|
| 1. Target lines 1          | 2. Target lines 2          |
| A. Approx. 30 cm (11.8 in) | B. Approx. 1.0 m (39.3 in) |

3. CONSULT work support  
Touch "FINE TUNING OF BIRDS-EYE VIEW" on the CONSULT screen.
4. On the CONSULT screen, touch "SELECT" button to select right or left camera and perform camera calibration as instructed below:
  - If the marker on the screen deviates from Target line 1, touch "AXIS X" button and "AXIS Y" button to adjust so that the marker is placed on the Target line 1.
  - If Target line 2 is misaligned among the cameras, adjust each camera image to bring Target line 2 into a straight line.

**CAUTION:**

**Never adjust the front camera and rear camera. Only adjust the right and left cameras.**

## Simplified target line adjustment method



- |   |   |                             |
|---|---|-----------------------------|
| 1. Target lines 1                               | 2. Target lines 2   | 3. Marker for target line 1 |
| 4. Boundary between cameras                     | 5. Crosshairs cursor (mark indicated the selected camera) |                             |
| A. Adjustment method for target lines 1 (right) | B. Adjustment method for target lines 2 (right)           |                             |

5. Adjust right and left cameras. Touch "APPLY" on the CONSULT screen to display adjustment results.
6. After adjusting right and left cameras, check that the marker is properly placed on the screen and there is no deviation in Target line 1.

**NOTE:**

- It can be initialized to the NISSAN factory default condition with "Initialize Camera Image Calibration".
- The adjustment value is cancelled on this mode by performing "Initialize Camera Image Calibration".



# CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

< BASIC INSPECTION >

[BOSE AUDIO WITH NAVIGATION]

Is the difference corrected?

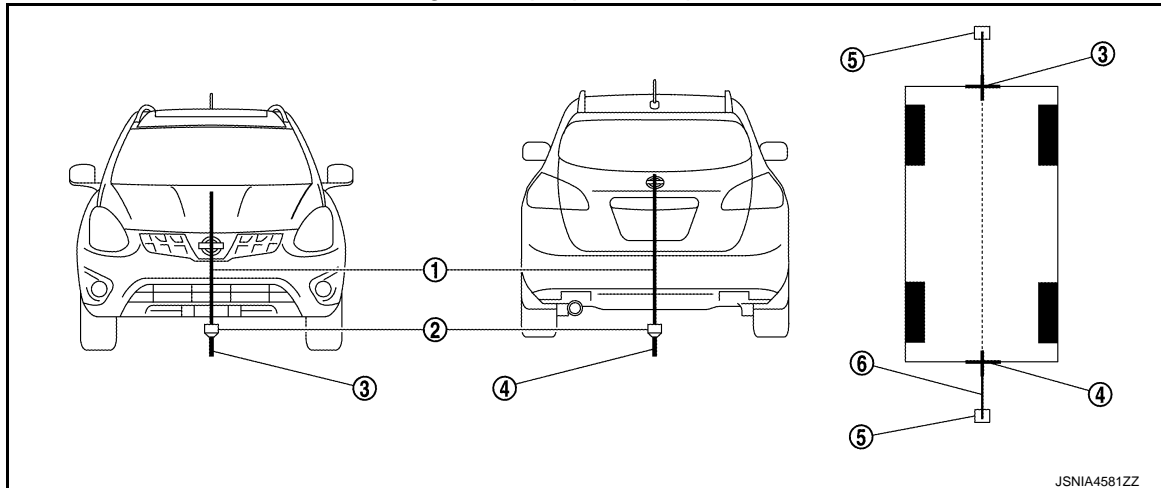
- YES >> On the CONSULT screen, touch "OK" button to complete writing to the around view monitor control unit.
- NO >> GO TO 5.

## 5.PERFORM "CALIBRATING CAMERA IMAGE"

Preparation of target line

1. Hang a string with a weight as shown in the figure. Put the points FM0, RM0 (mark) on the ground at the center of the vehicle front end and rear end with white packing tape or a pen.
2. Route the vinyl string under the vehicle, and then pull and fix it on the point approximately 1.0 m (39.9 in) to the front and rear of the vehicle through the points FM0 and RM0 using packing tape.

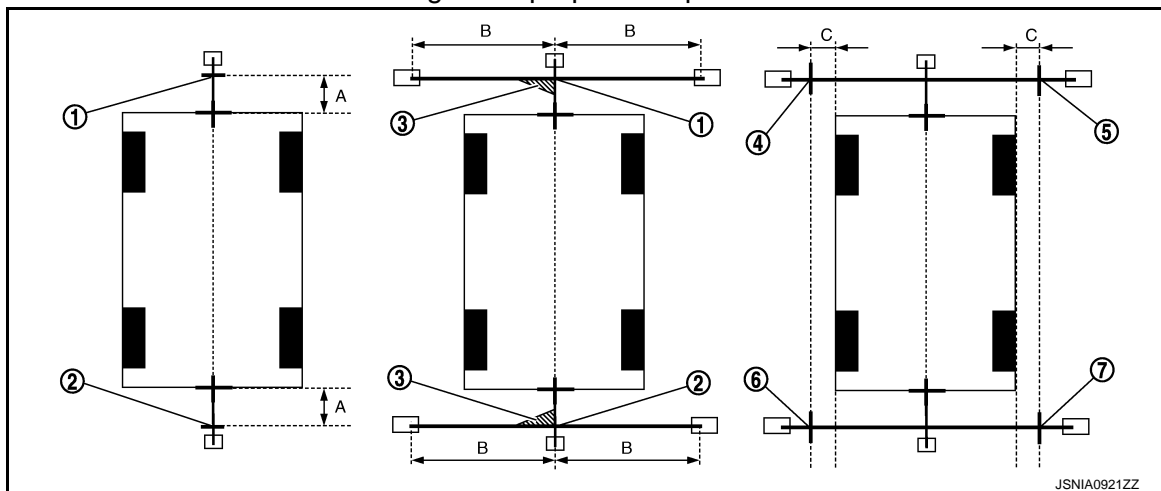
Target line preparation procedure 1



- |                     |   |                     |
|---------------------|---|---------------------|
| 1. Thread           | 2. Weight                                 | 3. Point FM0 (mark) |
| 4. Point RM0 (mark) | 5. Packing tape (to fix the vinyl string) | 6. Vinyl string     |

3. Put the points FM and RM (mark) 75 cm (29.5 in) from the points FM0 and RM0 individually.
4. Route the vinyl string through the points FM and RM using a triangle scale, and then fix it at approximately 1.5 m (59 in) on both sides with packing tape.
5. Put the points FL, FR, RL, and RR (mark) to both right and left [vehicle width / 2 + 30 cm (11.8 in)] from the points FM and RM.

Target line preparation procedure 2



- |                    |                    |                    |
|--------------------|--------------------|--------------------|
| 1. Point FM        | 2. Point RM        | 3. Triangle scale  |
| 4. Point FL (mark) | 5. Point FR (mark) | 6. Point RL (mark) |
|                    |                    | 7. Point RR (mark) |

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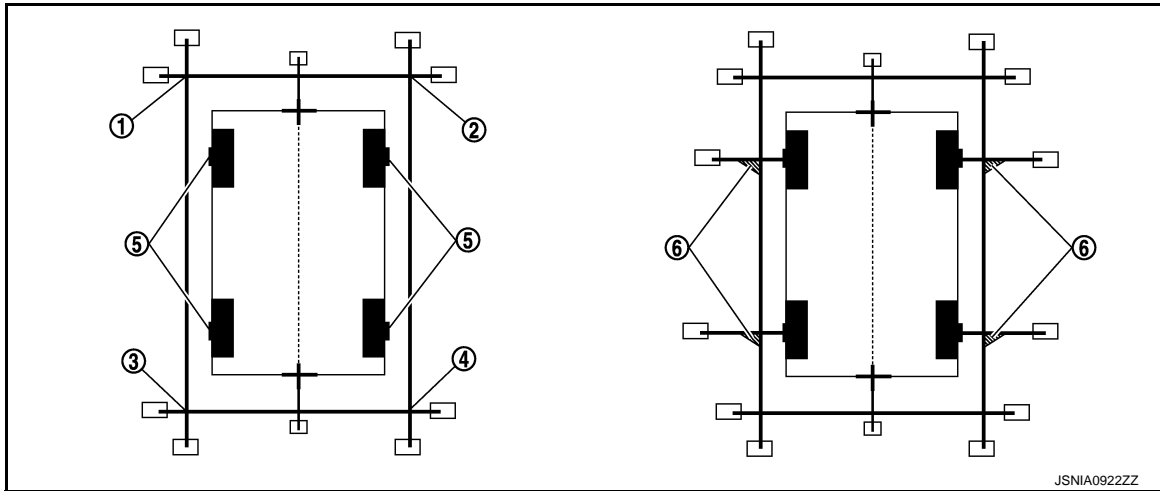
# CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

< BASIC INSPECTION >

[BOSE AUDIO WITH NAVIGATION]

7. Point RR (mark)
  - A. 75 cm (29.5 in)
  - B. Approx. 1.5 m (59 in)
  - C. 30 cm (11.8 in)  
[Vehicle width/ 2 + 30 cm (11.8 in) from the points FM and RM]
6. Draw the lines of the points FL – RL and FR – RR with vinyl string, and fix it with packing tape.
7. Put a mark on the center of each axle, draw vertical lines to the lines of the points FL – RL and FR – RR from the marks on the center of the axle using a triangle scale, and then fix the lines using packing tape.

Target line preparation procedure 3



- |             |                            |                   |
|-------------|----------------------------|-------------------|
| 1. Point FL | 2. Point FR                | 3. Point RL       |
| 4. Point RR | 5. Center position of axle | 6. Triangle scale |

Perform “Calibrating Camera Image”

CONSULT work support

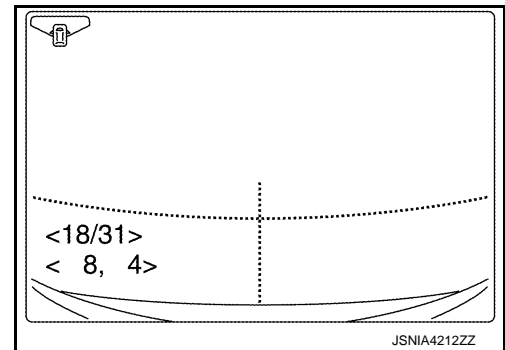
1. On the CONSULT screen, touch “CALIBRATING CAMERA IMAGE (FRONT CAMERA)”, “CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)”, “CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)”, or “CALIBRATING CAMERA IMAGE (REAR CAMERA)” to accept the selection.

**NOTE:**

To cancel the indication of Incomplete calibration, select items based on the target camera.

2. On the adjustment screen of each camera, adjust the parameter by touching the “AXIS X” button, “AXIS Y” button, and “ROTATE” button to place the calibration marker shown on the camera screen on the target line drawn on the ground.

Adjustment range	
Rotation direction (Center dial)	: 31 patterns (16 on the center)
Upper/lower direction (upper/lower switch)	: -22 – 22
Left direction (left/right switch)	: -22 – 22



3. Touch “APPLY” button on the CONSULT screen. “PRCSNG” is displayed and adjustment results are shown on the camera screen.

**CAUTION:**

Check that “PRCSNG” is displayed. Do never perform other operations while “PRCSNG” is displayed.

4. Touch “OK” button on the CONSULT screen. “PRCSNG” is displayed and adjustment results are written to the around view monitor control unit.

**CAUTION:**

Check that “PRCSNG” is displayed. Do never perform other operations while “PRCSNG” is displayed.

>> GO TO 6.

## 6. PERFORM “FINE TUNING OF BIRDS-EYE VIEW”

# CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

< BASIC INSPECTION >

[BOSE AUDIO WITH NAVIGATION]

This mode is designed to align the boundary between each camera image that could not be aligned in the "Calibrating Camera Image" mode.

CONSULT work support

1. Select "FINE TUNING OF BIRDS-EYE VIEW" by touching CONSULT screen.
2. On the adjustment screen of each camera, adjust the parameter by touching the "AXIS X" button, "AXIS Y" button, and "ROTATE" button to place the calibration marker shown on the camera screen on the target line drawn on the ground.

**NOTE:**

Touch "SELECT" button on the CONSULT screen to select the target camera.

3. Touch "APPLY" button on the CONSULT screen. "PRCSNG" is displayed and adjustment results are shown on the camera screen.

**CAUTION:**

**Check that "PRCSNG" is displayed. Do never perform other operations while "PRCSNG" is displayed.**

4. Touch "OK" button on the CONSULT screen. "PRCSNG" is displayed and adjustment results are written to the around view monitor control unit.

**CAUTION:**

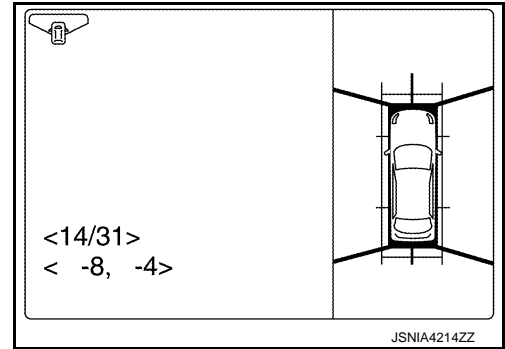
• **Check that "PRCSNG" is displayed. Never perform other operations while "PRCSNG" is displayed.**

• **After pressing the "OK" button, never press buttons other than the "BACK" button.**

**NOTE:**

- It can be initialized to the NISSAN factory default condition with "Initialize Camera Image Calibration".
- The adjustment value is cancelled in this mode by performing "Initialize Camera Image Calibration".

>> Calibration end



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# U0428 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## DTC/CIRCUIT DIAGNOSIS

### U0428 STEERING ANGLE SENSOR

#### DTC Logic

INFOID:000000008280683

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U0428	ST ANGLE SENSOR CALIBRATION [U0428]	The neutral position adjustment of the steering angle sensor is incomplete.	Adjust neutral position of the steering angle sensor.

#### Diagnosis Procedure

INFOID:000000008280684

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

When U1232 is detected, adjust the neutral position of the steering angle sensor.

>> Perform adjustment of the neutral position of the steering angle sensor. Refer to [AV-247, "CONSULT Function"](#).

# U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1000 CAN COMM CIRCUIT

### Description

INFOID:000000008280685

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-26. "CAN Communication Signal Chart"](#).

### DTC Logic

INFOID:000000008280686

### DTC DETECTION LOGIC

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

### Diagnosis Procedure

INFOID:000000008280687

#### 1. PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check "Self Diagnostic Result" of "AVM".

Is "CAN COMM CIRCUIT" displayed?

- YES >> Refer to [LAN-16. "Trouble Diagnosis Procedure"](#).  
NO >> Refer to [GI-46. "Intermittent Incident"](#).

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AV

# U1010 CONTROL UNIT (CAN)

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1010 CONTROL UNIT (CAN)

### DTC Logic

INFOID:000000008280688

### DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Probable malfunction factor
U1010	CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the around view monitor control unit if the malfunction occurs constantly. Refer to <a href="#">AV-326, "Removal and Installation"</a> .

# U1232 STEERING ANGLE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## U1232 STEERING ANGLE SENSOR

### DTC Logic

INFOID:000000008280689

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1232	ST ANGLE SEN CALIB [1232]	The neutral position registration of the steering angle sensor can not finish.	<ul style="list-style-type: none"><li>Steering angle sensor</li><li>Around view monitor control unit</li></ul>

### Diagnosis Procedure

INFOID:000000008280690

#### 1. REGISTER THE NEUTRAL POSITION OF THE STEERING ANGLE SENSOR

- Turn the ignition switch ON.
- Perform registration of the neutral position of the steering angle sensor. Refer to [AV-247, "CONSULT Function"](#).
- Check "Self Diagnostic Result" of "AVM" with CONSULT. Refer to [AV-247, "CONSULT Function"](#).

Is "ST ANGLE SEN CALIB" detected?

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

#### 2. CHECK STEERING ANGLE SENSOR

Check steering angle sensor.

Is the inspection result normal?

- YES >> Replace around view monitor control unit.  
NO >> Repair or replace malfunctioning parts.

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AV

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## POWER SUPPLY AND GROUND CIRCUIT

### NAVI CONTROL UNIT

#### NAVI CONTROL UNIT : Diagnosis Procedure

INFOID:000000008280691

#### 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	20

Is inspection result OK?

YES >> GO TO 2.

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

#### 2.CHECK POWER SUPPLY CIRCUIT

Check voltage between NAVI control unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	M88	19	OFF	Battery voltage
ACC power supply	M88	7	ACC	Battery voltage

Is inspection result OK?

YES >> GO TO 3.

NO >> Check harness between NAVI control unit and fuse.

#### 3.CHECK GROUND CIRCUIT

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	M88	20	OFF	Existed.
	M89	36		

Is inspection result OK?

YES >> INSPECTION END

NO >> Repair harness or connector.

### BOSE AMP.

#### BOSE AMP. : Diagnosis Procedure

INFOID:000000008280692

#### 1.CHECK FUSE

Check that the following fuses of the BOSE amp. are not blown.

Power source	Fuse No.
Battery	13

Is inspection result OK?

YES >> GO TO 2.

NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

#### 2.CHECK POWER SUPPLY CIRCUIT

Check voltage between BOSE speaker amp harness connector and ground.



# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Signal name	Connector No.	Terminal No.	Ignition switch position	Voltage
Battery power supply	B64	11	OFF	Battery voltage

Is inspection result OK?

YES >> GO TO 3.

NO >> Check harness between BOSE amp. and fuse.

## 3.CHECK GROUND CIRCUIT

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B64	12	OFF	Existed.

Is inspection result OK?

YES >> INSPECTION END

NO >> Repair harness or connector.

## TEL ADAPTER UNIT

### TEL ADAPTER UNIT : Diagnosis Procedure

INFOID:000000008280693

## 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	20

Is the inspection result normal?

YES >> GO TO 2.

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

## 2.CHECK POWER SUPPLY CIRCUIT

Check voltage between TEL adapter unit harness connector and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Battery power supply	B6	1	OFF	Battery voltage
ACC power supply		2	ACC	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check harness between TEL adapter unit and fuse.

## 3.CHECK GROUND CIRCUIT

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

Signal name	Connector No.	Terminal No.	Ignition switch position	Continuity
Ground	B6	4	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

## AROUND VIEW MONITOR CONTROL UNIT

# POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:000000008280694

### 1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35

Is inspection result normal?

YES >> GO TO 2.

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

### 2.CHECK POWER SUPPLY CIRCUITS

Check voltage between around view monitor control unit harness connector and ground.

Signal name	Connector	Terminal	Ignition switch position	Value (Approx.)
Battery power supply	M103	2	OFF	Battery voltage

Is inspection result normal?

YES >> GO TO 3.

NO >> Check harness between around view monitor control unit and fuse.

### 3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector.
3. Check continuity between around view monitor control unit harness connector and ground.

Signal name	Connector	Terminal	Ignition switch position	Continuity
Ground	M103	1	OFF	Existed

Is inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## MICROPHONE SIGNAL CIRCUIT

### Description

INFOID:000000008280695

TEL adapter unit supplies power to microphone. The microphone transmits the sound voice to the TEL adapter unit.

### Diagnosis Procedure

INFOID:000000008280696

#### 1.CHECK CONTINUITY BETWEEN TEL ADAPTER UNIT AND MICROPHONE CIRCUIT

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

TEL adapter unit		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
B6	7	R3	1	Existed
	8		2	
	29		4	

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

TEL adapter unit		Ground	Continuity
Connector	Terminal		
B6	7		Not existed
	29		

Is inspection result OK?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2.CHECK VOLTAGE MICROPHONE VCC

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

TEL adapter unit (+)		Ground (-)	Voltage (Approx.)
Connector	Terminal		
B6	29	Ground	5.0 V

Is inspection result OK?

YES >> GO TO 3.

NO >> Replace TEL adapter unit. Refer to [AV-323. "Exploded View"](#).

#### 3.CHECK MICROPHONE SIGNAL

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

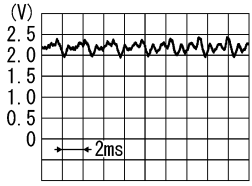
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AV

# MICROPHONE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

TEL adapter unit				Condition	Reference value
(+)		(-)			
Connector	Terminal	Connector	Terminal		
B6	7	B6	8	Give a voice.	 <p style="text-align: right; font-size: small;">PKIB5037J</p>

Is inspection result OK?

- YES >> Replace TEL adapter unit. Refer to [AV-323, "Exploded View"](#).
- NO >> Replace microphone. Refer to [AV-325, "Exploded View"](#).

# CONTROL SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## CONTROL SIGNAL CIRCUIT

### Description

INFOID:000000008280697

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

### Diagnosis Procedure

INFOID:000000008280698

#### 1. CHECK CONTINUITY CONTROL SIGNAL CIRCUIT

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

TEL adapter unit		Ground	Continuity
Connector	Terminals		
B6	20	Ground	Existed
	22		
	23		
	27		

Is the inspection result normal?

- YES >> Replace TEL adapter unit. Refer to [AV-323. "Exploded View"](#).  
NO >> Repair harness or connector.

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# CAMERA IMAGE SIGNAL CIRCUIT

[BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

## CAMERA IMAGE SIGNAL CIRCUIT WITH REAR VIEW MONITOR

### WITH REAR VIEW MONITOR : Description

INFOID:000000008717006

- The NAVI control unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the NAVI control unit when power is supplied from the NAVI control unit.

### WITH REAR VIEW MONITOR : Diagnosis Procedure

INFOID:000000008717007

#### 1. CHECK CONTINUITY CAMERA POWER SUPPLY CIRCUIT

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

NAVI control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M89	43	D188	1	Existed

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

NAVI control unit		Ground	Continuity
Connector	Terminal		
M89	43		Not existed

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

#### 2. CHECK VOLTAGE CAMERA POWER SUPPLY

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

(+)		(-)	Condition	Voltage (Approx.)
Connector	Terminal			
M89	43	Ground	Shift position is in "R".	6.0 V

Is inspection result normal?

YES >> GO TO 3.

NO >> Replace NAVI control unit. Refer to [AV-313, "Removal and Installation"](#).

#### 3. CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

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

NAVI control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M89	41	D188	3	Existed

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

# CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

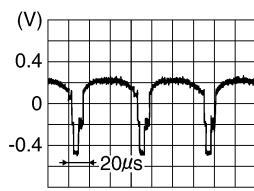
NAVI control unit		Ground	Continuity
Connector	Terminal		
M89	41		Not existed

Is inspection result normal?

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

## 4. CHECK CAMERA IMAGE SIGNAL

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

(+)		(-)	Condition	Reference value
Connector	Terminal			
M89	41	Ground	At rear view camera image is displayed.	 <p style="text-align: right; font-size: small;">SKIB0827E</p>

Is inspection result normal?

- YES >> Replace NAVI control unit. Refer to [AV-313, "Removal and Installation"](#).
- NO >> Replace rear view camera. Refer to [AV-333, "Removal and Installation"](#).

## WITH AROUND VIEW MONITOR

### WITH AROUND VIEW MONITOR : Description

INFOID:0000000008280699

- The around view monitor control unit supplies power to the rear camera when receiving a reverse signal.
- The rear camera transmits camera images to the around view monitor control unit when power is supplied from the around view monitor control unit.

### WITH AROUND VIEW MONITOR : Diagnosis Procedure

INFOID:0000000008280700

## 1. CHECK CONTINUITY CAMERA POWER SUPPLY CIRCUIT

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

Around view monitor control unit		Rear camera		Continuity
Connector	Terminal	Connector	Terminal	
M103	26	D187	1	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M103	26		Not existed

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# CAMERA IMAGE SIGNAL CIRCUIT

[BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair harness or connector.

## 2.CHECK VOLTAGE CAMERA POWER SUPPLY

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

(+)		(-)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
M103	26	Ground	Shift position is in "R".	6.2 V

Is inspection result normal?

YES >> GO TO 3.

NO >> Replace around view monitor control unit. Refer to [AV-326. "Removal and Installation"](#).

## 3.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

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

Around view monitor control unit		Rear camera		Continuity
Connector	Terminal	Connector	Terminal	
M103	28	D187	3	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M103	28		Not existed

Is inspection result normal?

YES >> GO TO 4.

NO >> Repair harness or connector.

## 4.CHECK CAMERA IMAGE SIGNAL

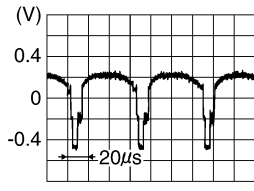
1. Connect around view monitor control unit connector and rear camera connector.
2. Turn ignition switch ON.
3. Shift the selector lever to "R" position.
4. Check signal between around view monitor control unit harness connector and ground.



# CAMERA IMAGE SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

(+)		(-)	Condition	Reference value
Around view monitor control unit				
Connector	Terminal			
M103	28	Ground	At rear camera image is displayed.	 <p style="text-align: right; font-size: small;">SKIB0827E</p>

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to [AV-326, "Removal and Installation"](#).

NO >> Replace rear camera. Refer to [AV-328, "Removal and Installation"](#).

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# CAMERA SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## CAMERA SWITCH SIGNAL CIRCUIT

### Description

INFOID:000000008280701

The camera switch signal is transmitted from the around view monitor switch to the around view monitor control unit and used to send information of the pressing of "CAMERA" switch.

### Diagnosis Procedure

INFOID:000000008280702

#### 1. CHECK CONTINUITY CAMERA SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect audio unit connector and around view monitor control unit connector.
3. Check continuity between audio unit harness connector and around view monitor control unit harness connector.

Audio unit		Around view monitor control unit		Continuity
Connector	Terminal	Connector	Terminal	
M85	61	M103	9	Existed

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

Audio unit		Ground	Continuity
Connector	Terminal		
M85	61		Not existed

Is the inspection result normal?

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

#### 2. CHECK AROUND VIEW MONITOR CONTROL UNIT VOLTAGE

1. Connect audio unit connector and around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(-)	Condition	Voltage (Approx.)
Connector	Terminal			
M103	9	Ground	Pressing the "FM-AM", "DISC" or "AUX" switch	0 V
			Except for above	5.0 V

Is the inspection result normal?

- YES >> Replace around view monitor control unit. Refer to [AV-326, "Removal and Installation"](#).  
 NO >> Replace NAVI control unit. Refer to [AV-313, "Removal and Installation"](#).

### Component Inspection

INFOID:000000008280703

#### 1. CHECK AROUND VIEW MONITOR SWITCH

1. Turn ignition switch OFF.
2. Disconnect the around view monitor switch connector.
3. Check continuity between terminals 1 and 2.

Terminals	Condition	Continuity

# CAMERA SWITCH SIGNAL CIRCUIT

[BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

1	2	Pressing the "CAMERA" switch	Existed
		Except for above	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the around view monitor switch. Refer to [SB-9, "SEAT BELT BUCKLE : Removal and Installation"](#).

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# IMAGE SWITCH SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## IMAGE SWITCH SIGNAL CIRCUIT

### Description

INFOID:000000008280704

The AV switch signal is output to around view monitor control unit when the "FM-AM" switch, "DISC" switch, or "AUX" switch of audio fascia switch is pressed.

### Diagnosis Procedure

INFOID:000000008280705

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

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector and around view monitor control unit connector.
3. Check continuity between NAVI control unit harness connector and around view monitor control unit harness connector.

NAVI control unit		Around view monitor control unit		Continuity
Connector	Terminal	Connector	Terminal	
M89	29	M103	16	Existed

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

NAVI control unit		Ground	Continuity
Connector	Terminal		
M89	29		Not existed

Is the inspection result normal?

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

#### 2. CHECK AROUND VIEW MONITOR CONTROL UNIT VOLTAGE

1. Connect NAVI control unit connector and around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(-)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
M103	16	Ground	Pressing the "FM-AM", "DISC" or "AUX" switch	0 V
			Except for above	5.0 V

Is the inspection result normal?

- YES >> Replace around view monitor control unit. Refer to [AV-326, "Removal and Installation"](#).  
 NO >> Replace NAVI control unit. Refer to [AV-313, "Removal and Installation"](#).

# BOSE AMP. ON SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## BOSE AMP. ON SIGNAL CIRCUIT

### Description

INFOID:000000008280706

When the audio system is turned on, a voltage signal is supplied from the NAVI control unit to the BOSE amp. When this signal is received, the BOSE amp. will turn on.

### Diagnosis Procedure

INFOID:000000008280707

#### 1. CHECK CONTINUITY AMP. ON SIGNAL CIRCUIT

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

NAVI control unit		BOSE amp.		Continuity
Connector	Terminal	Connector	Terminal	
M88	1	B65	31	Existed

4. Check continuity between NAVI control unit harness connector terminal 1 and ground.

NAVI control unit		Ground	Continuity
Connector	Terminal		
M88	1		Not existed

#### Is inspection result OK?

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

#### 2. CHECK VOLTAGE AMP. ON SIGNAL

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

NAVI control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M88	1		12.0 V

#### Is inspection result OK?

- YES >> Replace BOSE amp. Refer to [AV-314, "Exploded View"](#).  
NO >> Replace NAVI control unit. Refer to [AV-313, "Removal and Installation"](#).

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# WOOFER AMP. ON SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## WOOFER AMP. ON SIGNAL CIRCUIT

### Description

INFOID:000000008280708

When the audio system is turned on, a voltage signal is supplied from the BOSE amp. to the woofer. When this signal is received, the woofer will turn on.

### Diagnosis Procedure

INFOID:000000008280709

#### 1. CHECK CONTINUITY WOOFER AMP. ON SIGNAL CIRCUIT

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

BOSE amp.		Woofer		Continuity
Connector	Terminal	Connector	Terminal	
B65	25	B63	4	Existed

4. Check continuity between woofer harness connector and ground.

Woofer		Ground	Continuity
Connector	Terminal		
B63	4		Not existed

#### Is inspection result OK?

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

#### 2. CHECK VOLTAGE AMP. ON SIGNAL

1. Connect BOSE amp. connector
2. Turn ignition switch ON.
3. Check voltage between BOSE amp. harness connector and ground.

BOSE amp.		Ground	Voltage (Approx.)
Connector	Terminal		
B65	25		12.0 V

#### Is inspection result OK?

- YES >> Replace woofer. Refer to [AV-319, "Exploded View"](#).  
NO >> Replace BOSE amp.. Refer to [AV-314, "Exploded View"](#).

# STEERING SWITCH SIGNAL A CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## STEERING SWITCH SIGNAL A CIRCUIT

### Description

INFOID:000000008280710

Transmits the steering switch signal to NAVI control unit.

### Diagnosis Procedure

INFOID:000000008280711

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

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

NAVI control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M88	6	M33	24	Existed

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

NAVI control unit		Ground	Continuity
Connector	Terminal		
M88	6		Not existed

Is the inspection result normal?

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

#### 2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

- YES >> GO TO 3.  
 NO >> Replace spiral cable.

#### 3. CHECK NAVI CONTROL UNIT VOLTAGE

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

(+)		(-)		Voltage (Approx.)
NAVI control unit				
Connector	Terminal	Connector	Terminal	
M88	6	M88	15	5.0 V

Is the inspection result normal?

- YES >> GO TO 4.  
 NO >> Replace NAVI control unit. Refer to [AV-313, "Removal and Installation"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-295, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
 NO >> Replace steering switch. Refer to [AV-332, "Exploded View"](#).

### Component Inspection

INFOID:000000008280712

Measure the resistance between the steering switch connector terminals 16 to 17 and 20 to 17.

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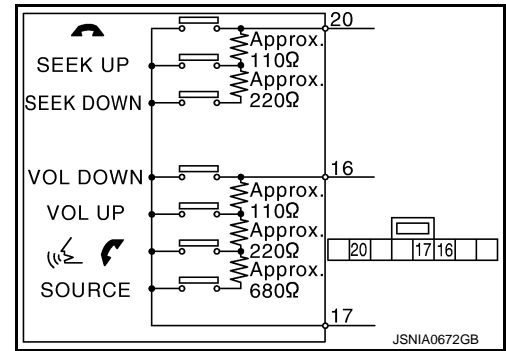
# STEERING SWITCH SIGNAL A CIRCUIT

[BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

Standard

Steering switch		Condition	Resistance Ω
Terminal	Terminal		
16	17	SOURCE switch ON	1000 – 1020
		switch ON	327 – 333
		VOL UP switch ON	109 – 111
		VOL DOWN switch ON	0
20	17	SEEK DOWN switch ON	327 – 333
		SEEK UP switch ON	109 – 111
		switch ON	0





# STEERING SWITCH SIGNAL B CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## STEERING SWITCH SIGNAL B CIRCUIT

### Description

INFOID:000000008280713

Transmits the steering switch signal to NAVI control unit.

### Diagnosis Procedure

INFOID:000000008280714

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

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

NAVI control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M88	16	M33	32	Existed

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

NAVI control unit		Ground	Continuity
Connector	Terminal		
M88	16		Not existed

Is the inspection result normal?

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

#### 2. CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Replace spiral cable.

#### 3. CHECK NAVI CONTROL UNIT VOLTAGE

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

(+)		(-)		Voltage (Approx.)
NAVI control unit				
Connector	Terminal	Connector	Terminal	
M88	16	M88	15	5.0 V

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace NAVI control unit. Refer to [AV-313, "Removal and Installation"](#).

#### 4. CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-297, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [AV-332, "Exploded View"](#).

### Component Inspection

INFOID:000000008280715

Measure the resistance between the steering switch connector terminals 16 to 17 and 20 to 17.

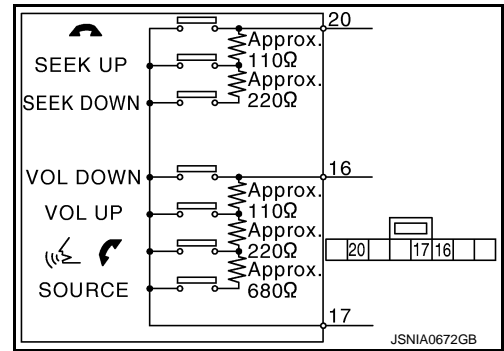
# STEERING SWITCH SIGNAL B CIRCUIT

[BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

Standard

Steering switch		Condition	Resistance Ω
Terminal	Terminal		
16	17	SOURCE switch ON	1000 – 1020
		switch ON	327 – 333
		VOL UP switch ON	109 – 111
		VOL DOWN switch ON	0
20	17	SEEK DOWN switch ON	327 – 333
		SEEK UP switch ON	109 – 111
		switch ON	0



# STEERING SWITCH GROUND CIRCUIT

[BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

## STEERING SWITCH GROUND CIRCUIT

### Description

INFOID:000000008280716

Transmits the steering switch signal to NAVI control unit.

### Diagnosis Procedure

INFOID:000000008280717

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

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

NAVI control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M88	15	M33	31	Existed

Is the inspection result normal?

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

#### 2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

- YES >> GO TO 3.  
NO >> Replace spiral cable.

#### 3.CHECK GROUND CIRCUIT

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

NAVI control unit		Ground	Continuity
Connector	Terminal		
M88	15		Existed

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Replace NAVI control unit. Refer to [AV-313, "Removal and Installation"](#).

#### 4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to [AV-299, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Replace steering switch. Refer to [AV-332, "Exploded View"](#).

### Component Inspection

INFOID:000000008280718

Measure the resistance between the steering switch connector terminals 16 to 17 and 20 to 17.

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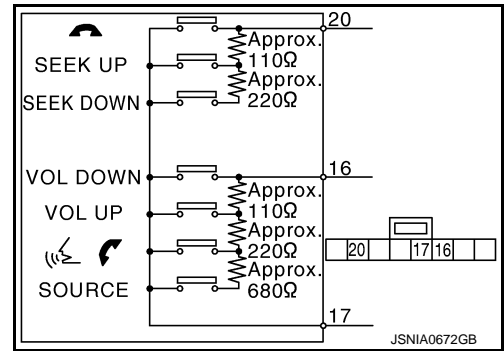
# STEERING SWITCH GROUND CIRCUIT

[BOSE AUDIO WITH NAVIGATION]

< DTC/CIRCUIT DIAGNOSIS >

Standard

Steering switch		Condition	Resistance Ω
Terminal	Terminal		
16	17	SOURCE switch ON	1000 – 1020
		switch ON	327 – 333
		VOL UP switch ON	109 – 111
		VOL DOWN switch ON	0
20	17	SEEK DOWN switch ON	327 – 333
		SEEK UP switch ON	109 – 111
		switch ON	0



SYMPTOM DIAGNOSIS

NAVIGATION SYSTEM

Symptom Table

INFOID:000000008280719

RELATED TO NAVIGATION

NOTE:

Combined part of AV switch and NAVI control unit.

Symptoms	Check items		Probable malfunction location / Action to take
Display does not turn ON.	All switches cannot be operated.		<ul style="list-style-type: none"> <li>NAVI control unit power supply and ground circuit. Refer to <a href="#">AV-280, "NAVI CONTROL UNIT : Diagnosis Procedure"</a>.</li> <li>NAVI control unit</li> </ul>
	All switches can be operated.		NAVI control unit
All switches cannot be operated.	Display does not turn ON.		<ul style="list-style-type: none"> <li>NAVI control unit power supply and ground circuit. Refer to <a href="#">AV-280, "NAVI CONTROL UNIT : Diagnosis Procedure"</a>.</li> <li>NAVI control unit</li> </ul>
	Display turn ON.		NAVI control unit
Only specified switch cannot be operated.	-		NAVI control unit
Map screen is not displayed. (RGB image other than map is normal.)	<ul style="list-style-type: none"> <li>Check that the map SD-card is in the SD-card slot.</li> <li>Check "SD Card Access" in "SERVICE SYSTEM SELF TEST", "SERVICE MENU".</li> </ul>	"OK" is displayed for "SD Card Access".	Map SD-card
		"OK" is not displayed for "SD Card Access".	<ul style="list-style-type: none"> <li>NAVI control unit</li> <li>Map SD-card</li> </ul>
Voice guidance is not heard.	Audio sound is normal.		NAVI control unit
Display does not dim.	Check "Illumination Signal" in "SERVICE SYSTEM STATUS", "SERVICE MENU".	"Illumination Signal" reaches 100% when the lighting switch is ON.	NAVI control unit
		"Illumination Signal" does not reach 100% when the lighting switch is ON.	Illumination control signal circuit
Vehicle icon does not move.	Check "Speed Signal" in "SERVICE SYSTEM STATUS", "SERVICE MENU".	A value of "Speed Signal" changes according to vehicle speeds.	NAVI control unit
		A value of "Speed Signal" does not change according to vehicle speeds.	Vehicle speed signal circuit
Map matching is not complete GPS icon is not displayed	Check "GPS Antenna" in "SERVICE SYSTEM SELF TEST", "SERVICE MENU".	"Connected" is displayed for "GPS Antenna".	NAVI control unit
		"Connected" is not displayed for "GPS Antenna".	GPS antenna
Traffic information (XM Traffic) is not received.	Check "XM Antenna" in "SERVICE SYSTEM SELF TEST", "SERVICE MENU".	"Detected" is displayed for "XM Antenna".	NAVI control unit
		"Detected" is not displayed for "XM Antenna".	<ul style="list-style-type: none"> <li>Antenna base</li> <li>Antenna feeder</li> </ul>

RELATED TO AUDIO

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AV

# NAVIGATION SYSTEM

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Symptoms	Check items	Probable malfunction location
NAVI control unit does not start.	—	NAVI control unit power supply and ground circuit. Refer to <a href="#">AV-280, "NAVI CONTROL UNIT : Diagnosis Procedure"</a> .
No sound comes out or the level of the sound is low.	No sound from all speakers.	<ul style="list-style-type: none"> <li>BOSE amp. ON signal circuit malfunction.</li> <li>BOSE amp. power supply and ground circuits malfunction.</li> </ul> Refer to <a href="#">AV-280, "BOSE AMP. : Diagnosis Procedure"</a> .
	Sound is not heard from rear woofer.	Sound signal (woofer) circuit malfunction.
	Only a certain speaker (front right, front left, rear right, or rear left) does not output sound.	<ul style="list-style-type: none"> <li>Poor connector connection of speaker.</li> <li>Sound signal circuit malfunction between NAVI control unit and BOSE amp.</li> <li>Sound signal circuit malfunction between BOSE amp. and speaker.</li> <li>Malfunction in speaker.</li> <li>Malfunction in NAVI control unit.</li> <li>Malfunction in BOSE amp.</li> </ul>
Noise is mixed with audio.	Noise comes out from all speaker.	<ul style="list-style-type: none"> <li>Malfunction in NAVI control unit.</li> <li>Malfunction in BOSE amp.</li> </ul>
	Noise comes out only from a certain speaker (front right, front left, rear right, or rear left).	<ul style="list-style-type: none"> <li>Poor connector connection of speaker.</li> <li>Sound signal circuit malfunction between NAVI control unit and BOSE amp.</li> <li>Sound signal circuit malfunction between BOSE amp. and speaker.</li> <li>Malfunction in speaker.</li> <li>Poor installation of speaker (e.g. backlash and looseness)</li> <li>Malfunction in NAVI control unit.</li> <li>Malfunction in BOSE amp.</li> </ul>
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	<ul style="list-style-type: none"> <li>Poor connector connection of antenna or antenna feeder.</li> <li>Loose antenna base mounting nut.</li> </ul> Refer to <a href="#">AV-320, "Exploded View"</a> .
Radio is not received or poor reception.	<ul style="list-style-type: none"> <li>Other audio sounds are normal.</li> <li>Any radio cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no obstacles generating external noises).</li> </ul>	<ul style="list-style-type: none"> <li>Antenna amp. ON signal circuit malfunction.</li> <li>Poor connector connection of antenna or antenna feeder.</li> <li>Loose antenna base mounting nut.</li> </ul> Refer to <a href="#">AV-320, "Exploded View"</a> .
Satellite radio is not received.	It change to satellite radio mode.	<ul style="list-style-type: none"> <li>Poor connector connection NAVI control unit.</li> <li>Loose antenna base mounting nut.</li> </ul> Refer to <a href="#">AV-320, "Exploded View"</a> .
	It does not change to satellite radio mode.	NAVI control unit power supply and ground circuit. Refer to <a href="#">AV-280, "NAVI CONTROL UNIT : Diagnosis Procedure"</a> .

## RELATED TO USB

### NOTE:

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

Symptoms	Check items		Probable malfunction location / Action to take
iPod® or USB memory can not be recognized.	With iPod or USB memory Connected, check "USB Device" in "SERVICE STATUS", "SERVICE MENU".	iPod or USB memory name is displayed for "USB Device".	<ul style="list-style-type: none"> <li>USB and AUX harness</li> <li>USB connector and AUX jack</li> <li>NAVI control unit</li> </ul>
		"Removed" is displayed for "USB Device".	<ul style="list-style-type: none"> <li>USB and AUX harness</li> <li>USB connector and AUX jack</li> </ul>

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

# NAVIGATION SYSTEM

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## RELATED TO AUXILIARY INPUT

**NOTE:**

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

Symptoms	Check items	Probable malfunction location
No voice sound is heard when AUX mode is selected.	Voice sound is heard when other modes are selected.	<ul style="list-style-type: none"> <li>• USB and AUX harness</li> <li>• USB connector and AUX jack</li> </ul>

## RELATED TO CAMERA

### Rear View Monitor

Symptoms	Check items	Probable malfunction location / Action to take
Camera image is not shown.	The guide line display is normal.	<ul style="list-style-type: none"> <li>• Rear view camera image signal circuit</li> <li>• Rear view camera power supply and ground circuits</li> </ul> Refer to <a href="#">AV-286, "WITH REAR VIEW MONITOR : Diagnosis Procedure"</a> .
The screen is not switched to camera image.	Check "Direction Signal" in "SERVICE SYSTEM STATUS", "SERVICE MENU".	"Reverse" is displayed for "Direction Signal" when the shift lever is in R.
		"Reverse" is not displayed for "Direction Signal" when the shift lever is in R.
The guide line display is malfunctioning.	—	EQ1 circuit

### Around View Monitor

Symptoms	Check items	Probable malfunction location / Action to take
It does not switch to camera image even when the "CAMERA" switch (around view monitor switch) is pressed or the shift position is in "R".	A beeping sound is not generated when the "DISP" switch is pressed.	Camera switch signal circuit. Refer to <a href="#">AV-290, "Diagnosis Procedure"</a> .
	A beeping sound is generated when the "DISP" switch is pressed.	Image switch signal circuit. Refer to <a href="#">AV-292, "Diagnosis Procedure"</a> .
The screen switches when pressing the "CAMERA" switch (around view monitor switch) or the shift position is in "R", however, all views are not displayed.	—	Camera image signal circuit. Refer to <a href="#">AV-287, "WITH AROUND VIEW MONITOR : Diagnosis Procedure"</a> .
It cannot be switched to rear view monitor even when the shift position is in "R".	The front view image is normal.	Reverse signal circuit (around view monitor control unit).



# NAVIGATION SYSTEM

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Symptoms	Check items	Probable malfunction location / Action to take
The predictive course line display in front view and rear view is malfunctioning.	—	Perform "Self Diagnostic Result" of "AVM" with CONSULT. Refer to <a href="#">AV-247. "CONSULT Function"</a> .
<ul style="list-style-type: none"> <li>• The front view screen is not displayed.</li> <li>• The front of Birds-Eye view screen is not displayed.</li> </ul>	—	
<ul style="list-style-type: none"> <li>• The rear view screen is not displayed.</li> <li>• The rear of Birds-Eye view screen is not displayed.</li> </ul>	—	
<ul style="list-style-type: none"> <li>• The front-side screen is not displayed.</li> <li>• The passenger side of Birds-Eye view screen is not displayed.</li> </ul>	—	
The driver side of Birds-eye view screen is not displayed.	—	
When shift position is in other than "R", the front-side and front screen or the Birds-Eye view and front screen remain displaying even if the vehicle speed increases.	—	

## RELATED TO STEERING SWITCH

Symptoms	Possible malfunction location / Action to take
All steering switches are not operated.	Steering switch signal ground circuit. Refer to <a href="#">AV-299. "Diagnosis Procedure"</a> .
Only specified switch cannot be operated.	Steering switch
"SEEK UP", "SEEK DOWN" and  switches are not operated.	Steering switch signal A circuit. Refer to <a href="#">AV-295. "Diagnosis Procedure"</a> .
 , "VOL UP", "VOL DOWN" and "SOURCE" switches are not operated.	Steering switch signal B circuit. Refer to <a href="#">AV-297. "Diagnosis Procedure"</a> .
The steering switch operates improperly. (The above phenomena excluded.)	EQ1 circuit



# HANDS-FREE PHONE SYMPTOMS

[BOSE AUDIO WITH NAVIGATION]

< SYMPTOM DIAGNOSIS >

## HANDS-FREE PHONE SYMPTOMS

### Symptom Table

INFOID:000000008280720

#### RELATED TO HANDS-FREE PHONE (EXCEPT FOR MEXICO)

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

#### Check Compatibility

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.

Symptoms	Check items	Possible malfunction location/Action to take
Does not recognize cellular phone connection.	Repeat the registration of cellular phone.	TEL adapter unit
Hands-free phone cannot be established.	—	<ul style="list-style-type: none"> <li>• TEL adapter unit power supply and ground circuit. Refer to <a href="#">AV-281, "TEL ADAPTER UNIT : Diagnosis Procedure"</a>.</li> <li>• Control signal circuit. Refer to <a href="#">AV-285, "Diagnosis Procedure"</a>.</li> <li>• AV communication circuit between NAVI control unit and TEL adapter unit.</li> </ul>
The other party's voice cannot be heard by hands-free phone.	Audio system sound is normal.	Sound signal (TEL voice, TEL guidance) circuit
	Audio system sound does not sound.	Refer to <a href="#">AV-301, "Symptom Table"</a> .
Originating sound is not heard by the other party with hands-free phone communication.	Voice recognition function is normal.	TEL adapter unit
	Voice recognition function does not work.	Microphone signal circuit. Refer to <a href="#">AV-283, "Diagnosis Procedure"</a> .

#### RELATED TO HANDS-FREE PHONE (FOR MEXICO)



# HANDS-FREE PHONE SYMPTOMS

[BOSE AUDIO WITH NAVIGATION]

< SYMPTOM DIAGNOSIS >

Symptoms	Check items	Possible malfunction location/Action to take
Does not recognize cellular phone connection.	Repeat the registration of cellular phone.	TEL adapter unit
Hands-free phone cannot be established.	—	<ul style="list-style-type: none"> <li>TEL adapter unit power supply and ground circuit. Refer to <a href="#">AV-281, "TEL ADAPTER UNIT : Diagnosis Procedure"</a>.</li> <li>Control signal circuit. Refer to <a href="#">AV-285, "Diagnosis Procedure"</a>.</li> <li>AV communication circuit between NAVI control unit and TEL adapter unit.</li> </ul>
The other party's voice cannot be heard by hands-free phone.	Audio system sound is normal.	Sound signal (TEL voice, TEL guidance) circuit
	Audio system sound does not sound.	Refer to <a href="#">AV-301, "Symptom Table"</a> .
Originating sound is not heard by the other party with hands-free phone communication.	Voice recognition function is normal.	TEL adapter unit
	Voice recognition function does not work.	Microphone signal circuit. Refer to <a href="#">AV-283, "Diagnosis Procedure"</a> .

## RELATED TO STEERING SWITCH

Symptoms	Possible malfunction location / Action to take
All steering switches are not operated.	Steering switch signal ground circuit. Refer to <a href="#">AV-299, "Diagnosis Procedure"</a> .
Only specified switch cannot be operated.	Replace steering switch. Refer to <a href="#">AV-332, "Exploded View"</a> .
"SEEK UP", "SEEK DOWN" and "  " switches are not operated.	Steering switch signal A circuit. Refer to <a href="#">AV-295, "Diagnosis Procedure"</a> .
"  ", "VOL UP", "VOL DOWN" and "SOURCE" switches are not operated.	Steering switch signal B circuit. Refer to <a href="#">AV-297, "Diagnosis Procedure"</a> .
The steering switch operates improperly. (The above phenomena excluded.)	<ul style="list-style-type: none"> <li>EQ1 circuit</li> <li>EQ3 circuit</li> </ul>

# NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

## NORMAL OPERATING CONDITION

### Description

INFOID:000000008280721

**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 display is turned off.	Press "☀/☾" to turn on 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 voice guidance volume level.
No map is displayed on the screen.	The map SD-card is not inserted.	Insert the map SD-card correctly.
	A screen other than map screen is displayed.	Press "MAP".
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the navigation system.

**NOTE:**

Locations stored in the Address Book and other memory functions may be lost if the vehicle's battery is disconnected or becomes discharged. If this occurs, service the vehicle's battery as necessary and re-enter the information in the Address Book.

### RELATED TO AUDIO

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

**NOTE:**

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

Symptom	Cause and Counter measure
Cannot play	Check if the CD was inserted correctly.
	Check if the CD is scratched or dirty.
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.
	If there is a mixture of music CD files (CD-DA data) and MP3/WMA files on a CD, only the music CD files (CD-DA data) will be played.
	Files with extensions other than ".MP3", ".WMA", ".mp3", or ".wma" cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format, This may occur depending on the variation or the setting of MP3/WMA writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the CD.
Check if the CD is protected by copyright.	

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Symptom	Cause and Counter measure
Poor sound quality	Check if the CD is scratched or dirty.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA CD, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.
Move immediately to the next song when playing	When a non-MP3/WMA file has been given an extension of ".MP3", ".WMA", ".mp3" or ".wma", or when play is prohibited by copyright protection, the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.
Poor reception only from a certain radio broadcast station.	Check incoming radio wave signal strength of applicable broadcast station.
Buzz/rattle sound from speaker	The majority of rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the rattle.

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

**NOTE:**

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

### MAP SD-CARD

Symptom	Possible cause	Possible solution
The message "Error" appears.	The SD-card is not recognized by the system.	Check the map SD-card data. Files can be lost.
		If you see any damage, replace the map SD-card.

### RELATED TO ROUTE CALCULATION AND VISUAL GUIDANCE

Symptom	Possible cause	Possible solution
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 cancelled.	Turn on the route guidance.
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.
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 a global route calculation based on multiple route calculations.
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.	Reset the destination to a main or ordinary road, and recalculate the route.

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Symptom	Possible cause	Possible solution
The landmark information does not correspond to the actual information.	This may be caused by insufficient or incorrect data on the map SD-card.	Updated information will be included in the next version of the map SD-card.
The suggested route does not exactly connect to the starting point, waypoints, or destination.	There is no data for route calculation closes to these locations.	Set the starting point, waypoints and destination on a main road, and perform route calculation.

### RELATED TO VEHICLE ICON

Symptom	Possible cause	Possible solution
Names of roads and locations differ between 2D and 3D view.	This is because the quantity of the displayed information is reduced so that the screen does not become difficult to read. There is also a chance that the names of roads or locations may be displayed several times, and that the names appearing on the screen may be different because of a processing procedure.	This is not a malfunction.
The vehicle icon is not displayed in the correct position.	The vehicle was transported after the ignition switch was pressed off, for example, by a ferry or car transporter.	Drive the vehicle for a while on a road where GPS signals can be received.
	The position and direction of the vehicle icon may be incorrect depending on the driving environments and the levels of positioning accuracy of the navigation system.	This is not a malfunction. Drive the vehicle for a while to automatically correct the position and direction of the vehicle icon.
When the vehicle is travelling on a new road, the vehicle icon is located on another nearby road.	The system automatically places the vehicle icon on the nearest available road, because the new road is not stored in the map data.	Updated road information will be included in the next version of the map SD-card.
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.
	The map data has an error 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 SD-card.

### RELATED TO VOICE GUIDANCE

Symptom	Possible cause	Possible solution
Voice guidance is not available	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 guide is set to off.	Turn voice guidance ON.
	Route guidance is set to off.	Route guidance is set to ON.
The guidance contact does not correspond to the actual condition.	The contact of voice guidance may vary, depending on the types of intersections at which turn are made.	Follow all traffic rules and regulations.

### RELATED TO TRAFFIC INFORMATION

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

Symptom	Possible cause	Possible solution
The traffic information is not displayed	The traffic information is not set to on.	Set the traffic information to on.
	You are in an area where traffic information is not available	Scroll to an area where traffic information is available
	You have not subscribed to XM NavTraffic or, your subscription to XM NavTraffic has expired.	Check your subscription status of XM NavTraffic.
	The map scale is set at a level where the display of icons is impossible.	Check that the map scale is set at a level in which the display of icons is possible.
With the automatic detour route search ON, no detour route is set to avoid congested areas.	There is no faster route compared to the current route, based on the road network and traffic information.	The automatic detour search is not intended for avoiding traffic jams. It searches for the fastest route taking into consideration such things as traffic jams.
The route does not avoid road section with traffic information stating it is closed due to road construction.	The navigation system is designed not to avoid this event because the actual period of closure may differ from the declared roadwork period.	Observe the actual road condition and follow the instructions on road for detour when necessary. If the road closure is for certain, use detour function and set the detour distance to avoid the closed road section.
Traffic information displayed differs from information from other media (e.g. radio).	Other media may use different information sources.	Observe the actual road conditions and regulations. Always observe safe driving practices and follow all traffic regulations.

### RELATED TO TELEPHONE

Symptoms	Cause and Counter measure
System fails to interpret the command correctly.	1. Ensure that the command format 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. Refer to <a href="#">AV-245, "Diagnosis Description"</a> .
The system consistently selects the wrong entry from the phone book.	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the "List Names" command.
	2. Replace one of the names being confused with a new name.

### RELATED TO HANDS-FREE PHONE (EXCEPT FOR MEXICO)

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

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

### RELATED TO HANDS-FREE PHONE (FOR MEXICO)

Symptom	Cause and Counter measure	H
Cannot use hands-free phone	<p>Customer will not be able to use a hands-free phone under the following conditions.</p> <ul style="list-style-type: none"> <li>• The vehicle is outside of the telephone service area.</li> <li>• The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area.</li> <li>• The cellular phone is locked to prevent it from being dialed.</li> </ul> <p><b>NOTE:</b> While a cellular phone is connected through the Bluetooth wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth Hands-Free Phone System cannot charge cellular phones.</p>	I J K
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.	L
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.	M

### RELATED TO SONAR

AV

O

P

## NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[BOSE AUDIO WITH NAVIGATION]

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



# REMOVAL AND INSTALLATION

## NAVI CONTROL UNIT

### Removal and Installation

INFOID:000000008280722

#### REMOVAL

1. Remove cluster lid C. Refer to [IP-13. "Exploded View"](#).
2. Remove NAVI control unit mounting screws.
3. Pull out NAVI control unit, remove harness clip, and then disconnect antenna feeder and harness connectors.
4. Remove NAVI control unit and bracket as a unit.
5. Remove brackets from NAVI control unit.

#### INSTALLATION

Install in the reverse order of removal.

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# BOSE AMP.

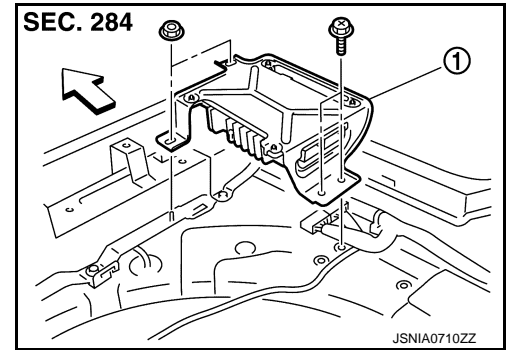
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## BOSE AMP.

### Exploded View

INFOID:000000008280723



← Vehicle front

1. BOSE amp.

### Removal and Installation

INFOID:000000008280724

#### REMOVAL

1. Remove luggage floor spacer assembly (FR, RH). Refer to [INT-31. "Exploded View"](#).
2. Remove BOSE amp.

#### INSTALLATION

Install in the reverse order of removal.

# FRONT SPEAKER

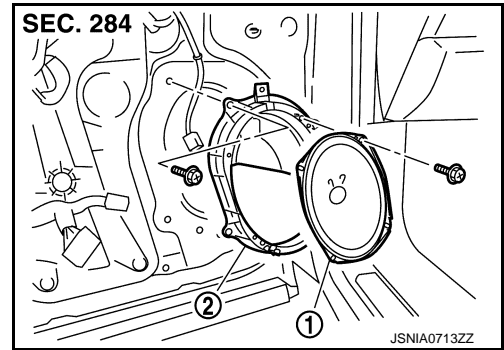
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## FRONT SPEAKER

### Exploded View

INFOID:000000008280725



1. Front speaker
2. Bracket

### Removal and Installation

INFOID:000000008280726

#### REMOVAL

1. Remove front door finisher. Refer to [INT-12. "FRONT DOOR FINISHER : Exploded View"](#).
2. Remove front door speaker from bracket.

#### INSTALLATION

Install in the reverse order of removal.

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## REAR SPEAKER

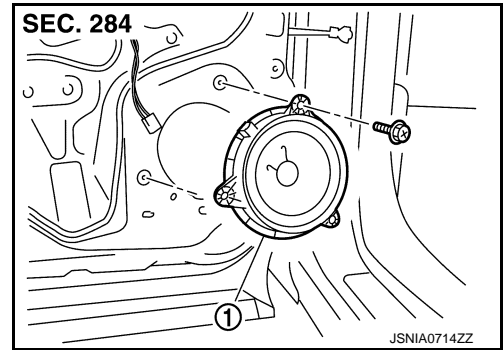
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

### REAR SPEAKER

Exploded View

INFOID:000000008280727



1. Rear speaker

### Removal and Installation

INFOID:000000008280728

#### REMOVAL

1. Remove rear door finisher. Refer to [INT-15. "REAR DOOR FINISHER : Exploded View"](#).
2. Remove rear speaker.

#### INSTALLATION

Install in the reverse order of removal.

# TWEETER

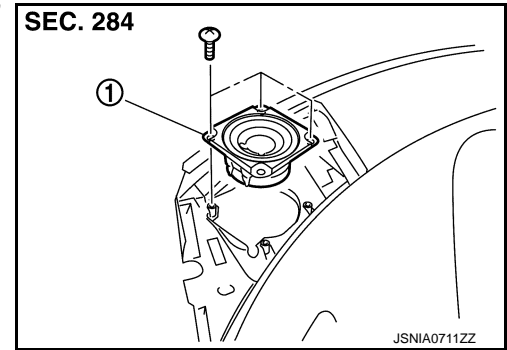
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## TWEETER

### Exploded View

INFOID:000000008280729



1. Tweeter

### Removal and Installation

INFOID:000000008280730

#### REMOVAL

1. Remove instrument panel. Refer to [JP-13, "Exploded View"](#).
2. Remove tweeter from instrument panel.

#### INSTALLATION

Install in the reverse order of removal.

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# CENTER SPEAKER

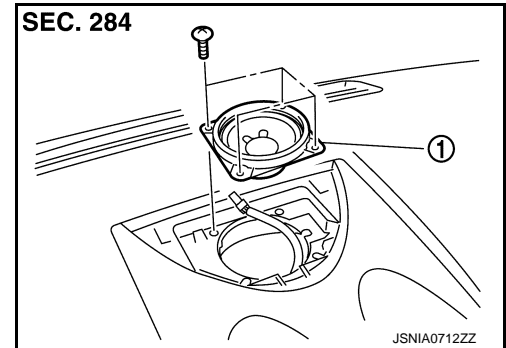
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## CENTER SPEAKER

Exploded View

INFOID:000000008280731



1. Center speaker

## Removal and Installation

INFOID:000000008280732

### REMOVAL

1. Remove center speaker grille. Refer to [JP-13, "Exploded View"](#).
2. Remove center speaker.

### INSTALLATION

Install in the reverse order of removal.

# WOOFER

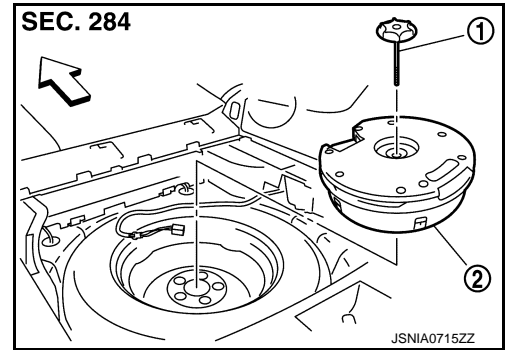
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## WOOFER

### Exploded View

INFOID:000000008280733



- ← Vehicle front
1. Clamp
  2. Woofer

### Removal and Installation

INFOID:000000008280734

#### REMOVAL

1. Remove luggage floor center box. Refer to [INT-31, "Exploded View"](#).
2. Remove clamp, and then remove woofer.

#### INSTALLATION

Install in the reverse order of removal.

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# RADIO & SATELLITE RADIO ANTENNA

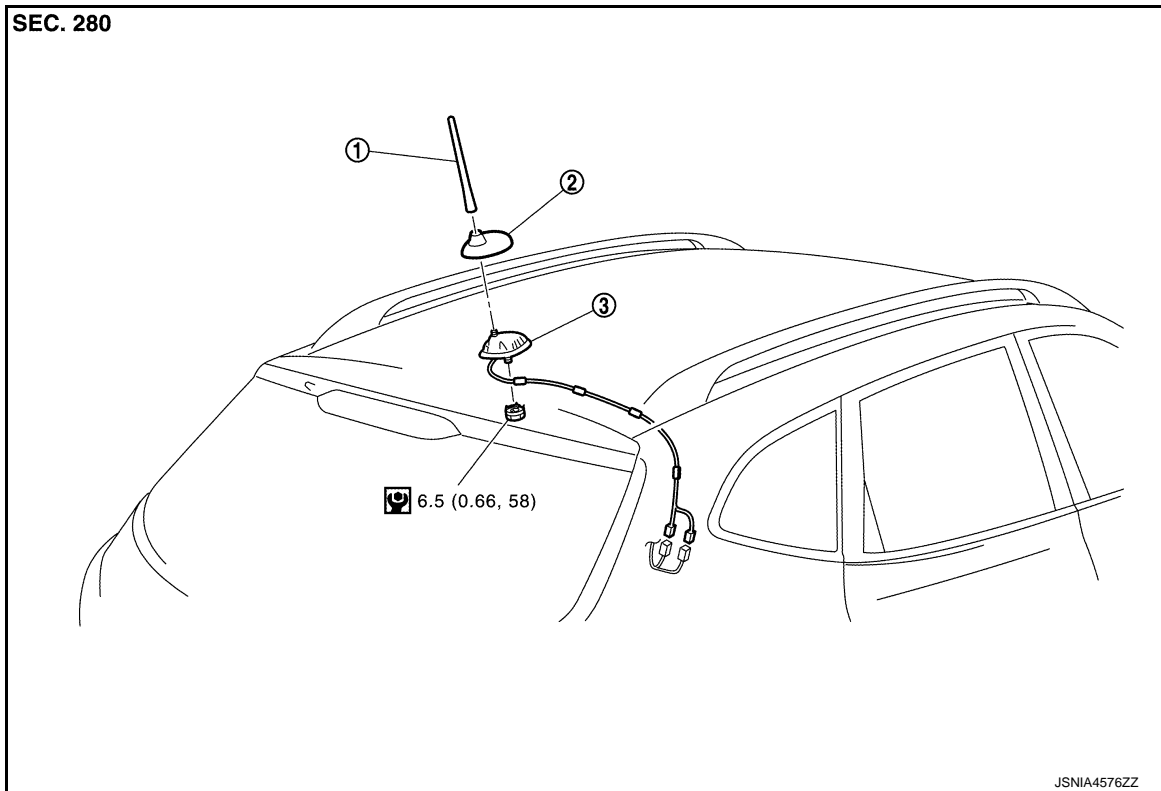
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## RADIO & SATELLITE RADIO ANTENNA

### Exploded View

INFOID:000000008280735



1. Antenna rod

2. Cover

3. Antenna base

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

### Removal and Installation

INFOID:000000008280736

#### REMOVAL

1. Remove headlining assembly. Refer to [INT-24. "NORMAL ROOF : Exploded View"](#) (normal roof models) or [INT-27. "SUNROOF : Exploded View"](#) (sunroof models).
2. Remove nuts, and then remove antenna rod (1), cover (2), and antenna base (3).

#### INSTALLATION

Install in the reverse order of removal.

#### CAUTION:

**If the antenna base mounting nut is tightened looser than the specified torque, then this will lower the sensitivity of the antenna. On the other hand, if the nut is tightened tighter than the specified torque, then this will deform the roof panel.**



# GPS ANTENNA

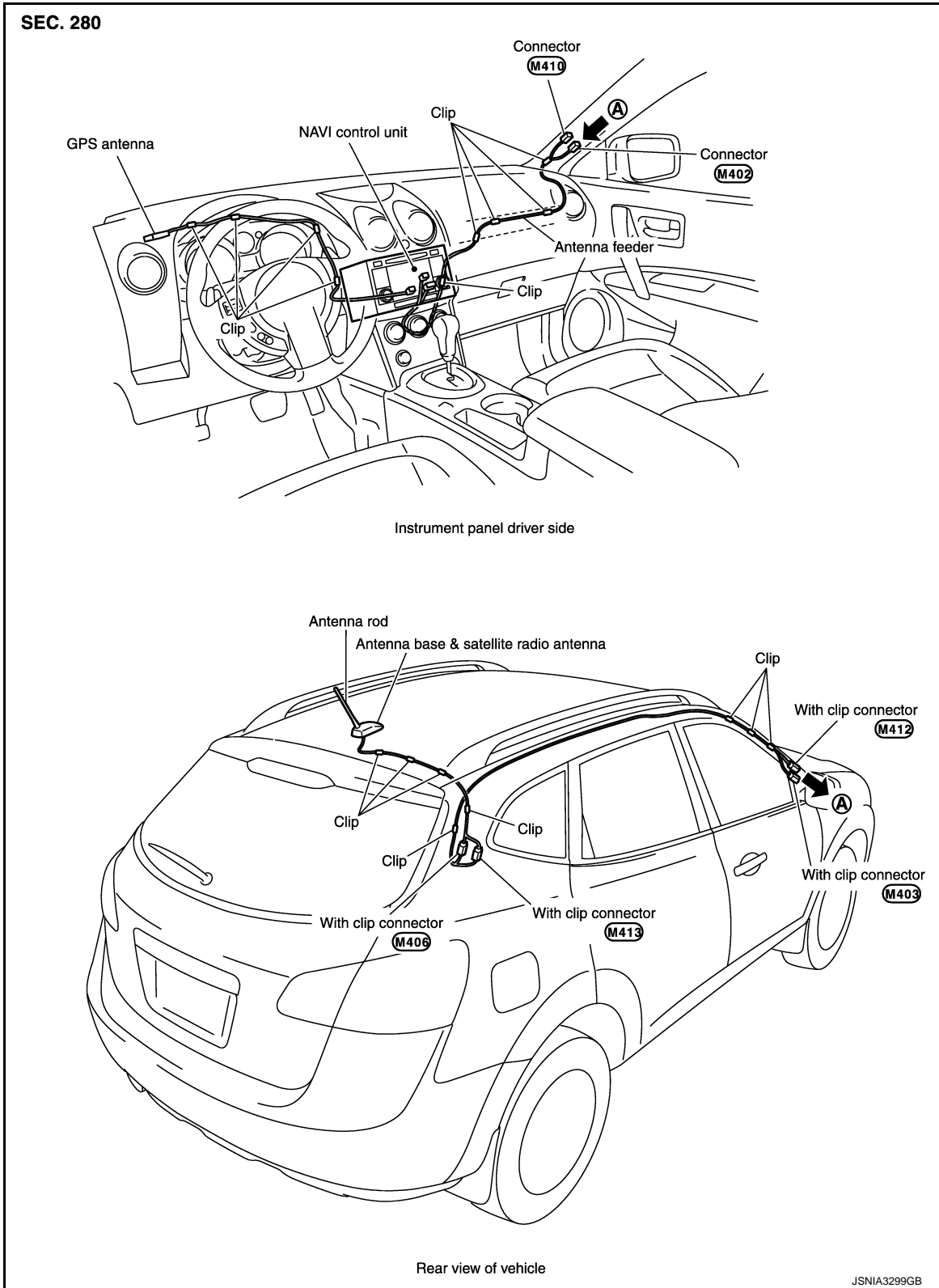
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## GPS ANTENNA

### Feeder Layout

INFOID:000000008280737



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### Removal and Installation

INFOID:000000008280738

#### REMOVAL

1. Remove instrument panel. Refer to [JP-13. "Exploded View"](#).

## GPS ANTENNA

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

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2. Remove GPS antenna screw to remove GPS antenna.

### INSTALLATION

Install in the reverse order of removal.

# TEL ADAPTER UNIT

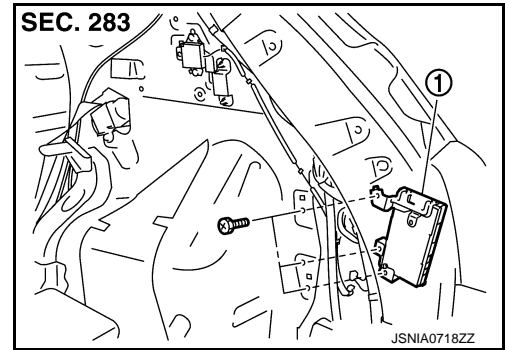
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## TEL ADAPTER UNIT

### Exploded View

INFOID:000000008280739



1. TEL adapter unit

### Removal and Installation

INFOID:000000008280740

#### REMOVAL

1. Remove luggage side lower finisher (RH). Refer to [INT-31, "Exploded View"](#).
2. Remove TEL adapter unit.

#### INSTALLATION

Install in the reverse order of removal.

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# TEL ANTENNA

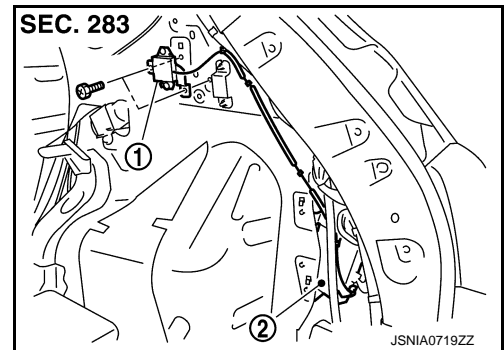
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## TEL ANTENNA

### Exploded View

INFOID:000000008280741



1. TEL antenna
2. TEL adapter unit

### Removal and Installation

INFOID:000000008280742

#### REMOVAL

1. Remove luggage side upper finisher (RH). Refer to [INT-31. "Exploded View"](#).
2. Remove TEL antenna.

#### INSTALLATION

Install in the reverse order of removal.

# MICROPHONE

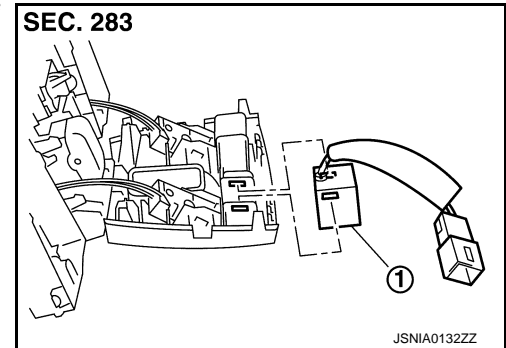
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## MICROPHONE

### Exploded View

INFOID:000000008280743



1. Microphone

### Removal and Installation

INFOID:000000008280744

#### REMOVAL

1. Remove map lamp assembly. Refer to [INT-24, "NORMAL ROOF : Exploded View"](#) (normal roof models) or [INT-27, "SUNROOF : Exploded View"](#) (sunroof models).
2. Remove microphone from map lamp assembly.

#### INSTALLATION

Install in the reverse order of removal.

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## AROUND VIEW MONITOR CONTROL UNIT

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

### AROUND VIEW MONITOR CONTROL UNIT

#### Removal and Installation

INFOID:000000008280745

#### REMOVAL

1. Remove cluster lid D. Refer to [IP-14, "Removal And Installation"](#).
2. Remove around view monitor control unit mounting screws.
3. Disconnect around view monitor control unit connector to remove around view monitor control unit.

#### INSTALLATION

1. Install in the reverse order of removal.
2. Perform camera image calibration. Refer to [AV-270, "Work Procedure"](#).

#### **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.
- When replacing around view monitor control unit, make sure adjust neutral position of steering angle sensor. Refer to [AV-247, "CONSULT Function"](#).

## FRONT CAMERA

### Removal and Installation

INFOID:000000008280746

#### REMOVAL

1. Remove front grille. Refer to [EXT-19, "Removal and Installation"](#).
2. Remove front camera mounting screws to remove front camera from front grille.

#### INSTALLATION

1. Install in the reverse order of removal.
2. Perform camera image calibration. Refer to [AV-270, "Work Procedure"](#).

#### **CAUTION:**

**Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.**

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## REAR CAMERA

### Removal and Installation

INFOID:000000008280747

#### REMOVAL

1. Remove back door finisher. Refer to [INT-34, "Exploded View"](#).
2. Remove rear camera screws to remove rear camera.

#### INSTALLATION

1. Install in the reverse order of removal.
2. Perform camera image calibration. Refer to [AV-270, "Work Procedure"](#).

**CAUTION:**

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.



## SIDE CAMERA

### Removal and Installation

INFOID:000000008280748

#### REMOVAL

1. Remove bracket assembly from housing. Refer to [MIR-20, "DOOR MIRROR ASSEMBLY : Disassembly and Assembly"](#).
2. Remove screw to remove side camera from housing.

#### INSTALLATION

1. Install in the reverse order of removal.
2. Perform camera image calibration. Refer to [AV-270, "Work Procedure"](#).

**CAUTION:**

**Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.**

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## AROUND VIEW MONITOR SWITCH

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

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### AROUND VIEW MONITOR SWITCH

#### Removal and Installation

INFOID:000000008280749

#### REMOVAL

Refer to [IP-23. "Removal and Installation"](#).

#### INSTALLATION

Install in the reverse order of removal.

# STEERING ANGLE SENSOR

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## STEERING ANGLE SENSOR

### Removal and Installation

INFOID:000000008280750

#### REMOVAL

1. Remove spiral cable assembly. Refer to [SR-14, "Exploded View"](#) (except for Mexico) or [SR-39, "Exploded View"](#) (for Mexico).
2. Remove steering angle sensor from spiral cable assembly.

#### INSTALLATION

1. Install in the reverse order of removal.
2. Perform adjustment of the neutral position of the steering angle sensor. Refer to [AV-247, "CONSULT Function"](#).

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AV

## STEERING SWITCH

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

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### STEERING SWITCH

#### Exploded View

INFOID:000000008280751

Refer to [SR-11, "Exploded View"](#).

#### Removal and Installation

INFOID:000000008280752

#### REMOVAL

Refer to [SR-11, "Removal and Installation"](#).

#### INSTALLATION

Install in the reverse order of removal.

# REAR VIEW CAMERA

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## REAR VIEW CAMERA

### Removal and Installation

INFOID:000000008717008

#### REMOVAL

1. Remove back door finisher. Refer to [INT-34, "Exploded View"](#).
2. Remove rear view camera screws to remove rear view camera.

#### INSTALLATION

Install in the reverse order of removal.

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## USB CONNECTOR AND AUX JACK

< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

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### USB CONNECTOR AND AUX JACK

#### Removal and Installation

INFOID:000000008280753

#### REMOVAL

1. Remove center console assembly. Refer to [IP-22. "Exploded View"](#).
2. Push the pawl from the back of center console assembly to remove USB connector and AUX jack.

#### INSTALLATION

Install in the reverse order of removal.

# ANTENNA FEEDER

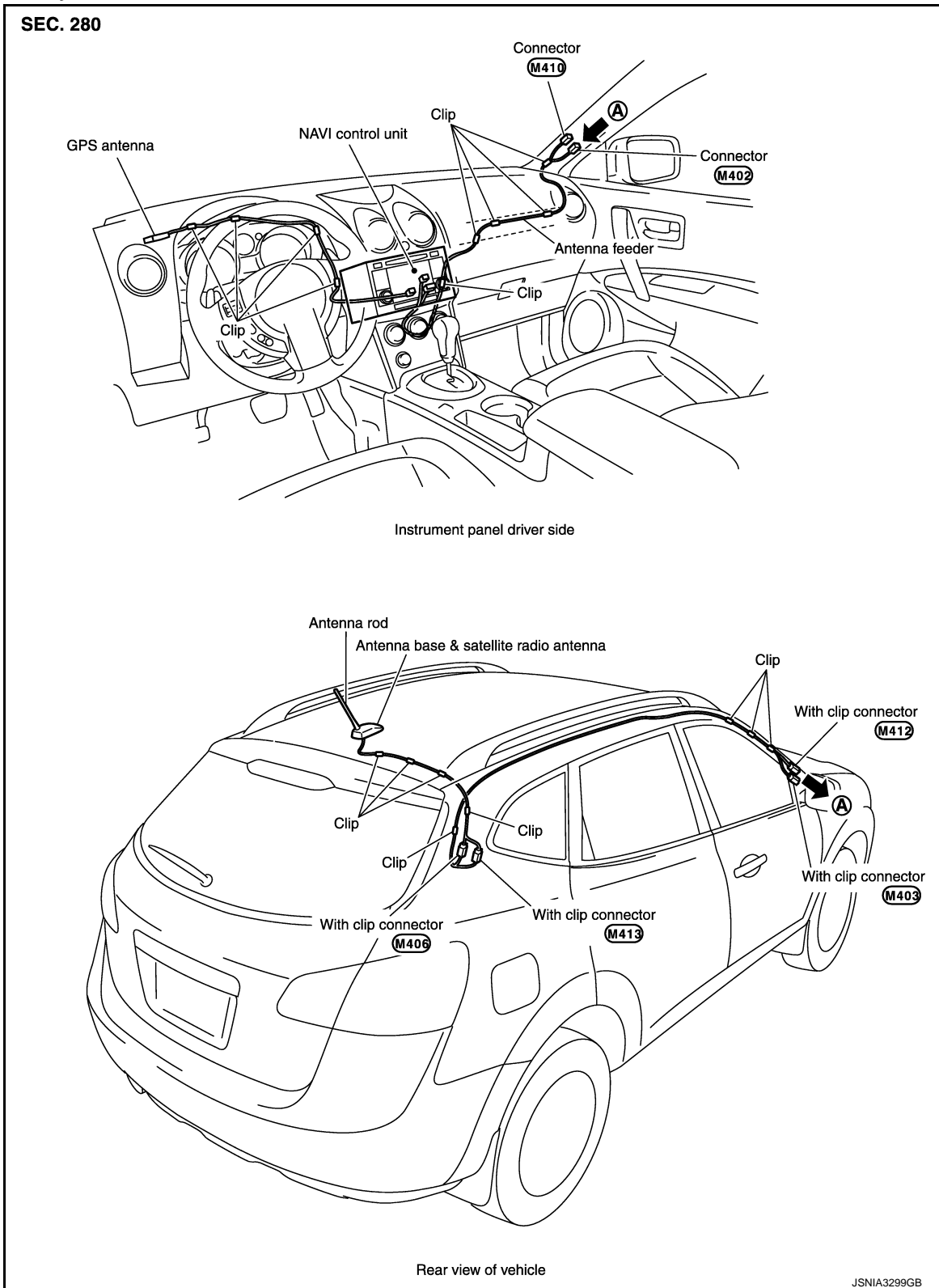
< REMOVAL AND INSTALLATION >

[BOSE AUDIO WITH NAVIGATION]

## ANTENNA FEEDER

### Feeder Layout

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