# SECTION AV В AUDIO, VISUAL & NAVIGATION SYSTEM С

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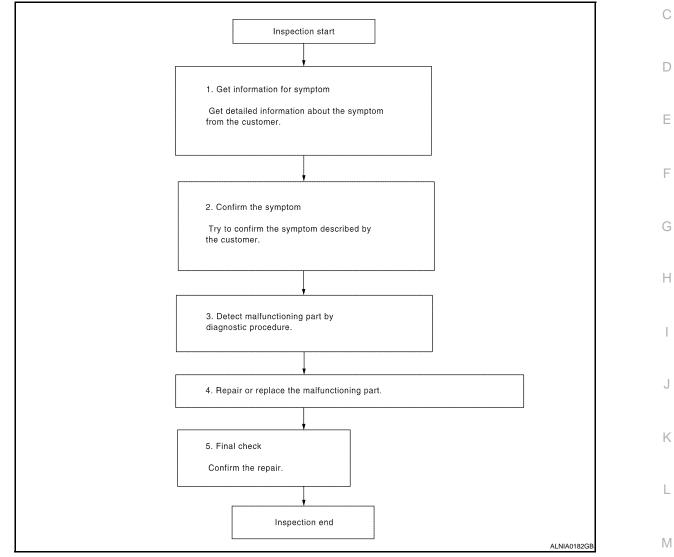
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GPS ANTENNA
NAVI CONTROL UNIT

# BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

#### Work Flow

**OVERALL SEQUENCE** 



#### DETAILED FLOW

#### **1.**GET INFORMATION FOR SYMPTOM

Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred).

#### >> GO TO 2

**2.**CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer. Verify relation between the symptom and the condition when the symptom is detected.

#### >> GO TO 3

**3.** DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

# AV-7

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#### DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[BASE AUDIO]

Is malfunctioning part detected?

YES >> GO TO 4

NO >> GO TO 2

**4.**REPAIR OR REPLACE THE MALFUNCTIONING PART

1. Repair or replace the malfunctioning part.

2. Reconnect parts or connectors disconnected during Diagnostic Procedure.

#### >> GO TO 5

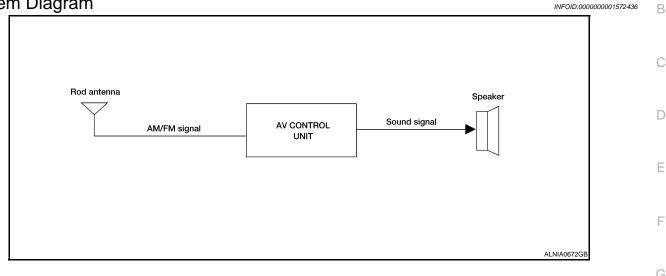
5.FINAL CHECK

Refer to confirmed symptom in step 2, and make sure that the symptom is not detected. <u>Has the symptom been repaired?</u>

YES >> Inspection End.

NO >> GO TO 2

# FUNCTION DIAGNOSIS AUDIO SYSTEM



#### System Description

#### AUDIO SYSTEM

The audio system consists of the following components

- Audio unit
- Rod antenna
- Front door speakers
- Front tweeters
- Rear door speakers
- Rear door tweeters (crew cab)

When the audio system is on, radio signals are received by the rod antenna. The audio unit then sends audio signals to the front door speakers, front tweeters, rear door speakers and rear door tweeters (crew cab). Refer to Owner's Manual for audio system operating instructions.

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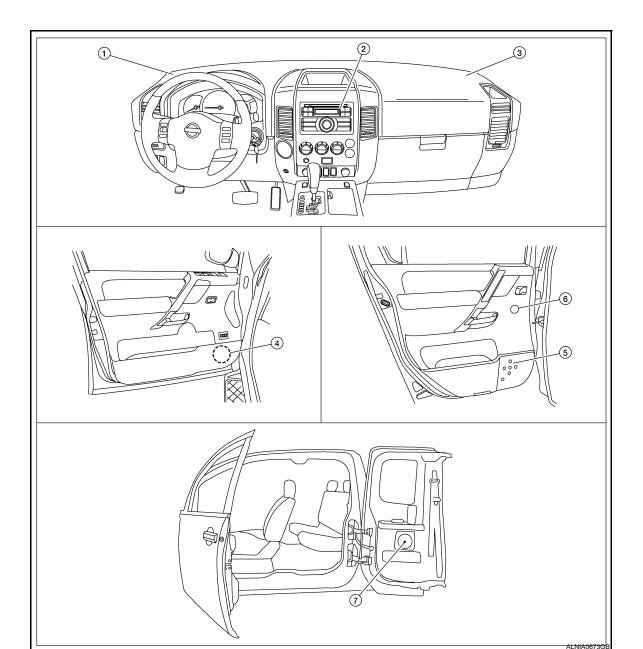
#### AUDIO SYSTEM

#### < FUNCTION DIAGNOSIS >

#### **Component Parts Location**

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[BASE AUDIO]



- 1. Front tweeter LH M109
- 4. Front door speaker LH D12 RH D112
- 7. Rear door speaker (king cab) LH B76 RH B159
- 2. Audio unit M43
- Rear door speaker (crew cab) LH D207 RH D307
- 3. Front tweeter RH M111
- Rear door tweeter (crew cab) LH D208 RH D308

# **Component Description**

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Part name	Description
Audio unit	Controls audio system functions
Front door speakers	<ul><li>Outputs audio signal from audio unit</li><li>Outputs high, mid and low range sounds</li></ul>

#### AV-10

#### **AUDIO SYSTEM**

#### < FUNCTION DIAGNOSIS >

#### [BASE AUDIO]

Part name	Description	
Front tweeters	<ul><li>Outputs audio signal from audio unit</li><li>Outputs high range sounds</li></ul>	
Rear door speakers	<ul><li>Outputs audio signal from audio unit</li><li>Outputs high, mid and low range sounds</li></ul>	
Rear door tweeters (crew cab)	<ul><li>Outputs audio signal from audio unit</li><li>Outputs high range sounds</li></ul>	

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< COMPONENT DIAGNOSIS >

# COMPONENT DIAGNOSIS POWER SUPPLY AND GROUND CIRCUIT AUDIO UNIT

#### AUDIO UNIT : Diagnosis Procedure

#### **1.**CHECK FUSES

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

Unit	Terminals	Signal name	Fuse No.
Audio unit	19	Battery power	31
	7	Ignition switch ACC or ON	4

#### Are the fuses OK?

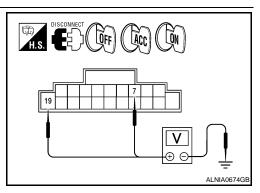
YES >> GO TO 2

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

#### 2. POWER SUPPLY CIRCUIT CHECK

- 1. Disconnect audio unit connector M43.
- 2. Check voltage between the audio unit connector M43 ground.

(+)		(-)	OFF	ACC	ON
Connector	Terminal	(-)	OIT	700	ON
M43	7 Ground	0V	Battery voltage	Battery voltage	
M45	19	Ground	Battery voltage	Battery voltage	Battery voltage



Are the voltage results as specified?

YES >> Inspection end. NO >> • Check connect

>> • Check connector housings for disconnected or loose terminals.

• Repair harness or connector.

#### 3. Ground circuit check

Inspect audio unit case ground.

Does case ground pass inspection?

YES >> Inspection end.

NO >> Repair audio unit case ground.

[BASE AUDIO]

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#### FRONT DOOR SPEAKER

#### < COMPONENT DIAGNOSIS >

# FRONT DOOR SPEAKER

#### Description

The audio unit sends audio signals to the front door speakers using the front door speaker circuits.

#### **Diagnosis** Procedure

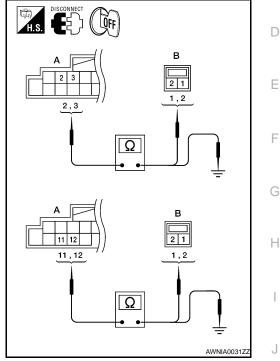
## **1.**HARNESS CHECK

- 1. Disconnect audio unit connector M43 and suspect speaker connector.
- 2. Check continuity between audio unit harness connector M43 (A) terminal and suspect speaker harness connector (B) terminal.

	А		В	Continuity
Connector	Terminal	Connector Terminal		Continuity
	2	D12	1	
M43	3	DIZ	2	Yes
10143	11	D112	1	165
	12	DIIZ	2	

 Check continuity between audio unit harness connector M43 (A) terminal and ground.

	А		Continuity
Connector	Connector Terminal		
	2		No
M43	3	Ground	
10143	11	Giouna	
	12		



Are continuity results as specified?

YES >> GO TO 2

NO

>> • Check connector housings for disconnected or loose terminals.

Repair harness or connector.

2.FRONT SPEAKER SIGNAL CHECK

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[BASE AUDIO]

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#### FRONT DOOR SPEAKER

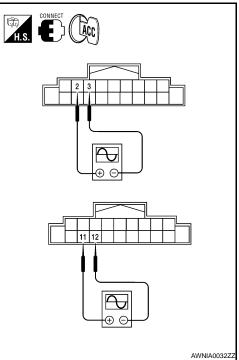
#### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector M43 and front speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.

Check the signal between audio unit harness connector M43 4. terr

tern		(-)	F-III or oscil	loscope.
Con- nector	Terminal	Terminal	Condition	Reference signal
	2	3		
M43	11	12	Receive audio sig- nal	(V) 1 -1 -1 -1 -1 -1 -1 -1 -1 -1
the au	udio signal	voltage as	s specified?	

- YES >> Replace speaker. Refer to AV-35, "Removal and Installation".
- NO >> Replace audio unit. Refer to AV-33, "Removal and Installation".



# **AV-14**

[BASE AUDIO]

#### **FRONT TWEETER**

#### < COMPONENT DIAGNOSIS >

# FRONT TWEETER

#### Description

The audio unit sends audio signals to the front tweeters using the front tweeter circuits.

#### **Diagnosis** Procedure

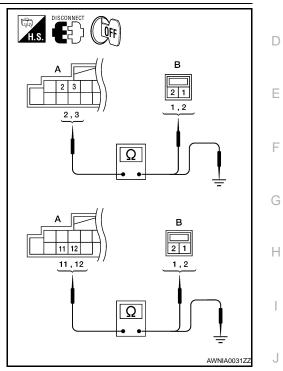
## **1.**HARNESS CHECK

- 1. Disconnect audio unit connector M43 and suspect front tweeter connector.
- Check continuity between audio unit harness connector M43 (A) and suspect front tweeter harness connector (B).

	A B		В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	2	M100	1	
MAD	3	M109	2	Yes
M43	11		1	Tes
	12	IVIIII	2	

 Check continuity between audio unit harness connector M43 (A) and ground.

A			Continuity
Connector	Terminal		Continuity
M43	2		No
	3	Ground	
	11	Giouna	
	12		



Are the continuity results as specified?

YES >> GO TO 2

NO

>> • Check connector housings for disconnected or loose terminals.

Repair harness or connector.

2.FRONT TWEETER SIGNAL CHECK

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#### **FRONT TWEETER**

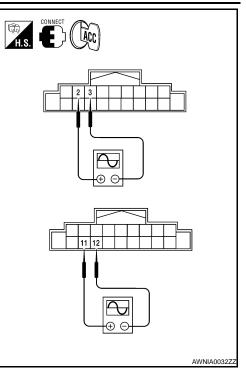
#### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector M43 and front tweeter connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.

	(+)	(-)		
Con- nector	Terminal	Terminal	Condition	Reference signal
	2	3		
M43	11	12	Receive audio sig- nal	(V) 1 0 -1 1 ms SKIA0177E

#### Is the audio signal voltage as specified?

- >> Replace the suspect front tweeter. Refer to AV-34, YES "Removal and Installation".
- NO >> Replace audio unit. Refer to AV-33, "Removal and Installation".



[BASE AUDIO]

#### REAR DOOR SPEAKER

#### < COMPONENT DIAGNOSIS >

# REAR DOOR SPEAKER

#### Description

The audio unit sends audio signals to the rear door speakers using the rear door speaker circuits.

#### **Diagnosis Procedure**

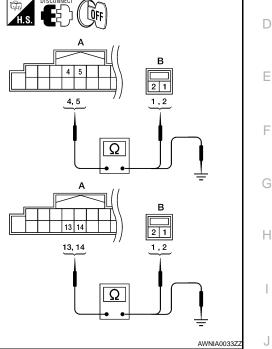
# **1.**HARNESS CHECK

- 1. Disconnect audio unit connector M43 and suspect rear door speaker connector.
- Check continuity between audio unit harness connector M43 (A) and suspect rear door speaker harness connector (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	4	D207 (crew cab)	1	
M43	5	B76 (king cab) D307 (crew cab)	2	Yes
10143	13		1	Tes
	B159 (king cab)	2		

3. Check continuity between audio unit harness connector M43 (A) and ground.

A			Continuity	
Connector	Terminal		Continuity	
M43	4			
	5	Ground	No	
	13	Giouna		
	14			



Are the continuity results as specified?

YES >> GO TO 2

NO

>> • Check connector housings for disconnected or loose terminals.

• Repair harness or connector.

2.REAR DOOR SPEAKER SIGNAL CHECK

# [BASE AUDIO]

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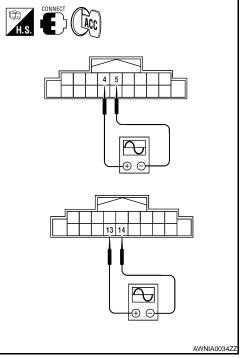
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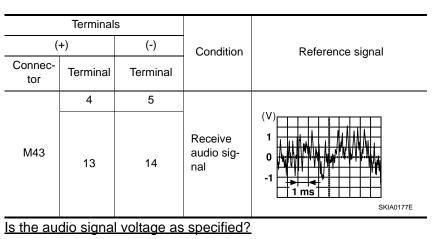
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#### **REAR DOOR SPEAKER**

#### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector and rear door speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.





- YES >> Replace the suspect rear door speaker. Refer to <u>AV-35</u>, <u>"Removal and Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-33</u>, "<u>Removal and</u> <u>Installation</u>".

#### **REAR DOOR TWEETER**

#### < COMPONENT DIAGNOSIS >

# REAR DOOR TWEETER

#### Description

The audio unit sends audio signals to the rear door tweeters using the audio signal circuits.

#### **Diagnosis Procedure**

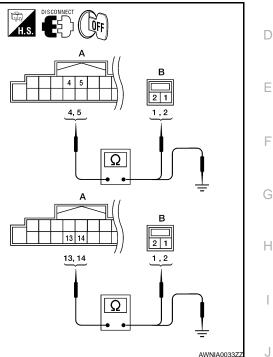
# **1.**HARNESS CHECK

- 1. Disconnect audio unit connector M43 and suspect rear door tweeter connector.
- Check continuity between audio unit harness connector M43 (A) and suspect rear door tweeter harness connector (B).

А		В		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
	4	4 D208	1		
M43	5		2	Yes	
	13	D308	1	Tes	
	14		2		

 Check continuity between audio unit harness connector M43 (A) and ground.

	A		Continuity	
Connector	Terminal		Continuity	
	4			
M43	5	Ground	No	
	13	Giouna		
	14			



Are the continuity results as specified?

YES >> GO TO 2

NO

>> • Check connector housings for disconnected or loose terminals.

• Repair harness or connector.

2.REAR DOOR TWEETER SIGNAL CHECK

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[BASE AUDIO]

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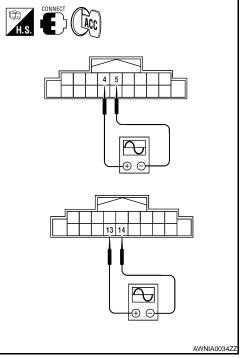
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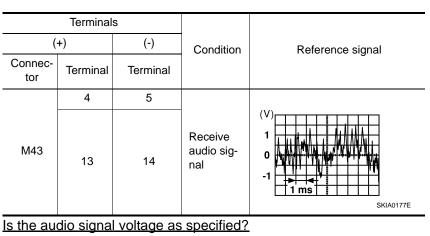
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#### **REAR DOOR TWEETER**

#### < COMPONENT DIAGNOSIS >

- Connect audio unit connector and rear door tweeter connector. 1.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- Check the signal between audio unit harness connector M43 4. terminals with CONSULT-III or oscilloscope.





- YES >> Replace the suspect rear door tweeter. Refer to AV-36. "Removal and Installation"
- >> Replace audio unit. Refer to AV-33, "Removal and NO Installation".

#### [BASE AUDIO]

#### **AUDIO UNIT**

#### [BASE AUDIO]

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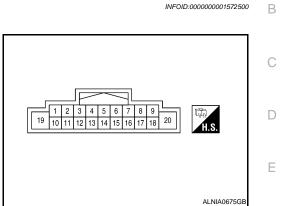
# < ECU DIAGNOSIS >

# **ECU DIAGNOSIS**

#### AUDIO UNIT

**Reference Value** 

**TERMINAL LAYOUT** 



#### PHYSICAL VALUES

	minal e color)	Description			Condition	Reference value
+	-	Signal name	Input/ Output		Condition	(Approx.)
2 (L/W)	3 (L/R)	Sound signal front door speaker and front tweeter LH	Output	Ignition switch ON	Audio output	(V) 1 0 -1 + 2ms SKIB3609E
4 (SB)	5 (B/Y)	Sound signal rear door speaker and rear tweeter LH	Output	Ignition switch ON	Audio output	(V) 1 0 -1 + 2ms SKIB3609E
7 (∀)	Ground	ACC power supply	Input	Ignition switch ACC or ON	_	Battery voltage
11 (W/B)	12 (L/B)	Sound signal front door speaker and front tweeter RH	Output	Ignition switch ON	Voice output	(V) 1 0 -1 -2ms SKIB3609E

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# AUDIO UNIT

#### < ECU DIAGNOSIS >

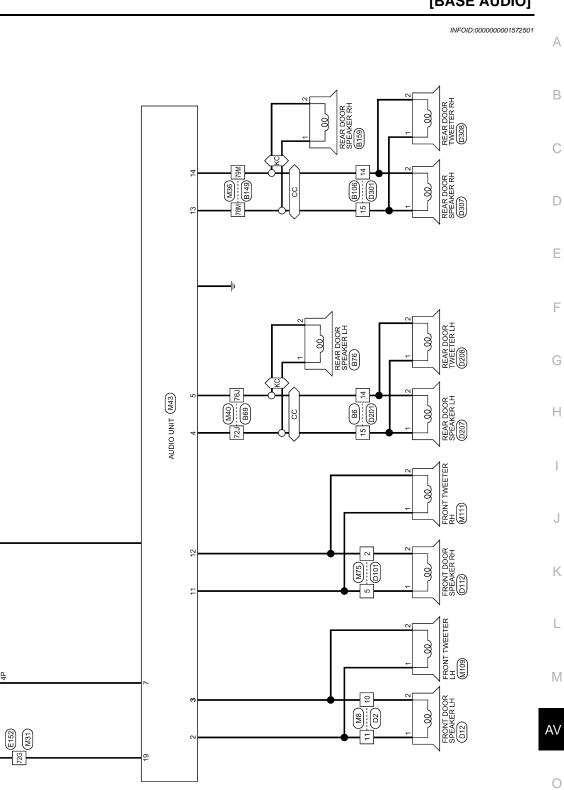
[BASE AUDIO	]
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	minal color)	Description		Condition		Reference value
+	_	Signal name	Input/ Output			(Approx.)
13 (O/L)	14 (R/L)	Sound signal rear door speaker and rear tweeter RH	Output	Ignition switch ON	Voice output	(V) 1 0 -1 * 2ms SKIB3609E
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage

# < ECU DIAGNOSIS >

# Wiring Diagram

CC CREW CAB



**BASE AUDIO SYSTEM** 

FUSE BLOCK (J/B) (M4)

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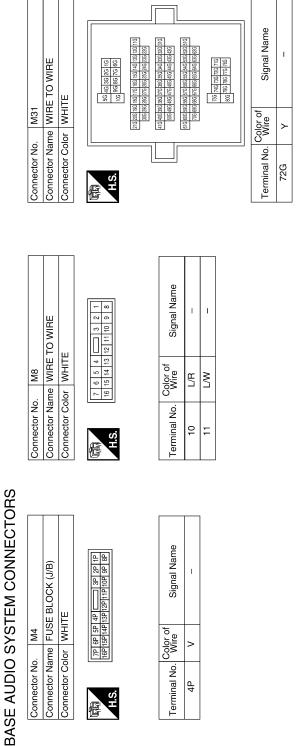
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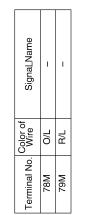
IGNITION SWITCH ACC OR ON

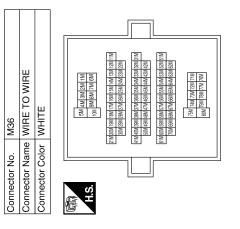
BATTERY

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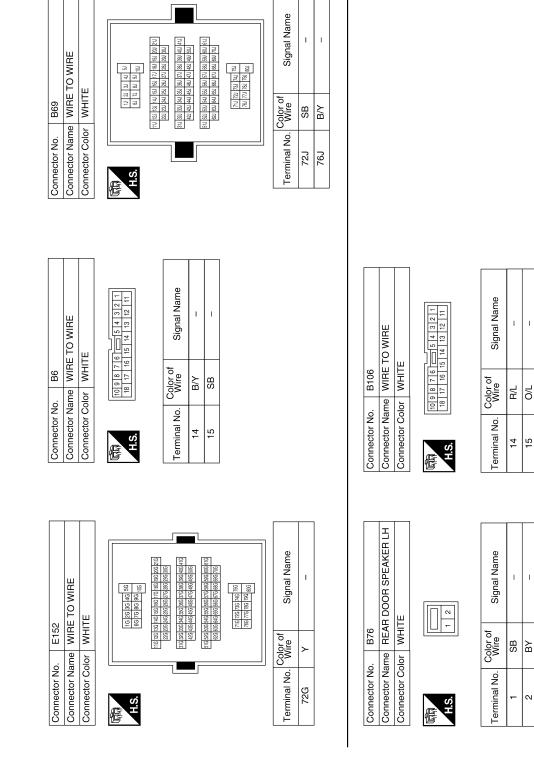


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# AUDIO UNIT

#### < ECU DIAGNOSIS >

	[BASE AUDIO]
Terminal No.     Color of Wire     Signal Name       2     L/B     -       5     W/B     -	
Signal Name	M111 FRONT TWEETER RH BROWN Irie of Signal Name //B - //B -
Wire Wire VLM W/B W/B V/B V/B V/B V/B V/B V/B V/B V/B V/B V	
Terminal No. 0.1	Connector No. Connector Name Connector Color Terminal No. Color 1 v V
総部営利調査 (1) (1) (1) (1) (1) (1) (1) (1)	Signal Name
Terminal Nc	Connector No. Connector Name Connector Color Terminal No. 2 2 L
	ALNIA0761GB
3	Implementation     Terminal No.     Color of Nine     Signal Name       Name     Name     Name     Name     Name       Name     Name     Name     Nam     Name       Name     N



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## **AUDIO UNIT**

#### < ECU DIAGNOSIS >

[BASE AUDIO]

D2       e     WIRE TO WIRE       MHITE       1     2       8     9       10     11	Signal Name	Connector No. D112 Connector Name FRONT DOOR SPEAKER RH Connector Color WHITE	Signal Name
00 WHT 00 WHT 8 9 10	Vire Vire L/W L/W	or WHITE	Virie Virie VIII
Connector No. D2 Connector Name WIRE T Connector Color WHITE	Terminal No. 11 11	Connector No. Connector Name Connector Color	Terminal No.
T E			
B159 REAR DOOR SPEAKER RH WHITE	Signal Name	D101 WIRE TO WIRE WHITE	Signal Name
	Color of Wire R/L R/L	D101 D101 Or WHITE T	Color of Wire W/B
Connector No. Connector Name Connector Color	Terminal No.	Connector No. D101 Connector Name WIRE TO WIRE Connector Color WHITE	Terminal No. 5
B149 WIRE TO WIRE WHITE MIRM SWI AM SWI MIRM SWI AM SWI MIRM SWI AM SWI MIRM SWI AM SWI SWI ZWI SWI AM SWI SWI ZWI SWI AM SWI ZWI ZWI SWI AM SWI ZWI ZWI SWI ZWI ZWI ZWI ZWI ZWI ZWI ZWI ZWI ZWI Z	Image: Section of the section of t	D12 FRONT DOOR SPEAKER LH WHITE	Signal Name
			Color of L/M L/R
Connector No. Connector Name Connector Color	Terminal No. C 738M 739M	Connector No. Connector Name Connector Color	Terminal No. C
			ALNIA0763GB

# **AUDIO UNIT**

#### < ECU DIAGNOSIS >

[BASE AUDIO]

AV-27

Connector No. D208 Connector Name REAR DOOR TWEETER LH Connector Color BROWN	Signal Name	Connector No. D308 Connector Name REAR DOOR TWEETER RH Connector Color BROWN	Signal Name -
Connector No. D208 Connector Name REAR DC Connector Color BROWN	o. Color of Wire B/Y	No. D308 Name REAR DC Color BROWN	o. Color of Wire R/L
Connector No. Connector Nam Connector Cold	Terminal No.	Connector No. Connector Name Connector Color	Terminal No. 1 2
D207 REAR DOOR SPEAKER LH WHITE	Signal Name	D307 REAR DOOR SPEAKER RH WHITE	Signal Name
Connector No. D207 Connector Name REAR C Connector Color WHITE	o. Color of B/√ B/√		o. Color of Wire O/L R/L
Connector No. Connector Name Connector Color	Terminal No.	Connector No. Connector Name Connector Color	Terminal No. 1 2
D201           me         WIRE TO WIRE           or         WHITE           123         415           11         12           11         12	Signal Name	D301       ne     WIRE TO WIRE       or     WHITE       1     1       1     1       1     1	Signal Name
Connector No. D201 Connector Name WIRE TO WIRE Connector Color WHITE	0. Color of B/Vite B/V SB	Connector No. D301 Connector Name WIRE TO WIRE Connector Color WHITE	o. Color of Wire R/L O/L
Connector No. Connector Nan Connector Col	Terminal No. 14 15	Connector No. Connector Name Connector Color	Terminal No. 14 15

#### **AUDIO UNIT**

# < ECU DIAGNOSIS >

AV-28

# SYMPTOM DIAGNOSIS AUDIO SYSTEM

# Symptom Table

AUDIO SYSTEM

Symptom	Possible cause	Reference page
Inoperative	<ul><li>Audio unit power circuit</li><li>Audio unit</li></ul>	• <u>AV-12</u>
All speakers do not sound	<ul><li>Audio unit</li><li>Audio unit power circuit</li></ul>	• <u>AV-12</u>
One or several speakers do not sound	<ul> <li>Front door speaker</li> <li>Front tweeter</li> <li>Rear door tweeter (crew cab)</li> <li>Rear door speaker</li> </ul>	<u>AV-13</u> <u>AV-15</u> <u>AV-17</u> <u>AV-19</u>

#### CD

Symptom	Possible cause	Reference page	G
CD cannot be inserted.			0
CD cannot be ejected.	Audio unit	۸۷/ 12	
The CD cannot be played.		<u>AV-12</u>	Н
The sound skips, stops suddenly, or is distorted.			

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[BASE AUDIO]

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#### NORMAL OPERATING CONDITION

#### < SYMPTOM DIAGNOSIS >

#### NORMAL OPERATING CONDITION

#### Description

INFOID:000000001572506

[BASE AUDIO]

The majority of the audio concerns are the result of outside causes (bad CD, electromagnetic interference, etc.).

#### NOISE

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

- 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 the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off mountains or buildings.

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 determine the cause.

#### NOTE:

The source of the noise can be found easily by listening to the noise while removing the fuses of electrical components, one by one.

Type of Noise and Possible Cause

C	occurrence condition	Possible cause
Occurs only when engine is ON.	A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed.	Ignition components
The occurrence of the noise is lin	ked with the operation of the fuel pump.	Fuel pump condenser
Noise only occurs when various electrical components are oper- ating.	A cracking or snapping sound occurs with the operation of various switches.	Relay malfunction, audio unit malfunction
	The noise occurs when various motors are operat- ing.	<ul><li>Motor case ground</li><li>Motor</li></ul>
The noise occurs constantly, not	<ul> <li>Rear defogger coil malfunction</li> <li>Open circuit in printed heater</li> <li>Poor ground of antenna feeder line</li> </ul>	
A cracking or snapping sound occ it is vibrating excessively.	<ul><li>Ground wire of body parts</li><li>Ground due to improper part installation</li><li>Wiring connections or a short circuit</li></ul>	

# < PRECAUTION > PRECAUTION PRECAUTIONS

Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSION-ER"

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 SR and SB section of this Service Manual.

#### WARNING:

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

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# < PREPARATION > PREPARATION

#### PREPARATION

#### **Commercial Service Tools**

INFOID:000000001572508

Tool name		Description
		Loosening bolts and nuts
Power tool		
	PBIC0191E	

#### **AUDIO UNIT**

# < ON-VEHICLE REPAIR > **ON-VEHICLE REPAIR AUDIO UNIT**

#### AUDIO UNIT

Removal

- 1. Disconnect the battery negative terminal.
- 2. Remove the cluster lid C. Refer to IP-13, "Removal and Installation".
- 3. Remove the audio unit screws (A), using power tool.
- 4. Pull out the audio unit (1) and disconnect the audio unit connectors.

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Installation Installation is in the reverse order of removal. INFOID:000000001586944

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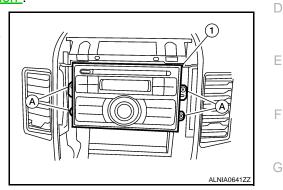
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#### FRONT TWEETER

# < ON-VEHICLE REPAIR >

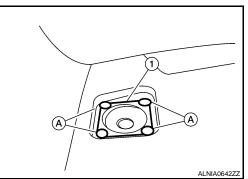
# FRONT TWEETER

#### Removal and Installation

#### FRONT TWEETER

#### Removal

- 1. Remove the front tweeter grille. Refer to IP-11. "Removal and Installation".
- 2. Remove the front tweeter clips (C103) (A).
- 3. Disconnect the front tweeter connector and remove the front tweeter (1).



Installation Installation is in the reverse order of removal. INFOID:000000001586946

**AV-35** 

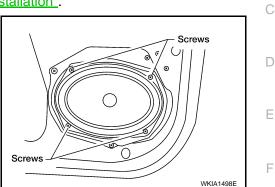
# FRONT DOOR SPEAKER

Removal and Installation

#### FRONT DOOR SPEAKER

Removal

- 1. Remove the front door finisher. Refer to INT-10, "Removal and Installation".
- 2. Remove the four front door speaker screws.
- 3. Disconnect the front door speaker connector and remove the front door speaker.



Installation Installation is in the reverse order of removal. INFOID:000000001586947

[BASE AUDIO]

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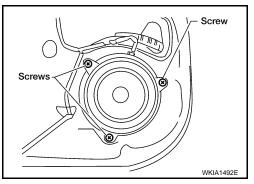
#### **REAR DOOR SPEAKER**

Removal and Installation

#### REAR DOOR SPEAKER

Removal

- 1. Remove the rear door finisher. Refer to <u>INT-10, "Removal and Installation"</u> Crew Cab or <u>INT-10, "Removal and Installation"</u> King Cab.
- 2. Remove the three rear door speaker screws and remove the rear door speaker.



Installation Installation is in the reverse order of removal. [BASE AUDIO]

### **AUDIO ANTENNA**

### < ON-VEHICLE REPAIR > **AUDIO ANTENNA**

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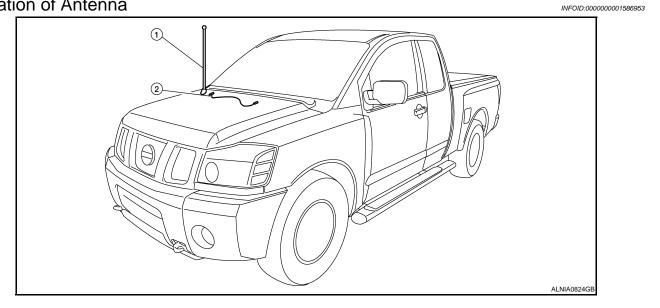
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Location of Antenna



Antenna 1.

2. Main feeder cable

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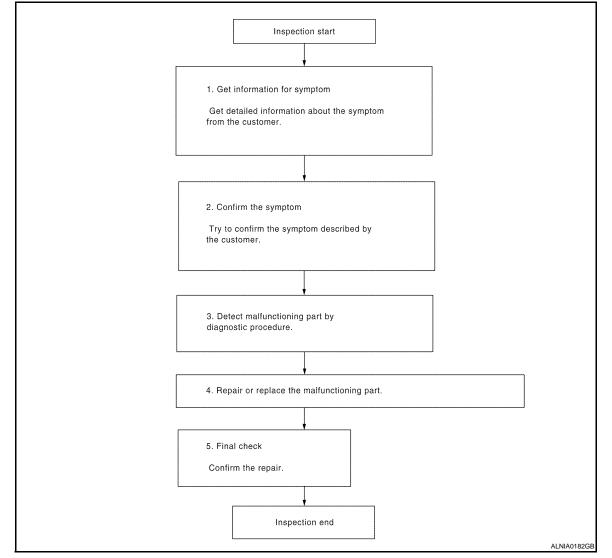
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# BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

### Work Flow

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**OVERALL SEQUENCE** 



### DETAILED FLOW

### **1.**GET INFORMATION FOR SYMPTOM

Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred).

#### >> GO TO 2

### **2.**CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer. Verify relation between the symptom and the condition when the symptom is detected.

#### >> GO TO 3

**3.** DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

### AV-38

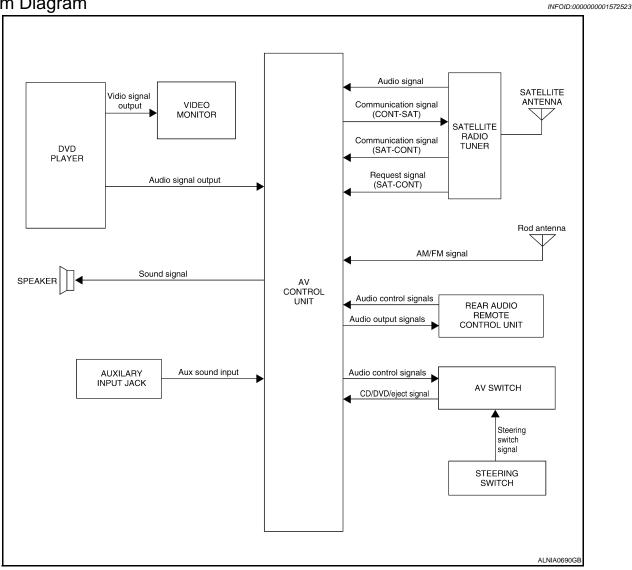
### **DIAGNOSIS AND REPAIR WORKFLOW**

< BASIC INSPECTION >	[MID AUDIO]
Is malfunctioning part detected?	
YES >> GO TO 4	
NO >> GO TO 2	
<b>4.</b> REPAIR OR REPLACE THE MALFUNCTIONING PART	_
<ol> <li>Repair or replace the malfunctioning part.</li> <li>Reconnect parts or connectors disconnected during Diagnostic Procedure.</li> </ol>	
2. Reconnect parts or connectors disconnected during Diagnostic Procedure.	
>> GO TO 5	
5.FINAL CHECK	
Refer to confirmed symptom in step 2, and make sure that the symptom is not detected.	
Was the repair confirmed?	
YES >> Inspection End.	
NO >> GO TO 2	

#### < FUNCTION DIAGNOSIS >

FUNCTION DIAGNOSIS AUDIO SYSTEM

### System Diagram



### System Description

#### AUDIO SYSTEM

The audio system consists of the following components

- Audio unit
- Rod antenna
- Steering wheel audio control switches
- AV switch
- Rear audio remote control unit
- Front door speakers
- Front tweeters
- Rear door speakers
- Rear door tweeters (crew cab)

When the audio system is on, radio signals are received by the rod antenna. The audio unit then sends audio signals to the front door speakers, front tweeters, rear door speakers and rear door tweeters (crew cab). Refer to Owner's Manual for audio system operating instructions.

#### SATELLITE RADIO SYSTEM

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#### AV-40

### **AUDIO SYSTEM**

#### < FUNCTION DIAGNOSIS >

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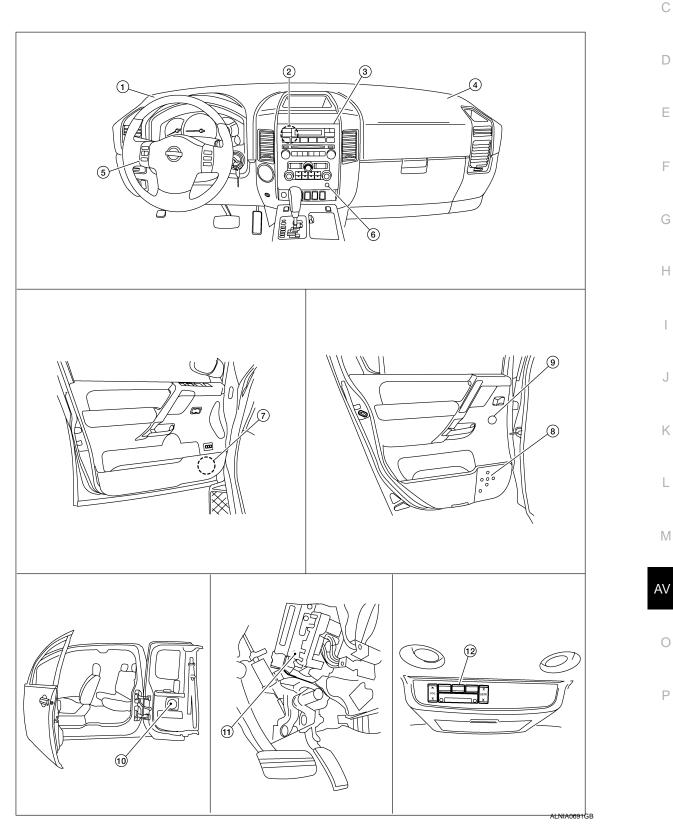
The satellite radio system consists of the following components

Satellite antenna

• Satellite radio tuner

When the satellite radio system is on, radio signals are supplied to the satellite radio tuner from the satellite antenna. The satellite radio tuner then sends audio signals to the audio unit. Refer to Owner's Manual for satellite radio system operating instructions.

### **Component Parts Location**



### **AUDIO SYSTEM**

11. Satellite radio tuner M41, M129

RH D307

#### < FUNCTION DIAGNOSIS >

- 1. Front tweeter LH M109
- 4. Front tweeter RH M111
- 7. Front door speaker LH D12 RH D112
- 10. Rear door speaker (king cab) LH B76 RH B159

### **Component Description**

- Audio unit M42, M43, M44, M45, M46 3. AV switch M98
   Steering wheel audio control switches
   Rear door speaker (crew cab)
   Rear door twee LH D207
   Rear door twee LH D208
  - Rear door tweeter (crew cab) LH D208 RH D308
  - 12. Rear audio remote control unit R204

Part name	Description
Audio unit	Controls audio system and satellite radio system functions
Steering wheel audio control switches	<ul><li>Audio operation can be operated</li><li>Steering switch signal is output to the AV switch</li></ul>
Rear audio remote control unit	<ul> <li>Audio and DVD operation can be operated</li> <li>Audio unit outputs audio signals to rear audio remote control unit for head- phone operation</li> </ul>
AV switch	<ul><li>Audio and DVD operation can be operated</li><li>Steering switch inputs are output to the audio unit</li></ul>
Front door speakers	<ul><li>Outputs audio signal from audio unit</li><li>Outputs high, mid and low range sounds</li></ul>
Front tweeters	<ul><li>Outputs audio signal from audio unit</li><li>Outputs high range sounds</li></ul>
Rear door speakers	<ul><li>Outputs audio signal from audio unit</li><li>Outputs high, mid and low range sounds</li></ul>
Rear door tweeters (crew cab)	<ul><li>Outputs audio signal from audio unit</li><li>Outputs high range sounds</li></ul>
Satellite radio tuner	<ul><li>Receives radio signals from satellite antenna</li><li>Sends audio signals to audio unit</li></ul>
Satellite antenna	Audio signal (satellite radio) is received and output to audio unit.

# < FUNCTION DIAGNOSIS >

#### **DVD** PLAYER А System Diagram INFOID:000000001683819 В VIDEO MONITOR Video signal output Audio output REAR signal AUDIO Audio signal output REMOTE Audio CONTROL D control UNIT DVD signal ΑV AV PLAYER CONTROL SWITCH UNIT Ε CD/DVD eject signal Sound signal Audio control signal SPEAKER F ALNIA0693GE System Description INFOID:000000001683820 The DVD entertainment system consists of the following components Audio unit DVD player Н Video monitor AV switch Steering wheel audio control switches · Rear audio remote control unit • Front tweeters Front door speakers Rear door speakers J

• Rear door tweeters (crew cab)

When the DVD entertainment system is on, video signals are sent from the DVD player to the video monitor. Audio signals are sent to the audio unit. Audio signals can be directed through the vehicle speakers or through wireless infrared headphones. Refer to the Owner's Manual for complete DVD entertainment system operating instructions.

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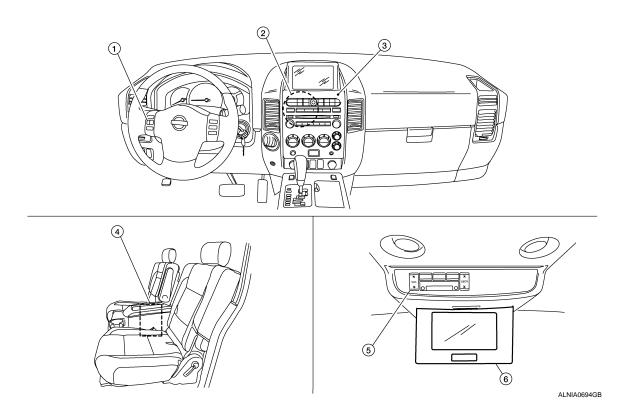
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### **Component Parts Location**

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[MID AUDIO]



- 1. Steering wheel audio control switches 2.
- Audio unit M42, M43, M44, M45, M46 3.
  - AV switch M98 6.

4. DVD player M205, M206 (located in 5. center console)

**Component Description** 

- Rear audio remote control unit R204
- Video monitor R202

Part name	Description
DVD player	<ul><li>Outputs DVD video to video monitor</li><li>Outputs DVD audio to the audio unit</li></ul>
Video monitor	Receives and displays the DVD video signal
Audio unit	Controls audio system and DVD entertainment system functions
AV switch	<ul> <li>All audio and A/C operations can be operated</li> <li>Switch signal is output to the audio unit</li> </ul>
Rear audio remote control unit	<ul> <li>Audio and DVD functions can be operated</li> <li>Switch signal is output to the audio unit</li> <li>Receives audio signal from audio unit for headphones</li> </ul>
Steering wheel audio control switches	<ul><li>Audio operation can be operated</li><li>Steering switch signal (operation signal) is output to audio unit</li></ul>
Front door speakers	<ul><li>Outputs audio signal from audio unit</li><li>Outputs high, mid and low range sounds</li></ul>
Front tweeters	<ul><li>Outputs audio signal from audio unit</li><li>Outputs high range sounds</li></ul>
Rear door speakers	<ul><li>Outputs audio signal from audio unit</li><li>Outputs high, mid and low range sounds</li></ul>
Rear door tweeters (crew cab)	<ul><li>Outputs audio signal from audio unit</li><li>Outputs high range sounds</li></ul>

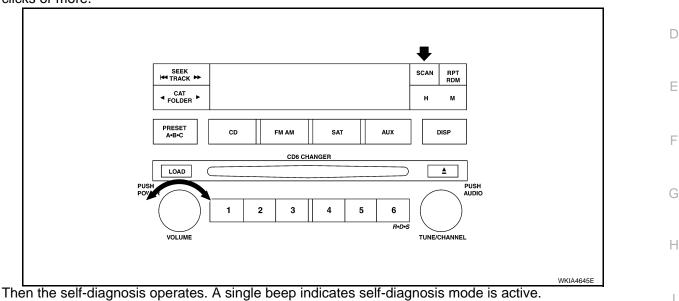
### < FUNCTION DIAGNOSIS >

### DIAGNOSIS SYSTEM (AUDIO UNIT) AV SWITCH

### AV SWITCH : Component Function Check

### STARTING THE SELF-DIAGNOSIS MODE

- 1. Turn ignition switch from OFF to ACC.
- Press and hold the "SCAN" switch and turn the volume control dial clockwise or counterclockwise for 30 C clicks or more.



- 3. Initially, all display segments will be illuminated.
- 4. Press each switch. When each switch is pressed, its name and communication code will be displayed **NOTE:**

CD player LOAD and EJECT buttons are not included in this test and will not change the display when  $^{-J}$  pressed.

### DIAGNOSIS FUNCTION

- It can check for continuity of the switches by sounding the beep when each AV switch and steering switch is
  pressed.
- It can check for continuity of harness between AV switch and steering switch.

### EXITING THE SELF-DIAGNOSIS MODE

Turn ignition switch OFF. Then the self-diagnosis ends.

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[MID AUDIO]

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< COMPONENT DIAGNOSIS >

### COMPONENT DIAGNOSIS POWER SUPPLY AND GROUND CIRCUIT AUDIO UNIT

### AUDIO UNIT : Diagnosis Procedure

### **1.**CHECK FUSES

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

Unit	Terminals	Signal name	Fuse No.
Audio unit	6	Battery power	31
	10	Ignition switch ACC or ON	4

#### Are the fuses OK?

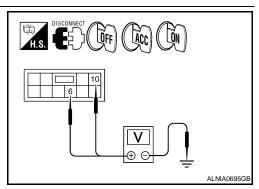
YES >> GO TO 2

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

### 2. POWER SUPPLY CIRCUIT CHECK

- 1. Disconnect audio unit connector M43.
- Check voltage between the audio unit connector M43 and ground.

(	+)	(-)	OFF	ACC	ON
Connector	Terminal	()	OTT	700	
M43	6	Ground	0V	Battery voltage	Battery voltage
	10	Ground	Battery voltage	Battery voltage	Battery voltage



#### Are the voltage results as specified?

YES >> GO TO 3 NO >> • Check c

>> • Check connector housing for disconnected or loose terminals.

Repair harness or connector.

### **3.**GROUND CIRCUIT CHECK

Inspect audio unit case ground.

Does case ground pass inspection?

YES >> Inspection End.

NO >> Repair audio unit case ground. AV SWITCH

### AV SWITCH : Diagnosis Procedure

### **1.**CHECK FUSE

Check that the fuses for the AV switch are not blown.

Unit	Terminal	Signal name	Fuse No.
AV switch	1	Battery	31
AV Switch	2	Ignition switch ACC or ON	4

#### Are the fuses OK?

YES >> GO TO 2

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

2. POWER SUPPLY CIRCUIT CHECK

[MID AUDIO]

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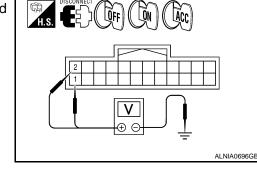
### POWER SUPPLY AND GROUND CIRCUIT

#### < COMPONENT DIAGNOSIS >

#### 1. Disconnect AV switch connector M98.

2. Check voltage between the AV switch connector M98 and ground.

(	+)	(-)	OFF	ACC	ON
Connector	Terminal	()	OIT	700	
M98	1	Ground	Battery voltage	Battery voltage	Battery voltage
10190	2	Ground	0V	Battery voltage	Battery voltage



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#### Are the voltage results as specified?

>> • Check connector housings for disconnected or loose terminals.

· Repair harness or connector.

## **3.**GROUND CIRCUIT CHECK

#### 1. Turn ignition switch OFF.

Check continuity between AV switch harness connector M98 2. and ground.

Connector	Terminal	—	Continuity
M98	5	Ground	Yes

Are the continuity results as specified?

YES >> Inspection End.

NO >> Repair harness or ground.

### SATELLITE RADIO TUNER

### SATELLITE RADIO TUNER : Diagnosis Procedure

### 1.CHECK FUSES

Check that the following fuses of the satellite radio tuner (factory installed) are not blown.

Unit	Terminals	Signal name	Fuse No.	
Satellite radio tuner (factory in-	32	Battery power	31	L
stalled)	36	Ignition switch ACC or ON	4	

#### Are the fuses OK?

YFS >> GO TO 2

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

AV-47

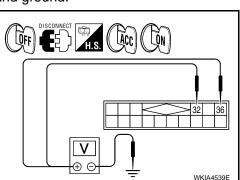
### 2. POWER SUPPLY CIRCUIT CHECK

- 1. Turn ignition switch OFF.
- Disconnect satellite radio tuner (factory installed) connector M41. 2.
- Check voltage between the satellite radio tuner (factory installed) and ground. 3.

(	+)	(-)	OFF	ACC	ON
Connector	Terminal	(-)	011	ACC	ON
M/1	32	Ground	Battery voltage	Battery voltage	Battery voltage
M41	36	Ground	0V	Battery voltage	Battery voltage

Are the voltage readings as specified?

YES >> GO TO 3



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### POWER SUPPLY AND GROUND CIRCUIT

#### < COMPONENT DIAGNOSIS >

>> • Check connector housings for disconnected or loose terminals.

#### • Repair harness or connector.

### **3.**GROUND CIRCUIT CHECK

#### Inspect satellite radio tuner (factory installed) case ground.

Does case ground pass inspection?

#### YES >> Inspection End.

NO >> Repair satellite radio tuner (factory installed) case ground.

#### DVD PLAYER

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### **DVD PLAYER : Diagnosis Procedure**

### 1.CHECK FUSE

Check that the following fuses for the DVD player are not blown.

Unit	Terminal	Signal name	Fuse No.
DVD player	16	Battery power	31
	15	Ignition switch ACC or ON	4

#### Is the fuse OK?

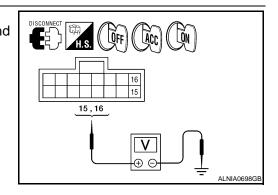
YES >> GO TO 2

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

### 2. POWER SUPPLY CIRCUIT CHECK

- 1. Disconnect DVD player connector M205.
- 2. Check voltage between the DVD player connector M205 and ground.

(+)		(-)	OFF	ACC	ON
Connector	Terminal	()	011		
M205	16	Ground	Battery voltage	Battery voltage	Battery voltage
	15	Ground	0V	Battery voltage	Battery voltage



#### Are the voltage results as specified?

YES >> GO TO 3

NO

- >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

### **3.**GROUND CIRCUIT CHECK

#### 1. Turn ignition switch OFF.

 Check continuity between DVD player harness connector M206 terminal 22 and ground.

Connector	Terminal	—	Continuity
M206	22	Ground	Yes

Are the continuity results as specified?

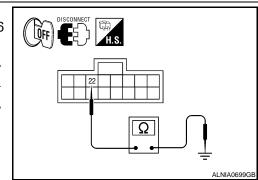
YES >> Inspection End.

NO >> Repair DVD player ground.

### VIDEO MONITOR

VIDEO MONITOR : Diagnosis Procedure

1.CHECK POWER SUPPLY CIRCUIT



INFOID:000000001683825

[MID AUDIO]

### POWER SUPPLY AND GROUND CIRCUIT

#### < COMPONENT DIAGNOSIS >

- 1. Turn ignition switch to ACC.
- 2. Check voltage between video monitor harness connector R202 and ground.

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-					
Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)	
Display B+	R202	11	ACC	12V	
ызріау Бт	11202	12	ACC	12 V	
as specified v	oltana avist	t?			

Does specified voltage exist?

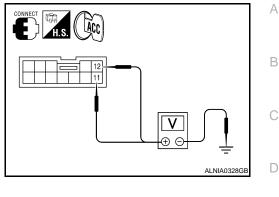
YES >> GO TO 3.

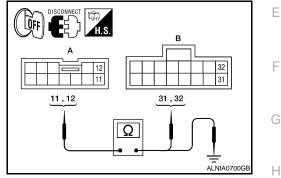
NO >> GO TO 2.

## 2. CHECK POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect the video monitor connector R202 and the DVD 2. player connector M206.
- 3. Check continuity between the video monitor harness connector R202 (A) and the DVD player connector M206 (B).

	А		В	Continuity
Connector	Terminal	Connector Terminal		Continuity
R202	11	M206	31	Yes
R202 -	12	101200	32	res





4. Check continuity between video monitor harness connector R202 (A) and ground.

· · · · · · · · · · · · · · · · · · ·	A		Continuity	
Connector	Terminal		Continuity	
R202	11	Ground	No	
11202	12	Ground	NO	

#### Are continuity test results as specified?

- YES >> Check DVD player power and ground supply. Refer to AV-48, "DVD PLAYER : Diagnosis Proce-Κ dure".
- NO >> Repair harness or connector.

### 3. CHECK GROUND CIRCUIT

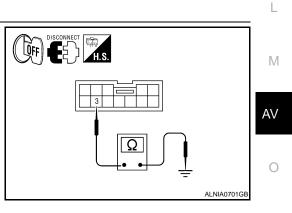
- 1. Turn ignition switch OFF.
- 2. Disconnect video monitor connector.
- 3. Check continuity between video monitor harness connector R202 and ground.

Connector No.	Terminal No.	_	Continuity
R202	3	Ground	Yes

#### Does continuity exist?

YES >> INSPECTION END

NO >> Repair harness or connector.



### FRONT DOOR SPEAKER

#### < COMPONENT DIAGNOSIS >

### FRONT DOOR SPEAKER

### Description

The audio unit sends audio signals to the front door speakers using the audio signal circuits.

### **Diagnosis** Procedure

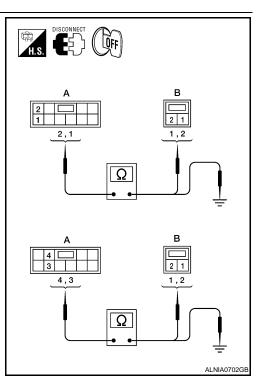
### **1.**HARNESS CHECK

- 1. Disconnect audio unit connector M43 and suspect speaker connector.
- Check continuity between audio unit harness connector M43 (A) 2. and suspect speaker harness connector (B).

А		I	В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M43	1	D12	2	
	2		1	Yes
	3	D112	2	165
	4		1	

3. Check continuity between audio unit harness connector M43 (A) and ground.

	А		Continuity
Connector	Terminal		Continuity
	1		No
M43	2	Ground	
10143	3	Ground	
	4		



Are continuity test results as specified?

YES >> GO TO 2

NO

- >> Check connector housings for disconnected or loose terminals.
  - · Repair harness or connector.

2.FRONT SPEAKER SIGNAL CHECK

INFOID:000000001572589

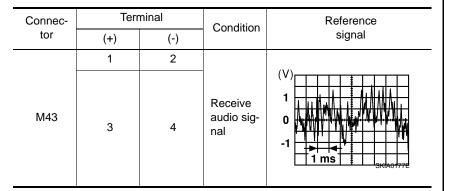
INFOID:000000001572590

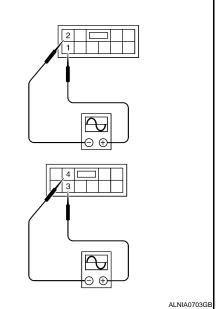
### FRONT DOOR SPEAKER

#### < COMPONENT DIAGNOSIS >

#### 1. Connect audio unit connector M43 and suspect speaker connector.

- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.





## Is audio signal voltage as specified?

- YES >> Replace suspect speaker. Refer to <u>AV-95. "Removal</u> and Installation".
- NO >> Replace the audio unit. Refer to <u>AV-92, "Removal and</u> <u>Installation"</u>.

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### FRONT TWEETER

### < COMPONENT DIAGNOSIS >

### FRONT TWEETER

### Description

The audio unit sends audio signals to the front tweeters using the audio signal circuits.

### **Diagnosis** Procedure

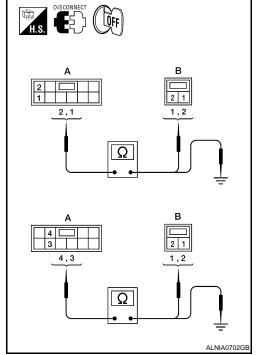
### **1.**HARNESS CHECK

- Disconnect audio unit connector M43 and suspect speaker connector.
- 2. Check continuity between audio unit harness connector M43 (A) and suspect speaker harness connector (B).

А			В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	1	M109	2	Yes
M43	2		1	
	3	M111	2	165
	4		1	

3. Check continuity between audio unit harness connector M43 (A) and ground.

	A		Continuity	
Connector	Connector Terminal		Continuity	
	1		No	
M43	2	Cround		
10143	3	Ground		
	4			



Are continuity test results as specified?

YES >> GO TO 2

NO

>> • Check connector housings for disconnected or loose terminals.

Repair harness or connector.

2.FRONT SPEAKER SIGNAL CHECK

INFOID:000000001572591

### FRONT TWEETER

**AV-53** 

#### < COMPONENT DIAGNOSIS >

#### [MID AUDIO]

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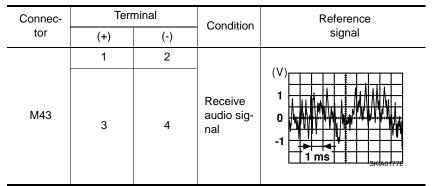
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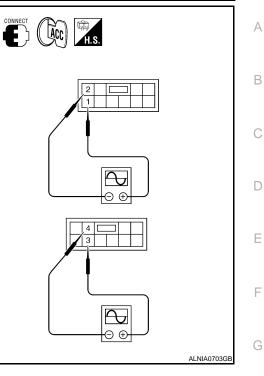
Ο

- 1. Connect audio unit connector M43 and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.





- YES >> Replace suspect speaker. Refer to <u>AV-93. "Removal</u> <u>and Installation"</u>.
- NO >> Replace the audio unit. Refer to <u>AV-92, "Removal and</u> <u>Installation"</u>.



### REAR DOOR SPEAKER

#### < COMPONENT DIAGNOSIS >

### REAR DOOR SPEAKER

### Description

The audio unit sends audio signals to the rear door speakers using the audio signal circuits.

### **Diagnosis Procedure**

### **1.**HARNESS CHECK

- 1. Disconnect audio unit connector M44 and suspect speaker connector.
- Check continuity between audio unit harness connectors M44 (A) and suspect speaker harness connector (B).

А		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M44	13	D207 (crew cab)	2	
	14	B76 (king cab)	1	Yes
	15	D307 (crew cab)	2	165
	16	B159 (king cab)	1	

3. Check continuity between audio unit harness connectors M44 (A) and ground.

Connector	Terminal	-	Continuity
M44	13		No
	14	Ground	
	15	Ground	
	16		



- YES >> GO TO 2
- NO >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

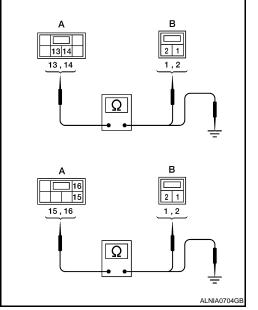
2.REAR DOOR SPEAKER SIGNAL CHECK

[MID AUDIO]

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INFOID:000000001572596

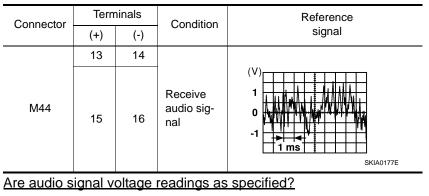




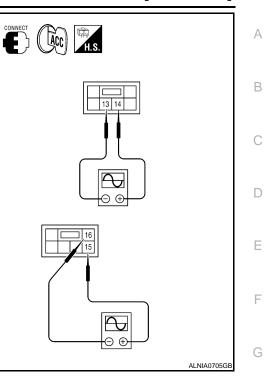
### **REAR DOOR SPEAKER**

#### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connectors and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connectors M44 terminals with CONSULT-III or oscilloscope.



- YES >> Replace suspect speaker. Refer to <u>AV-96, "Removal</u> and Installation".
- NO >> GO TO 3



#### [MID AUDIO]

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### **REAR DOOR TWEETER**

#### < COMPONENT DIAGNOSIS >

### REAR DOOR TWEETER

### Description

The audio unit sends audio signals to the rear door tweeters using the audio signal circuits.

### **Diagnosis Procedure**

### **1.**HARNESS CHECK

- 1. Disconnect audio unit connector M44 and suspect speaker connector.
- Check continuity between audio unit harness connectors M44 (A) and suspect speaker harness connector (B).

	A	В	Continuity		
Connector	Terminal	Connector	Terminal	Continuity	
	13 D208	D208		2	
M44		D208	1	Yes	
10144	15	D308	2	Tes	
	16		1	*	

3. Check continuity between audio unit harness connectors M44 (A) and ground.

Connector	Terminal	-	Continuity	
	13			
M44	14	Ground	No	
IVI44	15	Ground		
	16			



- YES >> GO TO 2
- NO >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

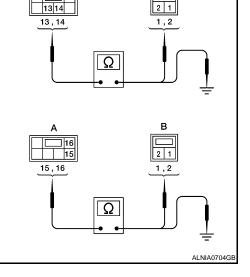
2.REAR DOOR SPEAKER SIGNAL CHECK

[MID AUDIO]

INFOID:000000001572597

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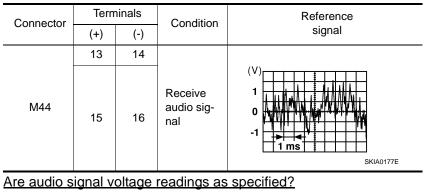
B



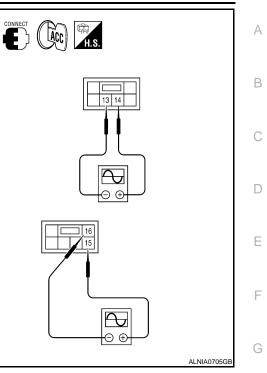
### **REAR DOOR TWEETER**

#### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connectors and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connectors M44 terminals with CONSULT-III or oscilloscope.



- YES >> Replace suspect speaker. Refer to <u>AV-96, "Removal</u> and Installation".
- NO >> GO TO 3



[MID AUDIO]

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### **STEERING SWITCH**

#### < COMPONENT DIAGNOSIS >

### STEERING SWITCH

### Description

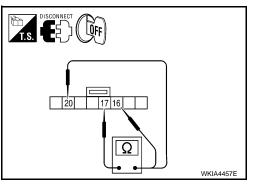
When one of the steering wheel audio control switches is pushed, the resistance in the steering wheel audio control switch circuit changes depending on which button is pushed.

### **Diagnosis Procedure**

### 1. CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

- 1. Turn ignition switch OFF.
- 2. Disconnect steering wheel audio control switch connector M102.
- 3. Check resistance between steering switch connector terminals.

Terr	minal	Signal name	Condition	Resistance (Ω) (Approx.)
		Seek (down)	Depress $ abla$ switch.	165
16	17	Volume (down)	Depress VOL down switch.	487
		Mode	Depress MODE switch.	0
		Seek (up)	Depress $\Delta$ switch.	165
20	17	Volume (up)	Depress VOL up switch.	487
		Power	Depress PWR switch.	0



#### Do the steering wheel audio control switches check OK?

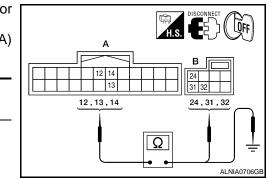
YES >> GO TO 2

NO >> Replace steering wheel audio control switch. Refer to AV-98, "Removal and Installation".

### 2.CHECK HARNESS

- Disconnect AV switch connector M98 and spiral cable connector M30.
- Check continuity between AV switch harness connector M98 (A) and spiral cable harness connector M30 (B).

А		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	12		24	
M98	13	M30	32	Yes
	14		31	



3. Check continuity between AV switch connector M98 (A) and ground.

A			Continuity
Connector	Terminal		Continuity
	12		
M98	13	Ground	No
	14		

Are the continuity results as specified?

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

3.Spiral Cable Check

INFOID:000000001572605

INEOID:000000001572606

### **STEERING SWITCH**

#### < COMPONENT DIAGNOSIS >

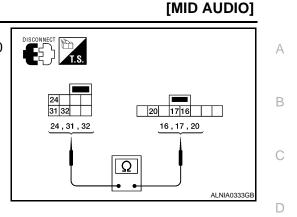
- 1. Disconnect spiral cable connector M102.
- Check continuity between spiral cable harness connector M30 (A) and M102 (B).

	Spira	l cable		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	24		20	
M30	31	M102	17	Yes
	32		16	

Does the spiral cable check OK?

YES >> Inspection End.

NO >> Replace spiral cable. Refer to <u>SR-6, "Removal and Installation"</u>.



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### SATELLITE RADIO TUNER : Description

COMMUNICATION SIGNAL CIRCUIT

Communication signals are exchanged between the audio unit and satellite radio tuner using the communication circuits.

### SATELLITE RADIO TUNER : Diagnosis Procedure

### **1.**CHECK HARNESS - REQ1

< COMPONENT DIAGNOSIS >

SATELLITE RADIO TUNER

- 1. Turn ignition switch OFF.
- 2. Disconnect satellite radio tuner (factory installed) connector M41 and audio unit connector M42.
- Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 28 and audio unit harness connector M42 (B) terminal 48.

A		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M41	28	M42	48	Yes

4. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 28 and ground.

A			Continuity	
Connector	Terminal		Continuity	
M41	28	Ground	No	

Are continuity results as specified?

YES >> GO TO 2

NO >> Repair harness or connector.

2. CHECK HARNESS - TXD

 Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 29 and audio unit harness connector M42 (B) terminal 49.

	A		В	
Connector	Terminal	Connector Terminal		Continuity
M41	29	M42	49	Yes

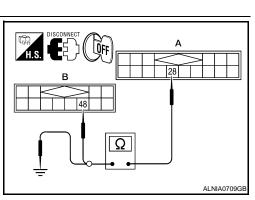
2. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 29 and ground.

	A		Continuity
Connector Terminal			Continuity
M41	29	Ground	No

Are continuity results as specified?

YES >> GO TO 3

- NO >> Repair harness or connector.
- 3.CHECK HARNESS RXD



INFOID:000000001683814

### COMMUNICATION SIGNAL CIRCUIT

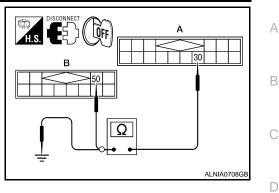
#### < COMPONENT DIAGNOSIS >

 Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 30 and audio unit harness connector M42 (B) terminal 50.

А		В		Continuity
Connector	Terminal	Connector Terminal		Continuity
M41	30	M42	50	Yes

2. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 30 and ground.

	A		Continuity	
Connector	Terminal		Continuity	
M41	30	Ground	No	



[MID AUDIO]

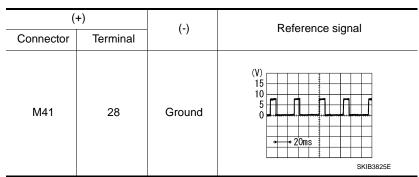
Are continuity results as specified?

YES >> GO TO 4

NO >> Repair harness or connector.

**4.**CHECK REQ1 SIGNAL

- 1. Connect satellite radio tuner (factory installed) connector and audio unit connector.
- 2. Turn ignition switch to ACC
- Check signal between satellite radio tuner (factory installed) harness connector M41 terminal 28 and ground with CONSULT-III or oscilloscope.



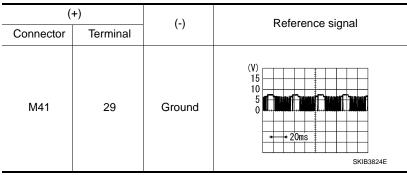
Are voltage readings as specified?

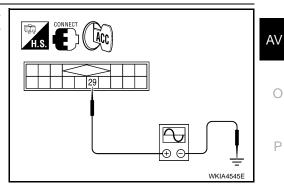
YES >> GO TO 5

NO >> Replace audio unit. Refer to <u>AV-92, "Removal and Installation"</u>.

**5.**CHECK TXD SIGNAL

Check signal between satellite radio tuner (factory installed) harness connector M41 terminal 29 and ground with CONSULT-III or oscillo-scope.





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Are the voltage readings as specified?

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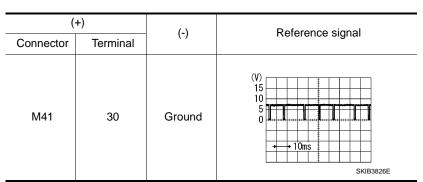
< COMPONENT DIAGNOSIS >

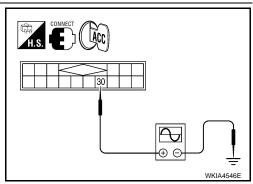
[MID AUDIO]

YES >> GO TO 6 NO >> Replace satellite radio tuner.

6.CHECK RXD SIGNAL

Check signal between satellite radio tuner (factory installed) harness connector M41 terminal 30 and ground with CONSULT-III or oscillo-scope.





Are the voltage readings as specified?

YES >> Replace satellite radio tuner.

NO >> Replace audio unit. Refer to <u>AV-92. "Removal and Installation"</u>.

#### SOUND SIGNAL CIRCUIT [MID AUDIO] < COMPONENT DIAGNOSIS > SOUND SIGNAL CIRCUIT А SATELLITE RADIO TUNER SATELLITE RADIO TUNER : Description INFOID:000000001683816 В Left and right channel audio signals are supplied from the satellite radio tuner to the audio unit through the sound signal circuits. SATELLITE RADIO TUNER : Diagnosis Procedure INFOID:000000001683817 LEFT CHANNEL D **1.**CHECK HARNESS Turn ignition switch OFF. 1. Disconnect satellite radio tuner (factory installed) connector M41 2. Ε and audio unit connector M42. 3. Check continuity between satellite radio tuner (factory installed) connector M41 (A) and audio unit connector M42 (B). B F 42 41 А В Continuity Connector Terminal Connector Terminal Ω 21 41 M41 M42 Yes 22 42 ALNIA0710GB Н 4. Check continuity between satellite radio tuner (factory installed) connector M41 (A) and ground. A Continuity Connector Terminal 21 M41 Ground No 22 Are continuity results as specified? YES >> GO TO 2 Κ NO >> Repair harness or connector. 2.CHECK LEFT CHANNEL AUDIO SIGNAL 1. Connect satellite radio tuner (factory installed) and audio unit. L Turn ignition switch ON. 2. Check signal between satellite radio tuner (factory installed) 3. H.S. CONNECT connector M41 terminals 21 and 22 with CONSULT-III or oscillo-Μ scope. (+) AV (-) Reference signal Connector Terminal 22 21 Θ⊕ M41 Ground WKIA4548E 22 Ρ SKIB3609E Are voltage readings as specified? YES >> Replace audio unit. Refer to AV-92, "Removal and Installation". NO >> Replace satellite radio tuner. Refer to AV-102, "Removal and Installation".

#### RIGHT CHANNEL

# AV-63

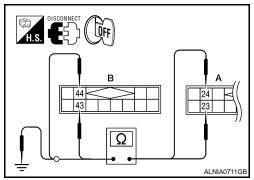
### SOUND SIGNAL CIRCUIT

#### < COMPONENT DIAGNOSIS >

## 1.CHECK HARNESS

- 1. Turn ignition switch OFF.
- 2. Disconnect satellite radio tuner (factory installed) connector M41 and audio unit connector M42.
- 3. Check continuity between satellite radio tuner (factory installed) M41 (A) and audio unit M42 (B).

A	١	E	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
M41	23	M42	43	Yes
	24	10142	44	Tes



4. Check continuity between satellite radio tuner (factory installed) connector M41 (A) and ground.

	А		Continuity	
Connector	Terminal		Continuity	
M41	23	Ground	No	
11/14 1	24	Gibunu	INO	

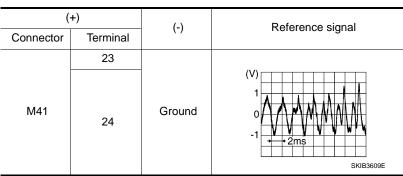
Are continuity results as specified?

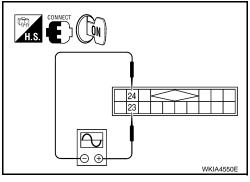
YES >> GO TO 2

NO >> Repair harness or connector.

2. CHECK RIGHT CHANNEL AUDIO SIGNAL

- 1. Connect satellite radio tuner (factory installed) and audio unit.
- 2. Turn ignition switch ON.
- 3. Check signal between satellite radio tuner (factory installed) connector M41 terminals 23 and 24 with CONSULT-III or oscillo-scope.





Are voltage readings as specified?

YES >> Replace audio unit. Refer to <u>AV-92, "Removal and Installation"</u>.

NO >> Replace satellite radio tuner. Refer to <u>AV-102. "Removal and Installation"</u>.

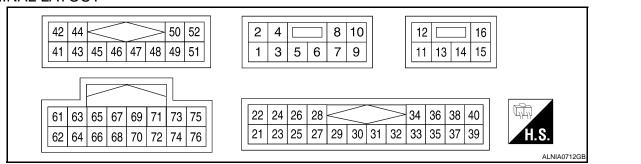
# < ECU DIAGNOSIS > ECU DIAGNOSIS

### AUDIO UNIT

### **Reference Value**

INFOID:000000001689304

TERMINAL LAYOUT



### PHYSICAL VALUES

	minal e color) 	Item	Signal input/ output		Condition	Reference value (Approx.)
2 (L/W)	1 (L/R)	Audio sound signal front LH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1
4 (W/B)	3 (L/B)	Audio sound signal front RH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1
6 (Y)	Ground	Battery power	Input	_	_	Battery voltage
7 (BR)	Ground	Illumination control signal	Input	Ignition switch ON	Illumination control switch is operated by lighting switch in 1st position.	Changes between 0 and 12V
8	Oracial		land	055	Lighting switch is in 1st position.	Battery voltage
(R/L)	Ground	Illumination signal	Input	OFF	Lighting switch is OFF.	0V
10 (V)	Ground	ACC signal	Input	Ignition switch ON	_	Battery voltage

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#### < ECU DIAGNOSIS >

(Wire	ninal color)	Item	Signal input/ output		Condition	Reference value (Approx.)
+ 14 (SB)	- 13 (B/Y)	Audio sound signal rear LH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 ms 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
16 (O/L)	15 (R/L)	Audio sound signal rear RH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 ms 5 5 5 5 5 5 5 5 5 5 5 5 5
21 (V)	Ground	Remote control A	Output	Ignition switch ON	Audio unit ON	5V
22 (P)	Ground	Remote control B	Output	Ignition switch ON	Audio unit ON	5V
23 (BR/Y)	Ground	Remote control C	Output	Ignition switch ON	Audio unit ON	5V
24 (L)	Ground	Remote control D	Output	Ignition switch ON	Audio unit ON	5V
25 (LG)	Ground	Remote control ground	_	_	_	0V
27 (O/L)	26 (O)	Audio sound signal LH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 SKIA0177E
29 (W)	28 (W/L)	Audio sound signal RH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 ms 5 KiA0177E
30	-	Shield	_	_	_	0V
31 (O)	Ground	Remote control en- able signal	Output	Ignition switch ON	Audio unit ON	5V
32 (V)	Ground	Remote control switch power sup- ply	Output	Ignition switch ON	Audio unit ON	12V

#### < ECU DIAGNOSIS >

	minal e color)	ltem	Signal input/		Condition	Reference value (Approx.)	
+	-		output			(дрргох.)	
35 (B)	34 (W)	Family entertain- ment system left channel audio input	Input	Ignition switch ON	DVD operating	(V) 1 0 -1 • 2ms SKiB3609E	
37 (R)	36 (G)	Family entertain- ment system right channel audio input	Input	Ignition switch ON	DVD operating	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	
39 (Y/L)	Ground	Family entertain- ment system en- able	Output	Ignition switch ON	DVD operating	12V	
40 (L/W)	Ground	Audio ON	Input	Ignition switch ON	DVD operating	12V	
42 (R)	41 (G)	Satellite radio au- dio signal LH	Input	lgnition switch ON	Satellite radio tuner operating	(V) 1 0 -1 * 2ms SKIB3609E	
44 (W)	43 (B)	Satellite radio au- dio signal RH	Input	Ignition switch ON	Satellite radio tuner operating	(V) 1 0 -1 -1 -1 SKIB3609E	
45	-	Ground	-	-	_	0V	
46	_	Data ground	I	-	_	0V	
48 (L)	_	REQ (SAT→AV control unit)	Input	Ignition switch ON	_	_	
49 (O/L)	_	RX (SAT→AV con- trol unit)	Input	Ignition switch ON	-	_	
50 (W/L)	-	TX (AV control unit→SAT)	Input	Ignition switch ON	_	_	

#### < ECU DIAGNOSIS >

	ninal color)	Item	Signal input/	Condition		Reference value (Approx.)	
+	_		output			(, , , , , , , , , , , , , , , , , , ,	
65 (O/L)	Ground	Audio RX	Input	lgnition switch ON	Operate audio vol- ume	(V) 6 4 2 0 * • 5 ms SKIA4403E	
66 (W/L)	Ground	Audio TX	Output	lgnition switch ON	Operate audio vol- ume	(V) 6 4 2 0 *** 2ms SKIA4402E	
67	_	Shield	_	Ignition switch ON	_	0V	
72 (W/B)	Ground	CD eject signal	Input	Ignition switch ON	Operate EJECT but- ton	$0V \rightarrow 5V$	
73 (Y/B)	Ground	CD load signal	Input	Ignition switch ON	Operate LOAD but- ton	$0V \rightarrow 5V$	
74 (W)	Ground	Auxiliary audio in- put RH (+)	Input	lgnition switch ON	Receive audio sig- nal (AUX input)	(V) 1 -1 -1 -1 -1 -1 -1 -1 -1 -1	
75 (R)	Ground	Auxiliary audio in- put LH (+)	Input	lgnition switch ON	Receive audio sig- nal (AUX input)	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1	
76 (B)	_	Shield	-	_	_	0V	

### < ECU DIAGNOSIS >

### Wiring Diagram

[MID AUDIO]

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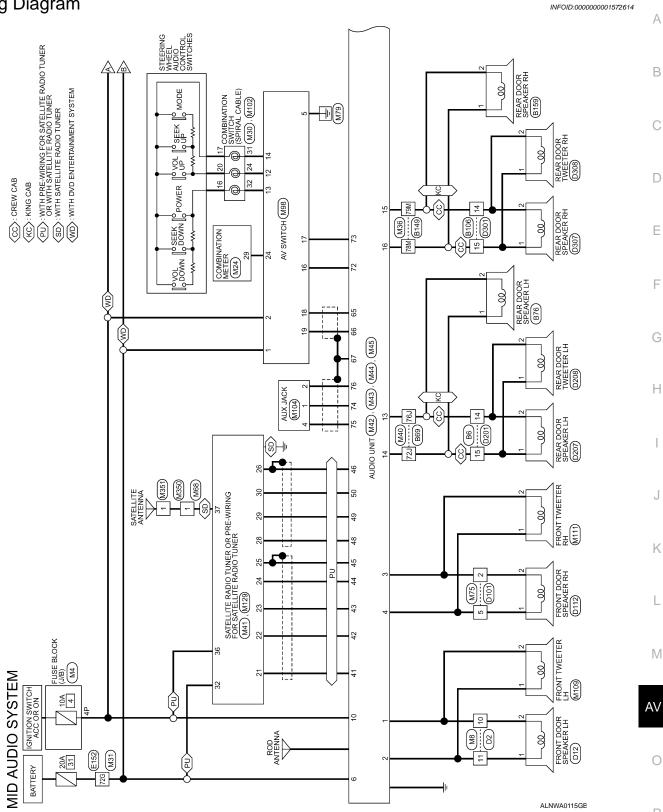
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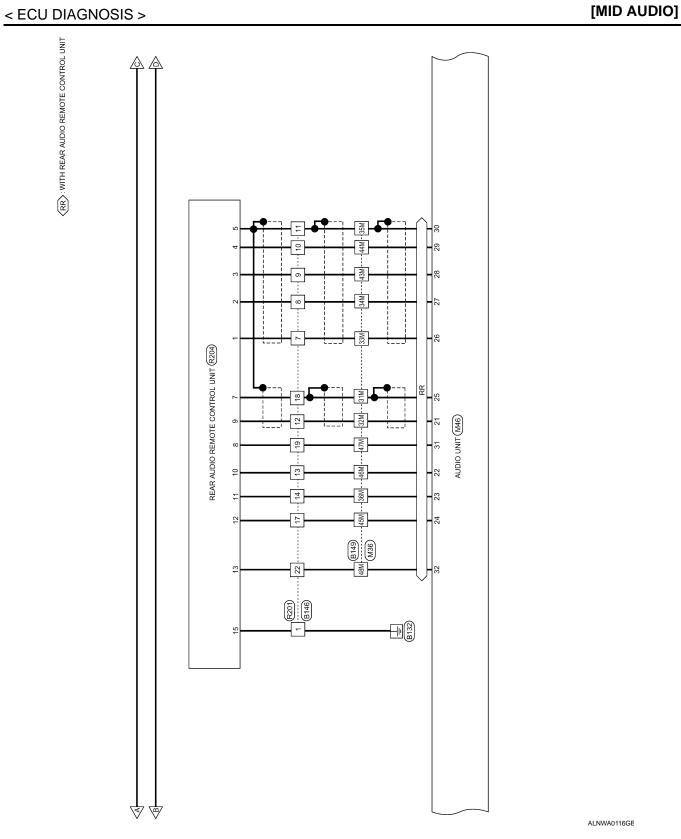
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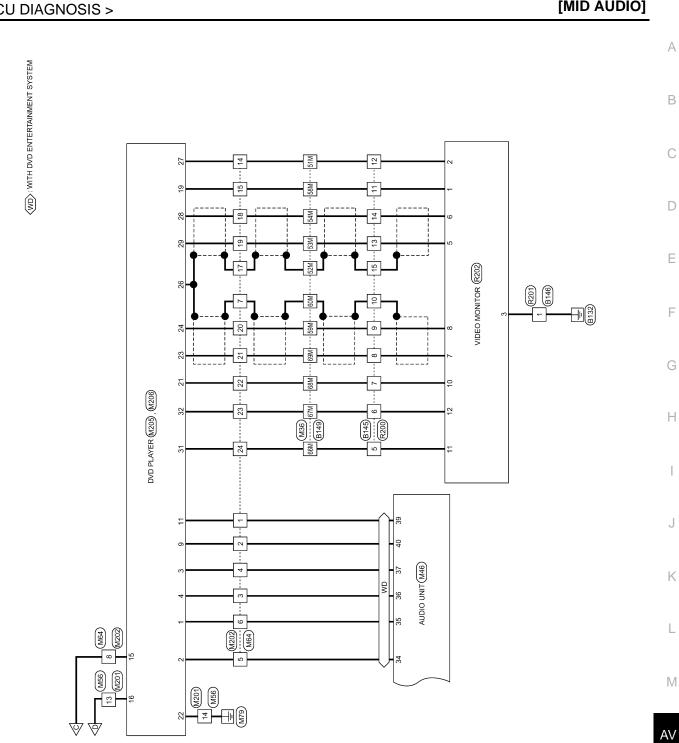
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CU DIAGNOSI	S >			[MID A
Connector No. M24 Connector Name COMBINATION METER Connector Color WHITE	20     19     17     16     14     13     12     11     10     9     8     7     6     5     4     2     1       40     38     37     56     38     34     38     33     31     30     29     28     1	Terminal No. Color of Signal Name 29 W/R SPEED_8P	Terminal No.     Color of Wire     Signal Name       72G     Y     -	
Connector No. M8 Connector Name WIRE TO WIRE Connector Color WHITE	7 6 5 4 <u>13</u> 12 1	lerminal No. Wire Signal Name 10 L/R – 11 L/W –	Connector No.     M31       Connector Name     WIRE TO WIRE       Connector Name     WIRE TO WIRE       Connector Name     WIRE TO WIRE       Connector Registration     00 400 feed       00 400 feed     00 400 feed       <	
MID AUDIO SYSTEM CONNECTORS Connector No. M4 Connector Name FUSE BLOCK (J/B) Connector Color WHITE	7P 6P 5P 4P	I lerminal No.     Wire     Signal Name       4P     V     -	Connector No.     M30       Connector Name     COMBINATION SWITCH       Connector Name     (SPIRAL CABLE)       Connector Color     GRAY       Image: Second Structure     (SPIRAL CABLE)       Image: Second Structure     (SIGN Structure)	ALNIA0765GB

# < ECU DIAGNOSIS >

SignaLName	1	I	I	I	I	I	1	1	I	I	1				Signal Name	REQ1_(SATHU)	TXD_(SATHU)	RXD_(H-SAT)	BATT	ACC										
Color of Wire	BR	>	B/W	_	SHIELD	0/L	SB	BR	G/Y	0/L	R/L				Color of Wire	_	0/L	W/L	٢	>										
Terminal No.	53M	54M	58M	59M	60M	66M	67M	68M	M69	78M	79M				Terminal No.	28	29	30	32	36										
														7																
Signal Name	1	1	1	I	I	1	1	1	I	1	1	1	Т		M41 SATELLITE DADIO TUNIED			32 34 36	21 23 25 27 28 29 30 31 33 35		Signal Name	SAT_LHOUT	SAT_LH+_OUT	SAT_RHOUT	SAT_RH+_OUT	SIG_SHIELD	DATA_GND			
Color of Wire	ГG	>	0	O/L	SHIELD	BR/Y	M/L	×		٩.	0	>	B/Y				_	22 24 26	21 23 25 27 28		Color of Wire	U	œ	m	×	SHIELD	SHIELD			
Terminal No.	31M	32M	33M	34M	35M	36M	43M	44M	45M	46M	47M	48M	51M		Connector No.	Connector Color			U,	J	Terminal No.	21	22	23	24	25	26			
		<u> </u>		<u> </u>	<u> </u>															3			<u> </u>	<u> </u>	<u> </u>					
							Г		]												Г									
	1					3M 12M 11M		3ml 32ml 31ml 3ml 42M	3M52M51M	34/62.1/						ц					231 221 10 231 221 10 231 231 331	431451	53.1 52.1 51.1 33.1 62.1	area	<u> </u>		Signal Name	ı	I	
Connector No. M36 Connector Name WIBF TO WIBF	WHITE			5M 4M 3M 2M 1M	10M BM AM 6M	120M 19M 18M 17M 16M 15M 14M 13	2 MP2 M02 M02 M 2 M02 M22 M22 M	41M 40M 59M 59M 57M 56M 57M 55M 54M 52M 52M 52M 52M 52M 52M 55M 52M 50M 48M 48M 48M 46M 46M 48M 48M 48M 48M 50M 50M 50M 50M 56M 56M 56M 56M 56M 56M 56M 56M 56M 56	59M	V 69M 68V 67V 66M 65V 64M 63	75M 74M 73M 72M 71M	80M 79M 78M 77M 76M			M40				51 41 31 21 11		Ziu zuu isa ina ira ina isa isa isa isa 300 290 280 270 260 255 244 253 220 441 461 581 581 581 551 354 231 221	501 491 471 461 451 441 431 421	61.1 80.1 58.1 58.1 55.1 56.1 55.1 54.1 53.1 52.1 77.1 63.1 68.1 67.1 66.1 65.1 64.1 63.1 67.1		754 741 733 723 711 201 754 781 773 761					
Connector No. M	Connector Color W					21M[201		41M 400	61M 60M	102							_			2			611 60	<u> </u>			No. Color of		B/Y	
5 5	5 5			U L	5				-						lecto				v T	5							Terminal No.	2/	76J	

#### < ECU DIAGNOSIS >

# **AUDIO UNIT**

# [MID AUDIO]

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AV-73

Connector No. M44 Connector Name ALIDIO LINIT		H.S.	Terminal No. Color of Signal Name	13 B/Y RR_SP_LH-	14 SB RR_SP_LH+	15 R/L RR_SP_RH-	16 O/L RR_SP_RH+						Terminal No. Wire Signal Name	2	P REMOTE	BR/Y	24 L REMOTE_D	25 LG REMOTE_GND	26 O L_CH_OUTPUT-	27 O/L L_CH_OUTPUT+	W/L	29 W R_CH_OUTPUT+	30 SHIELD SHIELD	31 O ENABLE	32 V SWITCH_+B
Connector No. M43 Connector Name AUDIO UNIT	Connector Color WHITE	(前) H.S.	Terminal No. Color of Signal Name	1 L/R FR_SP_LH-	2 L/W FR_SP_LH+	3 L/B FR_SP_RH-	4 W/B FR_SP_RH+	6 Y BACK_UP	10 V ACC						Connector Color WHITE		21 23 25 27 29 30 31 32								
M42 AUDIO UNIT	WHITE	42 44	or of Signal Name	(-)	f (+)	3 R (-)	V R (+)	ELD EARTH	ELD DATA_EARTH	- REQ1_(SATHU)	-	/L RXD_(H-SAT)		AUDIO UNIT	WHITE			62 64 66 68 70 72 74 76		r of Signal Name					AL
Connector No. M42 Connector Name AUDIO UNIT	Connector Color	低雨 H.S.	Terminal No. Color of	41 G	42 R	43 B	44 W	45 SHIELD	46 SHIELD	48 L	49 O/L	50 W/L	Connector No.	d)	Connector Color		61 61			Terminal No. Wire	72 W/B				

M44	AUDIO UNIT	MHITE	12 16
Connector No.	Connector Name AUDIO UNIT	Connector Color	

	Signal Name	RR_SP_LH-	RR_SP_LH+	RR_SP_RH-	RR_SP_RH+
	Color of Wire	B/Υ	SB	R/L	O/L
5	Terminal No.	13	14	15	16

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LOAD AUX\_R+ AUX\_L+ AUX\_EARTH

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																										_	A
Signal Name	I	1	1	I	I	I	1	I	I	I																	B C
Color of Wire	B/Y	B/W	SHIELD	7	BR		B/W	G/Y	BR	SB	-																
Terminal No.	14	15	17	18	19	20	21	22	23	24																	D
					<u> </u>					<u> </u>	J																E
			E	24														]									F
			7 8 9 10	12 13 14 15 16 17 18 19 20 21 22 23 24			Signal Name	I	1	1	I	1	1	I		VIRE		[	[2] –	Signal Name		I					G
M64			4 5 6	5 16 17 18										9	M75	WIRE TO WIRE	WHITE		4 3 2 10 9 8 7 6								Η
		_	1 2 3	12 13 14 1		Color	No. Wire	۲/۲	ΓM	σ	æ	8	B	SHIELD					4 10	No. Color of Wire	L/B	W/B					
Connector No.	Connector Name				0 1		Terminal No.	-	2	en	4	5	9	2	Connector No.	Connector Name	Connector Color		百日 H.S.	Terminal No.	~	5					J
										-								-				_					K
			1	5 16	]]		Signal Name													Signal Name							L
M56 WIDE TO WIDE		Ŀ	4 5 0	8 9 10 11 12 13 14 15 16			Signa									E TO WIRE	NN		Ð	Signa							Μ
o. M56	ame wine i olor WHITE		° ° ·	- 8 - 10			Wire	>	в						o. M69	ame WIRI	olor BROWN	_		Color of Wire	B						AV
Connector No.	Connector Name		æ	U I	0 L		Terminal No.	13	14						Connector No.	Connector Name WIRE TO WIRE	Connector Color		H.S.	Terminal No.	-						
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WHTE     13       WHTE     13       MHTE     13       13     14       14     14       17     17       17	Connector No. M102 Connector Name COMBINATION SWITCH
13     13     14     1       14     1     1     1     1       15     13     13     13     13       16     13     13     13     14     1       17     17     17     17     17       17     11     17     17     17       17     11     17     17     17       17     11     17     17     17       17     11     11     11     17       17     11     11     11     11       17     11     11     11     11       18     GND     0     0     0       104     0     0     0     0       11     11     11     11     11       11     11     11     11     11       11     11     11     11     11       11     11     11     11     11       11     11     11     11     11       11     11     11     11     11       11     11     11     11     11       11     11     11     11     11       11     11     11     <	
14     L       16     WB       17     V/B       11     L       11    <	Connector Color GRAY
10     <	
5     7     9     11     17     V/B       reof     Signal Name     24     W/R       r     +B       r     +B       r     ACC       1     ILL       1     ILL <t< td=""><td></td></t<>	
24     W/R       7     +B       7     +B       7     +B       7     +B       7     ACC       1     ILL       1     ILL       8     GND       M104     Connector No.       M104     Connector No.       M104     Connector No.       M104     Connector No.       1     4.3.2.1	H.S.
rof Signal Name + B + B + B + B + B + B + B + B	
Image: state of the state o	Terminal No. Color of Signal Name
V     ACC       R/L     ILL       BR     ILL CONT GND       B     GND       tor No.     M104       Connector Name       tor Color       tor Color	16 R –
Image: Connector No.     Connector No.       M104     AUX JACK       WHITE       Image: Connector Name       Image: Connector Color	17 BR –
R     ILL CONT GND       3     GND       M104     Connector No.       AUX JACK     Connector Name       WHITE     Connector Name	20 W –
3 GND M104 AUX JACK WHITE Connector No. Connector Name Connector Name	
M104 AUX JACK WHITE Connector Name Connector Color	
	Connector No. M111
	朝 H.S
Terminal No. Color of Signal Name Terminal No. Wire Signal Name	Terminal No. Color of Signal Name
1 W AUX_AUDIO_RH + 1 L/W -	1 W/B –
2 B AUX_GND 2 L/R -	2 L/B –

ALNIA0769GB

# AUDIO UNIT

#### < ECU DIAGNOSIS >

# [MID AUDIO]

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M201	Connector Name WIRE TO WIRE	WHITE	7 6 5 4 3 2 1 16 15 14 13 12 11 10 9 8
Connector No.	Connector Name	Connector Color WHITE	(16) H.S.
			1
M129	Connector Name SATELLITE RADIO TUNER	VIOLET	
Connector No. M129	Connector Name	Connector Color VIOLET	际 H.S.

Signal Name	I
Color of Wire	В
Terminal No.	37

Signal Name

Color of Wire

Terminal No. 13

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Connector No.	M202
Connector Name WIRE TO WIRE	WIRE TO WIRE
Connector Color BROWN	BROWN
	<u> </u>

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L	e	14		
L	4	15		
L	S	16		
η	Тп	17		
4	10	18		
L	6	19		
L	~	20		
L	8	21		
L	0	22		
L	9	23		
L	÷	2	1	
L	ŧ	24	.S.	

Signal Name	I	I	I	I	I	I
Color of Wire	۲/۲	L/W	ŋ	щ	M	в
Terminal No.	-	2	3	4	5	9

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AYER	11 13 15 11 13 15	Signal Name	FES_L+_OUTPUT	FES_LOUTPUT	FES_R+_OUTPUT	FES_ROUTPUT		ILL-	FES_ENABLE	LIGHTING_SW	ACC	B+
M205 e DVD PLAYER r GRAY	3 5 6 8 10	Color of Wire	В	×	æ	J	N	BR	<u>۲/۲</u>	R/L	٨	7
Connector No. Connector Name Connector Color	和 H.S.	Terminal No.	-	2	e	4	6	10	11	12	15	16

	Signal Name	I	I	I	I	I	I	I	I	I	I	I	
	Color of Wire	W/L	B/Y	B/W	SHIELD	≻	ВВ	_	B/W	G/Y	BR	SB	
	Terminal No.	10	14	15	17	18	19	20	21	22	23	24	

#### < ECU DIAGNOSIS >

B76 REAR DOOR SPEAKER LH WHITE rie frof Signal Name B	Signal Name I I I I I I I I I I I I I I I I I I I	
	Color of Wire BBR BBR BBR Color of BBR BBR Color of Color of BBR BBR BBR Color of Co	
Connector No. Connector Name Connector Color H.S. Terminal No. 2 2 B	Terminal No.       5       6       6       7       7       7       10       11       12       13       14       15	
аш		
Signal Name	B145       WHRE TO WIRE       WHITE       MITE       1     2       8     9       10     11	
D. Wire of B/4	Connector No. B145 Connector Name WIRE TO WIRE Connector Color WHITE	
Terminal No. 76J 76J	Connector No. Connector Name Connector Color	
	Signal Name	
E TO WIRE TE 2 3 4 4 5 2 3 4 4 5 2 3 2 3 4 4 5 2 3 2 3 4 4 5 2 3 3 4 8 5 2 3 3 5 2 5 2 5 2 5 2 5 2 5		
rr Name WIR au with au	r No. B10 r Name WIR Dr Color WHI 10191817 R/L 0/L	
Connector No. Connector Name Connector Color	Connector No. Connector Name Connector Color 14 15 15 0	
	ALNIA0772GB	

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[MID AUDIO]

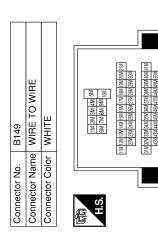
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[MID AUDIO]

Signal Name	I	I	I	I	I	I	I	I	-
Color of Wire	×	SHIELD	>	٩	BR/Y	_	ГG	0	٨
Terminal No. Color of	10	11	12	13	14	17	18	19	20

Connector No.	or No.	'n	B146								
Connector Name WIRE TO WIRE	or Name	∣≥	ШЩ	μ		Ш	lш				
Connector Color BROWN	or Color	Ē	õ	Š							
					г	L					
f	1 2	e	4 5	9		1	2	80	ი	10	Ξ
Ĭ	12 13 14 15 16 17 18 19 20 21 22 23 24	14 1	5 16	17	₽	6	20	51	22	23	24

Signal Name	I	-	—	I
Color of Wire	в	В	ŋ	æ
Terminal No.	-	2	8	6



ALNIA0773GB

SignaLName	I	I	I	I	I	I	I	I	I	I	I
Color of Wire	თ	_	B/W	_	SHIELD	OL	SB	ВВ	G∖Y	0/L	R/L
Terminal No.	53M	54M	58M	59M	60M	66M	67M	68M	M69	78M	79M

**AUDIO UNIT** 

Signal Name	1	I	I	1	1	I	I	I	1	I	I	1	I	1
Color of Wire	ГG	>	в	σ	SHIELD	BR/Y	æ	8	_	٩.	0	>	B/Y	SHIELD
Terminal No.	31M	32M	33M	34M	35M	36M	43M	44M	45M	46M	47M	48M	51M	52M

(54M) 55M 55M 57W 58M 59M 60M (64M 65M 65M 67M 68M 69M 70M

62M 63M

71M 72M 73M 74M 75M 76M 77M 78M 79M 80M

AV-80

Signal Name		I	I	1	1	1	1	I	I	1		VIDEO MONITOR			2 4 6 10 12 2 2 4 6 10 12			Signal Name		GND	GND	D	O/A_SHIELD	DATA_RX	DATA_TX	VIDE0_IN+	VIDEO_IN-	SW_POWER_+5V	FILTERED_BATT	FILTERED_BATT		
Color of		G/Y	8		SHIELD	B/W	Β/Υ	IJ		SHIELD	). R202				2 4 6	c c -		Color of		N/N	B/Y	в	SHIELD	σ		8		G/Y	SB	BR		
Terminal No		\ \	8	6	10	11	12	13	14	15	Connector No.	Connector Name	Connector Color		佢	H.S.		Terminal No		-	2	ε	4	5	9	7	8	10	11	12		
		1	1				Г						T																			
	WIRE			•	12 11 10 9 8			Signal Name		1		Signal Name	1	T	I	I	I	I	I													
	WIRE TO WIRE	WHITE		4 4	16 15 14 13 12		-	Color of Wire	a c	BB	or of	Wire	>	а.	BR/Y		ГG	0	>													
Connector No.	Connector Name	Connector Color					-	Terminal No. Col	2		Col	Terminal No.	12	13	14 BI	17			22													
Conne	Conne	Conne		ſ				Termir				Termin	-	-	-	-	-	-														
	-	1	1				Г				_			7				[			1	I	1	Т.		7						
	REAR DOOR SPEAKER RH					-1		Signal Name		1		O WIRF			111109876	18 17 16 15 14 13 12			olgrial ivarrie	I	I	1	1	1	1							
		r WHITE			]-	_	-	Color of Wire	2	۵۲ B/L	B201		r BROWN	_	10 9 8 7 6	23 22 21 20 19		Color of	Wire	в	ш	σ	œ	8	SHIELD							
Connector No.	Connector Name	Connector Color		Æ		5.		Terminal No. Co	-		Connector No.	Connector Name WIBF TO WIBF	Connector Color			H S			al No.	-	2	ω	6	10	11							
																													AL	NIA07	774GB	

#### < ECU DIAGNOSIS >

[MID AUDIO]

AV-81

Connector No. H204 Connector Name REAR AUDIO REMOTE	Terminal No.	Color of Wire	Signal Name	Connector No. D2 Connector Name WIRE TO WIRE	VIRE
	∞	0	ENABLE		
Connector Color WHITE	<b>б</b>	>	REMOTE_A		
	10	٩.	REMOTE_B		4 5 6 7
	11	BR/Y	REMOTE_C	8 9 10 11 12	13 14 15 16
4 6 8 10 12	12		REMOTE_D		
	15	ш	GND		
Terminal No. Wire Sional Name				Terminal No. Color of Si	Signal Name
- -					ı
n (7					ı
œ					
4 W R_CH_INPUT +					
5 SHIELD SHIELD					
9 B/L ILL+					
7 LG REMOTE GND					
Connector No. D12	Connector No.	D101		Connector No. D112	
Connector Name FRONT DOOR SPEAKER LH	Connector Name WIRE TO WIRE	e WIRE TO	D WIRE	Connector Name FRONT DOOR SPEAKER RH	OR SPEAKEF
Connector Color WHITE	Connector Color	<ul> <li>WHITE</li> </ul>		Connector Color WHITE	
朝 H.S.	同 H.S.	1 2 5 6 7 8	<b>a</b> 3 4 9 10	H.S.	
Terminal No. Color of Signal Name	Terminal No.	Color of Wire	Signal Name	Terminal No. Color of Si	Signal Name
1 L/W –	2	L/B	1	1 W/B	ı
2 L/R –		W/B	1	2 L/B	I

#### < ECU DIAGNOSIS >

< ECU DIAGNOSIS >	[MID AUDIO]
Connector No.     D208       Connector Name     REAR DOOR TWEETER LH       Connector Color     BROWN       Terminal No.     Color of       2     B/Y	Connector No.       D308         Connector Name       REAR DOOR TWEETER RH         Connector Color       BROWN         Time       Time         Terminal No.       Color of Color       Signal Name         2       R/L       -
	F
Connector No.     D207       Connector Name     REAR DOOR SPEAKER LH       Connector Name     REAR DOOR SPEAKER LH       Connector Color     WHITE       Terminal No.     Color of       1     SB       2     B/Y	D307 REAR DOOR SPEAKER RH WHITE In of Signal Name
D207       REAR DOOI       MHITE       Si       Si	H H H H H H H H H H H H H H H H H H H
Connector No. D207 Connector Name REAR C Connector Color WHITE Connector Color WHITE Terminal No. Color of 1 SB 1 SB	
Connector No. Connector Nan Connector Colo H.S. Terminal No.	Connector Nan Connector Nan Connector Colo
	K
WIRE 5 16 17 18 5 16 17 18 5 10 5 10 1 10	WIRE           -
No.         D201           Name         WIRE T           Color         WHITE           SB         SB	Connector No. D301 Connector Name WIRE T Connector Color WHITE Terminal No. Color WHITE 14 R/L 15 O/L 15 O/L
Connector No. Connector Name Connector Name Connector Color 14 15 15	Connector Nan Connector Nan Connector Nan Connector Nan Connector Nan (14 14 15
	Alnia0776GB

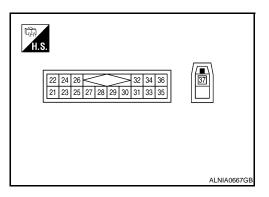
# < ECU DIAGNOSIS >

[MID AUDIO]

# SATELLITE RADIO TUNER

## **Reference Value**





#### PHYSICAL VALUES

Teri	minal	Description				Reference value
+	-	Signal name	Input/ Output		Condition	(Approx.)
22 (R)	21 (G)	Satellite radio sound signal LH	Output	Ignition switch ON	When satellite radio mode is selected	(V) 1 0 -1 * 2ms SKIB3609E
24 (W)	23 (B)	Satellite radio sound signal RH	Output	Ignition switch ON	When satellite radio mode is selected	(V) 1 -1 -1 SKIB3609E
25		Shield		_	—	_
26		Shield		—	—	_
28 (L)	Ground	Request signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 • + 10ms SKIA9299J
29 (O/L)	Ground	Communication signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	(V) 10 -10 -10 -10 -10 -10 -10 -10

[MID AUDIO]

# SATELLITE RADIO TUNER

#### < ECU DIAGNOSIS >

#### [MID AUDIO]

Terr	ninal	Description				Reference value	Δ
+	_	Signal name	Input/ Output		Condition	(Approx.)	A
				Ignition		(V) 10	В
30 (W/L)	Ground	Communication signal (CONT→SAT)	Input	switch ON	When satellite radio mode is selected	0 -10 -10 -10 -10 -10 -10 -10 -10 -10 -1	C
32 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage	
36 (V)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage	E
37 (B)	_	Satellite antenna	Input	_	_	_	F

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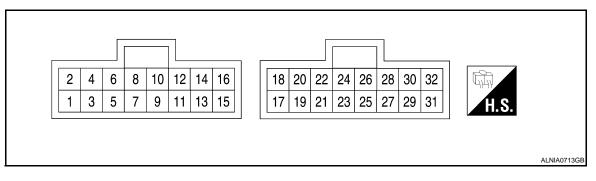
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# < ECU DIAGNOSIS >

# DVD PLAYER

**Reference Value** 

INFOID:000000001689303



#### PHYSICAL VALUES

	minal e color)	Description			Condition	Reference value
+	-	Signal name	Input/ Output		Condition	(Approx.)
1 (B)	2 (W)	DVD audio signal LH	Output	Ignition switch ON	With operation of the DVD player	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
3 (R)	4 (G)	DVD audio signal RH	Output	Ignition switch ON	With DVD player operation	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
9 (L/W)	Ground	Audio ON	Output	Ignition switch ON	With DVD player operation	Battery voltage
10 (BR)	Ground	Illumination control	Input	Ignition switch ON	With lighting switch in 1st or 2nd position	Varies between 0 and Battery voltage
11 (Y/L)	Ground	Family entertainment sys- tem enable	Input	Ignition switch ON	With DVD player operation	Battery voltage
12 (R/L)	Ground	Illumination power	Input	Ignition switch ON	With lighting switch in 1st or 2nd position	Battery voltage
15 (V)	Ground	ACC power	Input	Ignition switch ACC or ON	_	Battery voltage
16 (Y)	Ground	Battery power	Input	—	_	Battery voltage

# **DVD PLAYER**

# < ECU DIAGNOSIS >

#### [MID AUDIO]

	ninal color)	Description	Condition Reference va		Reference value	A	
+	_	Signal name	Input/ Output	(Approx.)		(Approx.)	
19 (B/W)	Ground	Ground	_	Ignition switch ON	_	0V	В
21 G/Y	Ground	Switch power	Output	Ignition switch ON	With DVD player operation	5V	С
22 (B)	Ground	Ground	_	Ignition switch ON	_	0V	D
23 (B/W)	Ground	VTR (+)	Output	Ignition switch ON	With DVD player operation	_	E
24 (L)	Ground	VTR (-)	Output	Ignition switch ON	With DVD player operation	_	F
26		Shield		—	_	_	
27 (B/Y)	Ground	Ground	_	Ignition switch ON	_	OV	G
28 (Y)		Data receive	Input		_	_	Н
29 (BR)		Data transmit	Output		_	_	
31 (SB)	Ground	Battery power	Output		_	Battery voltage	J
32 (BR)	Ground	Battery power	Output	—	_	Battery voltage	J

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# SYMPTOM DIAGNOSIS AUDIO SYSTEM

# Symptom Table

INFOID:000000001572622

#### AUDIO SYSTEM

Symptom	Possible cause	Reference page
Inoperative	<ul><li>AV control unit power circuit</li><li>AV control unit</li></ul>	<ul> <li><u>AV-46</u></li> <li><u>AV-45</u></li> </ul>
Steering switch does not operate	<ul><li>Steering switch</li><li>AV control unit</li></ul>	<ul> <li><u>AV-58</u></li> <li><u>AV-45</u></li> </ul>
All speakers do not sound	<ul><li>AV control unit</li><li>AV control unit power circuit</li></ul>	<ul> <li><u>AV-45</u></li> <li><u>AV-46</u></li> </ul>
One or several speakers do not sound	<ul> <li>Front door speaker</li> <li>Front tweeter</li> <li>Rear door speaker</li> <li>Rear door tweeter (crew cab)</li> </ul>	<ul> <li><u>AV-50</u></li> <li><u>AV-52</u></li> <li><u>AV-54</u></li> <li><u>AV-56</u></li> </ul>

#### CD

Symptom	Possible cause	Reference page
CD cannot be inserted.		
CD cannot be ejected.		0)/ 45
The CD cannot be played.	AV control unit	<u>AV-45</u>
The sound skips, stops suddenly, or is distorted.		

#### SATELLITE RADIO

Symptom	Possible cause	Reference page
Inoperative	<ul> <li>Satellite radio tuner power or ground circuit</li> <li>Satellite radio tuner communication circuit</li> <li>Satellite radio tuner</li> </ul>	• <u>AV-47</u> • <u>AV-60</u> • <u>AV-47</u>
Right or left channel does not sound	<ul> <li>Satellite radio tuner right channel audio signal circuit</li> <li>Satellite radio tuner left channel audio signal circuit</li> <li>Satellite radio tuner</li> </ul>	<ul> <li><u>AV-63</u></li> <li><u>AV-63</u></li> <li><u>AV-47</u></li> </ul>

#### DVD PLAYER

Symptom	Possible cause	Reference page
DVD player inoperative	<ul><li>Power supply and ground circuits</li><li>DVD player</li></ul>	<ul> <li><u>AV-48</u></li> <li><u>AV-48</u></li> </ul>
No sound when playing a DVD	<ul><li>Audio signal circuits</li><li>AV control unit</li><li>DVD player</li></ul>	<ul> <li><u>AV-86</u></li> <li><u>AV-46</u></li> <li><u>AV-48</u></li> </ul>
Video monitor is inoperative/does not display properly	<ul> <li>Power supply and ground circuits</li> <li>Video out circuit</li> <li>DVD player</li> <li>Video monitor</li> </ul>	<ul> <li><u>AV-48</u></li> <li><u>AV-86</u></li> <li><u>AV-48</u></li> <li><u>AV-48</u></li> </ul>
DVD remote control is inoperative/does not operate properly	<ul><li>DVD player</li><li>Rear audio and remote control unit</li></ul>	<ul> <li><u>AV-48</u></li> <li><u>AV-86</u></li> </ul>
Headphones inoperative	<ul> <li>Headphone batteries</li> <li>Headphone audio signal circuits from AV control unit</li> <li>AV control unit</li> <li>Rear audio remote control unit</li> </ul>	<ul> <li><u>AV-86</u></li> <li><u>AV-46</u></li> <li><u>AV-86</u></li> </ul>

#### AV-88

#### NORMAL OPERATING CONDITION

#### < SYMPTOM DIAGNOSIS >

# NORMAL OPERATING CONDITION

#### Description

The majority of the audio concerns are the result of outside causes (bad CD, electromagnetic interference, etc.).

NOISE

The following noise results from variations in field strength, such as fading noise and multi-path noise, or c external noise from trains and other sources. It is not a malfunction.

- 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 the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off mountains or buildings.

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 determine the cause. **NOTE:** 

The source of the noise can be found easily by listening to the noise while removing the fuses of electrical components, one by one.

Type of Noise and Possible Cause

C	Occurrence condition	Possible cause
Occurs only when engine is ON.	A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed.	Ignition components
The occurrence of the noise is linked with the operation of the fuel pump.		Fuel pump condenser
Noise only occurs when various	A cracking or snapping sound occurs with the operation of various switches.	Relay malfunction, AV control unit malfunc- tion
electrical components are oper- ating.	The noise occurs when various motors are operat- ing.	<ul><li>Motor case ground</li><li>Motor</li></ul>
The noise occurs constantly, not just under certain conditions.		<ul> <li>Rear defogger coil malfunction (crew cab)</li> <li>Open circuit in printed heater</li> <li>Poor ground of antenna feeder line</li> </ul>
A cracking or snapping sound occurs while the vehicle is being driven, especially when it is vibrating excessively.		<ul> <li>Ground wire of body parts</li> <li>Ground due to improper part installation</li> <li>Wiring connections or a short circuit</li> </ul>

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[MID AUDIO]

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# < PRECAUTION > PRECAUTION PRECAUTIONS

#### Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSION-ER"

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 and SB section of this Service Manual.

#### WARNING:

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

## PREPARATION

[MID AUDIO]

# < PREPARATION > PREPARATION

# PREPARATION

# **Commercial Service Tools**

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Power tool	ol name	Description	(
		Loosening bolts and nuts	(
	wer tool		Ε
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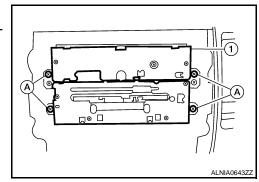
# < ON-VEHICLE REPAIR > ON-VEHICLE REPAIR AUDIO UNIT

Removal and Installation

#### AV SWITCH

Removal

- 1. Disconnect the battery negative terminal.
- 2. Remove the cluster lid C. Refer to IP-13, "Removal and Installation".
- 3. Remove the audio unit screws (A), using power tool.
- 4. Pull out the audio unit (1) and disconnect the audio unit connectors.



Installation Installation is in the reverse order of removal. INFOID:000000001586956

FRONT TWEETER		
< ON-VEHICLE REPAIR >	[MID AUDIO]	
FRONT TWEETER		А
Removal and Installation	INFOID:000000001586958	~
For removal and installation, refer to AV-34, "Removal and Installation".		В
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#### < ON-VEHICLE REPAIR > CENTER SPEAKER

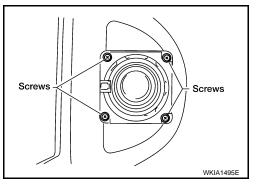
**Removal and Installation** 

#### **CENTER SPEAKER**

Removal

- 1. Remove the center console. Refer to IP-18, "Removal and Installation".
- 2. Remove the cluster lid D. Refer to IP-14, "Removal and Installation".
- 3. Remove the center speaker screws and remove the center speaker.

INFOID:000000001586959



Installation Installation is in the reverse order of removal.

# FRONT DOOR SPEAKER

< ON-VEHICLE REPAIR >	[MID AUDIO]
FRONT DOOR SPEAKER	
Removal and Installation	INFOID:000000001586960
For removal and installation, refer to AV-35, "Removal and Installation".	
	1

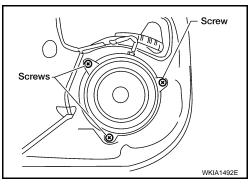
## REAR DOOR SPEAKER

Removal and Installation

#### REAR DOOR SPEAKER

Removal

- 1. Remove the rear door finisher. Refer to <u>INT-10, "Removal and Installation"</u> Crew Cab or <u>INT-10, "Removal and Installation"</u> King Cab.
- 2. Remove the three rear door speaker screws and remove the rear door speaker.



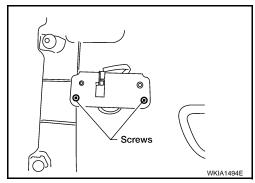
Installation

Installation is in the reverse order of removal.

#### REAR DOOR TWEETER

Removal

- 1. Remove the rear door finisher. Refer to <u>INT-10, "Removal and Installation"</u> Crew Cab or <u>INT-10, "Removal and Installation"</u> King Cab.
- 2. Remove the rear door tweeter screws and remove the rear door tweeter.
- 3. Disconnect the rear door tweeter connector.



Installation Installation is in the reverse order of removal.

AV-96

INFOID:000000001586961

# < ON-VEHICLE REPAIR >

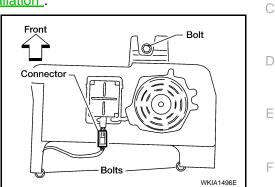
# WOOFER

#### Removal and Installation

#### SUBWOOFER (PREMIUM SYSTEM)

#### Removal

- 1. Remove the front driver seat. Refer to SE-28, "Removal and Installation".
- 2. Remove the subwoofer bolts.
- 3. Disconnect the subwoofer connector and remove the subwoofer.



Installation Installation is in the reverse order of removal.

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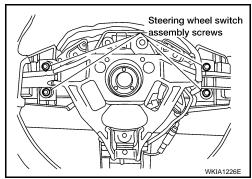
# STEERING SWITCH

Removal and Installation

#### STEERING WHEEL AUDIO CONTROL SWITCHES

Removal

- 1. Remove the steering wheel. Refer to ST-12. "Removal and Installation".
- 2. Remove the steering wheel rear cover screws and remove the steering wheel rear cover.
- 3. Remove the steering wheel switch assembly screws and remove the steering wheel switches.



Installation Installation is in the reverse order of removal. INFOID:000000001586963

[MID AUDIO]

# REAR AUDIO REMOTE CONTROL UNIT

#### Removal and Installation

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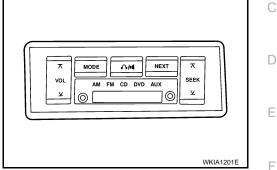
#### REAR AUDIO REMOTE CONTROL UNIT

Removal

 Carefully remove the rear audio remote control unit from the rear roof console assembly.
 CAUTION:
 Wrap removal tool with clean shop cloth to prevent damage

to the headliner.

2. Disconnect the connector and remove the rear audio remote control unit.



Installation

Installation is in the reverse order of removal.

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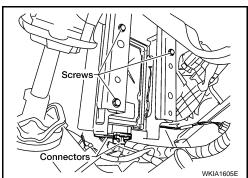
#### < ON-VEHICLE REPAIR >

# BOSE AMP.

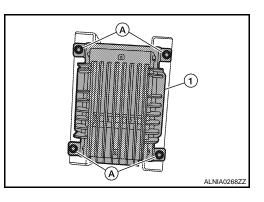
Removal and Installation

#### REMOVAL

- 1. Remove the BCM. Refer to BCS-50, "Removal and Installation".
- 2. Remove the accelerator pedal. Refer to ACC-3, "Removal and Installation".
- 3. Disconnect the Bose speaker amp. connectors.
- 4. Remove the Bose speaker amp. and bracket assembly screws and slide the Bose speaker amp. bracket assembly down.



5. Remove the Bose speaker amp.screws (A). then remove the Bose speaker amp. (1).



INSTALLATION Installation is in the reverse order of removal.

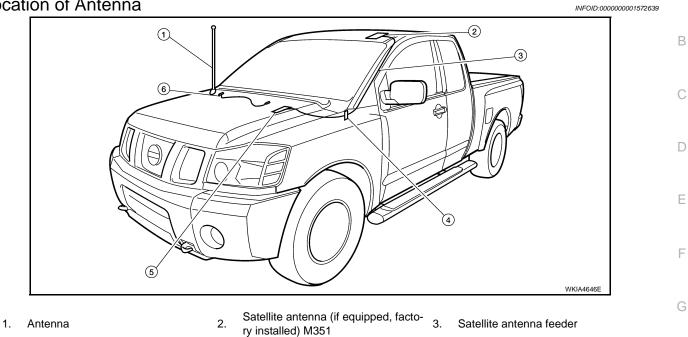
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### **AUDIO ANTENNA**

### < ON-VEHICLE REPAIR > AUDIO ANTENNA

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Location of Antenna



M69, M350 4.

- 5. Satellite radio tuner M129
- Main feeder cable 6.

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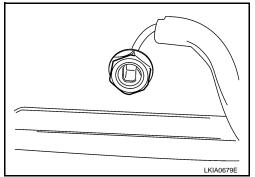
# SATELLITE RADIO ANTENNA

Removal and Installation

#### SATELLITE RADIO ANTENNA

Removal

- 1. Lower the headliner. Refer to <u>INT-21, "Removal and Installa-</u> tion".
- 2. Disconnect the satellite radio antenna connector.
- 3. Remove the satellite radio antenna nut.
- 4. Remove the satellite radio antenna.



Installation Installation is in the reverse order of removal. INFOID:000000001601301

# SATELLITE RADIO TUNER

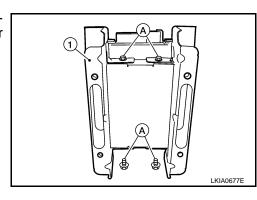
Removal and Installation

#### SATELLITE RADIO TUNER

Removal

- 1. Remove the accelerator pedal assembly. Refer to ACC-3. "Removal and Installation".
- 2. Remove the BCM. Refer to BCS-50, "Removal and Installation".
- 3. Disconnect the audio amp. and the satellite radio tuner connectors.
- 4. Remove the audio amp./satellite radio tuner bracket screws and slide the audio amp./satellite radio tuner bracket down.

5. Remove the satellite radio tuner screws (A) and remove the satellite radio tuner from the audio amp./satellite radio tuner bracket (1).



Screw

Connectors

Installation Installation is in the reverse order of removal. .

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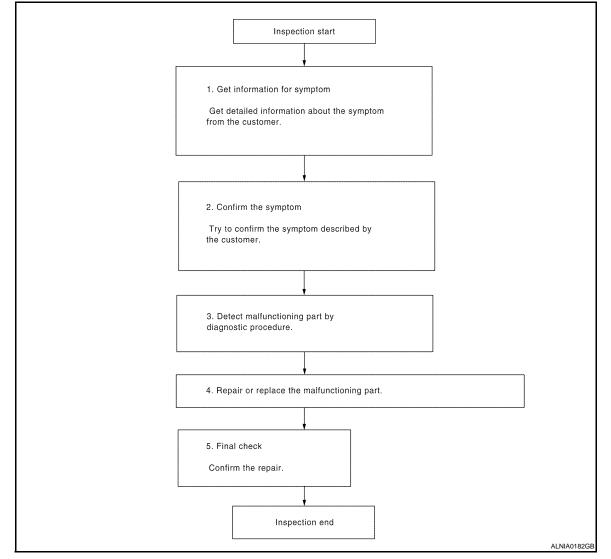
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# BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

#### Work Flow

INFOID:000000001663476

**OVERALL SEQUENCE** 



#### DETAILED FLOW

#### **1.**GET INFORMATION FOR SYMPTOM

Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred).

#### >> GO TO 2

## **2.**CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer. Verify relation between the symptom and the condition when the symptom is detected.

#### >> GO TO 3

**3.** DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

# AV-104

# DIAGNOSIS AND REPAIR WORKFLOW

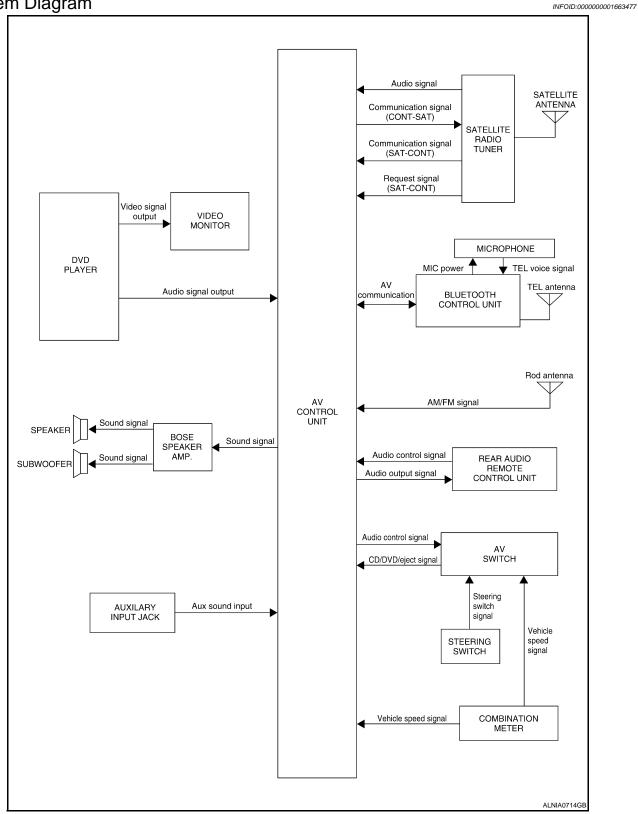
BASIC INSPECTION >	
DADIC INDECTION >	

#### [PREMIUM WITHOUT NAVIGATION]

Is malfunctioning part detected?	
YES >> GO TO 4	А
NO >> GO TO 2	
4.REPAIR OR REPLACE THE MALFUNCTIONING PART	В
<ol> <li>Repair or replace the malfunctioning part.</li> <li>Reconnect parts or connectors disconnected during Diagnostic Procedure.</li> </ol>	
	0
>> GO TO 5	С
5.FINAL CHECK	
Refer to confirmed symptom in step 2, and make sure that the symptom is not detected.	D
Was the repair confirmed?	
YES >> Inspection End. NO >> GO TO 2	Е
NO >> GO TO 2	
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# < FUNCTION DIAGNOSIS > FUNCTION DIAGNOSIS AUDIO SYSTEM

System Diagram



System Description

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AUDIO SYSTEM

#### < FUNCTION DIAGNOSIS >

The audio system consists of the following components	
Audio unit	А
Audio amp.	A
Rod antenna	
Steering wheel audio control switches	
AV switch	В
Rear audio remote control unit	
Front door speakers	
Front tweeters	С
Center speaker	0
Rear door speakers	
Rear door tweeters (crew cab)	
Subwoofer	D
When the audio system is on, radio signals are received by the rod antenna. The audio unit then sends audio	
signals to the audio amp. The audio amp. amplifies the audio signals before sending them to the front door	
speakers, front tweeters, center speaker, rear door speakers, rear door tweeters (crew cab) and the sub-	Е
woofer.	
Refer to Owner's Manual for audio system operating instructions.	
	F
SATELLITE RADIO SYSTEM	Г
The satellite radio system consists of the following components	
Satellite antenna	
Satellite radio tuner	G
When the satellite radio system is on, radio signals are supplied to the satellite radio tuner from the satellite	
antenna. The satellite radio tuner then sends audio signals to the audio unit.	
Refer to Owner's Manual for satellite radio system operating instructions.	Н
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. Refer to Owner's Manual for operating instructions.	
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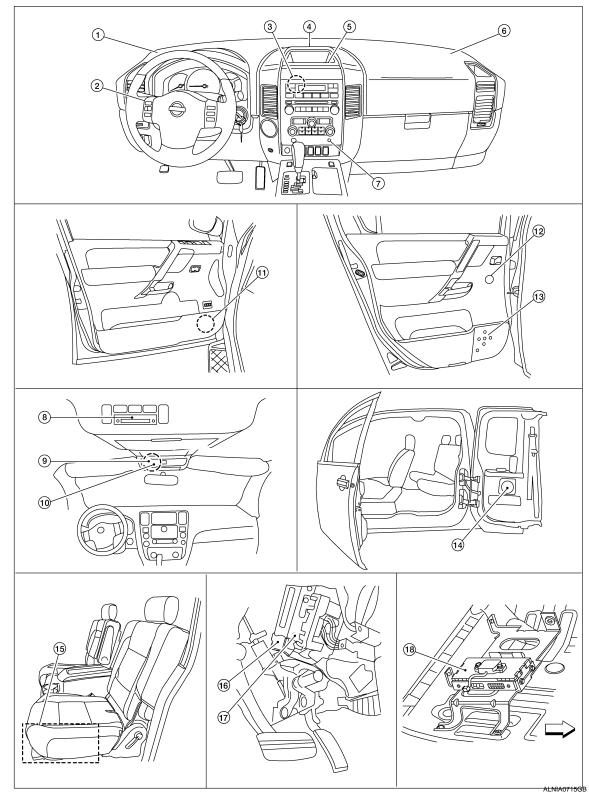
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# Component Parts Location

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[PREMIUM WITHOUT NAVIGATION]



#### C:FRONT

- 1. Front tweeter LH M109
- 4. Center speaker M110
- 7. Aux jack M104

- 2. Steering wheel audio control switch- 3. es
- 5. AV switch M98
- 8. Rear audio remote control unit R204 9.
- Audio unit M42, M43, M44, M45, M46
- 6. Front tweeter RH M111
  - Microphone R109

### **AUDIO SYSTEM**

### < FUNCTION DIAGNOSIS >

- 10. Bluetooth ON indicator R105
- 13. Rear door speaker (crew cab) LH D207 RH D307
- Audio amp M112, M113 (view behind 17. Satellite radio tuner M41, M129 instrument panel above accelerator pedal)

# **Component Description**

[PREMIUM WITHOUT NAVIGATION]

11. Front door speaker 12. Rear door tweeter (crew cab) А LH D12 LH D208 RH D112 RH D308 14. Rear door speaker (king cab) 15. Subwoofer B72 (under driver's seat) LH B76 В RH B159 18. Bluetooth control unit B141, B142 (with Bluetooth) (view with passenger С front seat removed)

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Part name	Description			
Audio unit	Controls audio system and satellite radio system functions			
Audio amp.	Receives power (amp ON) and audio signals from Audio unit and outputs audio signals to each speaker.			
Steering wheel audio control switches	<ul><li>Audio operation can be operated</li><li>Steering switch signal is output to audio unit</li></ul>			
Front door speakers	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high, mid and low range sounds</li></ul>			
Front tweeters	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high range sounds</li></ul>			
Center speaker	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high range sounds</li></ul>			
Rear door speakers	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high, mid and low range sounds</li></ul>			
Rear door tweeters (crew cab)	<ul> <li>Outputs audio signal from audio amp.</li> <li>Outputs high range sounds</li> </ul>			
Subwoofer	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs low range sounds</li></ul>			
Satellite radio tuner	<ul><li>Receives radio signals from satellite antenna</li><li>Sends audio signals to Audio unit</li></ul>			
Satellite antenna	Audio signal (satellite radio) is received and output to Audio unit.			

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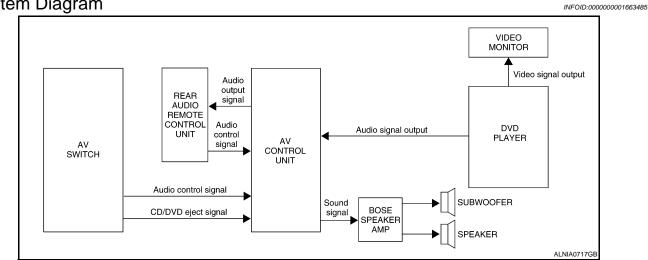
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# **DVD PLAYER**

### < FUNCTION DIAGNOSIS > DVD PLAYER

### System Diagram



# System Description

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The DVD entertainment system consists of the following components

- Audio unit
- DVD player
- Video monitor
- AV switch
- · Steering wheel audio control switches
- Rear audio remote control unit
- Audio amp.
- Front tweeters
- Front door speakers
- Center speaker
- Rear door tweeters (crew cab)
- Rear door speakers
- Subwoofer

When the DVD entertainment system is on, video signals are sent from the DVD player to the video monitor. Audio signals are sent to the Audio unit. Audio signals can be directed through the wireless infrared headphones or through the audio amp. to the vehicle speakers. Refer to the Owner's Manual for complete DVD entertainment system operating instructions.

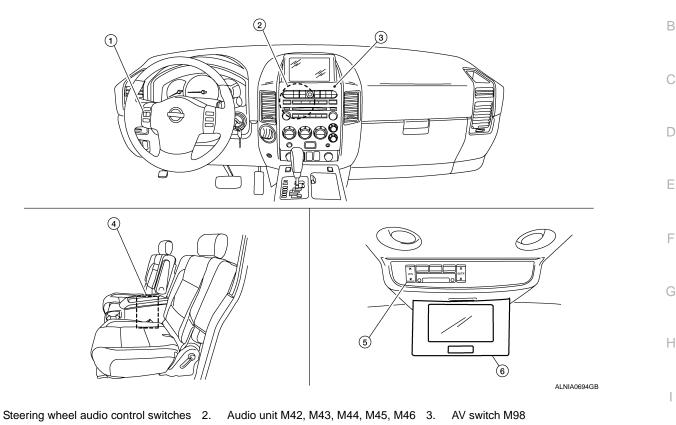
# AV-110

# < FUNCTION DIAGNOSIS >

# **Component Parts Location**

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- 4. DVD player M205 (located in center 5. console)
- Rear audio remote control unit R204

Av switch M90
 Video monitor R202

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# **Component Description**

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Part name	Description	
DVD player	<ul><li>Outputs DVD video to video monitor</li><li>Outputs DVD audio to the audio unit</li></ul>	L
Video monitor	Receives and displays the DVD video signal	
Audio unit	Controls audio system and DVD entertainment system functions	M
Audio amp.	<ul><li>Recieves audio signals from the audio unit</li><li>Outputs amplified audio signals to the speakers</li></ul>	11
AV switch	<ul><li> All audio operations can be operated</li><li> Switch signal is output to the audio unit</li></ul>	AV
Rear audio remote control unit	<ul> <li>Audio and DVD functions can be operated</li> <li>Switch signal is output to the audio unit</li> <li>Receives audio signal from audio unit for headphones</li> </ul>	0
Steering wheel audio control switches	<ul> <li>Audio operation can be operated</li> <li>Steering switch signal (operation signal) is output to audio unit</li> </ul>	
Front door speakers	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high, mid and low range sounds</li></ul>	P
Front tweeters	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high range sounds</li></ul>	
Center speaker	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high, mid and low range sounds</li></ul>	

# AV-111

# **DVD PLAYER**

### < FUNCTION DIAGNOSIS >

### [PREMIUM WITHOUT NAVIGATION]

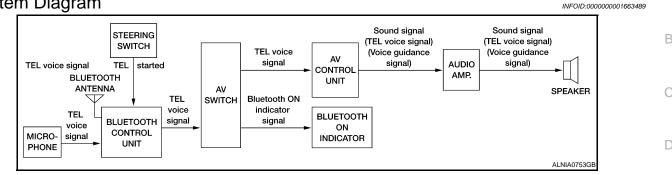
Part name	Description
Rear door tweeters (crew cab)	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high range sounds</li></ul>
Rear door speakers	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high, mid and low range sounds</li></ul>
Subwoofer	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs low range sounds</li></ul>

## HANDS-FREE PHONE SYSTEM

### < FUNCTION DIAGNOSIS >

# HANDS-FREE PHONE SYSTEM





### System Description

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Refer to the Owner's Manual for Bluetooth telephone system operating instructions. **NOTE:** 

Cellular telephones must have their wireless connection set up (paired) before using the Bluetooth telephone system.

Bluetooth telephone system allows users who have a Bluetooth equipped cellular telephone to make a wireless connection between their cellular telephone and the Bluetooth control unit. Hands-free cellular telephone calls can be sent and received. Personal memos can be created using the Nissan Voice Recognition system. Some Bluetooth cellular telephones may not be recognized by the Bluetooth control unit. When a cellular telephone or the Bluetooth control unit is replaced, the telephone must be paired with the Bluetooth control unit. Different cellular telephones may have different pairing procedures. Refer to the cellular telephone operating manual.

### **BLUETOOTH CONTROL UNIT**

When the ignition switch is turned to ACC or ON, the Bluetooth control unit will power up. During power up, the Bluetooth control unit is initialized and performs various self checks. Initialization may take up to 10 seconds. If a phone is present in the vehicle and paired with the Bluetooth control unit, Nissan Voice Recognition will then become active. Bluetooth telephone functions can be turned off using the Nissan Voice Recognition system.

### STEERING WHEEL AUDIO CONTROL SWITCHES

When buttons on the steering wheel audio control switch are pushed, the resistance in steering wheel audio control switch circuit changes depending on which button is pushed. The Bluetooth control unit uses this signal to perform various functions while navigating through the voice recognition system.

The following functions can be performed using the steering wheel audio control switch:

- Initiate Self Diagnosis of the Bluetooth telephone system
- Start a voice recognition session
- Answer and end telephone calls
- Adjust the volume of calls
- Record memos

### MICROPHONE

The microphone is located in the roof console assembly. The microphone sends a signal to the Bluetooth con-I trol unit. The microphone can be actively tested during self-diagnosis.

### AV CONTROL UNIT

The AV control unit receives signals from the Bluetooth control unit and sends audio signals to the audio amp. then on to the speakers.

### **Component Parts Location**

Refer to AV-108, "Component Parts Location".

AV-113

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# < FUNCTION DIAGNOSIS >

### HANDS-FREE PHONE SYSTEM [PREMIUM WITHOUT NAVIGATION]

Component Description

Part name	Description		
Audio unit	<ul> <li>Receives telephone voice signal from Bluetooth control unit</li> <li>Sends telephone voice and voice guidance signals to the speakers</li> </ul>		
Audio amp.	<ul><li>Recieves audio signals from the audio unit</li><li>Outputs amplified audio signals to the speakers.</li></ul>		
Front door speaker			
Front tweeter	Receives telephone voice and voice guidance signals from the audio amp.		
Center speaker			
Steering wheel audio control switches	<ul><li>Start a voice recognition session</li><li>Answer and end telephone calls</li><li>Adjust the volume level</li></ul>		
Microphone	Sends voice signals to Bluetooth control unit		
Bluetooth control unit	Controls hands-free phone functions		
Bluetooth antenna	Sends telephone voice signal to Bluetooth control unit		
Bluetooth ON indicator	Controlled by the Bluetooth control unit		

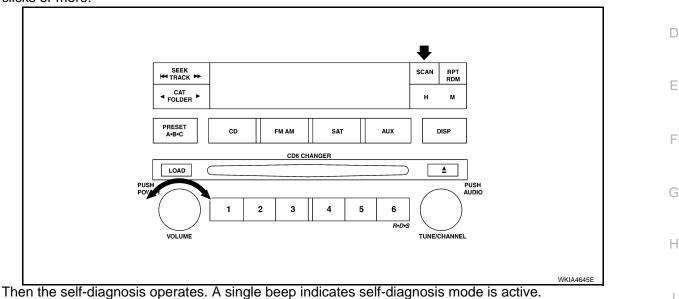
< FUNCTION DIAGNOSIS >

# DIAGNOSIS SYSTEM (AUDIO UNIT) AV SWITCH

**AV SWITCH : Component Function Check** 

STARTING THE SELF-DIAGNOSIS MODE

- 1. Turn ignition switch from OFF to ACC.
- Press and hold the "SCAN" switch and turn the volume control dial clockwise or counterclockwise for 30 C clicks or more.



- 3. Initially, all display segments will be illuminated.
- 4. Press each switch. When each switch is pressed, its name and communication code will be displayed **NOTE:**

CD player LOAD and EJECT buttons are not included in this test and will not change the display when  $^{-J}$  pressed.

### DIAGNOSIS FUNCTION

- It can check for continuity of the switches by sounding the beep when each AV switch and steering switch is
  pressed.
- It can check for continuity of harness between AV switch and steering switch.

EXITING THE SELF-DIAGNOSIS MODE

Turn ignition switch OFF. Then the self-diagnosis ends.

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### DIAGNOSIS SYSTEM (BLUETOOTH CONTROL UNIT) AGNOSIS > [PREMIUM WITHOUT NAVIGATION]

### < FUNCTION DIAGNOSIS >

# DIAGNOSIS SYSTEM (BLUETOOTH CONTROL UNIT)

### **Diagnosis Description**

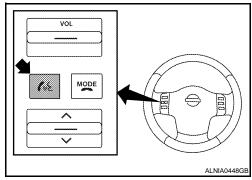
The Bluetooth control unit has two diagnostic checks. The first diagnostic check is performed automatically every ignition cycle during control unit initialization. The second diagnostic check is performed by the technician using the steering wheel audio control switches prior to trouble diagnosis.

### BLUETOOTH CONTROL UNIT INITIALIZATION CHECKS

- Internal control unit failure
- Bluetooth antenna connection open or shorted
- Steering wheel audio control switches [SEND( ♥ ↓ ≥)/END( ▲ ≥)] stuck closed
- Vehicle speed pulse count
- Microphone connection test (with playback to operator)
- Bluetooth inquiry check

### **OPERATION PROCEDURE**

- 1. Turn ignition switch to ACC or ON.
- 2. Wait for the Bluetooth system to complete initialization. This may take up to 10 seconds.
- 3. Press and hold the steering wheel audio control switch  $\checkmark \checkmark_{k}$  button for at least 5 seconds. The Bluetooth system will begin to play a verbal prompt.

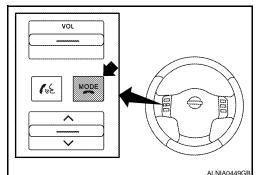


- While the prompt is playing, press and hold the steering wheel audio control switch <sup>MOE</sup> button until you hear the "Diagnostics mode" prompt. The Bluetooth system will sound a 5 second beep.
- 5. While the beep is sounding, press and hold the steering wheel audio control switch button again until you hear prompts.
- The Bluetooth system has now entered into the diagnostic mode. Results of the diagnostic checks will be verbalized to the technician. Refer to <u>AV-116</u>, "Work Flow".
- After the failure records are reported, an interactive microphone test will be performed. Follow the voice prompt. If the microphone test fails refer to <u>AV-116</u>, "Work Flow".
- 8. Self-diagnosis mode is complete when the voice prompt says "All diagnostic functions completed".

### Work Flow

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Failure Message	Action		
"Internal failure"	Replace Bluetooth control unit. Refer to AV-207, "Removal and Installation".		
"Bluetooth antenna open"	1. Inspect harness connection.		
"Bluetooth antenna shorted"	2. Replace Bluetooth antenna. Refer to <u>AV-206, "Removal and Installation"</u> .		
"Phone/Send for Hands Free System is stuck"	Check steering wheel audio control switches. Refer to <u>AV-142, "Description"</u> .		
"Phone/End for the Hands Free System is stuck"	Check steering wheel additio control switches. Relet to <u>AV-142, Description</u> .		
"Microphone test" (failed interactive test)	<ol> <li>Inspect harness between Bluetooth control unit and microphone.</li> <li>Replace microphone. Refer to <u>AV-205, "Removal and Installation"</u>.</li> </ol>		



### AV-116

# < COMPONENT DIAGNOSIS > COMPONENT DIAGNOSIS POWER SUPPLY AND GROUND CIRCUIT AUDIO UNIT

# **AUDIO UNIT : Diagnosis Procedure**

# 1.CHECK FUSES

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

Unit	Terminals	Signal name	Fuse No.	D
Audio unit	6	Battery power	31	
	10	Ignition switch ACC or ON	4	Е

### Are the fuses OK?

YES >> GO TO 2

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

# 2. POWER SUPPLY CIRCUIT CHECK

- Disconnect audio unit connector M43. 1
- 2. Check voltage between the audio unit connector M43 and ground.

(	(+)		OFF	ACC	ON
Connector	Terminal	(-)	011	700	
M43	6	Ground	0V	Battery voltage	Battery voltage
10145	10	Ground	Battery voltage	Battery voltage	Battery voltage

### Are the voltage results as specified?

YES >> GO TO 3 NO

>> • Check connector housing for disconnected or loose terminals. • Repair harness or connector.

# **3.**GROUND CIRCUIT CHECK

Inspect audio unit case ground.

Does case ground pass inspection?

### YES >> Inspection End.

>> Repair audio unit case ground. NO **AV SWITCH** 

# **AV SWITCH : Diagnosis Procedure**

### 1.CHECK FUSE

Check that the fuses for the AV switch are not blown.

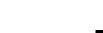
Unit	Terminal	Signal name	Fuse No.	
AV switch	1	Battery	31	Ρ
AV SWICH	2	Ignition switch ACC or ON	4	

### Are the fuses OK?

YES >> GO TO 2

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

2. POWER SUPPLY CIRCUIT CHECK



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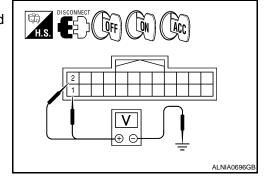
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# POWER SUPPLY AND GROUND CIRCUIT

### < COMPONENT DIAGNOSIS >

- 1. Disconnect AV switch connector M98.
- 2. Check voltage between the AV switch connector M98 and ground.

(+)		(-)	OFF	ACC	ON
Connector	Terminal	()	OIT	100	ON
M98	1	Ground	Battery voltage	Battery voltage	Battery voltage
W90	2	Ground	0V	Battery voltage	Battery voltage



### Are the voltage results as specified?

```
YES >> GO TO 3
NO >> • Check of
```

>> • Check connector housings for disconnected or loose terminals.

- Repair harness or connector.
- **3.**GROUND CIRCUIT CHECK
- 1. Turn ignition switch OFF.
- 2. Check continuity between AV switch harness connector M98 and ground.

Connector	Terminal		Continuity
M98	5	Ground	Yes

Are the continuity results as specified?

YES >> Inspection End.

NO >> Repair harness or ground.

# SATELLITE RADIO TUNER

# SATELLITE RADIO TUNER : Diagnosis Procedure

# 1.CHECK FUSES

Check that the following fuses of the satellite radio tuner (factory installed) are not blown.

Unit	Terminals	Signal name	Fuse No.
Satellite radio tuner (factory in-	32	Battery power	31
stalled)	36	Ignition switch ACC or ON	4

### Are the fuses OK?

YES >> GO TO 2

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

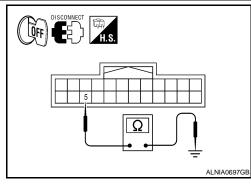
# 2. POWER SUPPLY CIRCUIT CHECK

- 1. Turn ignition switch OFF.
- 2. Disconnect satellite radio tuner (factory installed) connector M41.
- 3. Check voltage between the satellite radio tuner (factory installed) and ground.

(+)		(-)	OFF	ACC	ON
Connector	Terminal	(-)	OIT	700	
M41	32	Ground	Battery voltage	Battery voltage	Battery voltage
17141	36		0V	Battery voltage	Battery voltage

Are the voltage readings as specified?

YES >> GO TO 3



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# AV-118

# POWER SUPPLY AND GROUND CIRCUIT

# < COMPONENT DIAGNOSIS > [PREMIUM] NO >> • Check connector housings for disconnected or loose terminals. • Repair harness or connector. 3.GROUND CIRCUIT CHECK Inspect satellite radio tuner (factory installed) case ground. Does case ground pass inspection? YES >> Inspection End. NO >> Repair satellite radio tuner (factory installed) case ground. DVD PLAYER DVD PLAYER DVD PLAYER : Diagnosis Procedure 1.CHECK FUSE

Check that the following fuses for the DVD player are not blown.

Unit	Terminal	Signal name	Fuse No.	-
	16	Battery power	31	_
DVD player	15	Ignition switch ACC or ON	4	_

### Is the fuse OK?

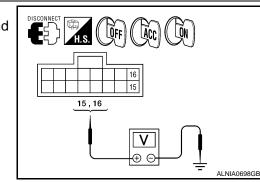
YES >> GO TO 2

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

### 2. POWER SUPPLY CIRCUIT CHECK

- 1. Disconnect DVD player connector M205.
- Check voltage between the DVD player connector M205 and ground.

(+	-)	(-)	OFF	ACC	ON
Connector	Terminal	(-)	OIT	700	
M205	16	Ground	Battery voltage	Battery voltage	Battery voltage
W203	M205 Ground 15	0V	Battery voltage	Battery voltage	



Are the voltage results as specified?

YES >> GO TO 3

NO

- >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

# 3. GROUND CIRCUIT CHECK

### 1. Turn ignition switch OFF.

 Check continuity between DVD player harness connector M206 terminal 22 and ground.

Connector	Terminal		Continuity
M206	22	Ground	Yes

Are the continuity results as specified?

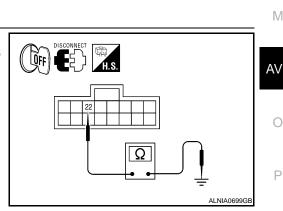
YES >> Inspection End.

NO >> Repair DVD player ground.

# **VIDEO MONITOR**

VIDEO MONITOR : Diagnosis Procedure

**1.**CHECK POWER SUPPLY CIRCUIT



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### POWER SUPPLY AND GROUND CIRCUIT OSIS > [PREMIUM WITHOUT NAVIGATION]

### < COMPONENT DIAGNOSIS >

- 1. Turn ignition switch to ACC.
- 2. Check voltage between video monitor harness connector R202 and ground.

Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Display B+	R202	11	ACC	12V
	11202	12	7,00	12 V

Does specified voltage exist?

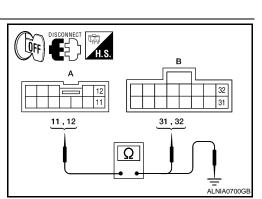
YES >> GO TO 3.

NO >> GO TO 2.

# 2. CHECK POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect the video monitor connector R202 and the DVD player connector M206.
- Check continuity between the video monitor harness connector R202 (A) and the DVD player connector M206 (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
<b>D</b> 202	11	M206	31	Yes
R202	12	101200	32	Tes



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4. Check continuity between video monitor harness connector R202 (A) and ground.

	A		Continuity	
Connector	Terminal		Continuity	
R202	11	Ground	No	
11202	12	Ground	NO	

Are continuity test results as specified?

YES >> Check DVD player power and ground supply. Refer to <u>AV-48, "DVD PLAYER : Diagnosis Proce-</u> <u>dure"</u>.

NO >> Repair harness or connector.

# 3. CHECK GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect video monitor connector.
- 3. Check continuity between video monitor harness connector R202 and ground.

Connector No.	Terminal No.	—	Continuity
R202	3	Ground	Yes

### Does continuity exist?

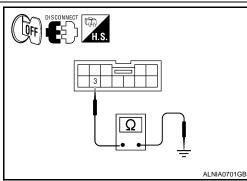
- YES >> INSPECTION END
- NO >> Repair harness or connector.

### AUDIO AMP

AUDIO AMP : Diagnosis Procedure

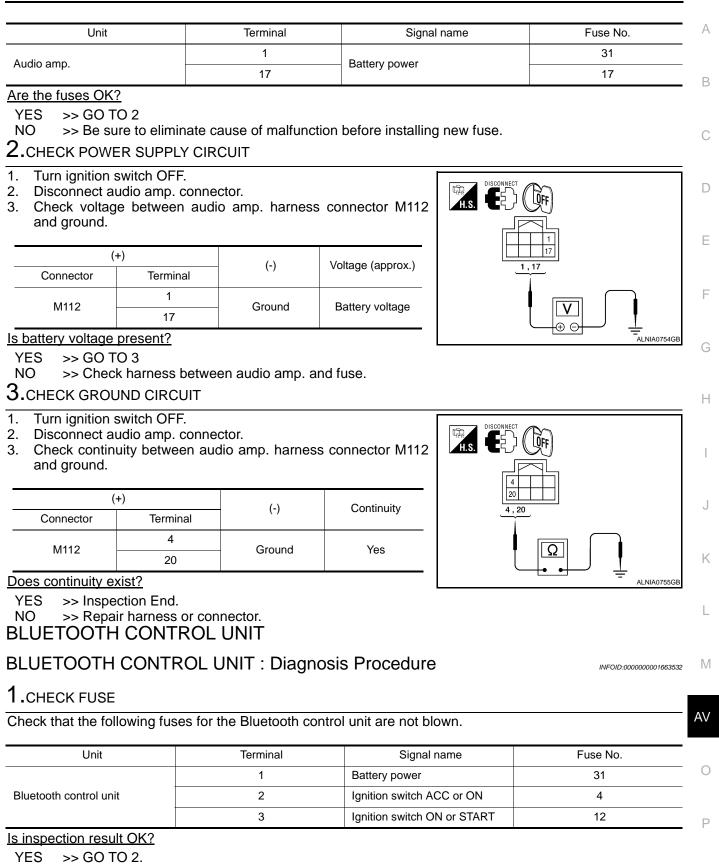
**1.**CHECK FUSE

Check that the audio amp. fuses are not blown.



# POWER SUPPLY AND GROUND CIRCUIT

### < COMPONENT DIAGNOSIS >



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

2. CHECK POWER SUPPLY CIRCUIT

### POWER SUPPLY AND GROUND CIRCUIT [PREMIUM WITHOUT NAVIGATION]

### < COMPONENT DIAGNOSIS >

Check voltage between Bluetooth control unit harness connector B142 and ground.

Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
	1	OFF	
B142	2	ACC	Battery voltage
	3	ON	

Is battery voltage present as specified?

YES >> GO TO 3.

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

- 3. CHECK GROUND CIRCUIT
- 1. Turn ignition switch OFF.
- Disconnect Bluetooth control unit connector. 2.
- Check continuity between Bluetooth control unit harness con-3. nector B142 and ground.

Connector No.	Terminal No.	Ignition switch position	Continuity
B142	4, 20, 23	OFF	Yes

Are continuity results as specified?

>> INSPECTION END YES

NO >> Repair harness or connector.

# MICROPHONE

# **MICROPHONE : Diagnosis Procedure**

# 1.CHECK POWER SUPPLY CIRCUIT (MICROPHONE SIDE)

- Turn ignition switch ON. 1.
- Check voltage between microphone harness connector R109 2. terminal 4 and ground.

Signal name	Connector No.	Terminal No.	Ignition switch posi- tion	Value (Ap- prox.)
MIC power	R109	4	ON	5V

Is approximately 5V present?

YES >> GO TO 3.

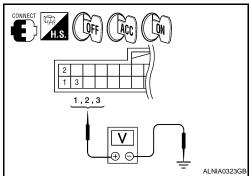
NO >> GO TO 2.

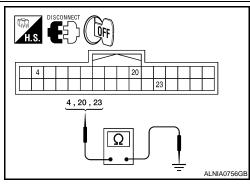
# 2. CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

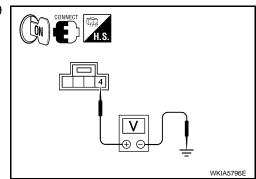
- Turn ignition switch OFF. 1.
- Disconnect microphone and Bluetooth control unit harness con-2. nectors.
- 3. Check continuity between microphone harness connector R109 (A) terminal 4 and Bluetooth control unit harness connector B142 (B) terminal 29.

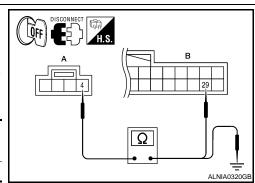
A		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
R109	4	B142	29	Yes

4. Check continuity between microphone harness connector R109 (A) terminal 4 and ground.





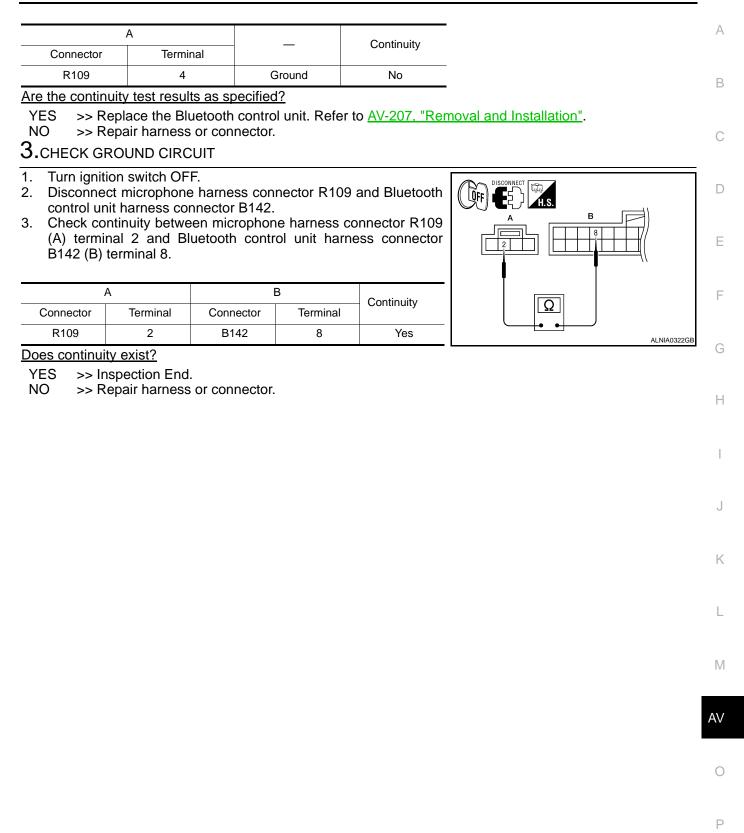




# POWER SUPPLY AND GROUND CIRCUIT

### < COMPONENT DIAGNOSIS >

### [PREMIUM WITHOUT NAVIGATION]



### < COMPONENT DIAGNOSIS >

# FRONT DOOR SPEAKER

### Description

The audio unit sends audio signals to the audio amp. The audio amp. amplifies the audio signals before sending them to the front door speakers using the audio signal circuits.

# **Diagnosis** Procedure

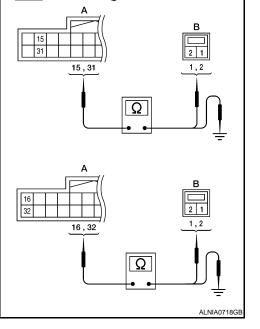
# **1.**SPEAKER HARNESS CHECK

- 1. Disconnect audio amp. connector M113 and suspect speaker connector.
- Check continuity between audio amp. harness connector M113 2. (A) and suspect speaker harness connector (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	15	D12	1	
M113	31	DTZ	2	Yes
	16	D112	1	Tes
	32		2	

3 Check continuity between audio amp. harness connector M113 (A) and ground.

	A		Continuity
Connector	Connector Terminal		
	15		No
M113	31	Ground	
101113	16	Ground	INO
	32		



Are continuity test results as specified?

YES >> GO TO 2

NO >> • Check connector housings for disconnected or loose terminals. • Repair harness or connector.

2.FRONT DOOR SPEAKER SIGNAL CHECK

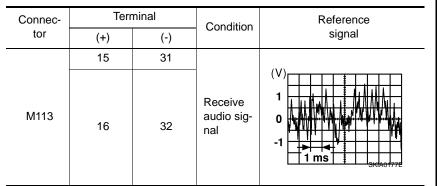
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# FRONT DOOR SPEAKER

### < COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connector M113 and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio amp. harness connector M113 terminals with CONSULT-III or oscilloscope.



### Is audio signal voltage as specified?

YES >> Replace suspect speaker. Refer to <u>AV-95, "Removal</u> and Installation".

NO >> GO TO 3

# **3.**PRE-AMP HARNESS CHECK

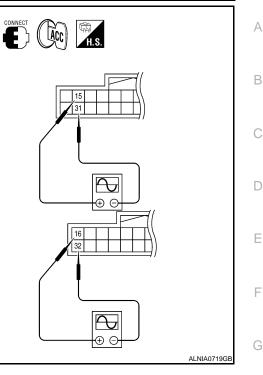
- Disconnect audio unit connector M43 and audio amp. connector M113.
- Check continuity between audio unit harness connector M43 (A) and audio amp. harness connector M113 (B).

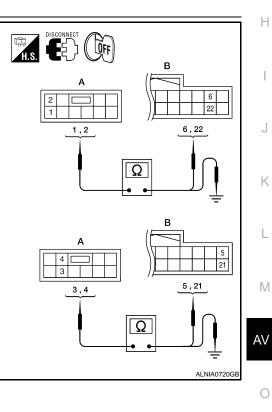
A B		Continuity		
Connector	Terminal	Connector	Terminal	Continuity
	1	M113	6	
M43	2		22	Yes
	3		5	163
	4		21	

 Check continuity between audio unit harness connector M43 (A) and ground.

		А		Continuity	
_	Connector	Connector Terminal		Continuity	
	M43	1	Ground	No	
		2			
		3			
		4			

### LK [PREMIUM WITHOUT NAVIGATION]





Are continuity test results as specified?

YES >> GO TO 4

NO

- >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

**4.**PRE-AMP SIGNAL CHECK

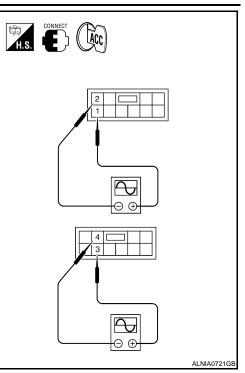
Ρ

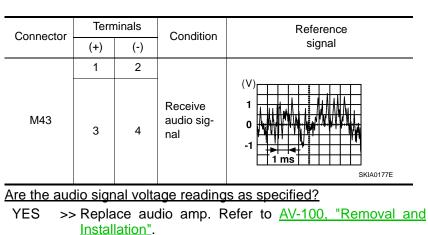
# FRONT DOOR SPEAKER

### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector and audio amp. connector.
- 2. Turn ignition switch ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.

### [PREMIUM WITHOUT NAVIGATION]





NO >> Replace audio unit. Refer to <u>AV-92. "Removal and</u> <u>Installation"</u>.

# FRONT TWEETER

# < COMPONENT DIAGNOSIS >

# FRONT TWEETER

# Description

The audio unit sends audio signals to the audio amp. The audio amp. amplifies the audio signals before sending them to the tweeters using the audio signal circuits.

# **Diagnosis Procedure**

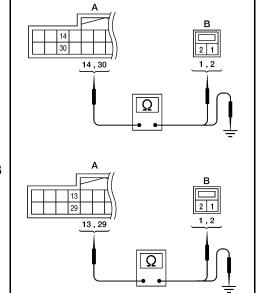
# **1.**HARNESS CHECK

- 1. Disconnect audio amp. connector M113 and suspect tweeter connector.
- Check continuity between audio amp. harness connector M113 (A) and suspect tweeter harness connector (B).

	А		В	
Connector	Terminal	Connector	Terminal	Continuity
M113	14	M109	1	Yes
	30		2	
	13	M111	1	165
	29		2	

 Check continuity between audio amp. harness connector M113 (A) and ground.

A			Continuity
Connector	Connector Terminal		Continuity
	14		No
M113	30	Ground	
	13	Giouna	NO
	29	_	



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Are continuity test results as specified?

YES >> GO TO 2

NO >> • Check connector housings for disconnected or loose terminals. • Repair harness or connector.

**2.**FRONT TWEETER SIGNAL CHECK

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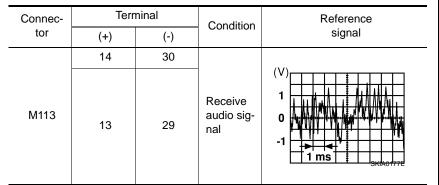
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# FRONT TWEETER

### < COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connector M113 and suspect tweeter connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio amp. harness connector M113 terminals with CONSULT-III or oscilloscope.



### Is audio signal voltage as specified?

YES >> Replace suspect tweeter. Refer to <u>AV-191, "Removal</u> and Installation".

NO >> GO TO 3

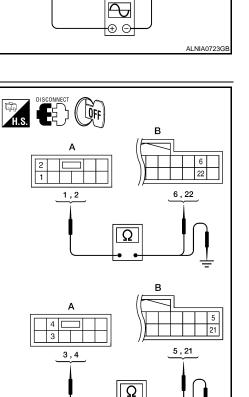
# **3.**PRE-AMP HARNESS CHECK

- Disconnect audio unit connector M43 and audio amp. connector M113.
- 2. Check continuity between audio unit harness connector M43 (A) and audio amp. harness connector M113 (B).

A B		В	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
	1	M113	6	
M43	2		22	Yes
	3		5	Tes
	4		21	

3. Check continuity between audio unit harness connector M43 (A) and ground.

		A	·	Continuity	
	Connector	Connector Terminal		Continuity	
	M43	1		No	
		2	Ground		
		3			
		4			



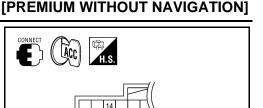
Are continuity test results as specified?

YES >> GO TO 4

NO

- >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

**4.**PRE-AMP SIGNAL CHECK



# **FRONT TWEETER**

### < COMPONENT DIAGNOSIS >

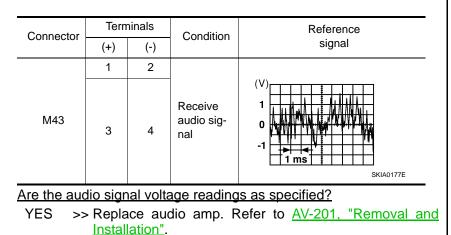
- 1. Connect audio unit connector and audio amp. connector.
- 2. Turn ignition switch ACC.

Installation".

3. Push "POWER" switch.

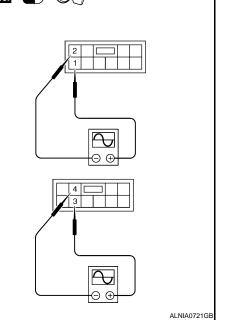
NO

4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.



>> Replace audio unit. Refer to AV-189, "Removal and

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**ACC** 

### < COMPONENT DIAGNOSIS >

# CENTER SPEAKER

# Description

The audio unit sends audio signals to the audio amp. The audio amp. amplifies the audio signals before sending them to the center speaker using the audio signal circuits.

# Diagnosis Procedure

# **1.**CENTER SPEAKER HARNESS CHECK

- 1. Disconnect audio amp. connector M113 and center speaker connector M110.
- Check continuity between audio amp. harness connector M113 (A) and center speaker harness connector M110 (B).

A B		В	Continuity		
Connector	Terminal	Connector	Terminal	Continuity	
M113	10	M110	1	Yes	
IVITI3	26	WITTO	2	165	

 Check continuity between audio amp. harness connector M113 (A) and ground.

	А		Continuity	
Connector	Connector Terminal		Continuity	
M113	10	Ground	No	
WIT15	26	Ground	INO	

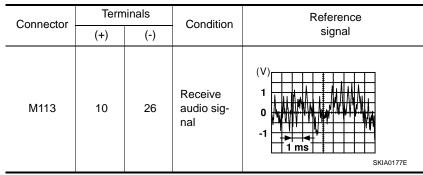
### Are continuity test results as specified?

YES >> GO TO 2

- NO >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

### 2. CENTER SPEAKER SIGNAL CHECK

- Connect audio amp. connector M113 and center speaker connector M110.
- 2. Turn ignition switch to ACC.
- 3. Push <sup>•</sup>POWER" switch.
- 4. Check the signal between audio amp. harness connector M113 terminals with CONSULT-III or oscilloscope.



Is the audio signal voltage reading as specified?

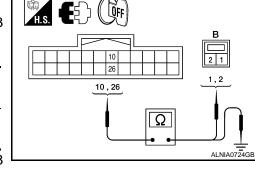
YES >> Replace center speaker. Refer to <u>AV-192, "Removal and Installation"</u>.

NO >> GO TO 3

**3.** PRE-AMP HARNESS CHECK



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# **CENTER SPEAKER**

### < COMPONENT DIAGNOSIS >

- 1. Disconnect audio unit connector M43 and audio amp. connector M113.
- 2. Check continuity between audio unit harness connector M43 (A) and audio amp. harness connector M113 (B).

	АВ		Continuity	
Connector	Terminal	Connector Terminal		Continuity
M43	1	M113	6	
	2		22	Yes
	3		5	165
	4		21	

3. Check continuity between audio unit harness connector M43 (A) and ground.

	А		Continuity
Connector	Connector Terminal		Continuity
	1		No
M43	2	Ground	
10143	3	Giouna	NO
	4		

Are continuity test results as specified?

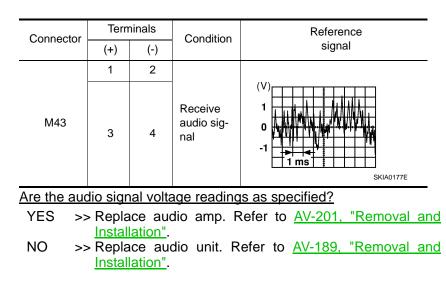
YES >> GO TO 4 NO >> • Check of

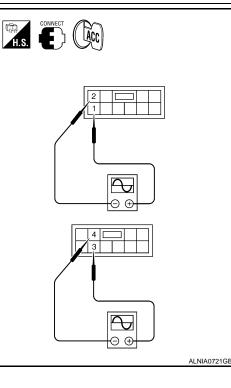
>> • Check connector housings for disconnected or loose terminals.• Repair harness or connector.

AV-131

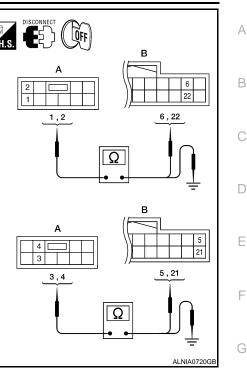
### **4.**PRE-AMP SIGNAL CHECK

- 1. Connect audio unit connector and audio amp. connector.
- 2. Turn ignition switch ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.





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### < COMPONENT DIAGNOSIS >

# REAR DOOR SPEAKER

### Description

The audio unit sends audio signals to the audio amp. The audio amp. amplifies the audio signals before sending them to the rear door speakers using the audio signal circuits.

# **Diagnosis** Procedure

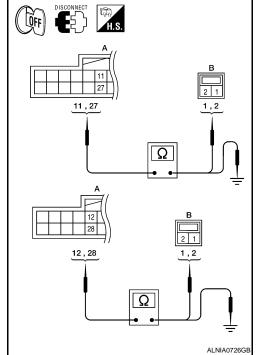
# **1.**SPEAKER HARNESS CHECK

- 1. Disconnect audio amp. connectors M113 and suspect speaker connector.
- Check continuity between audio amp. harness connectors M113 2. (A) and suspect speaker harness connector (B).

	A	В		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity		
	11	D207 (crew cab)	1			
M113	27	B76 (king cab)	2	Yes		
WITTS	12	D307 (crew cab)	1	165		
	28	B159 (king cab)	2			

3. Check continuity between audio amp. harness connectors M113 (A) and ground.

Connector	Terminal	-	Continuity
	11		
M113	27	Ground	No
MITS	12		
	28		



Are the continuity test results as specified?

YES >> GO TO 2

NO >> • Check connector housings for disconnected or loose terminals.

• Repair harness or connector.

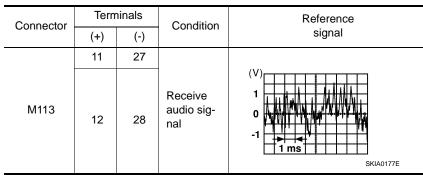
2.SPEAKER SIGNAL CHECK

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# **REAR DOOR SPEAKER**

### < COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connectors and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio amp. harness connectors M113 terminals with CONSULT-III or oscilloscope.



### Are audio signal voltage readings as specified?

YES >> Replace suspect speaker. Refer to <u>AV-194</u>, "<u>Removal</u> and <u>Installation</u>".

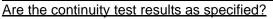
# **3.**PRE-AMP HARNESS CHECK

- 1. Disconnect audio unit connector M44 and audio amp. connector M113.
- Check continuity between audio unit harness connector M44 (A) and audio amp. harness connector M113 (B).

A B		Continuity		
Connector	Terminal	Connector	Terminal	Continuity
	13	M113	8	
M44	14		24	Yes
	15		7	Tes
	16		23	

 Check continuity between audio unit harness connector M44 (A) and ground.

	A Connector Terminal			Continuity
-				Continuity
-		13		
	M44	14	Ground	No
		15	Giouna	NO
		16		



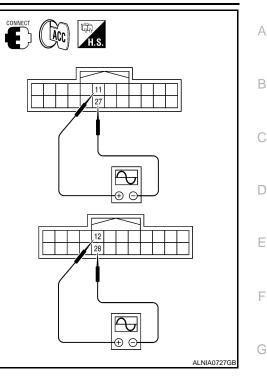
YES >> GO TO 4

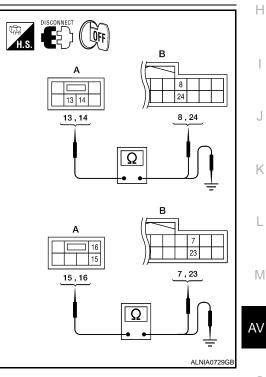
NO

- >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

**4.**PRE-AMP SIGNAL CHECK





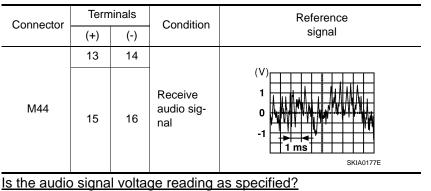


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# REAR DOOR SPEAKER

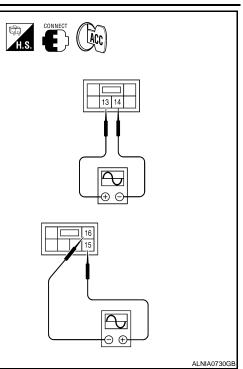
### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector M44 and audio amp. connector M113.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M44 terminals with CONSULT-III or oscilloscope.



- YES >> Replace audio amp. Refer to <u>AV-201, "Removal and</u> <u>Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-189</u>, "<u>Removal and</u> <u>Installation</u>".

### [PREMIUM WITHOUT NAVIGATION]



# REAR DOOR TWEETER

### < COMPONENT DIAGNOSIS >

# REAR DOOR TWEETER

### Description

The audio unit sends audio signals to the audio amp. The audio amp. amplifies the audio signals before sending them to the rear door tweeters using the audio signal circuits.

### **Diagnosis Procedure**

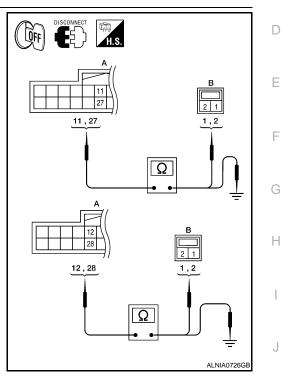
# **1.**SPEAKER HARNESS CHECK

- 1. Disconnect audio amp. connectors M113 and suspect speaker connector.
- Check continuity between audio amp. harness connectors M113 (A) and suspect speaker harness connector (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	11	D208	1	
M113	27	D200	2	Yes
	12	D308	1	165
	28		2	

 Check continuity between audio amp. harness connectors M113 (A) and ground.

Connector	Terminal	-	Continuity
	11		
M113	27	Ground	No
IVIT13	12	Giouna	NO
	28		



Are the continuity test results as specified?

YES >> GO TO 2

NO >> • Check connector housings for disconnected or loose terminals.

Repair harness or connector.

2.SPEAKER SIGNAL CHECK

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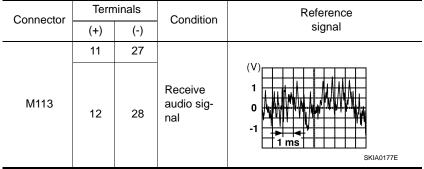
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# **REAR DOOR TWEETER**

### < COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connectors and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio amp. harness connectors M113 terminals with CONSULT-III or oscilloscope.



### Are audio signal voltage readings as specified?

YES >> Replace suspect speaker. Refer to <u>AV-194, "Removal</u> and Installation".

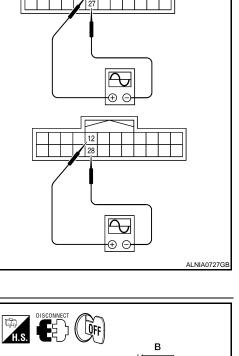
# **3.**PRE-AMP HARNESS CHECK

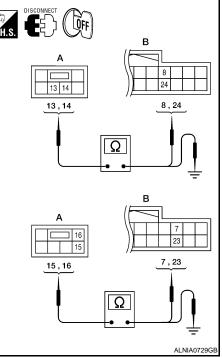
- 1. Disconnect audio unit connector M44 and audio amp. connector M113.
- 2. Check continuity between audio unit harness connector M44 (A) and audio amp. harness connector M113 (B).

A B		В	Continuity		
Connector	Terminal	Connector Terminal		Continuity	
	13	M113	8		
M44	14		24	Yes	
	15		7	Tes	
	16		23		

3. Check continuity between audio unit harness connector M44 (A) and ground.

	A Connector Terminal			Continuity
-				Continuity
-		13		
	M44	14	Ground	No
		15	Ground	
		16		





Are the continuity test results as specified?

YES >> GO TO 4

NO

- >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

**4.**PRE-AMP SIGNAL CHECK

# [PREMIUM WITHOUT NAVIGATION]

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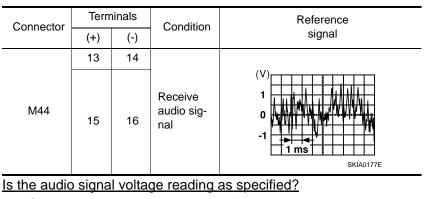
ACC

# **REAR DOOR TWEETER**

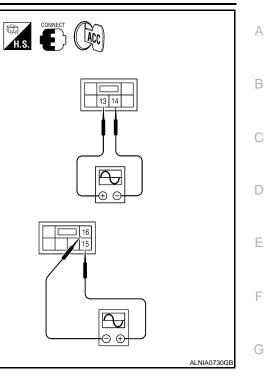
### < COMPONENT DIAGNOSIS >

### [PREMIUM WITHOUT NAVIGATION]

- 1. Connect audio unit connector M44 and audio amp. connector M113.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M44 terminals with CONSULT-III or oscilloscope.



- YES >> Replace audio amp. Refer to <u>AV-201, "Removal and</u> <u>Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-189</u>, "<u>Removal and</u> <u>Installation</u>".



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# < COMPONENT DIAGNOSIS >

# SUBWOOFER

# Description

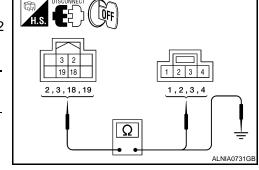
The audio unit sends audio signals to the audio amp. The audio amp. amplifies the audio signals before sending them to the subwoofer using the audio signal circuits.

# Diagnosis Procedure

# **1.**SPEAKER HARNESS CHECK

- Disconnect audio amp. connector M112 and subwoofer connector B72.
- Check continuity between audio amp. harness connector M112 (A) and subwoofer harness connector B72 (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	2		1	
M112	3	B72	3	Yes
	IVITZ	18	DIZ	2
	19		4	



3. Check continuity between audio amp. harness connector M112 (A) and ground.

A Connector Terminal		Continuity
		Continuity
2		
3		No
18	Giouna	NO
19		
	Terminal 2 3 18	Terminal 2 3 18 Ground

Are the continuity test results as specified?

YES >> GO TO 2

NO

>> • Check connector housings for disconnected or loose terminals.

Repair harness or connector.

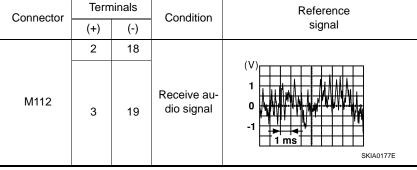
2.SPEAKER SIGNAL CHECK

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# SUBWOOFER

### < COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connector M112 and subwoofer connector B72.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio amp. harness connector M112 terminals with CONSULT-III or oscilloscope.



### Is the audio signal voltage as specified?

YES >> Replace subwoofer. Refer to <u>AV-196, "Removal and</u> <u>Installation"</u>.

# **3.**PRE-AMP HARNESS CHECK

- 1. Disconnect audio unit connector M44 and audio amp. connector M113.
- Check continuity between audio unit harness connector M44 (A) and audio amp. harness connector M113 (B).

A B		Continuity		
Connector	Terminal	Connector	Terminal	Continuity
	13	M113	8	
M44	14		24	Yes
	15		7	Tes
	16		23	

3. Check continuity between audio unit harness connector M44 (A) and ground.

-	A Connector Terminal			Continuity
-				Continuity
-		13		
	M44	14	Ground	No
		15	Ground	
		16	1	

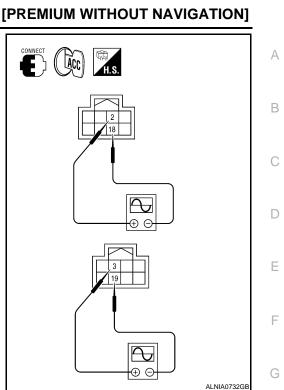
### Are the continuity test results as specified?

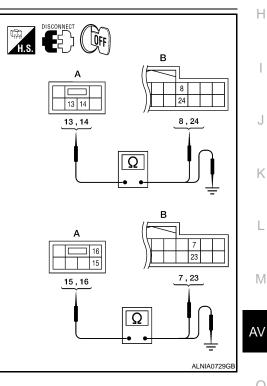
YES >> GO TO 4

NO

- >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

**4.**PRE-AMP SIGNAL CHECK





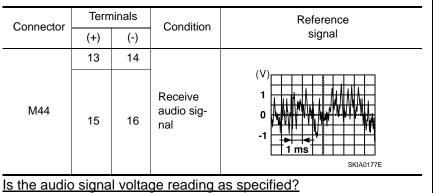
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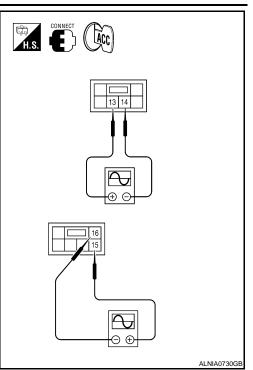
### **SUBWOOFER**

### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector M44 and audio amp. connector M113.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- Check the signal between audio unit harness connector M44 4. terminals with CONSULT-III or oscilloscope.



- YES >> Replace audio amp. Refer to AV-201, "Removal and Installation".
- NO >> Replace audio unit. Refer to AV-189, "Removal and Installation".



[PREMIUM WITHOUT NAVIGATION]

### < COMPONENT DIAGNOSIS >

# AMP ON SIGNAL CIRCUIT

# Description

When the audio system is turned on, a voltage signal is supplied from the audio unit to the audio amp. When this signal is received, the audio amp. will turn on.

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### **Diagnosis Procedure**

# 1.CHECK AMP ON SIGNAL

- 1. Turn audio system ON.
- 2. Check voltage between audio amp. harness connector M113 terminal 9 and ground.

### 9 - Ground

Is battery voltage present?

- YES >> Inspection End.
- NO >> GO TO 2.

# 2. CHECK AMP ON SIGNAL (AUDIO UNIT)

Check voltage between audio unit harness connector M44 terminal 12 and ground.

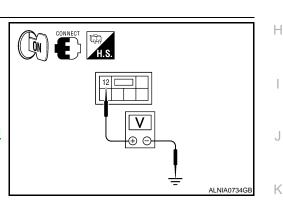
### 12 - Ground

: More than 6.5V

: More than 6.5V

Is battery voltage present?

- YES >> Repair harness or connector.
- NO >> Replace audio unit. Refer to <u>AV-189</u>, "<u>Removal and</u> <u>Installation</u>".



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### < COMPONENT DIAGNOSIS >

# STEERING SWITCH

### Description

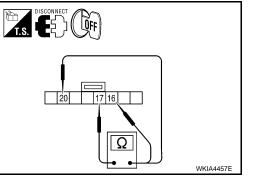
When one of the steering wheel audio control switches is pushed, the resistance in the steering wheel audio control switch circuit changes depending on which button is pushed.

# **Diagnosis Procedure**

1. CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

- 1. Turn ignition switch OFF.
- 2. Disconnect steering wheel audio control switch connector M102.
- 3. Check resistance between steering switch connector terminals.

Terminal		Signal name	Condition	Resistance (Ω) (Approx.)
		Seek (down)	Depress $ abla$ switch.	165
		Volume (down)	Depress VOL down switch.	487
16	17	17 Mode (without Bluetooth)	Depress MODE switch.	
		Phone/Send (with Blue- tooth)	Depress MODE switch.	0
		Seek (up)	Depress $\Delta$ switch.	165
20	17	Volume (up)	Depress VOL up switch.	487
	17	Power (without Bluetooth)	Depress PWR switch.	0
_		Mode/End (with Bluetooth)	Depress 🌈 🏑 switch.	0



Do the steering wheel audio control switches check OK?

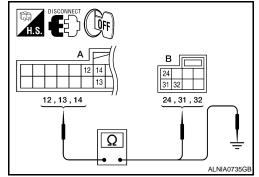
YES >> GO TO 2

NO >> Replace steering wheel audio control switch. Refer to <u>AV-197, "Removal and Installation"</u>.

### 2.CHECK HARNESS

- 1. Disconnect Bluetooth control unit connector B142 and spiral cable connector M30.
- Check continuity between Bluetooth control unit harness connector B142 (A) and spiral cable harness connector M30 (B).

А			Continuity	
Connector	Terminal	Connector Terminal		Continuity
	12		24	
B142	13	M30	32	Yes
	14		31	



3. Check continuity between Bluetooth control unit connector B142 (A) and ground.

	А		Continuity
Connector	Terminal		
	12		
B142	13	Ground	No
	14		

Are the continuity results as specified?

# **STEERING SWITCH**

# < COMPONENT DIAGNOSIS >

# [PREMIUM WITHOUT NAVIGATION]

NO >> 3.spiral	Repair ha						А
2. Check				arness connector M30			В
	Spira	l cable			24		0
Connector	Terminal	Connector	Terminal	Continuity	31 32 24 , 31 , 32	20 1716 16, 17, 20	С
	24		20				
M30	31	M102	17	Yes		Ω	D
	32		16			ALNIA0333GB	
	Inspection	n End.	Refer to <u>SR</u>	-6, "Removal and Insta	llation".		E
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# **COMMUNICATION SIGNAL CIRCUIT**

### < COMPONENT DIAGNOSIS >

# COMMUNICATION SIGNAL CIRCUIT SATELLITE RADIO TUNER

# SATELLITE RADIO TUNER : Description

Communication signals are exchanged between the audio unit and satellite radio tuner using the communication circuits.

# SATELLITE RADIO TUNER : Diagnosis Procedure

# **1.**CHECK HARNESS - REQ1

- 1. Turn ignition switch OFF.
- 2. Disconnect satellite radio tuner (factory installed) connector M41 and audio unit connector M42.
- 3. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 28 and audio unit harness connector M42 (B) terminal 48.

А		В		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
M41	28	M42	48	Yes	

4. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 28 and ground.

	Ą		Continuity	
Connector	Terminal			
M41	28	Ground	No	

Are continuity results as specified?

YES >> GO TO 2

NO >> Repair harness or connector.

2. CHECK HARNESS - TXD

Check continuity between satellite radio tuner (factory installed) 1. harness connector M41 (A) terminal 29 and audio unit harness connector M42 (B) terminal 49.

А			Continuity		
Connector	Terminal	Connector	Terminal	Continuity	
M41	29	M42	49	Yes	

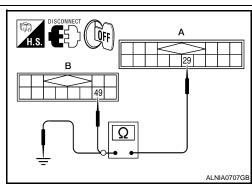
Check continuity between satellite radio tuner (factory installed) 2. harness connector M41 (A) terminal 29 and ground.

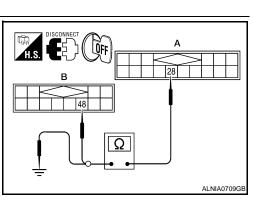
	A	_	Continuity
Connector	Terminal		
M41	29	Ground	No

Are continuity results as specified?

YES >> GO TO 3

- NO >> Repair harness or connector.
- **3.**CHECK HARNESS RXD





[PREMIUM WITHOUT NAVIGATION]

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### **COMMUNICATION SIGNAL CIRCUIT**

#### < COMPONENT DIAGNOSIS >

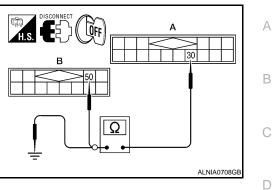
1. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 30 and audio unit harness connector M42 (B) terminal 50.

	A		Continuity	
Connector	Terminal	Connector Terminal		
M41	30	M42	50	Yes

2. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 30 and ground.

	A		Continuity
Connector	Terminal		Continuity
M41	30	Ground	No

#### [PREMIUM WITHOUT NAVIGATION] 5 **OF** 11 8



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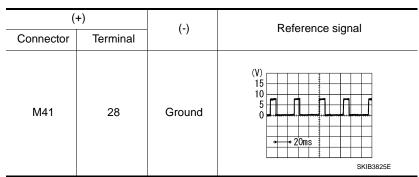
Are continuity results as specified?

YES >> GO TO 4

NO >> Repair harness or connector.

**4.**CHECK REQ1 SIGNAL

- 1. Connect satellite radio tuner (factory installed) connector and audio unit connector.
- 2. Turn ignition switch to ACC
- 3. Check signal between satellite radio tuner (factory installed) harness connector M41 terminal 28 and ground with CONSULT-III or oscilloscope.



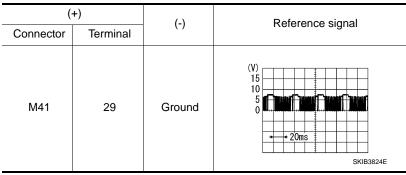
Are voltage readings as specified?

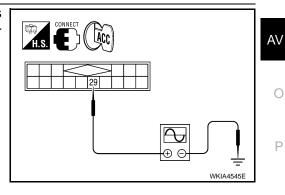
YES >> GO TO 5

NO >> Replace audio unit. Refer to AV-92, "Removal and Installation".

#### **5.**CHECK TXD SIGNAL

Check signal between satellite radio tuner (factory installed) harness connector M41 terminal 29 and ground with CONSULT-III or oscilloscope.





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Are the voltage readings as specified?

### AV-145

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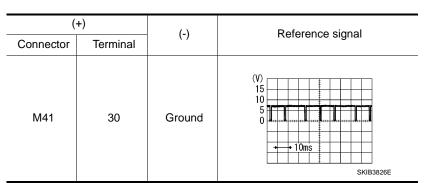
< COMPONENT DIAGNOSIS >

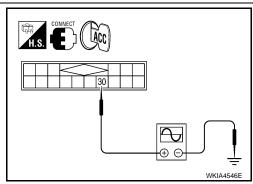
[PREMIUM WITHOUT NAVIGATION]

YES >> GO TO 6 NO >> Replace satellite radio tuner.

6.CHECK RXD SIGNAL

Check signal between satellite radio tuner (factory installed) harness connector M41 terminal 30 and ground with CONSULT-III or oscillo-scope.





Are the voltage readings as specified?

YES >> Replace satellite radio tuner.

NO >> Replace audio unit. Refer to <u>AV-92. "Removal and Installation"</u>.

#### SOUND SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >	
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#### SOUND SIGNAL CIRCUIT SATELLITE RADIO TUNER

#### SATELLITE RADIO TUNER : Description

Left and right channel audio signals are supplied from the satellite radio tuner to the audio unit through the sound signal circuits.

#### SATELLITE RADIO TUNER : Diagnosis Procedure

#### LEFT CHANNEL

#### **1.**CHECK HARNESS

- 1. Turn ignition switch OFF.
- 2. Disconnect satellite radio tuner (factory installed) connector M41 and audio unit connector M42.
- Check continuity between satellite radio tuner (factory installed) connector M41 (A) and audio unit connector M42 (B).

Α	١	E	Continuity		
Connector	Terminal	Connector	Terminal	Continuity	
M41	21	M42	41	Yes	
17141	22	IVI42	42	163	

4. Check continuity between satellite radio tuner (factory installed) connector M41 (A) and ground.

-		А		Continuity	
-	Connector	Terminal			
_	M41	21	Ground	No	
_	1014 1	22	Ciouna	NO	

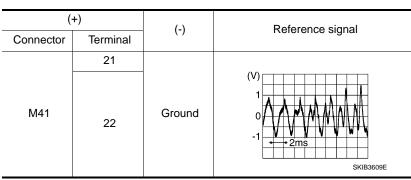
#### Are continuity results as specified?

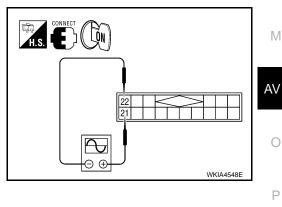
YES >> GO TO 2

NO >> Repair harness or connector.

#### 2.CHECK LEFT CHANNEL AUDIO SIGNAL

- 1. Connect satellite radio tuner (factory installed) and audio unit.
- 2. Turn ignition switch ON.
- Check signal between satellite radio tuner (factory installed) connector M41 terminals 21 and 22 with CONSULT-III or oscilloscope.





Are voltage readings as specified?

YES >> Replace audio unit. Refer to AV-92, "Removal and Installation".

NO >> Replace satellite radio tuner. Refer to <u>AV-102. "Removal and Installation"</u>.

#### RIGHT CHANNEL

# AV-147

А

В

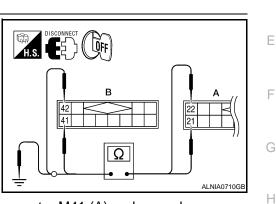
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### SOUND SIGNAL CIRCUIT

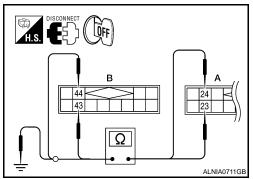
#### < COMPONENT DIAGNOSIS >

#### [PREMIUM WITHOUT NAVIGATION]

### 1.CHECK HARNESS

- 1. Turn ignition switch OFF.
- 2. Disconnect satellite radio tuner (factory installed) connector M41 and audio unit connector M42.
- 3. Check continuity between satellite radio tuner (factory installed) M41 (A) and audio unit M42 (B).

A	١	E	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
M41	23	M42	43	Yes
10141	24	10142	44	Tes



4. Check continuity between satellite radio tuner (factory installed) connector M41 (A) and ground.

	А		Continuity	
Connector	Terminal		Continuity	
M41	23	Ground	No	
10141	24	Gibunu	NO	

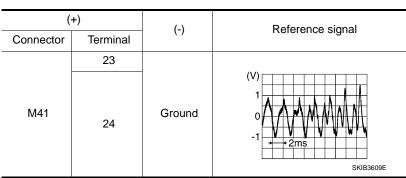
Are continuity results as specified?

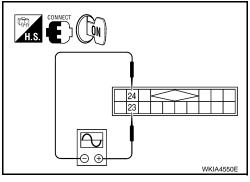
YES >> GO TO 2

NO >> Repair harness or connector.

2. CHECK RIGHT CHANNEL AUDIO SIGNAL

- 1. Connect satellite radio tuner (factory installed) and audio unit.
- 2. Turn ignition switch ON.
- 3. Check signal between satellite radio tuner (factory installed) connector M41 terminals 23 and 24 with CONSULT-III or oscillo-scope.





Are voltage readings as specified?

YES >> Replace audio unit. Refer to <u>AV-92, "Removal and Installation"</u>.

NO >> Replace satellite radio tuner. Refer to <u>AV-102. "Removal and Installation"</u>.

#### **MICROPHONE SIGNAL CIRCUIT**

#### < COMPONENT DIAGNOSIS >

### **MICROPHONE SIGNAL CIRCUIT**

#### Description

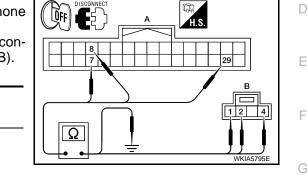
Voice signals are transmitted from the microphone to the Bluetooth control unit using the microphone signal В circuits.

#### **Diagnosis** Procedure

### $1. {\sf check harness between bluetooth control unit and microphone}$

- 1. Turn ignition switch OFF.
- Disconnect Bluetooth control unit connector and microphone 2. connector.
- 3. Check continuity between Bluetooth control unit harness connector B142 (A) and microphone harness connector R109 (B).

	A		Continuity	
Connector	Terminal	Connector Terminal		Continuity
	7		1	
B142	8	R109	2	Yes
	29		4	



4. Check continuity between Bluetooth control unit harness connector B142 (A) and ground.

	A				
Connector	Terminal	—	Continuity		
	7				
B142	8	Ground	No		
	29				J
	uity test results as specif	ied?			
NO >> R	O TO 2 epair harness or connect ICROPHONE POWER S				K
nector. 2. Turn ignit	Bluetooth control unit co			CONNECT THE H.S.	L
	Itage between micropho	one namess c	connector RT09		M
4 - Gro	ound	: Approx. 5V			
	ding approx. 5 volts?				AV
NO >> R	O TO 3 eplace Bluetooth cont <u>Removal and Installation</u> "		er to <u>AV-207,</u>	WKIA6796E	0
3. СНЕСК МІ	ICROPHONE SIGNAL				

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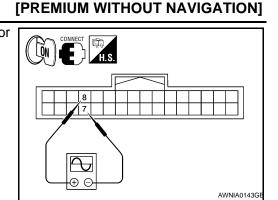
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### MICROPHONE SIGNAL CIRCUIT

#### < COMPONENT DIAGNOSIS >

Check signal between Bluetooth control unit harness connector B142 terminals 7 and 8 with CONSULT-III or and oscilliscope.

Connector	(+) Terminal	(-) Terminal	Reference signal
B142	7	8	While speaking into MIC (V) 2.5 2.0 1.5 1.0 0.5 0 + 2ms PKIB5037J



Are voltage readings as specified?

YES >> Replace Bluetooth control unit. Refer to <u>AV-207, "Removal and Installation"</u>.

NO >> Replace microphone. Refer to <u>AV-205. "Removal and Installation"</u>.

# ECU DIAGNOSIS

### AUDIO UNIT

#### **Reference Value**

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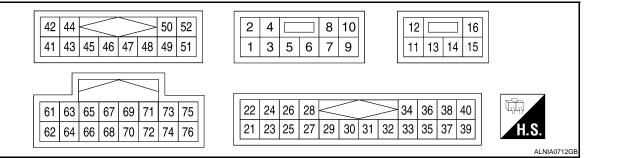
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#### **TERMINAL LAYOUT**



#### PHYSICAL VALUES

	minal e color) _	ltem	Signal input/ output		Condition	Reference value (Approx.)
2 (W)	1 (B)	Audio sound signal front LH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1
4 (Y)	3 (BR)	Audio sound signal front RH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 ms 5 KIA0177E
6 (Y)	Ground	Battery power	Input	-	_	Battery voltage
7 (BR)	Ground	Illumination control signal	Input	Ignition switch ON	Illumination control switch is operated by lighting switch in 1st position.	Changes between 0 and 12V
8				055	Lighting switch is in 1st position.	Battery voltage
(R/L)	Ground	Illumination signal	Input	OFF	Lighting switch is OFF.	0V
9	_	Shield	_	_	_	0V
10 (V)	Ground	ACC signal	Input	Ignition switch ON	_	Battery voltage
12 (G/W)	Ground	Amp ON signal	Output	Ignition switch ON	-	Battery voltage

#### < ECU DIAGNOSIS >

	minal e color)	Item	Signal input/		Condition	Reference value (Approx.)	
+	_	1	output			(Αρμιοχ.)	
14 (BR)	13 (B/R)	Audio sound signal rear LH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5	
16 (L)	15 (B/W)	Audio sound signal rear RH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1	
21 (V)	Ground	Remote control A	Output	Ignition switch ON	Audio unit ON	5V	
22 (P)	Ground	Remote control B	Output	Ignition switch ON	Audio unit ON	5V	
23 (BR/Y)	Ground	Remote control C	Output	Ignition switch ON	Audio unit ON	5V	
24 (L)	Ground	Remote control D	Output	Ignition switch ON	Audio unit ON	5V	
25 (LG)	Ground	Remote control ground	_	-	_	0V	
27 (O/L)	26 (O)	Audio sound signal LH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1	
29 (W)	28 (W/L)	Audio sound signal RH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1	
30	-	Shield	-	_	_	0V	
31 (O)	Ground	Remote control en- able signal	Output	Ignition switch ON	Audio unit ON	5V	
32 (V)	Ground	Remote control switch power sup- ply	Output	Ignition switch ON	Audio unit ON	12V	

#### < ECU DIAGNOSIS >

	minal e color)	ltem	Signal input/		Condition	Reference value	/
+	-		output			(Approx.)	
35 (B)	34 (W)	Family entertain- ment system left channel audio input	Input	Ignition switch ON	DVD operating	(V) 1 -1 -1 -1 -1 SKIB3609E	(
37 (R)	36 (G)	Family entertain- ment system right channel audio input	Input	Ignition switch ON	DVD operating	(V) 1 0 -1 -1 -1 SKIB3609E	I
39 (Y/L)	Ground	Family entertain- ment system en- able	Output	Ignition switch ON	DVD operating	12V	(
40 (L/W)	Ground	Audio ON	Input	Ignition switch ON	DVD operating	12V	ŀ
42 (R)	41 (G)	Satellite radio au- dio signal LH	Input	Ignition switch ON	Satellite radio tuner operating	(V) 1 0 -1 • • 2 ms SKIB3609E	
44 (W)	43 (B)	Satellite radio au- dio signal RH	Input	Ignition switch ON	Satellite radio tuner operating	(V) 1 0 -1 • • 2ms SKIB3609E	
45	_	Ground	_	_	_	0V	ľ
46	-	Data ground	_	_	-	0V	
48 (L)	-	REQ (SAT→AV control unit)	Input	Ignition switch ON	_	_	A
49 (O/L)	-	RX (SAT→AV con- trol unit)	Input	Ignition switch ON	_	_	(
50 (W/L)	-	TX (AV control unit→SAT)	Input	Ignition switch ON	-	_	I

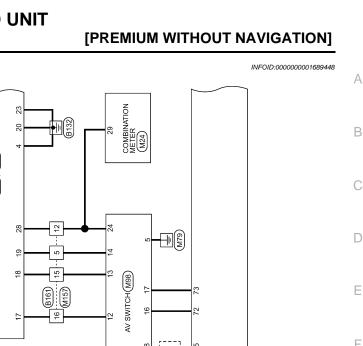
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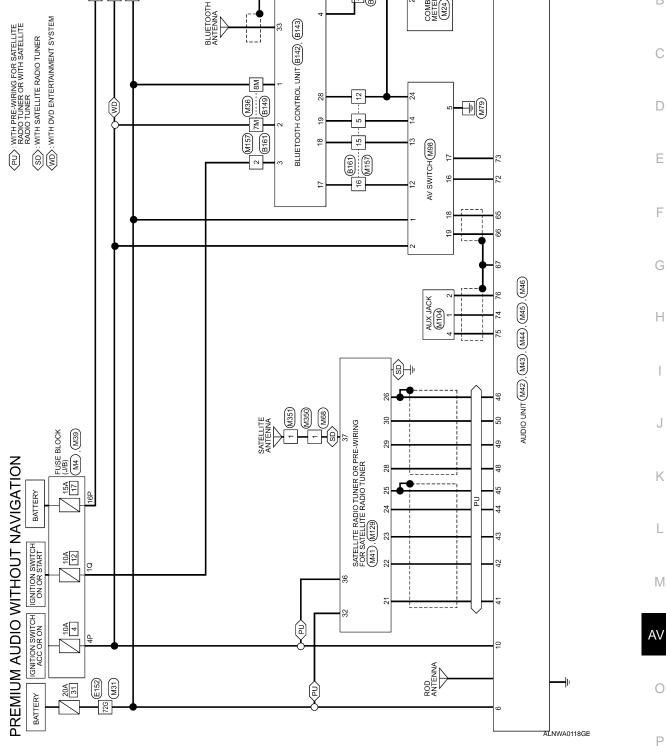
	minal e color)	Item	Signal input/		Condition	Reference value (Approx.)
+	-		output			(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
65 (O/L)	Ground	Audio RX	Input	Ignition switch ON	Operate audio vol- ume	(V) 6 4 2 0 ••••5ms SKIA4403E
66 (W/L)	Ground	Audio TX	Output	lgnition switch ON	Operate audio vol- ume	(V) 6 4 2 0 • • 2ms SKIA4402E
67	-	Shield	-	Ignition switch ON	-	0V
70	-	Shield	_	Ignition switch ON	-	0V
71 (B)	69 (W)	NAVI voice	Input	Ignition switch ON	-	_
72 (W/B)	Ground	CD eject signal	Input	Ignition switch ON	Operate EJECT but- ton	$0V \rightarrow 5V$
73 (Y/B)	Ground	CD load signal	Input	Ignition switch ON	Operate LOAD but- ton	$0V \rightarrow 5V$
74 (W)	Ground	Auxiliary audio in- put RH (+)	Input	Ignition switch ON	Receive audio sig- nal (AUX input)	(V) 1 1 1 1 1 1 1 1 1 1 1 1 1
75 (R)	Ground	Auxiliary audio in- put LH (+)	Input	Ignition switch ON Receive audio sig- nal (AUX input)		(V) 1 0 -1 1 ms skia0177E
76 (B)	_	Shield	-	_	-	OV



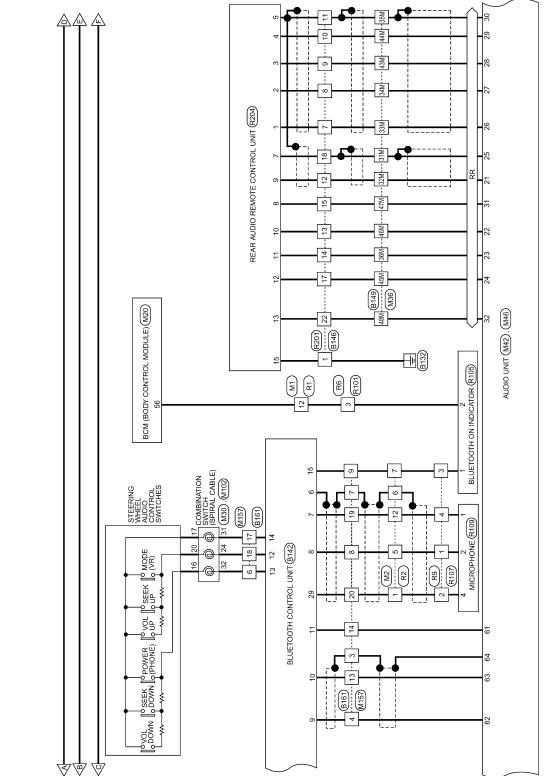
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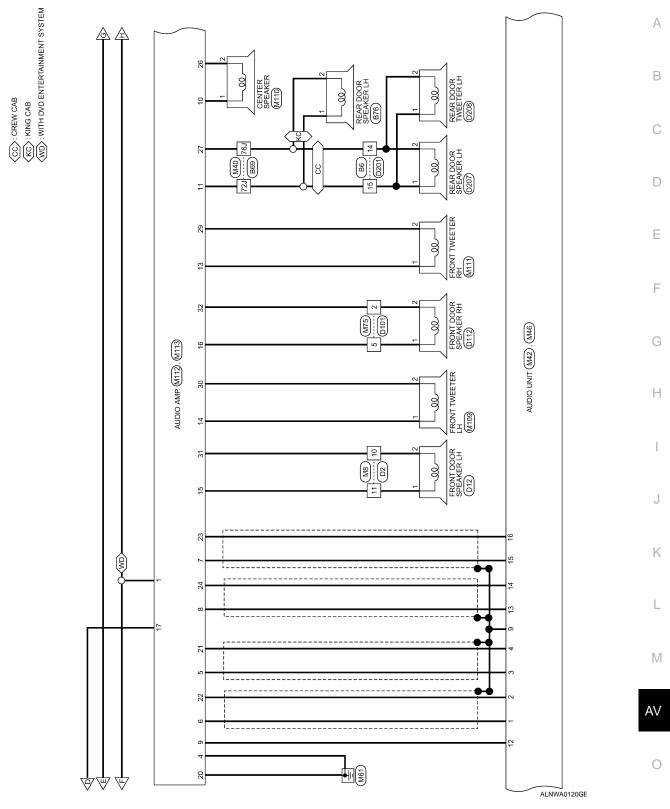


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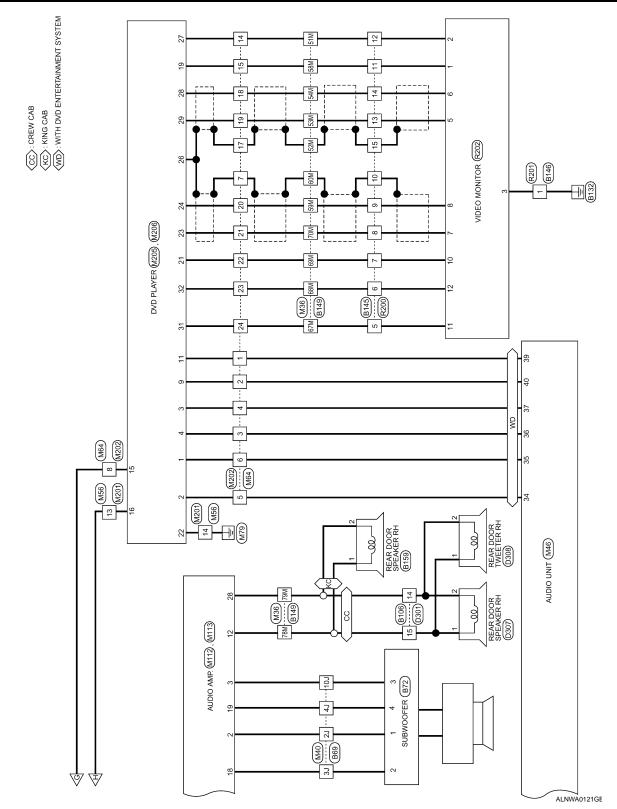
**AUDIO UNIT** 

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#### < ECU DIAGNOSIS >



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		А
M4 me FUSE BLOCK (J/B) or WHITE WHITE Mei Pap 40 19 29 80 100 of Signal Name V - V - V - V - V	MBINATION S IIRAL CABLE) AY Signal N Signal N STRG_SW_E	B
M4 Ame FUSE blor WHITE Color of V/G V/G		D
Connector No.     M4       Connector Name     FUSE BLOCK (J/B)       Connector Name     FUSE BLOCK (J/B)       Connector Color     WHITE       M     FUSE BLOCK (J/B)       Image: State of the state	Connector N Connector N Connector C Terminal No. 24 31 32	Е
		F
Signal Name	4 2	G
M2         M2           WIRE TO WIRE         WIRE TO WIRE           WHITE         VHITE           11         10           12         11           12         11           12         12           12         11           12         12           12         11           12         11           12         12           12         13           12         14           12         12           12         13           12         14           12         14           12         12           12         12           12         13           12         14           12         14           12         14           12         14           13         1           14         1           15         1           15         1           16         1           16         1           17         1	M24         M24           COMBINATION         WHITE           WHITE         M24           WHITE         M24           N/R         Sign	Η
	Connector No.         M24           Connector Name         COMBINATION METER           Connector Name         COMBINATION METER           Connector Name         COMBINATION METER           Connector Name         Combination           Mile         Mile         Mile           Mile         Signal Name         Signal Name           29         W/R         SPEED_8P	
CTORS Connector No. Connector Name Connector Name Connector Color H.N. Color 1 R.N. 5 R R 12 G	Connector No.         Connector Name           Connector Name         Connector Color           Connector Color         29           19         118         17           19         18         17           29         38         38           29         V         V	J
		K
Premiumation     Mit Connector No.     Mit Connector No.       Connector Name     Mit E TO WIRE       Connector Name     WIRE TO WIRE       Connector Name     WIRE TO WIRE       Connector Name     Mit Connector       Connector Name     Wire       Connector Name     Image: Signal Name       Terminal No.     Color of Signal Name       12     Rod		L
MITHO           M1           M1RE           WHITE           VHITE           Ion           Ion           VG	MB         MB           MHITE         MHITE           MHITE         MHITE           MHITE         MHITE           MHITE         MHITE           MHITE         MHITE	Μ
MIUM AUDIO WITHOU       Connector No.     M1       Connector Name     WIRE TO WIRE       Connector Name     MI       Connector Name     Mire       Connector Name     Mire       Terminal No.     Color of Wire       Terminal No.     Color of Wire       Terminal No.     Color of Wire		٩V
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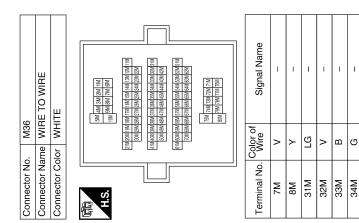
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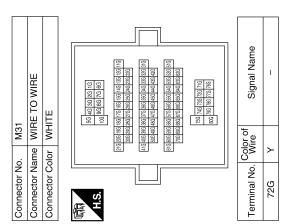
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AV-159

Signal Name	1	1	1	I	1	I	I	I	I	I	I	1	I	I	I	I	1	1	1	I	1
Color of Wire	SHIELD	BR/Υ	æ	×	ГG	٩	0	>	Β/Υ	SHIELD	BR	≻	B/W	_	SHIELD	SB	BR	G/Y	B/W	0/L	R/L
Terminal No.	35M	36M	43M	44M	45M	46M	47M	48M	51M	52M	53M	54M	58M	59M	60M	67M	68M	69M	70M	78M	79M

I





F	Connector No. M39	Connector Name FUSE BLOCK (J/B)	Connector Color WHITE	30 - 20 10 80 20 50 40
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Signal Name	I	
Color of Wire	G/R	
Terminal No.	ā	

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#### < ECU DIAGNOSIS >

Connector No. M41 Connector Name SATELLITE RADIO TUNER

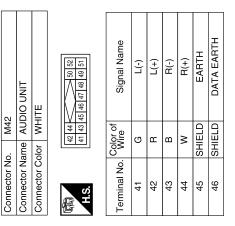
ITE	27 28 29 30 31 33 35	Signal Name	SAT_LCH(-)	SAT_LCH(+)	SAT_RCH(-)	SAT_RCH(+)	EARTH SIG	DATA_GND	REQ1 (SAT-COMBI)	TXD (SAT-COMBI)	RXD (COMBI-SAT)	BACKUP	ACC
lor WHITE	22 24 26 21 23 25	Color of Wire	σ	æ	ш	×	SHIELD	SHIELD	_	OL	W/L	≻	٨
Connector Color	雨间 H.S.	Terminal No.	21	22	23	24	25	26	28	29	30	32	36

**AUDIO UNIT** 

Signal Name							
Color of Wire	۲	в	ВВ	BR/W	SB	B/Y	
Terminal No. Color of Wire	2J	3J	4J	10J	72J	76J	

	M40	
Connector Name	WIRE TO WIRE	
Connector Color	WHITE	
R.S.H	51 44 31 21 11 10 90 81 71 61	
21,1 20	21. [20.] [9.] [12.] [13.] [14.] [13.] [12.] [11.] [30.] [29.] [29.] [27.] [26.] [25.] [24.] [23.] [22.]	
14-1 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	411 401 391 381 351 561 551 341 351 321 311 501 491 481 471 466 455 444 431 421 422	
	61.1 (61.1 (51.1 (52.1 (55.1 (53.1 (53.1 (53.1 (51.1 (1)))))))))))))))))	
	754 774 775 774 774 774 857 857 858 958 959 959 959 959 959 959 959 959	

Signal Name	REQ (CD-COMBI)	RX (CD-COMBI)	TX (COMBI-CD)	
Color of Wire	L	0/L	W/L	
Terminal No. Wire	48	49	50	



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#### [PREMIUM WITHOUT NAVIGATION]

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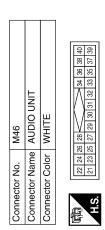
10	AUDIO UNIT	WHITE	5 67 69 71 73 75	5 68 70 72 74 76	Signal Name	TEL_SIG_INPUT (-)	TEL_SIG_INPUT (+)	TEL_SIG_ON_TRIG	TEL_SIG_GND	RX (DCU-H/U)	TX (H/U-DCU)	SHIELD	EJECT	LOAD	AUX_R+	AUX_L+	AUX_EARTH	
. M45	<u> </u>		61 63 65	62 64 66	Color of Wire	æ	σ	≻	SHIELD	O/L	W/L	SHIELD	W/B	Y/B	×	щ	в	
Connector No.	Connector Name	Connector Color		011 	Terminal No.	61	62	63	64	65	66	67	72	73	74	75	76	

Connector Name     AUDIO UNIT       Connector Color     (BOSE)       Connector Color     WHITE       Initial Library     Initial Library       Terminal No.     Color of Nire     Signal Name       12     GW     AMP_ON       13     B/R     RR_SP_LH-       14     BR     RR_SP_LH-       15     B/W     RR_SP_LH+       16     L     RR_SP_RH+	Connector No.	. M44	14
WHITE           0         0           111         11           111<	Connector Na		JDIO UNIT OSE)
Color of B/R B/R B/R L C	Connector Co	-	HITE
Color of Wire GW B/R B/R B/W L	品. S.H	( <sup>2</sup> )	2 11 13 14 15
GW B/R B/R B/W L	Terminal No.	Color o Wire	
B/R BR B/W L	12	GW	AMP_ON
BB BW L	13	B/B	RR_SP_LH-
BW L	14	BR	RR_SP_LH+
	15	B/W	RR_SP_RH-
	16	_	RR_SP_RH+

	AUDIO UNIT	ш	6         7         9	Signal Name	FR_SP_LH-	FR_SP_LH+	FR_SP_RH-	FR_SP_RH+	BACK_UP	CASE_GND	ACC
. M43		lor WHITE	2	Color of Wire	В	M	BR	٢	Y	SHIELD	>
Connector No.	Connector Name	Connector Color	民 H.S.	Terminal No.	-	2	e	4	9	6	10

Signal Name	R_CH_OUTPUT (+)	SHIELD	ENABLE	SWITCH_B(+)	FES_L_CHI/P (-)	FES_L_CHI/P (+)	FES_R_CHI/P (-)	FES_R_CH/P (+)	FES_ENABLE	
Color of Wire	×	SHIELD	0	>	×	в	σ	В	۲/۲	۲W
Terminal No.	29	30	31	32	34	35	36	22	39	40

Signal Name	REMOTE_A	REMOTE_B	REMOTE_C	REMOTE_D	REMOTE_GND	L_CH_OUTPUT (-)	L_CH_OUTPUT (+)	R_CH_OUTPUT (-)	R_CH_OUTPUT (+)
Color of Wire	>	٩	BR/Y	_	ГG	0	0/L	W/L	3
Terminal No.	21	22	23	24	25	26	27	28	29



ALNIA0788GB

**AUDIO UNIT** 

Signal Name		1	1	1	1	1	1	1	1	1					A/C AND AV SWITCH	BLY		8 10 12 14 16 18 20 22 24 7 9 11 13 15 17 19 21 23		Signal Name	8+	ACC	GND	M-CAN1_L BUS (+)	SHIELD-1	BUS (-)	REMOTE_A CONT_A	REMOTE_B CONT_B	REMOTE_CONT_C	B_PULSE	
Color of Wire			B/Y	B/W	SHIELD	~	BR		B/W	G/Y	a a	5 5	3	M98		_	-	2 4 6 8 10 12 1 3 5 7 9 11		Color of Wire	2 ×	· >	В	∑ >	SHIELD	ГG				W/R	
Terminal No.	1		14	15	17 S	18	19	20	21	22	53	03	5	Connector No.	Connector Name	Connector Color	Æ	Ś		Terminal No.		- 2	5	9	7 S	8	12	13	14	16	
	VIRE			1 2 3 4 5 6 <b>•</b> 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24			olgrial Name	I	I	I	I	1	1		VIRE		Ē	5		Signal Name	I	I									
M64	Connector Name WIRE TO WIRE	BROWN		3 4 5 6 <b>■</b> 4 15 16 17 18		Color of		۸/L	L/W	IJ	н	8	в	M75	Connector Name WIRE TO WIRE	WHITE	4 3 2 1	10 9 8 7 6	or of	5	L/B	W/B									
tor No.	tor Name	Connector Color		12 13		Colo	NO.	>		_		>		tor No.	tor Name	Connector Color					-	>									
Connector No.	Connec	Connec	Ŧ		0. 		l erminal NO.	-	2	с С	4	ъ	9	Connector No.	Connec	Connec	Æ	H.S.		Terminal No.	0	2 L									
										1				_					_												
	WIRE TO WIRE			1 2 3 • 4 5 6 7 8 9 10 11 12 13 14 15 16		i	signal Name	I	I						WIRE TO WIRE	z				Signal Name	I										
		or WHITE		8 9 10 11 1:		Color of	Wire	Υ	в					M68		or BROWN	(£	]	olor of	Wire	>										
Connector No.	Connector Name	Connector Color			0 L	-	ż	13	14					Connector No.	Connector Name	Connector Color	E	H.S.		Terminal No.	-										

#### **AUDIO UNIT** [PREMIUM WITHOUT NAVIGATION]

AV-163

M109 FRONT TWEETER LH BROWN	Signal Name	Connector No. M112 Connector Name AUDIO AMPLIFIER Connector Color BROWN	Signal Name BATT WOOFER+1 WOOFER+2 GND BATT WOOFER+1 WOOFER+1 GND GND
Vo. M109 Vame FRON Color BROW	Color of Unite	- M112 me AUDIO A lor BROWN	Color of Wire of Wire of Vire of Wire of Wire of Vire B B B B B B B B B B B B B B B B B B B
Connector No. Connector Name Connector Color	Terminal No.	Connector No. Connector Name Connector Color	Terminal No. 2 3 3 4 4 17 17 18 18 19 19 20
Connector No. M104 Connector Name AUX JACK Connector Color WHITE	Terminal No.     Color of Wire     Signal Name       1     W     AUX_AUDIO_RH +       2     B     AUX_GND       4     R     AUX_AUDIO_LH +	Connector No.     M111       Connector Name     FRONT TWEETER RH       Connector Color     BROWN	Terminal No.     Color of Wire     Signal Name       1     W/B     -       2     U/B     -
Connector No. M102 Connector Name COMBINATION SWITCH (SPIRAL CABLE) Connector Color GRAY	Terminal No.Color of WireSignal Name16R-17BR-20W-	Connector No.     M110       Connector Name     CENTER SPEAKER       Connector Color     BROWN	Terminal No.     Color of Wire     Signal Name       1     L/W     -       2     L/B     -

### < ECU DIAGNOSIS >

### [PREMIUM WITHOUT NAVIGATION]

AV-164

### **AUDIO UNIT**

#### [PREMIUM WITHOUT NAVIGATION]

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Signal Name	RR_RH_IN+	RR_LH_IN+	CTR_OUT-	RR_LH_OUT-	RR_RH_OUT-	FR_RH_TW-	FR_LH_TW-	FR_LH_OUT-	FR_RH_OUT-
Color of Wire	_	BR	L/B	B/Y	R/L	L/B	L/R	L/R	L/B
Terminal No.	23	24	26	27	28	29	30	31	32

Signal Name	AMP_ON	CTR_OUT+	RR_LH_OUT+	RR_RH_OUT+	FR_RH_TW+	FR_LH_TW+	FR_LH_OUT+	FR_RH_OUT+	FR_RH_IN+	FR_LH_IN+
Color of Wire	G/W	L/W	SB	O/L	W/B	L/W	L/W	W/B	Y	×
Terminal No.	6	10	÷	12	13	14	15	16	21	22

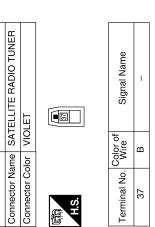
Connector No.	M113
Connector Name	Connector Name AUDIO AMPLIFIER
Connector Color BROWN	BROWN

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	9	32 31 30 29 28 27 26 25 24 23 22 21		Signal Name
	2	53		ž
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117	6	25		igr
11	10	26		0
IN	÷	27		
	12	28		
	15 14 13 12 11	29		° of
	14	30		Color of Wire
	15	31		°2
	16	32		o.
Æ		0 E		Terminal No.

Signal Name	CENTER+	RH_IN-	LH_IN-	RR_LH_IN-	
Color of Wire	BR	в	BW	B/R	
Terminal No. Wire	പ	9	7	8	

Signal Name	I	I	I	I	-	-	I
Color of Wire	æ	≻	G/O	>	Y/R	в	R/W
Terminal No. Wire	13	14	15	16	17	19	20

57	WIRE TO WIRE	WHITE	7 16 15 14 13 12 11 10		Signal Name	I	Ι	I	I	I	I	I	I	I
. M157			9 8 7 6 0 20 19 18 17 16 15		Color of Wire	G/R	SHIELD	თ	R/B	G/W	SHIELD	R/L	GR	W/R
Connector No.	Connector Name	Connector Color	сн Е	5	Terminal No.	5	ĸ	4	5	9	2	æ	ი	12



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M129

Connector No.

Signal Name	1	I	I	1	I	I	I	1	1	1	1					DVD PLAYER	ш					Signal Name		FES_L+_OUTPUT	FES_LOUTPUT	FES_R+_OUTPUT	FES_R_OUTPUT		ILL-	FES_ENABLE	LIGHTING_SW	ACC	B+
Color of Wire	>	B/Y	B/W	SHIELD	~	BR	Γ	B/W	G/Y	BB	SB	2			. M206		lor WHITE	_				Color of		m	×	щ	ŋ	L/W	BR	۲/۲	R/L	>	٢
Terminal No.	8	14	15	17	18	19	20	21	22	23	24	-			Connector No.	Connector Name	Connector Color		晤	H.S.		Tarminal No		-	5	ю	4	6	10	11	12	15	16
Connector No. M202 Connector Name WIRE TO WIRE		-	(成本)	U.		Terminal No. Wire Signal Name	~~~~	۲/۲	-		4 R –	5 W -	е В О	7 SHIELD –	Color of	Sigi	19 B/W GND	21 G/Y SW_POWER +5V	22 B GND	23 B/W VTR+	24 L VTR-	26 SHIELD SHIELD	27 B/Y GND	28 Y DATA_RX	29 BR DATA TX	31 SB +B	BB						

connector No.	M201
connector Name	connector Name WIRE TO WIRE
connector Color WHITE	WHITE

	WIRE TO WIRE	Щ	7 6 5 4 5 4 5 1 1 2 1 1 1 0 9 8	Cicaci No.
M201		WHITE	6 5 4 15 14 13	Color of
Connector No.	Connector Name	Connector Color	而 H.S.	Torminal No Co

Signal Name	I	I	
Color of Wire	≻	В	
Terminal No.	13	14	

Connector No.	M205
Connector Name DVD PLAYER	DVD PLAYER
Connector Color WHITE	WHITE

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#### [PREMIUM WITHOUT NAVIGATION]

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AGNOSIS >	[PREMIUM WITHOUT NAVIGATION]
Connector No.     E152       Connector Name     WIRE TO WIRE       Connector Name     Wire       Connector Name     Wire       Connector Name     Wire       Mark     Name       Mark     Name       Mark     Name       Mark     Name       Mark     Name       Statistic     Name       Mark     Nam       Mark	Terminal No.     Color of Wire     Signal Name       2J     V     -       2J     V     -       3J     B     -       4J     BR     -       70J     BR/W     -       76J     B/Y     -
Connector No.     M351       Connector Name     SATELLITE ANTENNA       Connector Color     BROWN       Image: Same state of the	Connector No.       B69         Connector Name       WIRE TO WIRE         Connector Name       WIRE TO WIRE         Million       Million         Million       Million
Connector No.     M350       Connector Name     WIRE TO WIRE       Connector Color     BROWN       Terminal No.     Color of Vire       1     B	Connector No.     B6       Connector Name     WIRE TO WIRE       Connector Name     WIRE TO WIRE       Connector Color     WHITE       Terminal No.     Color of 18 / 16 / 15 / 14 / 13 / 12 / 11       Terminal No.     Color of 18 / 17 / 16 / 15 / 14 / 13 / 12 / 11       Terminal No.     Color of 18 / 17 / 16 / 15 / 14 / 13 / 12 / 11

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AV-167

Connector Name WIRE TO WIRE Connector Color WHITE	Terminal No. Color of Signal Name	14 B/L –	15 O/L –			Connector Color   BLACK	_		H.S.	5			Terminal No Color of Sinnal Name		2 œ	2				
B/6 REAR DOOR SPEAKER LH WHITE	Signal Name	1	1		Signal Name	MIC_IN-	AUDIO_OUT+	AUDIO_OUT-	MUTE_CONTROL	LADDER_IN_1	LADDER_IN_2	LADDER_IN_GND	LADDER_OUT_1	LADDER_OUT_2	LADDER_OUT_GND	CONT1	CONT4	SPEED_SIGNAL	MIC_POWER	
	Color of Wire	SB	B/Y		Color of Wire	B/L	σ	æ	۲	R/G	Q/W	H/Y B	; >	G/O	R/B	в	в	W/R	R/W	
Connector Name Connector Color	Terminal No.	-	CN	-	Terminal No.	8	6	10	11	12	13	14	17	18	19	20	23	28	29	
B/2 SUBWOOFER BROWN	Signal Name	WOOFER+1	WOOFER-1	WOOFER+2 WOOFER-2	5	BLUETOOTH CONTROL	ITE				8 10112 14 16 18 20 22 24 26 28 30 30	7 19 21 23 25 27 29 31		Signal Name	BATT	ACC	IGN	GND	MIC_SHIELD	MIC IN+
9 2	Color of Wire	>	۵	BR/W BR			Color WHITE				0 12 14 16 1	9 11 13 15 17		Color of Wire	>	>	G/R	B/W	SHIELD	œ
Connector Nan Connector Nan Connector Col	Terminal No.	-	2	ω 4	Connector No.	Connector Name	Connector Color			H.S.	2 4 6 8 1	20		Terminal No.	-	. 0	e e	4	9	7

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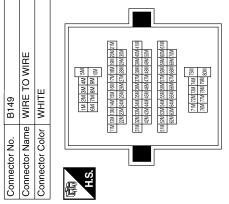
WIRE     Terminal No.       WIRE     10       11     11       11     11       11     12       12     13       13     14       14     15       1     17       1     18       1     17       1     18       1     17       1     18       1     17       1     18       1     18       1     18       1     18       1     18 <th></th> <th>52M</th> <th>53M</th> <th>54M</th> <th>04IM</th>		52M	53M	54M	04IM
Name         Name <td< td=""><td></td><td></td><td></td><td>T</td><td></td></td<>				T	
Name         Name <td< td=""><td></td><td></td><td></td><td>Т</td><td>-</td></td<>				Т	-
		ļ	1	1	I
	2 >	>	m	n (C	5
Connector No. Connector Name Connector Name Connector Color 1 1 1 1 9 R 31M 1.0 Collo	32M	32M	33M	34M	
B145           NRE TO WIRE           WHITE           WHITE           Olor of         1         2         1         5         1           BR         -         -         -         -         -         -           BR         -         -         -         -         -         -         -           BW         -         -         -         -         -         -         -           B/W         -         -         -         -         -         -         -           B/W         -         -         -         -         -         -         -           B/W         -         -         -         -         -         -         -         -           B/Y         -         -         -         -         -         -         -           B149         -         -         -         -         -         -         -         -         -           M         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -	Ш	I			I I I I I I I I I I I I I I I I I I I
0.         B145           ame         WIRE T           ame         WIRE T           olor         WHITE           Ame         Wine           SB         BR           Color of         Wine           SHELD         B/W           B/Y         B/Y           B/Y         B/Y           B/Y         B/Y           B/HELD         Caller           B/HELD         MIELL	lor WHITE	-			1 MI2
Connector No.         B145           Connector Name         WIRE TO WIRE           Connector Name         WIRE TO WIRE           Connector Color         WHITE           L         Signal           F         Signal           F         G/Y           F         G/Y           F         G/Y           T         G/Y           11         B/W           12         B/Y           13         G           14         L           15         SHIELD           Connector No.         B149           Connector No.         B149	Connector Color		L A		

Signal Name	I	I	I	Ι	I	I	Ι	I	I
Color of Wire	3	SHIELD	>	Ч	BR/Y	0	L	ГG	>
Terminal No. Color of	10	11	12	13	14	15	41	18	22

			1							
				_						
B149	WIRE TO WIRE	WHITE			1M 2M 3M 4M 5M	6M 7M 8M 9M 10M	11M 12M 13M 14M 15M 16M 17M 18M 19M 20M 21M	22M 23M 24M 25M 26M 27M 28M 29M 30M	311/I 32/II 33/II 35/II 35	51M 52M 55M 55M 56M 55M 56M 57M 58M 59M 60M 61M
ector No.	ector Name	ector Color					11M		311	211

No. Color of Wire	Β/Υ	SHIELD	BR	≻	B/W	_	SHIELD	SB	BR	G√	B/W	O/L	R/L
Terminal No.	51M	52M	53M	54M	58M	59M	60M	67M	68M	69M	70M	78M	79M
Те													
Signal Name	1	1	1	1	1	1	I	1	I	1	1	I	

Signal Name	I	I	I	I	I	I	I	I	I	I	I	I	
Color of Wire	ГG	>	в	σ	SHIELD	BR/Υ	æ	N	ГG	٩	0	>	
Terminal No.	31M	32M	33M	34M	35M	36M	43M	44M	45M	46M	47M	48M	



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	Signal Name	I	1	1	I	I	I	1	I	I	I	I	1		E TO WIRE	Е	7 6 5 4 3 2 1 16 15 14 13 12 11 10 9 8	Signal Name	I			
	Color of Wire	G/W	SHIELD	R/L	GR	W/R	æ	≻	G/O	>	Y/R	в	R/W	. R6	me WIR		7 6 5 4 16 15 14 1	Color of Wire	R/G			
	Terminal No.	9	7	ω	6	12	13	14	15	16	17	19	20	Connector No.	Connector Name WIRE TO WIRE	Connector Color	品 H.S.	Terminal No.	е			
F	Connector No. B 161 Connector Name WIRE TO WIRE	Connector Color WHITE			H S 10 11 12 13 14 15 16 17 18 19 20			Terminal No. Wire Signal Name	2 G/R –	0		5 R/B –		Connector No. R2			「1 2 3 ■ 4 5 6 7 8 9 10 11 12	Terminal No. Color of Signal Name	1 R/W –	5 R/L –	6 SHIELD –	7 GR –
	Connector No. B159 Connector Name BEAR DOOR SPEAKER BH	WHITE	_					Terminal No. Color of Signal Name			1			Connector No. R1		Connector Color WHILE	低払 H.S.	Terminal No. Color of Signal Name	12 R/G –			

### [PREMIUM WITHOUT NAVIGATION]

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AUDIO UNIT

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Connector No. R107 Connector Name WIRE TO WIRE Connector Color WHITE	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	I No. Color of Signal Name R/L – – R/W – – GR – – B –	al No. Color of Signal Name SHELD - B.W B.W	
	4 5 6 7 13 14 15 16 H.S.	Signal Name Terminal No 1 1 2 2 3 4 4	WIRE 10 WIRE 10 11 12 13 14 15 15	Signal Name
Connector No. R101 Connector Name WIRE TO WIRE Connector Color WHITE	H.S.	Terminal No. Color of Wire 3 R/G	Connector No. R200 Connector Name WIRE TO WIRE Connector Color WHITE	Terminal No.     Color of Wire       5     SB       6     BR       7     G/Y       9     L
Connector No. R9 Connector Name WIRE TO WIRE Connector Color WHITE	頃 H.S.	Terminal No.Color of WireSignal Name1R/L-2R/W-3GR-4B-	Connector No. R109 Connector Name MICROPHONE Connector Color WHITE	Terminal No.     Color of Wire     Signal Name       1     B     MIC_OUT_(+)       2     R/L     MIC_OUT_(-)       4     R/W     MIC_POWER

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Connector No. R204 Connector Name REAR AUDIO REMOTE Connector Color WHITE		Terminal No. Color of Signal Name	1 B L_CH_INPUT-	2 G L_CH_INPUT+	3 R R_CH_INPUT-	4 W R_CH_INPUT+	5 SHIELD SHIELD	7 LG REMOTE_GND	8 O ENABLE	9 V REMOTE_A	10 P REMOTE_B	11 BR/Y REMOTE_C	12 G REMOTE_D	13 V SWITCH_+B	15 B GND	F	Connector No. D101	Connector Name WIRE TO WIRE	Connector Color WHITE
R202 VIDEO MONITOR WHITE	2 4 6 10 10 12 1 3 5 7 8 9 11	Color of Signal Name	B/W GND	B/Y GND	BID	G DATA_RX	L DATA_TX	W VIDEO IN+	L VIDEO IN-	G/Y SW POWER_+5V	SB FILTERED_BAT	BR FILTERED_BAT					D12	Connector Name FRONT DOOR SPEAKER LH	WHITE
Connector No. Connector Name Connector Color	。 H.S.	Terminal No. Colo	1 B/	2 B/	3	2	9	7 V	8	10 G/	11 S	12 B					Connector No.	Connector Name	Connector Color
Connector No. R201 Connector Name WIRE TO WIRE Connector Color BROWN	24 23 22 21 20 19 18 17 16 15 14 13 2 1 24 23 22 21 20 19 18 17 16 15 14 19 12	Color of Signal Name	ı m	۱ ش	ı ت	L.	- M	SHIELD –	- >	۱ ۵.	BR/Y –	- 0	B	GR –	- N		. D2	Connector Name WIRE TO WIRE	lor WHITE
Connector No. Connector Name Connector Color	同 H.S.	Terminal No.	-	2	∞	6	10	1	12	13	14	15	17	18	22		Connector No.	Connector Na	Connector Color

ш	7 8 9 10	Signal	I
lor WHIT	1 5 5 6 1	Color of Wire	L/B
Connector Color WHITE	雨 H.S.	Terminal No. Wire	2
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				1
2	Signal Name	I	I	
-	Color of Wire	L/W	L/R	
У.Н.	Terminal No.	Ļ	2	

Signal Name

Color of Wire L/B ۲

> Terminal No. 10 ÷

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Image: Description of the state of the		B C D
Connector No.     D112 Domector Name (meetor Name (meetor Name)     Connector Name (meetor Name)     Connector Name (meetor Name)       Connector Name (meetor Name)     D112 (meetor Name)     Connector Name)     Connector Name)       Connector Name)     Connector Name)     Connector Name)     Connector Name)       M     M     M     M     M       M     M     M     M     M       M     M     M     M     M       M     M     M     M       M     M     M       M     M     M       M     M     M       M     M     M       M     M       M     M </th <th></th> <th>F</th>		F
Connector No.     D112 Domector Name (meetor Name (meetor Name)     Connector Name (meetor Name)     Connector Name (meetor Name)       Connector Name (meetor Name)     D112 (meetor Name)     Connector Name)     Connector Name)       Connector Name)     Connector Name)     Connector Name)     Connector Name)       M     M     M     M     M       M     M     M     M     M       M     M     M     M     M       M     M     M     M       M     M     M       M     M     M       M     M     M       M     M     M       M     M       M     M </td <td>VIRE i6 7 8 9 10 i6 17 18 i6 1</td> <td>G</td>	VIRE i6 7 8 9 10 i6 17 18 i6 1	G
Image: Connector No.     Connector No.     Di12     Connector No.       Connector Name     ERONT DOOR SPEAKER RH     Connector Name       Connector Name     Connector Name     Connector Name       N     Connector Name     Connector Name	C C C C C C C C C C C C C C C C C C C	Н
Image: Signal Name     Image: Signal Name       Image: Signal Name       Image: Signal Name       Image: Signa Name		I
Connector No.       D112         Connector Name       FRONT DOOR SFEAKER RH         Connector Name       Front         T       T         T       T         Connector Name       REAR DOOR TWEETER LH         Connector Name       REAR DOOR TWEETER LH         T       T       T         T       T       T         Connector Name       REAR DOOR TWEETER LH       Signal Name         T       T       T	Connecto Connecto Connecto Lanal 14 15	J
		K
	anal Name anal Name	L
		Μ
	Name RE Color BF BA	AV
	Connector Connector Connector Terminal N 2	0
ALNIA0799GB	ALNIA0799	

# < ECU DIAGNOSIS >

#### [PREMIUM WITHOUT NAVIGATION]

AV-173

Connector No.	D308
Connector Name	Connector Name REAR DOOR TWEETER RH
Connector Color BROWN	BROWN
	21

الم	Signal Name	I
	Color of Wire	0/L
雨司 H.S.	Terminal No.	Ļ

Signal Name	1	I
Color of Wire	O/L	R/L
Terminal No.	Ļ	2

ALNIA0800GB

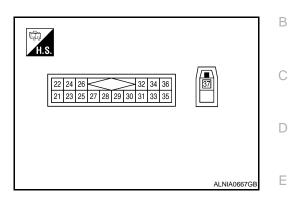
### SATELLITE RADIO TUNER

#### **Reference Value**

INFOID:000000001689449

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#### PHYSICAL VALUES

Teri	minal	Description				Reference value	-
+	_	Signal name	Input/ Output		Condition	(Approx.)	G
22 (R)	21 (G)	Satellite radio sound signal LH	Output	Ignition switch ON	When satellite radio mode is selected	(V) 1 0 -1 + 2ms SKIB3609E	H
24 (W)	23 (B)	Satellite radio sound signal RH	Output	Ignition switch ON	When satellite radio mode is selected	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	J K
25	_	Shield	_	—	—	—	
26	_	Shield		—	—	_	-
28 (L)	Ground	Request signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 10 + 10ms SKIA9299J	M AV O
29 (O/L)	Ground	Communication signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 -10 -10 -10 -10 -10 -	P

### SATELLITE RADIO TUNER

#### < ECU DIAGNOSIS >

Terr	minal	Description				Reference value	
+	-	Signal name	Input/ Output		Condition	(Approx.)	
30 (W/L)	Ground	Communication signal (CONT→SAT)	Input	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 -10 -10 -10 -10 -10 -	
32 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage	
36 (V)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage	
37 (B)		Satellite antenna	Input		_	_	

#### [PREMIUM WITHOUT NAVIGATION]

### < ECU DIAGNOSIS >

### DVD PLAYER

**Reference Value** 

INFOID:000000001689450



#### PHYSICAL VALUES

	Terminal Description (Wire color)		Description Condition		Condition	Reference value
+	_	Signal name	Signal name Input/ Output		Condition	(Approx.)
1 (B)	2 (W)	DVD audio signal LH	Output	lgnition switch ON	With operation of the DVD player	(V) 1 0 -1 • • 2 ms SKIB3609E
3 (R)	4 (G)	DVD audio signal RH	Output	lgnition switch ON	With DVD player operation	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
9 (L/W)	Ground	Audio ON	Output	Ignition switch ON	With DVD player operation	Battery voltage
10 (BR)	Ground	Illumination control	Input	Ignition switch ON	With lighting switch in 1st or 2nd position	Varies between 0 and Battery voltage
11 (Y/L)	Ground	Family entertainment sys- tem enable	Input	Ignition switch ON	With DVD player operation	Battery voltage
12 (R/L)	Ground	Illumination power	Input	Ignition switch ON	With lighting switch in 1st or 2nd position	Battery voltage
15 (V)	Ground	ACC power	Input	Ignition switch ACC or ON	_	Battery voltage
16 (Y)	Ground	Battery power	Input	—	_	Battery voltage

### AV-177

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### **DVD PLAYER**

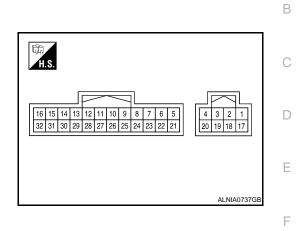
# < ECU DIAGNOSIS >

	minal color)	Description		Condition		Reference value	
+	-	Signal name	Input/ Output		Condition	(Approx.)	
19 (B/W)	Ground	Ground	_	Ignition switch ON	_	0V	
21 G/Y	Ground	Switch power	Output	Ignition switch ON	With DVD player operation	5V	
22 (B)	Ground	Ground	_	Ignition switch ON	_	0V	
23 (B/W)	Ground	VTR (+)	Output	Ignition switch ON	With DVD player operation	_	
24 (L)	Ground	VTR (-)	Output	Ignition switch ON	With DVD player operation	_	
26	—	Shield	_	—	—	_	
27 (B/Y)	Ground	Ground	_	Ignition switch ON	_	0V	
28 (Y)		Data receive	Input		_	_	
29 (BR)	_	Data transmit	Output			_	
31 (SB)	Ground	Battery power	Output	—		Battery voltage	
32 (BR)	Ground	Battery power	Output	—	_	Battery voltage	

### AUDIO AMP

**Reference Value** 

**TERMINAL LAYOUT** 



#### PHYSICAL VALUES

	minal color)	Item	Signal input/ output		Condition	Reference value (Approx.)	G
+ 1 (Y)	Ground	Battery	Input	_	_	Battery voltage	Н
2 (W)	18 (B)	Subwoofer	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	l J
3 (BR/W)	19 (BR)	Subwoofer	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5	K
4 (B)	Ground	Ground	_	Ignition switch ON	-	_	Μ
9 (G/W)	Ground	Amp. ON signal	Input	Ignition switch ON	-	More than 6.5V	AV
10 (L/W)	26 (L/B)	Center speaker	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	O

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### AUDIO AMP

#### < ECU DIAGNOSIS >

Terminal (wire color)		Item	Signal input/		Condition	Reference value (Approx.)
+	-		output			(Appiox.)
11 (SB)	27 (B/Y)	Rear door speak- er LH and rear door tweeter LH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
12 (O/L)	28 (R/L)	Rear door speak- er RH and rear door tweeter RH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5
13 (W/B)	29 (L/B)	Front door tweet- er RH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 SKIA0177E
14 (L/W)	30 (L/R)	Front tweeter LH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 SKIA0177E
15 (L/W)	31 (L/R)	Front door speak- er LH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
16 (W/B)	32 (L/B)	Front door speak- er RH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 KIA0177E
17 (Y/G)	Ground	Battery	Input	-	_	Battery voltage
20 (B)	Ground	Ground	_	Ignition switch ON	_	_

# AUDIO AMP

# < ECU DIAGNOSIS >

# [PREMIUM WITHOUT NAVIGATION]

	ninal color) _	ltem	Signal input/ output		Condition Reference value (Approx.)		A
21 (Y)	5 (BR)	Audio sound sig- nal front RH	Input	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 KIA0177E	B
22 (W)	6 (B)	Audio sound sig- nal front LH	Input	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	D E F
23 (L)	7 (B/W)	Audio sound sig- nal rear RH	Input	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	G
24 (BR)	8 (B/R)	Audio sound sig- nal rear LH	Input	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	I J K

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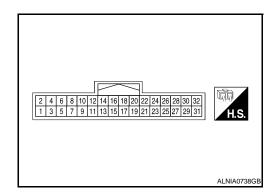
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# **BLUETOOTH CONTROL UNIT**

**Reference Value** 

TERMINAL LAYOUT

PHYSICAL VALUES



Terminal (wire color)		Descriptio	n	Condition		Reference value	
+	_	Signal name	Input/ output	Condition		(Approx.)	
1 (Y)	Ground	Battery power	Input	_	-	Battery voltage	
2 (V)	Ground	ACC power	Input	Ignition switch ACC/ON	-	Battery voltage	
3 (G/R)	Ground	IGN power	Input	lgnition switch ON/ START	-	Battery voltage	
4 (B/W)	Ground	Ground	-	Ignition switch ON	-	0V	
6	-	Shield	-	-	-	-	
7 (B)	8 (R/L)	MIC in signal	Input	_	-	_	
9 (G)	10 (R)	Audio out	Output	Ignition switch ACC/ON	Bluetooth control unit sends audio signal	(V) 1 0 -1 0 2 ms SKIB3609E	
11 (Y)	-	Mute control	_	_	_	_	
					Pressing 🌈 📢 switch	0V	
12	14	Steering switch	Input	Ignition switch	Pressing $\Delta$ switch	0.75	
(R/G)			Pressing VOL up switch	2V			
					Except for above	5V	

# BLUETOOTH CONTROL UNIT

### < ECU DIAGNOSIS >

# [PREMIUM WITHOUT NAVIGATION]

Terminal (wire color)		Description	n	Condition		Reference value									
+	_	Signal name	Input/ output		Condition	(Approx.)									
					Pressing	0V									
13	14	Steering switch	Input	Ignition switch	Pressing $ abla$ switch	0.75V									
(G/W)	(Y/R)	signal B	mpor	ON	Pressing VOL down switch	2V									
					Except for above	5 V									
15 (G/R)	Ground	LED power	Output	lgnition switch ON	-	Battery voltage									
					Pressing 🌈 📈 switch	0V									
17	19	Steering switch	Output	Ignition switch	Pressing $\Delta$ switch	0.75									
(V)	(R/B)	signal A	Culput	Output	Output	Culput	Culput	Culput	Culput	σαιραί	ON	Pressing VOL up switch	2V		
					Except for above	5V									
					Pressing MODE switch	0V									
18	19		switch Output Switch Ontput	Output switch	Output switch		Output	Output	Output	Output switch	Output		Pressing $ abla$ switch	0.75V	
(G/O)	(R/B)	signal B									Pressing VOL down switch	2V			
					Except for above	5V									
20 (B)	Ground	Ground	-	_	_	0V									
23 (B)	Ground	Ground	_	_	-	0V									
28 (W/R)	Ground	Vehicle speed sig- nal (8-pulse)	Input	lgnition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	(V) 15 10 5 0 • • • 20ms PKIA1935E									
29 (R/W)	Ground	Microphone power	Output	lgnition switch ON	_	5V									

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# [PREMIUM WITHOUT NAVIGATION]

# SYMPTOM DIAGNOSIS AUDIO SYSTEM

# Symptom Table

INFOID:000000001663581

# AUDIO SYSTEM

Symptom	Possible cause	Reference page
Inoperative	<ul><li>AV control unit power circuit</li><li>AV control unit</li></ul>	• <u>AV-117</u> • <u>AV-189</u>
Steering switch does not operate	<ul><li>Steering switch</li><li>AV control unit</li></ul>	• <u>AV-142</u> • <u>AV-117</u>
All speakers do not sound	<ul> <li>AV control unit</li> <li>AV control unit power circuit</li> <li>Audio amp. ON signal</li> <li>Audio amp. power/ground circuit</li> <li>Audio amp.</li> </ul>	<ul> <li><u>AV-117</u></li> <li><u>AV-117</u></li> <li><u>AV-141</u></li> <li><u>AV-120</u></li> <li><u>AV-201</u></li> </ul>
One or several speakers do not sound	<ul> <li>Front door speaker</li> <li>Front tweeter</li> <li>Center speaker</li> <li>Rear door speaker</li> <li>Rear door tweeter (crew cab)</li> <li>Subwoofer</li> </ul>	<ul> <li><u>AV-124</u></li> <li><u>AV-127</u></li> <li><u>AV-130</u></li> <li><u>AV-132</u></li> <li><u>AV-135</u></li> <li><u>AV-138</u></li> </ul>

CD

Symptom	Possible cause	Reference page	
CD cannot be inserted.			
CD cannot be ejected.	AV control unit	<u>AV-117</u>	
The CD cannot be played.			
The sound skips, stops suddenly, or is distorted.			

# SATELLITE RADIO

Symptom	Possible cause	Reference page
Inoperative	<ul> <li>Satellite radio tuner power or ground circuit</li> <li>Satellite radio tuner communication circuit</li> <li>Satellite radio tuner</li> </ul>	• <u>AV-118</u> • <u>AV-144</u> • <u>AV-204</u>
Right or left channel does not sound	<ul> <li>Satellite radio tuner right channel audio signal circuit</li> <li>Satellite radio tuner left channel audio signal circuit</li> <li>Satellite radio tuner</li> </ul>	• <u>AV-147</u>

# HANDS-FREE PHONE

Symptom	Possible cause	Reference page
Inoperative	<ul><li>Bluetooth control unit power and ground circuit</li><li>Bluetooth control unit</li></ul>	<ul> <li><u>AV-121</u></li> <li><u>AV-116</u></li> </ul>
Steering switch does not operate	<ul><li>Steering switch</li><li>Bluetooth control unit</li></ul>	<ul> <li><u>AV-142</u></li> <li><u>AV-116</u></li> </ul>
Voice activated control does not operate	<ul><li>Microphone</li><li>Steering switch</li><li>Bluetooth control unit</li></ul>	<ul> <li><u>AV-149</u></li> <li><u>AV-142</u></li> <li><u>AV-116</u></li> </ul>

### **DVD PLAYER**

# **AUDIO SYSTEM**

### < SYMPTOM DIAGNOSIS >

# [PREMIUM WITHOUT NAVIGATION]

Symptom	Possible cause	Reference page	,
DVD player inoperative	<ul><li>Power supply and ground circuits</li><li>DVD player</li></ul>	• <u>AV-119</u>	A
No sound when playing a DVD	<ul><li>Audio signal circuits</li><li>AV control unit</li><li>DVD player</li></ul>	<ul> <li><u>AV-177</u></li> <li><u>AV-117</u></li> <li><u>AV-119</u></li> </ul>	E
Video monitor is inoperative/does not display properly	<ul> <li>Power supply and ground circuits</li> <li>Video out circuit</li> <li>DVD player</li> <li>Video monitor</li> </ul>	<ul> <li><u>AV-119</u></li> <li><u>AV-177</u></li> <li><u>AV-119</u></li> <li><u>AV-119</u></li> </ul>	(
DVD remote control is inoperative/does not operate properly	<ul><li>DVD player</li><li>Rear audio remote control unit</li></ul>	<ul> <li><u>AV-119</u></li> <li><u>AV-198</u></li> </ul>	
Headphones inoperative	<ul> <li>Headphone batteries</li> <li>Headphone audio signal circuits from AV control unit</li> <li>AV control unit</li> <li>Rear audio remote control unit</li> </ul>	• <u>AV-151</u> • <u>AV-151</u> • <u>AV-151</u>	E

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# NORMAL OPERATING CONDITION

### < SYMPTOM DIAGNOSIS >

# NORMAL OPERATING CONDITION

# Description

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[PREMIUM WITHOUT NAVIGATION]

The majority of the audio concerns are the result of outside causes (bad CD, electromagnetic interference, etc.).

### NOISE

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

- 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 the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off mountains or buildings.

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 determine the cause.

### NOTE:

The source of the noise can be found easily by listening to the noise while removing the fuses of electrical components, one by one.

Type of Noise and Possible Cause

C	Occurrence condition	Possible cause
Occurs only when engine is ON. A continuous growling noise occurs. The sp the noise varies with changes in the engine		Ignition components
The occurrence of the noise is lin	ked with the operation of the fuel pump.	Fuel pump condenser
Noise only occurs when various electrical components are oper-	A cracking or snapping sound occurs with the operation of various switches.	Relay malfunction, AV control unit malfunc- tion
ating.	The noise occurs when various motors are operat- ing.	<ul><li>Motor case ground</li><li>Motor</li></ul>
The noise occurs constantly, not	<ul> <li>Rear defogger coil malfunction (crew cab)</li> <li>Open circuit in printed heater</li> <li>Poor ground of antenna feeder line</li> </ul>	
A cracking or snapping sound occ it is vibrating excessively.	urs while the vehicle is being driven, especially when	<ul> <li>Ground wire of body parts</li> <li>Ground due to improper part installation</li> <li>Wiring connections or a short circuit</li> </ul>

# < PRECAUTION > PRECAUTION PRECAUTIONS

Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSION-ER"

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 and SB section of this Service Manual.

### WARNING:

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

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# < PREPARATION > PREPARATION

# PREPARATION

# **Commercial Service Tools**

Tool name		Description
Power tool		Loosening bolts and nuts
	PBIC0191E	

# < ON-VEHICLE REPAIR > ON-VEHICLE REPAIR

# AUDIO UNIT

Removal and Installation

For removal and installation, refer to <u>AV-92, "Removal and Installation"</u>.

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# DISPLAY UNIT

Removal and Installation

For removal and installation, refer to <u>AV-190, "Removal and Installation"</u>.

# **FRONT TWEETER**

# [PREMIUM WITHOUT NAVIGATION]

# < ON-VEHICLE REPAIR > **FRONT TWEETER** А Removal and Installation INFOID:000000001663587 For removal and installation, refer to AV-34, "Removal and Installation". В С D Е F G

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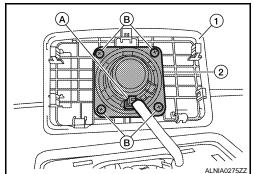
# CENTER SPEAKER

# Removal and Installation

REMOVAL

# **CAUTION:** Use a suitable tool to prevent damage to the center speaker grille and the instrument panel.

- 1. Using a suitable tool, remove the center speaker grille finisher (1).
- 2. Disconnect the center speaker connector (A).
- 3. Remove the center speaker screws (B).
- 4. Remove the center speaker (2).



INSTALLATION Installation is in the reverse order of removal.

# < ON-VEHICLE REPAIR > FRONT DOOR SPEAKER А Removal and Installation INFOID:000000001663589 For removal and installation, refer to AV-35. "Removal and Installation". В С D Е F G Н J Κ L Μ AV

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# REAR DOOR SPEAKER

Removal and Installation

REAR DOOR SPEAKER For removal and installation, refer to <u>AV-36, "Removal and Installation"</u>.

REAR DOOR TWEETER For removal and installation, refer to <u>AV-36, "Removal and Installation"</u>.

# BACK DOOR SPEAKER

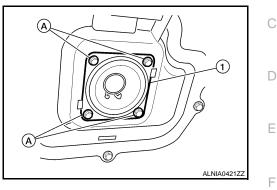
# Removal and Installation

# REMOVAL

- 1. Remove the back door lower finisher. Refer to XXX.
- 2. Remove the back door speaker screws (A).
- 3. Pull out the back door speaker (1), disconnect the back door speaker connector and remove the back door speaker (1).

INSTALLATION Installation is in the reverse order of removal.

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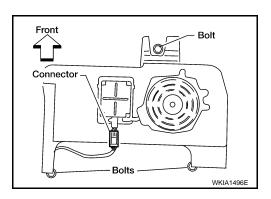
# WOOFER

Removal and Installation

# SUBWOOFER (BOSE SYSTEM)

Removal

- 1. Remove front seat LH. Refer to SE-28, "Removal and Installation".
- 2. Disconnect the subwoofer connector.
- 3. Remove the subwoofer bolts.
- 4. Remove the subwoofer.



Installation Installation is in the reverse order of removal.

# **STEERING SWITCH**

# < ON-VEHICLE REPAIR >

# [PREMIUM WITHOUT NAVIGATION]

# STEERING SWITCH

# Removal and Installation

For removal and installation of the steering wheel audio control switch, refer to <u>AV-98, "Removal and Installa-</u> <sub>B</sub> <u>tion"</u>.

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# REAR AUDIO REMOTE CONTROL UNIT

Removal and Installation

For removal and installation, refer to AV-99. "Removal and Installation"

AV-198

# DVD PLAYER A Removal and Installation monocommonstallation. For removal and installation, refer to AV-200, "Removal and Installation". B C D E F F F G G

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# DVD ENTERTAINMENT SYSTEM

Removal and Installation

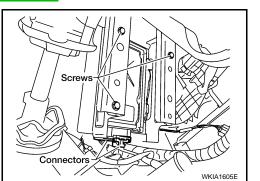
For removal and installation, refer to <u>AV-200, "Removal and Installation"</u>.

# < ON-VEHICLE REPAIR > BOSE AMP.

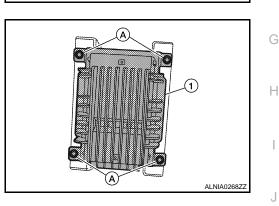
# **Removal and Installation**

### REMOVAL

- 1. Remove the BCM. Refer to BCS-50, "Removal and Installation".
- 2. Remove the accelerator pedal. Refer to ACC-3, "Removal and Installation".
- 3. Disconnect the BOSE speaker amp. connectors.
- 4. Remove the BOSE speaker amp. and bracket assembly screws and slide the BOSE speaker amp. bracket assembly down.



Remove the BOSE speaker amp.screws (A). then remove the 5. BOSE speaker amp. (1).



**INSTALLATION** Installation is in the reverse order of removal.

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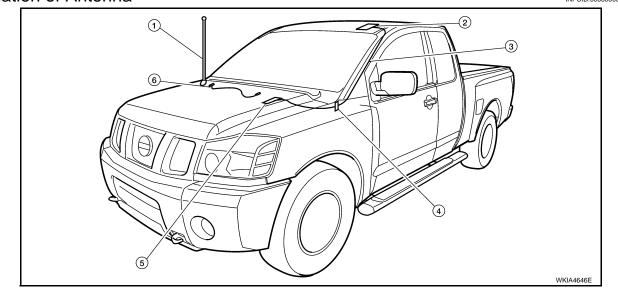
# AUDIO ANTENNA

# [PREMIUM WITHOUT NAVIGATION]

# < ON-VEHICLE REPAIR > AUDIO ANTENNA

# Location of Antenna





1. Antenna

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M69, M350

- 2. Satellite antenna (if equipped, factory installed) M351 3.
- 5. Satellite radio tuner M129
- Satellite antenna feeder
- 6. Main feeder cable

AV-202

# SATELLITE RADIO ANTENNA

<pre>CON-VEHICLE REPAIR &gt; [PREMIUM WITHOUT NAVIGATION]</pre>				
SATELLITE RADIO ANTENNA	A			
Removal and Installation	INFOID:000000001663600			
For removal and installation, refer to AV-102, "Removal and Installation".	В			
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INFOID:000000001663601

# SATELLITE RADIO TUNER

Removal and Installation

For removal and installation, refer to <u>AV-103</u>, "Removal and Installation".

# MICROPHONE

# Removal and Installation

# REMOVAL

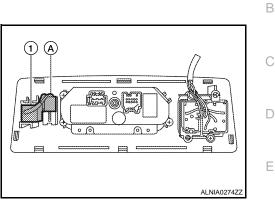
**INSTALLATION** 

- 1. Remove the front roof console finisher. Refer to XXXX.
- 2. Disconnect the Bluetooth microphone connector (A).
- 3. Detach the Bluetooth microphone (1) from the front roof console finisher and remove the Bluetooth microphone (1).



Installation is in the reverse order of removal.

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[PREMIUM WITHOUT NAVIGATION]

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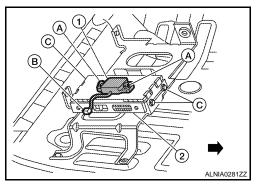
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# TEL ANTENNA

# Removal and Installation

# REMOVAL

- 1. Disconnect the battery negative terminal.
- 2. Slide the front passenger seat fully forward.
- 3. Remove the Bluetooth control unit kick shield screws and remove the Bluetooth control unit kick shield.
- Remove the Bluetooth antenna screws (A), disconnect the Bluetooth antenna connector (B) and remove the Bluetooth antenna (1).
  - Bluetooth control unit screws (C)
  - Bluetooth control unit (2)
  - $\Leftarrow$ :Front of vehicle



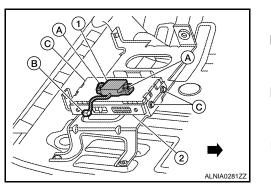
INSTALLATION Installation is in the reverse order of removal. [PREMIUM WITHOUT NAVIGATION]

# **BLUETOOTH CONTROL UNIT**

# **Removal and Installation**

### REMOVAL

- 1. Disconnect the negative battery terminal.
- 2. Slide the front passenger seat fully forward.
- 3. Remove the Bluetooth control unit kick shield screws and remove the Bluetooth control unit kick shield.
- 4. Remove the Bluetooth control unit screws (C), disconnect the Bluetooth control unit connectors and remove the Bluetooth control unit (2).
  - Bluetooth antenna (1)
  - Bluetooth antenna screws (A)
  - Bluetooth antenna connector (B)
  - ⇐:Front of vehicle



**INSTALLATION** Installation is in the reverse order of removal.

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# [PREMIUM WITHOUT NAVIGATION]

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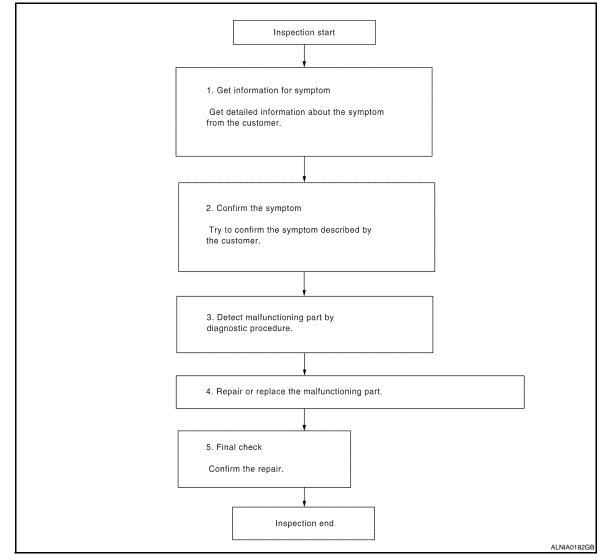
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# BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

# Work Flow

INFOID:000000001693603

**OVERALL SEQUENCE** 



# DETAILED FLOW

# **1.**GET INFORMATION FOR SYMPTOM

Get detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred).

# >> GO TO 2

# **2.**CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer. Verify relation between the symptom and the condition when the symptom is detected.

# >> GO TO 3

**3.** DETECT MALFUNCTIONING PART BY DIAGNOSTIC PROCEDURE

Inspect according to Diagnostic Procedure of the system.

# AV-208

DIAGNOSIS AND REPAI	R WORKFLOW
< BASIC INSPECTION >	[PREMIUM WITH NAVIGATION]
Is malfunctioning part detected?	
YES >> GO TO 4 NO >> GO TO 2	A
<b>4.</b> REPAIR OR REPLACE THE MALFUNCTIONING PART	
	В
<ol> <li>Repair or replace the malfunctioning part.</li> <li>Reconnect parts or connectors disconnected during Diag</li> </ol>	nostic Procedure.
>> GO TO 5	C
5.FINAL CHECK	
Refer to confirmed symptom in step 2, and make sure that th Was the repair confirmed?	e symptom is not detected.
YES >> Inspection End. NO >> GO TO 2	E
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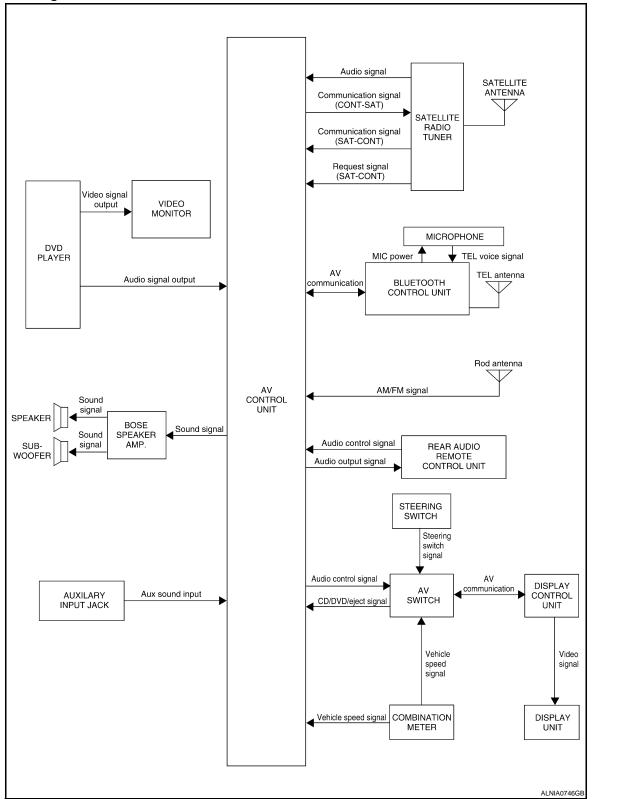
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INFOID:000000001691171

# < FUNCTION DIAGNOSIS > FUNCTION DIAGNOSIS AUDIO SYSTEM

# System Diagram



System Description

# < FUNCTION DIAGNOSIS >

The outline system consists of the following components	
The audio system consists of the following components <ul> <li>Audio unit</li> </ul>	
	А
Display unit	
Display control unit	
Audio amp.	В
Rod antenna	
Steering wheel audio control switches	
• AV switch	
Rear audio remote control unit	С
Front door speakers	
Front tweeters	
Center speaker	D
Rear door speakers	
Rear door tweeters (crew cab)	
Subwoofer	_
When the audio system is on, radio signals are received by the rod antenna. The audio unit then sends audio	E
signals to the audio amp. The audio amp. amplifies the audio signals before sending them to the front door	
speakers, front tweeters, center speaker, rear door speakers, rear door tweeters (crew cab) and the sub-	
woofer.	F
Refer to Owner's Manual for audio system operating instructions.	-
SATELLITE RADIO SYSTEM	
The satellite radio system consists of the following components	0
Satellite antenna	G
Satellite radio tuner	
When the satellite radio system is on, radio signals are supplied to the satellite radio tuner from the satellite	Н
antenna. The satellite radio tuner then sends audio signals to the audio unit.	
Refer to Owner's Manual for satellite radio system operating instructions.	
SPEED SENSITIVE VOLUME SYSTEM	
Volume level of this system goes up and down automatically in proportion to the vehicle speed. The control	1
level can be selected by the customer. Refer to Owner's Manual for operating instructions.	
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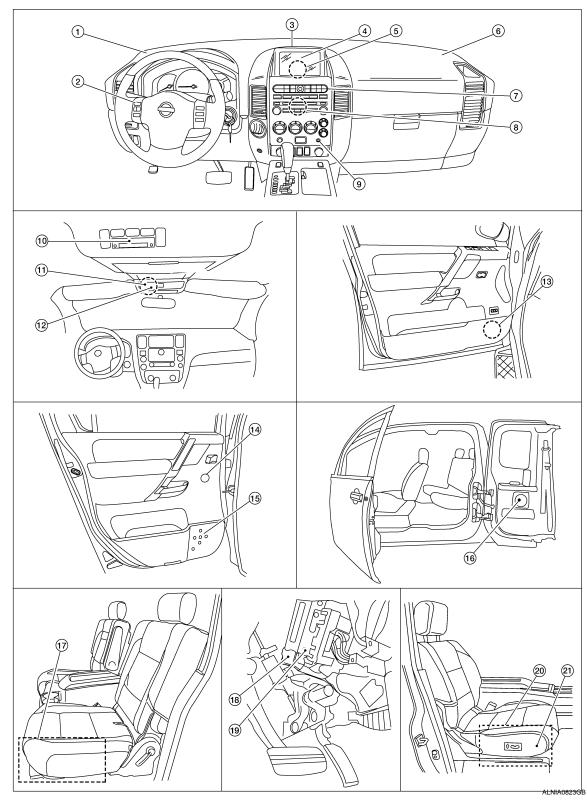
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# **AUDIO SYSTEM**

### < FUNCTION DIAGNOSIS >

# **Component Parts Location**

INFOID:000000001691173



### <⊐:FRONT

- 1. Front tweeter LH M109
- 4. Display unit M93
- 7. AV switch M98

- 2. Steering wheel audio control switch- 3. es
  - Display control unit M95

5.

- 8. Audio unit M42, M43, M44, M45, M46 9.
- Center speaker M110
- Front tweeter RH M111
  - Aux jack M104

6.

# **AUDIO SYSTEM**

### < FUNCTION DIAGNOSIS >

10.	Rear audio remote control unit R204	11.	Bluetooth ON indicator R105	12.	Microphone R109		
13.	Front door speaker LH D12 RH D112	14.	Rear door tweeter (crew cab) LH D208 RH D308	15.	Rear door speaker (crew cab) LH D207 RH D307	A	
16.	Rear door speaker (king cab) LH B76 RH B159	17.	Subwoofer B72 (under driver's seat)	18.	Audio amp. M112, M113 (view behind instrument panel above accelerator pedal)	В	
19.	Satellite radio tuner M41, M129	20.	NAVI control unit B151, B152 (locat- ed under passenger front seat)	21.	Bluetooth control unit B141, B142 (with Bluetooth)	С	

# **Component Description**

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[PREMIUM WITH NAVIGATION]

Part name	Description	
Audio unit	Controls audio system and satellite radio system functions	
Display unit	Displays all audio and navigation related information received from the display control unit	
Display control unit	Receives audio and navigation related information and outputs that informa- tion to the display unit	
Audio amp.	Receives power (amp ON) and audio signals from audio unit and outputs au- dio signals to each speaker.	
Steering switches	<ul><li>Audio operation can be operated</li><li>Steering switch signal is output to audio unit</li></ul>	
Front door speakers	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high, mid and low range sounds</li></ul>	
Front tweeters	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high range sounds</li></ul>	
Center speaker	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high range sounds</li></ul>	
Rear door speakers	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high, mid and low range sounds</li></ul>	
Rear door tweeters (crew cab)	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high range sounds</li></ul>	
Subwoofer	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs low range sounds</li></ul>	
Satellite radio tuner	<ul><li>Receives radio signals from satellite antenna</li><li>Sends audio signals to audio unit</li></ul>	
Satellite antenna	Audio signal (satellite radio) is received and output to audio unit.	

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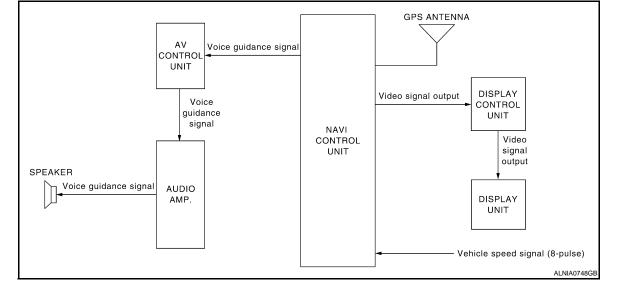
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# < FUNCTION DIAGNOSIS >

# NAVIGATION SYSTEM





# System Description

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# NOTE:

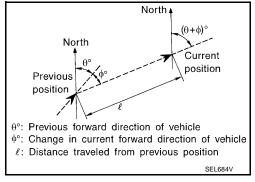
Refer to NAVI System Owner's Manual for system operation.

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), and the 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 DVD-ROM, which is stored in the DVD-ROM drive (map-matching), and indicated on the screen with a current-location mark.

By comparing the vehicle position detection results found by the GPS and by map-matching, more accurate vehicle position data can be used.

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 input signal. Therefore, the calculation may become incorrect as the tires wear down. To prevent this, an automatic distance fine adjustment 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). As the gyroscope and GPS antenna have both merit and demerit, input signals from them are prioritized in each situation. However, this order of priority may change in accordance with more detailed travel conditions so that the travel direction is detected more accurately.

[PREMIUM WITH NAVIGATION]

# **NAVIGATION SYSTEM**

### < FUNCTION DIAGNOSIS >

# [PREMIUM WITH NAVIGATION]

Туре	Advantage	Disadvantage	
Gyroscope (angular velocity sensor)	Can detect the vehicle's turning angle quite accurately.	• Direction errors may accumulate when the 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 the vehicle speed is low.	

### MAP-MATCHING

Map-matching is a function that repositions the vehicle on the road map when a new location is judged to be the most accurate. This is done by comparing the current vehicle position, calculated by the method described in the position detection principle, with the road map data around the vehicle, read from the map DVD-ROM stored on the DVD-ROM drive.

Therefore, the vehicle position may not be corrected after the vehicle is driven over a certain distance or time in which GPS information is hard to receive. In this case, the current-location mark on the display must be corrected manually.

### **CAUTION:**

### The road map data is based on data stored on the HDD.

• 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 current-location mark has been repositioned.

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

If two roads are running in parallel, they are of the same priority. Therefore, the current-location mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road.

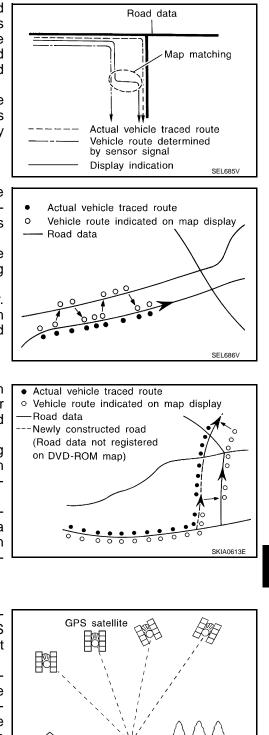
 Map-matching does not function correctly when the road on which the vehicle is driving is new and not recorded in the DVD-ROM, or when the road pattern stored in the map data and the actual road pattern are different due to repair.

When driving on a road not present in the map, the map-matching function may find another road and position the current-location mark on it. Then, when the correct road is detected, the currentlocation mark may leap to it.

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

# GPS (GLOBAL POSITIONING SYSTEM)

GPS (Global Positioning System) has been developed and controlled by the US Department of Defense. The system utilizes GPS satellite (NAVSTAR), sending out radio waves while flying on an orbit around the earth at the height of approx. 21,000 km (13,000 miles). The GPS receiver calculates the vehicle's position in three dimensions (latitude/longitude/altitude) according to the time lag of the radio waves received from four or more GPS satellites (three-dimensional positioning). If radio waves were received only from three GPS satellites, the GPS receiver calculates the vehicle's position in two dimensions (latitude/longitude), utilizing the altitude data calculated previously by using radio waves from four or more GPS satellites (two-dimensional positioning).



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# **NAVIGATION SYSTEM**

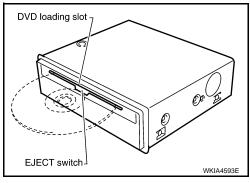
### < FUNCTION DIAGNOSIS >

- Accuracy of the GPS will deteriorate under the following conditions.
- In two-dimensional positioning, the GPS accuracy will deteriorate when the altitude of the vehicle position changes.
- There may be an error of approximately 10 m (30 ft.) in position detected by three-dimensional positioning, which is more accurate than two-dimensional positioning. The accuracy can be even lower depending on the arrangement of the GPS satellites utilized for the positioning.
- Position detection is not possible when the vehicle is in an area where radio waves from the GPS satellite do
  not reach, such as in a tunnel, parking lot in a building, and under an elevated highway. Radio waves from
  the GPS satellites may not be received when some object is located over the GPS antenna.
- Position correction by GPS is not available while the vehicle is stopped.

### COMPONENT DESCRIPTION

NAVI Control Unit

- The gyro (angular speed sensor) and the DVD-ROM drive are built-in units that control the navigation functions.
- Signals are received from the gyro, the vehicle speed sensor, and the GPS antenna. Vehicle location is determined by combining this data with the data contained in the DVD-ROM map. Location information is shown on liquid crystal display (display unit).
- Maps, traffic control regulations, and other pertinent information can be easily read from the DVD-ROM disc.
- The oscillator gyro sensor is used to detect changes in vehicle steering angle.



### Map DVD-ROM

- The map DVD-ROM has maps, traffic control regulations, and other pertinent information.
- To improve DVD-ROM map matching and route determination functions, the DVD-ROM uses an exclusive Nissan format. Therefore, the use of a DVD-ROM provided by other manufacturers cannot be used.

### Display Control Unit

The display control unit coordinates audio and video signals between the NAVI control unit and the display unit.

### Display Unit

Displays NAVI system information.

### AV Switch

AV switch allows user to input NAVI display settings. Self diagnostics are initiated using AV switch.

### GPS Antenna

GPS antenna sends signals to NAVI control unit.

### **Component Parts Location**

Refer to AV-212, "Component Parts Location".

# Component Description

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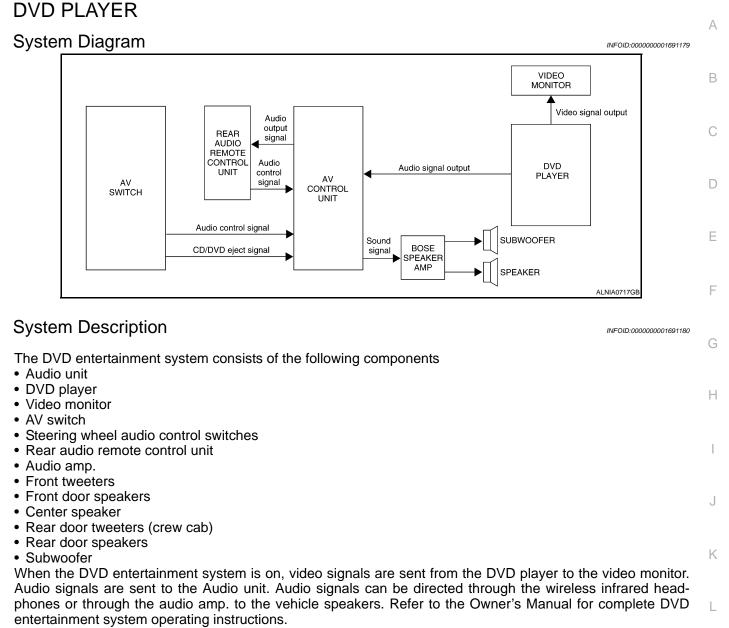
Part name	Description
Audio unit	<ul><li>Controls each operation of the navigation system</li><li>Voice guidance signal is output to audio amp.</li></ul>
BOSE speaker amp.	Voice guidance signal is input from audio unit, and it is output to speakers.
Tweeter	Voice guidance signal from audio amp. is output.
Steering switches	<ul> <li>Each operation of navigation system can be performed</li> <li>Switch operating signal is output to audio unit</li> </ul>
Microphone	Sends voice signals to audio unit
GPS antenna	GPS signal is received and is output to audio unit.

# AV-216

### **DVD PLAYER**

# < FUNCTION DIAGNOSIS >

### [PREMIUM WITH NAVIGATION]



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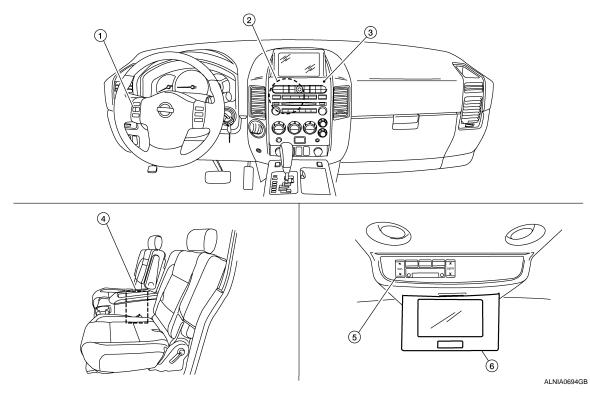
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# < FUNCTION DIAGNOSIS >

# **Component Parts Location**

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1. Steering wheel audio control switches 2.

Audio unit M42, M43, M44, M45, M46 3.

AV switch M98 6.

- 4. DVD player M205 (located in center 5. console)
- Rear audio remote control unit R204

Video monitor R202

INFOID:000000001691182

Component Description	

Part name	Description
DVD player	<ul><li>Outputs DVD video to video monitor</li><li>Outputs DVD audio to the audio unit</li></ul>
Video monitor	Receives and displays the DVD video signal
Audio unit	Controls audio system and DVD entertainment system functions
Audio amp.	<ul><li>Recieves audio signals from the audio unit</li><li>Outputs amplified audio signals to the speakers</li></ul>
AV switch	<ul><li>All audio operations can be operated</li><li>Switch signal is output to the audio unit</li></ul>
Rear audio remote control unit	<ul> <li>Audio and DVD functions can be operated</li> <li>Switch signal is output to the audio unit</li> <li>Receives audio signal from audio unit for headphones</li> </ul>
Steering wheel audio control switches	<ul><li>Audio operation can be operated</li><li>Steering switch signal (operation signal) is output to audio unit</li></ul>
Front door speakers	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high, mid and low range sounds</li></ul>
Front tweeters	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high range sounds</li></ul>
Center speaker	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high, mid and low range sounds</li></ul>

# AV-218

# **DVD PLAYER**

#### < FUNCTION DIAGNOSIS >

### [PREMIUM WITH NAVIGATION]

Part name	Description	-
Rear door tweeters (crew cab)	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high range sounds</li></ul>	- A
Rear door speakers	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high, mid and low range sounds</li></ul>	В
Subwoofer	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs low range sounds</li></ul>	-
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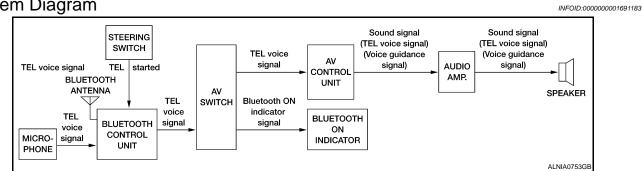
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### HANDS-FREE PHONE SYSTEM

#### < FUNCTION DIAGNOSIS >

# HANDS-FREE PHONE SYSTEM

System Diagram



#### System Description

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Refer to the Owner's Manual for Bluetooth telephone system operating instructions.

NOTE:

Cellular telephones must have their wireless connection set up (paired) before using the Bluetooth telephone system.

Bluetooth telephone system allows users who have a Bluetooth equipped cellular telephone to make a wireless connection between their cellular telephone and the Bluetooth control unit. Hands-free cellular telephone calls can be sent and received. Personal memos can be created using the Nissan Voice Recognition system. Some Bluetooth cellular telephones may not be recognized by the Bluetooth control unit. When a cellular telephone or the Bluetooth control unit is replaced, the telephone must be paired with the Bluetooth control unit. Different cellular telephones may have different pairing procedures. Refer to the cellular telephone operating manual.

#### **BLUETOOTH CONTROL UNIT**

When the ignition switch is turned to ACC or ON, the Bluetooth control unit will power up. During power up, the Bluetooth control unit is initialized and performs various self checks. Initialization may take up to 10 seconds. If a phone is present in the vehicle and paired with the Bluetooth control unit. Nissan Voice Recognition will then become active. Bluetooth telephone functions can be turned off using the Nissan Voice Recognition system.

#### STEERING WHEEL AUDIO CONTROL SWITCHES

When buttons on the steering wheel audio control switch are pushed, the resistance in steering wheel audio control switch circuit changes depending on which button is pushed. The Bluetooth control unit uses this signal to perform various functions while navigating through the voice recognition system.

The following functions can be performed using the steering wheel audio control switch:

- Initiate Self Diagnosis of the Bluetooth telephone system
- Start a voice recognition session
- Answer and end telephone calls
- · Adjust the volume of calls
- Record memos

#### MICROPHONE

The microphone is located in the roof console assembly. The microphone sends a signal to the Bluetooth control unit. The microphone can be actively tested during self-diagnosis.

#### AV CONTROL UNIT

The AV control unit receives signals from the Bluetooth control unit and sends audio signals to the audio amp. then on to the speakers.

#### Component Parts Location

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Refer to AV-212, "Component Parts Location".

#### HANDS-FREE PHONE SYSTEM [PREMIUM WITH NAVIGATION]

< FUNCTION DIAGNOSIS >

# **Component Description**

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Part name	Description
Audio unit	<ul> <li>Receives telephone voice signal from Bluetooth control unit</li> <li>Sends telephone voice and voice guidance signals to the speakers</li> </ul>
Audio amp.	<ul><li>Recieves audio signals from the audio unit</li><li>Outputs amplified audio signals to the speakers.</li></ul>
Front door speaker	
Front tweeter	Receives telephone voice and voice guidance signals from the audio amp.
Center speaker	
Steering wheel audio control switches	<ul><li>Start a voice recognition session</li><li>Answer and end telephone calls</li><li>Adjust the volume level</li></ul>
Microphone	Sends voice signals to Bluetooth control unit
Bluetooth control unit	Controls hands-free phone functions
Bluetooth antenna	Sends telephone voice signal to Bluetooth control unit
Bluetooth ON indicator	Controlled by the Bluetooth control unit

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### < FUNCTION DIAGNOSIS >

# DIAGNOSIS SYSTEM (AUDIO UNIT) AUDIO UNIT

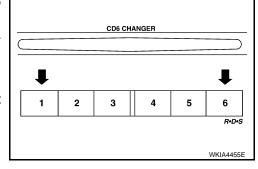
### AUDIO UNIT : Diagnosis Description

For self-diagnosis function information, refer to <u>AV-223, "Diagnosis Description"</u>. AV SWITCH

# AV SWITCH : Component Function Check

# STARTING THE SELF-DIAGNOSIS MODE

- 1. Turn ignition switch from OFF to ACC.
- Within 10 seconds press and hold the switches "MEMORY 1" and "MEMORY 6" simultaneously for 3 seconds. Then the self-diagnosis operates. A single beep indicates selfdiagnosis mode is active.
- Press each switch and listen for beep.
   NOTE:
   CD player LOAD and EJECT buttons are not included in this test and will not beep when pressed.



#### DIAGNOSIS FUNCTION

- It can check for continuity of the switches by sounding the beep when each AV switch and steering switch is pressed.
- It can check for continuity of harness between AV switch and steering switch.

#### EXITING THE SELF-DIAGNOSIS MODE

Turn ignition switch OFF. Then the self-diagnosis ends.

[PREMIUM WITH NAVIGATION]

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#### < FUNCTION DIAGNOSIS >

# [PREMIUM WITH NAVIGATION]

# DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)

#### Diagnosis Description

#### DESCRIPTION

- Diagnosis function consists of the self-diagnosis mode performed automatically and the CONFIRMATION/ ADJUSTMENT mode operated manually.
- Self-diagnosis mode checks for connections between the units constituting this system, analyzes each individual unit at the same time, and displays the results on the LCD screen.
- CONFIRMATION/ADJUSTMENT mode is used to perform trouble diagnosis that require operation and judgment by an operator (trouble that cannot be automatically judged by the system), to check/change the set value, and to display the Error History of the navigation system.

#### Work Flow

#### INFOID:000000001691193

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#### ON BOARD SELF-DIAGNOSIS FUNCTION

Diagnosis Item

	Mode			Description		
S	Self-diagnosis	(DCU)		Display control unit diagnosis.		
Self-diagnosis (NAVI)			<ul> <li>NAVI Control unit diagnosis (DVD-ROM drive) will not be diagnosed when no map DVD-ROM is in it.</li> <li>Analyzes connection between the NAVI control unit and the GPS anten- na and operation of each unit.</li> </ul>			
	Display dia	gnosis		On display control unit mode, color tone and shading of the screen can be checked by the display of a color bar and a gray scale.		
	Vehicle sigr	nals		On display control unit mode, analyzes the following vehicle signals: Vehicle speed signal, light signal <sup>NOTE</sup> , ignition switch signal, and reverse signal.		
	Auto Climat	uto Climate Control (if equipped)		Auto Climate Control (if equipped)         A/C self-diagnosis of A/C system.		A/C self-diagnosis of A/C system.
	Display diagnosis		liagnosis	On NAVI C/U mode, color tone and shading of the screen can be checked by the display of a color bar and a gray scale.		
CONFIRMATION/	/	Vehicle sig		Vehicle signals		On NAVI C/U mode, analyzes the following vehicle signals: Vehicle speed signal, light signal, ignition switch signal, and reverse signal.
ADJUSTMENT				Diagnosis results previously stored in the memory (before turning ignition switch ON) are displayed in this mode. Time and location when/where the errors occurred are also displayed.		
	Navigation	Naviga- tion	Speed Cali- bration	Under ordinary conditions, the navigation system distance measuring func- tion will automatically compensate for minute decreases in wheel and tire diameter caused by tire wear or low-pressure. Speed calibration immedi- ately restores system accuracy in cases such as when distance calibration is needed because of the use of tire chains in inclement weather.		
			Steering An- gle Adjust- ment	Corrects difference between actual turning angle of a vehicle and turning angle of the car mark on the display.		
CAN D	IAG SUPPOR		DR	Display status of CAN communication.		

#### NOTE:

Make the status that is set by D/N function be shown.

#### SELF-DIAGNOSIS MODE (DCU)

- 1. Start the engine.
- 2. Turn the audio system off.

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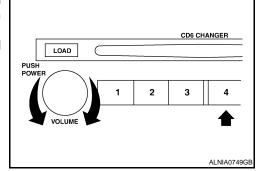
#### < FUNCTION DIAGNOSIS >

become selective.

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- 3. While pressing the "MEMORY 4" button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
  - Shifting from current screen to previous screen is performed by pressing "BACK" button.



- The initial self-diagnosis screen will be shown, and items "Self-Diagnosis (DCU)", "Self-Diagnosis (NAVI)", "Confirmation/ Adjustment" and "CAN DIAG SUPPORT MONITOR" will SELF DIAGNOSIS Select one of following Self Diagnosis(DCU) Self Diagnosis(NAVI) Confirmation/Adjustment CAN DIAG SUPPORT MONITOR SKIA4207E
  - SELF DIAGNOSIS(DCU) Running self diagnosis... SKIA4208E
- 6. When the self-diagnosis completes, optional part confirmation screen will be shown.

Perform self-diagnosis by selecting the "Self-Diagnosis".

ation enters the self-diagnosis mode.

screen indicates progress of the diagnosis.

· Self-diagnosis subdivision screen will be shown and the oper-

• A bar graph shown below the self-diagnosis subdivision

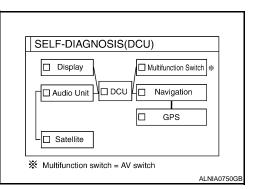
- When connection of an optional part is judged error, a screen to check if the optional part is actually fitted on the vehicle or not will be shown. When fitted, select the switch of the part on the screen and press "End". Then the "SELF DIAGNOSIS" screen will be shown.
- When the optional part is connected normally, the switch for the part will not appear on the screen.

Are y	ou sure this function is availal	ole?
	IVCS	
	CD Changer	
	Satellite	
	End	

7. On the "SELF DIAGNOSIS" screen, each unit name will be colored according to the diagnosis result, as follows.

Green	: Not malfunctioning.
Yellow	: Cannot be judged by self-diagnosis results.
Red	: Unit is malfunctioning.
Gray	: Diagnosis has not been done.
f several	malfunctions are present in a unit, color of its swite

• If ch on the screen will be either red, yellow, or gray, determined by the malfunction of the highest priority.





# [PREMIUM WITH NAVIGATION]

#### < FUNCTION DIAGNOSIS >

- 8. Select a switch on the "SELF DIAGNOSIS" screen and comments for the diagnosis results will be shown.
  - When the switch is green, the following comment will be shown. "Self-diagnosis was successful. Further diagnosis and adjustments are recommended. Follow the "confirmation/ adjustment" menu or refer to the service manual."
  - When the switch is yellow, the following comment will be shown. "Connection to the following unit is abnormal. See the service manual for further details".
  - When the switch is red, the following comment will be shown. "DCU is abnormal".

#### SELF-DIAGNOSIS RESULT

Quick reference table

- Select a malfunctioning diagnosis No. in the diagnosis result quick reference table.
- Find estimated malfunctioning system in the diagnosis No. table and perform check. 2.
- Turn the ignition switch OFF and perform self-diagnosis again. 3.

		Screen sv	vitch				
Switch color	DCU*	DISPLAY	Audio unit	Navigation	GPS an- tenna	Diagnosis No.	G
Red	×					1	
	×	x				2	Н
Gray	x		х			3	
	×			×	×	4	

\*: DCU = Display control unit

#### **CAUTION:**

- When AV switch has a malfunction, you cannot start. Refer to AV-222, "AV SWITCH : Component Function Check" .
- When display unit has a malfunction, you cannot start. Refer to AV-238, "DISPLAY CONTROL UNIT : Diagnosis Procedure" .

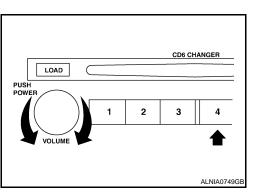
Self-Diagnosis Codes

Diagnosis No.	Possible cause	Reference page	L
1	Display control unit malfunction	Refer to AV-238 .	
2	Display communication line between display control unit and display unit	Refer to AV-311 .	
3	Audio unit power supply and ground circuit Audio communication line between display control unit and audio unit	Refer to <u>AV-236</u> .	M
4	NAVI control unit power supply and ground circuit AV communication line between display control unit and NAVI control unit	Refer to <u>AV-236</u> .	AV

AV-225

#### SELF-DIAGNOSIS MODE (NAVI)

- 1. Start the engine.
- Turn the audio system off.
- 3. While pressing the "MEMORY 4" button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
  - Shifting from current screen to previous screen is performed by pressing "BACK" button.



Self-diagnosis was successful 1 of 1 Further diagnosis and adjustments are recommended. Follow the " confirmation / adjustment" menu or refer to the service manual.

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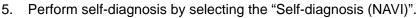
[PREMIUM WITH NAVIGATION]

#### < FUNCTION DIAGNOSIS >

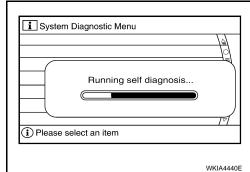
 The initial self-diagnosis screen will be shown, and items "Self-Diagnosis (DCU)", "Self-Diagnosis (NAVI)", "Confirmation/ Adjustment" and "CAN DIAG SUPPORT MONITOR" will become selective.

# [PREMIUM WITH NAVIGATION]

Select one of following	
Self Diagnosis(DCU)	
Self Diagnosis(NAVI)	
Confirmation/Adjustment	
CAN DIAG SUPPORT MONITOR	
,	



- Self-diagnosis subdivision screen will be shown and the operation enters the self-diagnosis mode.
- A bar graph will be shown on the screen to indicate progress of the diagnosis.



6. On the "SELF DIAGNOSIS" screen, each unit name will be colored according to the diagnosis result, as follows.

oreen . Not manufectorning.	Green	ŝ	Not malfunctioning.
-----------------------------	-------	---	---------------------

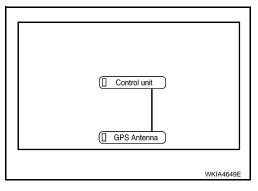
Yellow : Cannot be judged by self-diagnosis results.

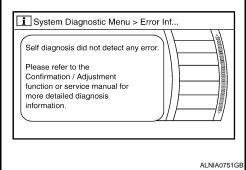
- Red : Unit is malfunctioning.
- Gray : Diagnosis has not been done.
- If several malfunctions are present in a unit, color of its switch on the screen will be either red, yellow, or gray, determined by the malfunction of the highest priority.
- 7. Select a switch on the "SELF DIAGNOSIS" screen and comments for the diagnosis results will be shown.
  - When the switch is green, the following comment will be shown. "Self diagnosis did not detect any error. Please refer to the Confirmation / Adjustment function or service manual for more detailed diagnosis information."
  - When the switch is yellow, the following comment will be shown. "Connection to the following unit is abnormal. See the service manual for further details".
  - When the switch is red, the following comment will be shown. "Center Control Unit is abnormal".
  - When the switch is gray, the following comment will be shown.
     "Detected connection error(s) are the following. Please refer to the confirmation/adjustment function or service manual for more detailed diagnosis information."

#### SELF-DIAGNOSIS RESULT

#### Quick reference table

- 1. Select an malfunctioning diagnosis No. in the diagnosis result quick reference table.
- 2. Find estimated malfunctioning system in the diagnosis No. table and perform check.
- 3. Turn the ignition switch OFF and perform self-diagnosis again.





#### **DIAGNOSIS SYSTEM (NAVI CONTROL UNIT)** [PREMIUM WITH NAVIGATION] < FUNCTION DIAGNOSIS >

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#### Screen switch Diagnosis No. Switch color Control unit\* GPS antenna Red ×

×

 $\times$ Yellow  $\times$ ×

\*: Control unit = NAVI control unit

Gray

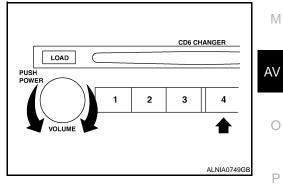
- **CAUTION:**
- When AV switch has a malfunction, you cannot start. Refer to AV-222, "AV SWITCH : Component Function Check" .
- When display unit has a malfunction, you cannot start. Refer to AV-237, "DISPLAY UNIT : Diagnosis Procedure"

Self-diagnosis codes

Diagnosis No.	Possible cause	Reference page
1	NAVI control unit malfunction.	Refer to <u>AV-236</u>
2	No map DVD-ROM is inserted in the NAVI control unit.	Refer to AV-214
3	<ul> <li>When "DVD-ROM error. Please check disc." is shown.</li> <li>Eject map DVD-ROM and check if it is compatible with the system.</li> <li>Check ejected DVD-ROM for dirt, damage, and warpage.</li> <li>If no error is found, insert a known good map DVD-ROM of the same type and perform self-diagnosis again. If same result is shown, the NAVI control unit is malfunctioning. If result is normal, the map DVD-ROM is malfunctioning.</li> </ul>	Refer to <u>AV-214</u>
4	If "Error found in DVD-ROM or DVD-ROM driver in control unit. Please perform diagnosis in accordance with service manual" is shown, carry out same inspection as diagnosis No. 3.	Refer to <u>AV-214</u>
5	<ul> <li>GPS antenna system.</li> <li>Visually check for a broken wire in the GPS antenna coaxial cable.</li> <li>Disconnect GPS antenna connector, and make sure approximately 5V is supplied from the NAVI control unit. If not, the NAVI control unit is malfunctioning. If 5V is supplied, replace the GPS antenna. If the connection is still malfunction after the replacement of the GPS antenna, the NAVI control unit is malfunctioning.</li> </ul>	Refer to <u>AV-350</u>

#### CONFIRMATION/ADJUSTMENT MODE

- 1. Start the engine.
- Turn the audio system off.
- 3. While pressing the "MEMORY 4" button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
  - · Shifting from current screen to previous screen is performed by pressing "BACK" button.



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#### < FUNCTION DIAGNOSIS >

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The initial self-diagnosis screen will be shown, and items "Self-Diagnosis (DCU)", "Self-Diagnosis (NAVI)", "Confirmation/ Adjustment" and "CAN DIAG SUPPORT MONITOR" will become selective.

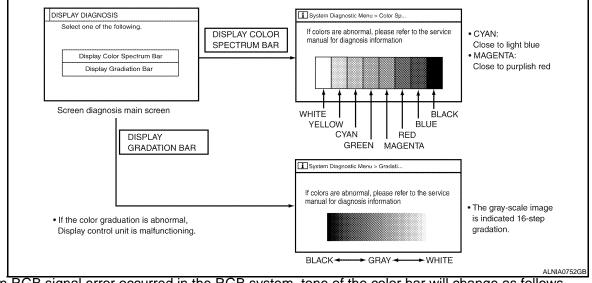
# [PREMIUM WITH NAVIGATION]

Select one	of following	
Se	elf Diagnosis(DCL	J)
Se	If Diagnosis(NAV	Í)
Con	firmation/Adjustm	ent
CAN DIA	G SUPPORT MC	NITOR

- 5. When "Confirmation/Adjustment" is selected on the initial selfdiagnosis screen, the operation will enter the CONFIRMATION/ ADJUSTMENT mode. In this mode, check and adjustment of each item will become possible.
- 6. The initial trouble diagnosis screen will be shown, and items "Display Diagnosis", "Vehicle Signals", "Auto Climate Control" and "Navigation" will become selective.
- 7. Select each switch on "CONFIRMATION/ADJUSTMENT" screen to display the relevant diagnosis screen.

NFIRMATION/A	
Display Diagnosis	Auto Climate Control
Vehicle Signals	Navigation

#### **DISPLAY DIAGNOSIS**



- When RGB signal error occurred in the RGB system, tone of the color bar will change as follows.
  - R (red) signal error
- : Screen looks bluish
- G (green) signal error
- B (blue) signal error
- : Screen looks reddish : Screen looks yellowish
- When the color of the screen looks unusual, refer to <u>AV-246, "Description"</u>, <u>AV-247, "Description"</u> and <u>AV-248, "Description"</u>.

VEHICLE SIGNALS

#### < FUNCTION DIAGNOSIS >

# [PREMIUM WITH NAVIGATION]

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

In case of confirming light signal, set D/N mode to ON/OFF of lighting switch (normal setting).

- OFF: D (Day mode)
- ON: N (Night mode)

Unless above setting, light signal (ON/OFF) may not be accurately displayed.

VEHICLE SIGNALS		
Vehicle Speed	OFF	
IGN	ON	
Reverse	OFF	
IVCS	OFF	
Light	OFF	

D

С

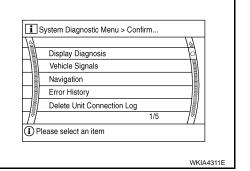
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В

Diagnosis item	Display	Condition	Remarks	
	ON	Vehicle speed > 0 km/h (0 MPH)		
Vehicle speed	OFF	Vehicle speed = 0 km/h (0 MPH)	Changes in indication may be delayed by approx. 1.5 seconds. This is normal.	
	-	Ignition switch in ACC position		
linht	ON	Lighting switch ON		
Light	OFF	Lighting switch OFF		
IGN	ON	Ignition switch ON		
IGN	OFF	Ignition switch ACC		
	ON	Selector lever in R position		
Reverse	OFF	Selector lever in other than R position	Changes in indication may be delayed by ap prox. 1.5 seconds. This is normal.	
	-	Ignition switch in ACC position		

#### NAVIGATION

- The initial confirmation/adjustment screen will be shown, and items "Display Diagnosis", "Vehicle Signals", "Navigation", "Error History" and "Delete Unit Connection Log" will become selective.
- 2. Select each switch on "CONFIRMATION/ADJUSTMENT" screen to display the relevant diagnosis screen.



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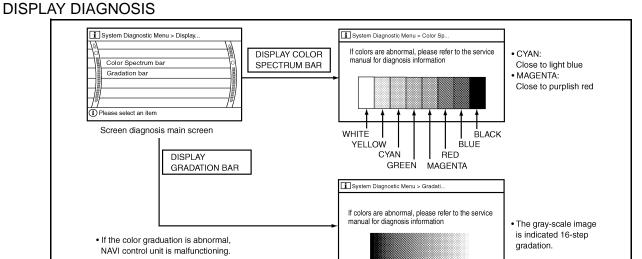
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#### DIAGNOSIS SYSTEM (NAVI CONTROL UNIT) [PREMIUM WITH NAVIGATION]

# < FUNCTION DIAGNOSIS >



BLACK-

► GRAY ←

►WHITE

- When RGB signal error occurred in the RGB system, tone of the color bar will change as follows.
  - R (red) signal error

#### : Screen looks bluish : Screen looks reddish

- G (green) signal error
- B (blue) signal error : Screen looks yellowish
- When the color of the screen looks unusual, refer to <u>AV-246, "Description"</u>, <u>AV-247, "Description"</u> and <u>AV-248, "Description"</u>.

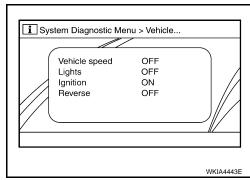
#### VEHICLE SIGNALS

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

In case of confirming light signal, set D/N mode to ON/OFF of light switch (normal setting).

- OFF: D (Day mode)
- ON: N (Night mode)

Unless mode is in above setting, light signal (ON/OFF) may not be accurately displayed.



WKIA4317E

Diagnosis item	Display	Condition	Remarks
	ON	Vehicle speed > 0 km/h (0 MPH)	
Vehicle speed	OFF	Vehicle speed = 0 km/h (0 MPH)	Changes in indication may be delayed by approx. 1.5 seconds. This is normal.
	-	Ignition switch in ACC position	
Lighte	ON	Lighting switch ON	
Lights	OFF	Lighting switch OFF	
Ignition	ON	Ignition switch ON	
Ignition	OFF	Ignition switch ACC	
	ON Selector lever in R position		
Reverse	OFF	Selector lever in other than R position	Changes in indication may be delayed by approx. 1.5 seconds. This is normal.
	_	Ignition switch in ACC position	

# AV-230

#### < FUNCTION DIAGNOSIS >

- 1. The navigation screen will be shown, and items "Speed Calibration" and "Steering Angle Adjustment" will become selective.
- 2. Select each switch on "NAVIGATION" screen to display the relevant diagnosis screen.

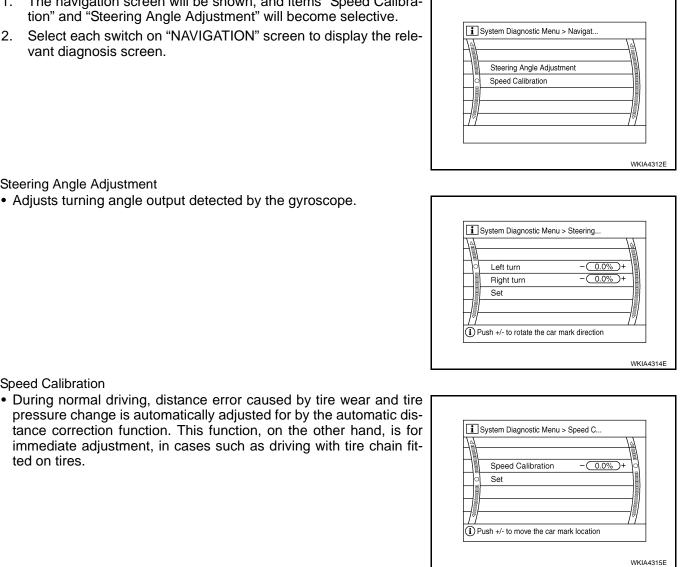


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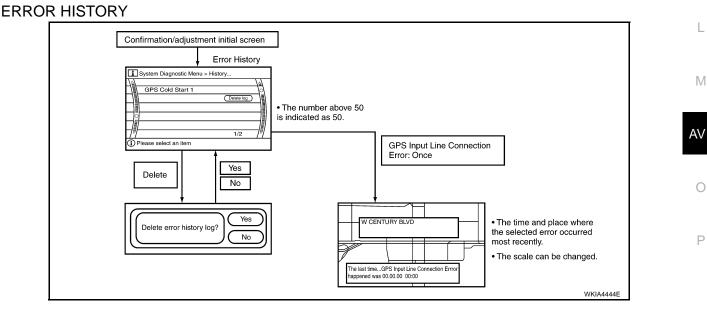


Steering Angle Adjustment

Adjusts turning angle output detected by the gyroscope.

**Speed Calibration** 

ted on tires.



#### DIAGNOSIS BY ERROR HISTORY

The "Self-diagnosis" results indicate whether an error occurred during the period from when the ignition switch is turned to ON until "Self-diagnosis" is completed.

#### < FUNCTION DIAGNOSIS >

If an error occurred before the ignition switch was turned to ON and does not occur again until the "Self-diagnosis" is completed, the diagnosis result will be judged normal. Therefore, those errors in the past which cannot be found by the "Self-diagnosis" must be found by diagnosing the "Error History".

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

- Correct time of the error occurrence may not be displayed when the GPS antenna substrate within the NAVI control unit has malfunctioned.
- Place of the error occurrence is represented by the position of the current-location mark at the time when the error occurred. If the current-location mark has deviated from the correct position, then the place of the error occurrence may be located correctly.
- The maximum number of occurrences which can be stored is 50. For the 51st and later occurrences, the displayed number remains 50.

When a reproducible malfunction occurred but its cause cannot be identified because several errors are present, record the item, number and place (longitude/latitude) of error occurrence (or delete the Error History), then turn the ignition switch from OFF to ON to reproduce the malfunction. Check the Error History to find the items which show an increased number of occurrences, and diagnose the item.

Erroritom	Possible causes		
Error item	Action/symptom	Example of symptom	
Gyro sensor disconnected	<ul> <li>Communications malfunction between NAVI control unit and internal gyro.</li> <li>Perform self-diagnosis.</li> <li>When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.</li> </ul>	<ul> <li>Navigation location detection performance has deteriorated. (Angular velocity cannot be detected.)</li> </ul>	
	Communication error between NAVI control unit and internal GPS substrate.	Navigation location detection performance has	
GPS discon- nected	<ul> <li>Perform self-diagnosis.</li> <li>When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.</li> </ul>	<ul> <li>deteriorated.</li> <li>(Location correction using GPS is not performed.)</li> <li>GPS receiving status remains gray.</li> </ul>	
GPS trans-	Malfunctioning transmission wires to NAVI control unit and internal GPS substrate.	<ul> <li>During self-diagnosis, GPS diagnosis is not performed.</li> </ul>	
mission ca- ble malfunction	<ul> <li>Perform self-diagnosis.</li> <li>When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.</li> </ul>		
GPS input line connec- tion error	Malfunctioning receiving wires to NAVI control unit and internal GPS substrate.	Navigation location detection performance has deteriorated.	
	<ul> <li>Perform self-diagnosis.</li> <li>When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.</li> </ul>	<ul> <li>(Location correction using GPS is not performed.)</li> <li>GPS receiving status remains gray.</li> </ul>	
GPS TCX0	Oscillating frequency of the GPS substrate frequency synchronizing oscillation circuit exceeded (or below) the specification	Navigation location detection performance has	
over GPS TCX0 under	<ul> <li>Perform self-diagnosis.</li> <li>When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interfer- ence, or the control unit may have been subjected to excessively high or low temperatures.</li> </ul>	<ul> <li>deteriorated.</li> <li>(Location correction using GPS is not performed.)</li> <li>GPS receiving status remains gray.</li> </ul>	
000 001/	Contents of ROM (or RAM) in GPS substrate are malfunctioning.	Location detection accuracy of the navigation	
GPS ROM malfunction GPS RAM malfunction	<ul> <li>Perform self-diagnosis.</li> <li>When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.</li> </ul>	system will deteriorate, depending on the error area in the memory, because GPS cannot make correct positioning. (Location correction using GPS is not per- formed.)	

#### < FUNCTION DIAGNOSIS >

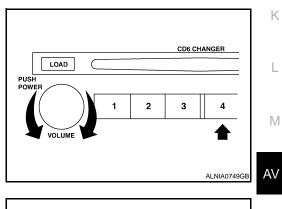
#### [PREMIUM WITH NAVIGATION]

Error item	Possible causes	Example of symptom	Δ
Enormenn	Action/symptom	Example of symptom	A
GPS RTC malfunction	<ul> <li>Clock IC in GPS substrate is malfunctioning.</li> <li>Perform self-diagnosis.</li> <li>When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.</li> </ul>	becomes possible. (The GPS receiver starts positioning without re-collecting the whole sat- ellite information when it judged the data	В
GPS anten-	Malfunctioning connection between GPS substrate in NAVI control unit and GPS antenna.	<ul> <li>Navigation location detection performance has deteriorated.</li> </ul>	D
na discon- nected	<ul> <li>Perform self-diagnosis.</li> <li>When connection between NAVI control unit and GPS antenna is judged normal by self-diagnosis, the symptom may be intermittent, caused by impact or vibration.</li> </ul>	<ul> <li>(Location correction using GPS is not performed.)</li> <li>GPS receiving status remains gray.</li> </ul>	
	The power voltage supplied to the GPS circuit board has decreased.	Navigation location detection performance has deteriorated.	F
Low voltage of GPS	<ul> <li>Perform self-diagnosis.</li> <li>When connection between NAVI control unit and GPS antenna is judged normal by self-diagnosis, the symptom may be intermittent, caused by impact or vibration.</li> </ul>	<ul> <li>deteriorated.</li> <li>(Location correction using GPS is not performed.)</li> <li>GPS receiving status remains gray.</li> </ul>	
	Malfunctioning NAVI control unit.	-	
DVD-ROM Malfunction	Dedicated map DVD-ROM is in the system, but the data cannot be read.	<ul> <li>The map of a particular location cannot be dis- played.</li> </ul>	Η
DVD-ROM Read error DVD-ROM Response Er- ror	<ul> <li>Is map DVD-ROM damaged, warped, or dirty?</li> <li>If damaged or warped, the map DVD-ROM is malfunctioning.</li> <li>If dirty, wipe the DVD-ROM clean with a soft cloth.</li> <li>Perform self-diagnosis.</li> <li>When NAVI control unit is judged normal by self-diagnosis, the symptom is judged intermittent, caused by vibration.</li> </ul>	<ul> <li>Specific guidance information cannot be displayed.</li> <li>Map display is slow.</li> <li>Guidance information display is slow.</li> <li>System has been affected by vibration.</li> </ul>	l J

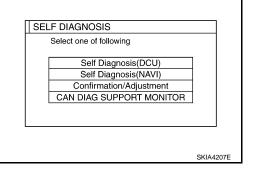
AV-233

#### CAN DIAG SUPPORT MONITOR

- 1. Start the engine.
- 2. Turn the audio system off.
- 3. While pressing the "MEMORY 4" button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
  - Shifting from current screen to previous screen is performed by pressing "BACK" button.



- The initial self-diagnosis screen will be shown, and items "Self-Diagnosis (DCU)", "Self-Diagnosis (NAVI)", "Confirmation/ Adjustment" and "CAN DIAG SUPPORT MONITOR" will become selective.
- 5. Select "CAN DIAG SUPPORT MONITOR".



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#### < FUNCTION DIAGNOSIS >

# [PREMIUM WITH NAVIGATION]

#### Display status of CAN communication. 6.

Item	Content	Error counter
CAN_COMM	OK/NG	0-50
CAN_CIRC_1	OK/UNKWN	0-50
CAN_CIRC_2	OK/UNKWN	0-50
CAN_CIRC_3	OK/UNKWN	0-50
CAN_CIRC_4	OK/UNKWN	0-50
CAN_CIRC_5	OK/UNKWN	0-50
CAN_CIRC_6	OK/UNKWN	0-50
CAN_CIRC_7	OK/UNKWN	0-50
CAN_CIRC_8	OK/UNKWN	0-50
CAN_CIRC_9	OK/UNKWN	0-50

CAN DIAG S	SUPPORT	MONITOR	
CAN_COMM	OK	0	Delete
CAN_CIRC_1	OK	0	
CAN_CIRC_2	OK	0	
CAN_CIRC_3	OK	0	
CAN_CIRC_4	UNKWN	1	
CAN_CIRC_5	UNKWN	1	
CAN_CIRC_6	UNKWN	1	
CAN_CIRC_7	OK	0	
CAN_CIRC_8	OK	0	
CAN_CIRC_9	OK	0	

SKIA4288E

• If the ignition is turned on and UNKWN is shown on the screen, the value of the counter will be up. (MAX50)

- The value of the counter does not change if the ignition changes to OFF. (MAX50)
  If the counter shows the value of 50 and UNKWN is shown, the value of 50 will not be changed.

### **DIAGNOSIS SYSTEM (BLUETOOTH CONTROL UNIT)**

#### < FUNCTION DIAGNOSIS >

### DIAGNOSIS SYSTEM (BLUETOOTH CONTROL UNIT)

#### **Diagnosis Description**

The Bluetooth control unit has two diagnostic checks. The first diagnostic check is performed automatically every ignition cycle during control unit initialization. The second diagnostic check is performed by the technician using the steering wheel audio control switches prior to trouble diagnosis.

#### BLUETOOTH CONTROL UNIT INITIALIZATION CHECKS

- Internal control unit failure
- Bluetooth antenna connection open or shorted
- Steering wheel audio control switches [SEND( ♥ ↓ ≥)/END( MODE)] stuck closed
- Vehicle speed pulse count
- Microphone connection test (with playback to operator)
- Bluetooth inquiry check

#### **OPERATION PROCEDURE**

- Turn ignition switch to ACC or ON. 1.
- Wait for the Bluetooth system to complete initialization. This may take up to 10 seconds. 2.
- 3. Press and hold the steering wheel audio control switch C button for at least 5 seconds. The Bluetooth system will begin to play a verbal prompt.

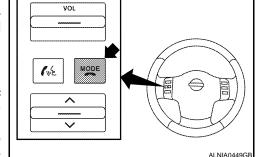
- 4. While the prompt is playing, press and hold the steering wheel audio control switch to button until you hear the "Diagnostics" mode" prompt. The Bluetooth system will sound a 5 second beep.
- 5. While the beep is sounding, press and hold the steering wheel audio control switch keep button again until you hear prompts.
- The Bluetooth system has now entered into the diagnostic 6. mode. Results of the diagnostic checks will be verbalized to the technician. Refer to AV-223, "Work Flow".
- 7. After the failure records are reported, an interactive microphone test will be performed. Follow the voice prompt. If the microphone test fails refer to AV-223, "Work Flow".
- 8. Self-diagnosis mode is complete when the voice prompt says "All diagnostic functions completed".

#### Work Flow

INFOID:000000001691191

Failure Message	Action	
"Internal failure"	Replace Bluetooth control unit. Refer to AV-207, "Removal and Installation".	0
"Bluetooth antenna open"	1. Inspect harness connection.	
"Bluetooth antenna shorted"	2. Replace Bluetooth antenna. Refer to <u>AV-206, "Removal and Installation"</u> .	<u>ation"</u> . P
"Phone/Send for Hands Free System is stuck"	<ul> <li>Check steering wheel audio control switches. Refer to <u>AV-142. "Description"</u>.</li> </ul>	
"Phone/End for the Hands Free System is stuck"		
"Microphone test" (failed interactive test)	<ol> <li>Inspect harness between Bluetooth control unit and microphone.</li> <li>Replace microphone. Refer to <u>AV-205, "Removal and Installation"</u>.</li> </ol>	

# MODE 1. ALNIA0448GE VOL

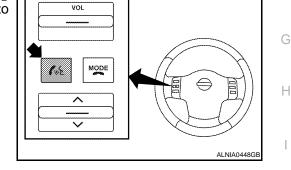


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[PREMIUM WITH NAVIGATION]

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# AV-235

# COMPONENT DIAGNOSIS POWER SUPPLY AND GROUND CIRCUIT AUDIO UNIT

### AUDIO UNIT : Diagnosis Procedure

### **1.**CHECK FUSES

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

Unit	Terminals	Signal name	Fuse No.
Audio unit	6	Battery power	31
	10	Ignition switch ACC or ON	4

#### Are the fuses OK?

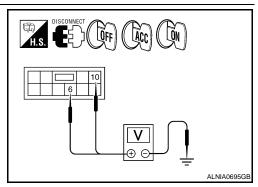
YES >> GO TO 2

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

# 2. POWER SUPPLY CIRCUIT CHECK

- 1. Disconnect audio unit connector M43.
- Check voltage between the audio unit connector M43 and ground.

(	(+)		OFF	ACC	ON
Connector	Terminal	(-)	OIT	//00	
M43	6	Ground	0V	Battery voltage	Battery voltage
10140	10	Ground	Battery voltage	Battery voltage	Battery voltage



#### Are the voltage results as specified?

YES >> GO TO 3 NO >> • Check c

>> • Check connector housing for disconnected or loose terminals.

Repair harness or connector.

### **3.**GROUND CIRCUIT CHECK

Inspect audio unit case ground.

Does case ground pass inspection?

YES >> Inspection End.

NO >> Repair audio unit case ground.

NAVI CONTROL UNIT

### NAVI CONTROL UNIT : Diagnosis Procedure

### **1.**CHECK FUSE

Make sure the following fuses of the NAVI control unit are not blown.

Connector	Terminal	Signal name	Fuse No.
B151	2	Battery	31
BIJI	5	ACC/ON	4
B152	63	ON/START	12

Are the fuses OK?

YES >> GO TO 2.

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

### AV-236

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#### < COMPONENT DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

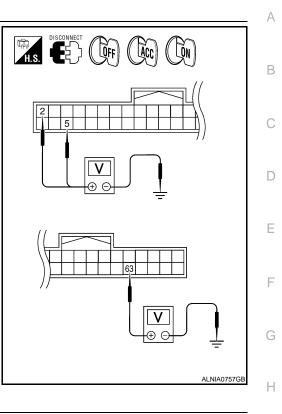
# 2. CHECK POWER SUPPLY CIRCUIT

- 1. Disconnect NAVI control unit connectors B151 and B152.
- 2. Check voltage between connectors and ground.

	Terminals			Ignition switch position		
(+)		()	OFF	100	ON	
Connector	Terminal	(-)	OFF	ACC	UN	
B151 -	2	Battery voltage	Battery voltage	Battery voltage		
D101 -	5	Ground	0V	Battery voltage	Battery voltage	
B152	63		0V	0V	Battery voltage	

Are the voltage readings as specified?

- YES >> GO TO 3.
- NO >> Check harness for open between NAVI control unit and fuse.



# 3.CHECK GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Check continuity between the following NAVI control unit connector B151 and ground.

	Terminals			Continuity
Connector	Terminal	—	Ignition switch	Continuity
B151	1	Ground	OFF	Yes

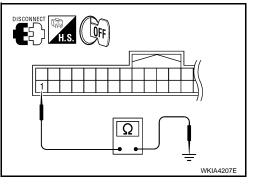
Is continuity present?

YES >> Inspection End.

NO >> Repair or replace harness.

DISPLAY UNIT

**DISPLAY UNIT : Diagnosis Procedure** 



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- 1. CHECK POWER SUPPLY AND GROUND CIRCUIT FOR DISPLAY CONTROL UNIT
- Check power supply and ground circuit for display control unit. Refer to <u>AV-238</u>, "DISPLAY CONTROL <u>AV UNIT : Diagnosis Procedure"</u>.
   <u>Did the power/ground supply check good?</u>
   YES >> GO TO 2.

NO >> Repair malfunctioning part.

2. CHECK POWER SUPPLY CIRCUIT FOR DISPLAY UNIT

#### < COMPONENT DIAGNOSIS >

- 1. Disconnect display unit connector M93.
- 2. Turn ignition switch ON.
- 3. Check voltage between display unit harness connector M93 terminals 2, 3 and ground.

#### Approx. 9V

- Are voltage readings as specified?
- YES >> GO TO 4.
- NO >> GO TO 3.
- **3.**CHECK HARNESS
- 1. Turn ignition switch OFF.
- 2. Disconnect display control unit connector M94.
- 3. Check continuity between display control unit harness connector M94 terminals 2, 4 and display unit harness connector M93 terminals 2, 3.

Display co	ontrol unit	Displa	Continuity	
Connector	Terminal	Connector	Terminal	
M94	2	M93	2	Yes
IVI94	4	10193	3	Tes

4. Check continuity between display unit connector M93 and ground.

	Terminals				
[		Continuity			
Connector	Terminal				
M93	2	Ground	No		
10195	3	Giouna	INO		

#### Are continuity test results as specified?

YES >> Replace display control unit. Refer to <u>AV-335, "Removal and Installation"</u>.

# NO >> Repair harness.

4.CHECK GROUND CIRCUIT

Check continuity between display unit and ground as follows.

Terminals		Ignition	Continuity	
Connector	Terminal	_	switch	Continuity
M93	1	Ground	OFF	Yes

#### Is continuity present?

YES >> Inspection End.

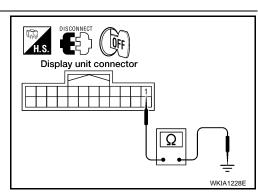
NO >> Repair harness.

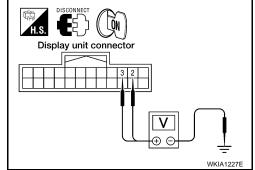
# DISPLAY CONTROL UNIT

# **DISPLAY CONTROL UNIT : Diagnosis Procedure**

# **1.**CHECK FUSE

Make sure the following fuses of the display control unit are not blown.





Display unit connector

Display control unit connector

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### AV-238

#### < COMPONENT DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

Connector	Terminal	Signal name	Fuse No.	Α
	1	Battery	31	_
M94	10	ACC/ON	4	_
	12	ON/START	4	В

Are fuses OK?

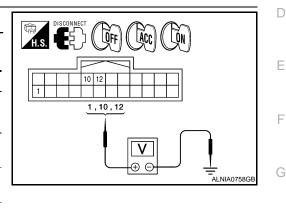
YES >> GO TO 2. NO >> If fuse is b

>> If fuse is blown, be sure to eliminate cause of blown fuse before installing new fuse.

# 2. CHECK POWER SUPPLY CIRCUIT

- 1. Disconnect display control unit connector M94.
- Check voltage between connector terminals and ground as follows.

	Terminals			Ignition switch position		
(+)		()	OFF	ACC	ON	
Connector	Terminal	(-)	OIT	ACC	ON	
	1	Ground	Battery voltage	Battery voltage	Battery voltage	
M94	10		0V	Battery voltage	Battery voltage	
	12		0V	0V	Battery voltage	

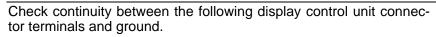


Are voltage readings as specified?

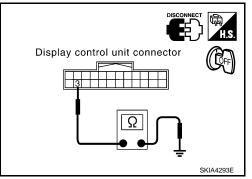
YES >> GO TO 3.

NO >> Check harness for open between display control unit and fuse.

#### **3.**CHECK GROUND CIRCUIT



	Terminals			Continuity
Connector	Terminal	_	Ignition Switch	Continuity
M94	3	Ground	OFF	Yes



<u>Is continuity present?</u> YES >> Inspectio

YES >> Inspection End. NO >> Repair or replace harness.

### AV SWITCH

### AV SWITCH : Diagnosis Procedure

### 1.CHECK FUSE

Check that the fuses for the AV switch are not blown.

Unit	Terminal	Signal name	Fuse No.	
AV switch	1	Battery	31	Ρ
AV SWICH	2	Ignition switch ACC or ON	4	-

#### Are the fuses OK?

YES >> GO TO 2

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

2. POWER SUPPLY CIRCUIT CHECK

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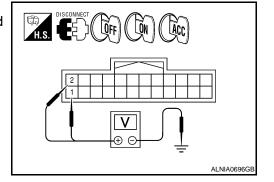
AV

#### POWER SUPPLY AND GROUND CIRCUIT [PREMIUM WITH NAVIGATION]

#### < COMPONENT DIAGNOSIS >

- 1. Disconnect AV switch connector M98.
- 2. Check voltage between the AV switch connector M98 and ground.

(	(+)		OFF	ACC	ON
Connector	Terminal	(-)		ACC	
M98	1	Ground	Battery voltage	Battery voltage	Battery voltage
10190	2	Ground	0V	Battery voltage	Battery voltage



#### Are the voltage results as specified?

#### YES >> GO TO 3 NO

- >> Check connector housings for disconnected or loose terminals.
  - · Repair harness or connector.

# **3.**GROUND CIRCUIT CHECK

- 1. Turn ignition switch OFF.
- Check continuity between AV switch harness connector M98 2. and ground.

Connector	Terminal		Continuity
M98	5	Ground	Yes

Are the continuity results as specified?

YES >> Inspection End.

NO >> Repair harness or ground.

# SATELLITE RADIO TUNER

### SATELLITE RADIO TUNER : Diagnosis Procedure

# 1.CHECK FUSES

Check that the following fuses of the satellite radio tuner (factory installed) are not blown.

Unit	Terminals	Signal name	Fuse No.
Satellite radio tuner (factory in-	32	Battery power	31
stalled)	36	Ignition switch ACC or ON	4

#### Are the fuses OK?

YES >> GO TO 2

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

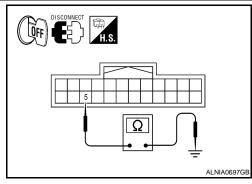
# 2. POWER SUPPLY CIRCUIT CHECK

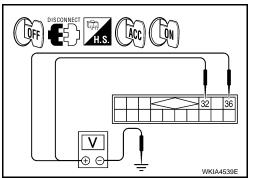
- 1. Turn ignition switch OFF.
- Disconnect satellite radio tuner (factory installed) connector M41. 2.
- Check voltage between the satellite radio tuner (factory installed) and ground. 3.

(	+)	(-)	OFF	ACC	ON
Connector	Terminal	(-)	OIT	700	
M41	32	Ground	Battery voltage	Battery voltage	Battery voltage
17141	36	Ground	0V	Battery voltage	Battery voltage

Are the voltage readings as specified?

YES >> GO TO 3





				r disconne	ected or loose	e terminals.	
3.GROUND	•						
Inspect satel Does case gi YES >> I		inspectio	-	d) case gro	ound.		
	epair satel		tuner (fac	tory install	ed) case gro	und.	
DVD PLAY	′ER : Dia	ignosis	Proced	ure			INFOID:0000000016911
<b>1.</b> CHECK F	JSE						
Check that th	e following	fuses for	the DVD	player are	not blown.		
	Jnit		Termir	nal	S	ignal name	Fuse No.
	Jnit		Termir 16	nal	Battery powe	r	Fuse No. 31
DVD player			-	nal	Battery powe	5	
DVD player <u>Is the fuse O</u> YES >> 0 NO >> 1 <b>2.</b> POWER S 1. Disconne	<u><?</u> GO TO 2 fuse is blo SUPPLY CIF</u>	RCUIT C	16 15 ure to elim HECK ector M20	inate caus	Battery powe	tion before installin	31 4
DVD player Is the fuse O YES >> 0 NO >> 1 2.POWER S 1. Disconne 2. Check v ground.	<u>K?</u> GO TO 2 fuse is blo SUPPLY CIF ect DVD pla bltage betw	RCUIT C	16 15 ure to elim HECK ector M20	inate caus	Battery powe Ignition switc	tion before installin	31 4
DVD player Is the fuse O YES >> 0 NO >> 1 2.POWER S 1. Disconne 2. Check v	<u>K?</u> GO TO 2 fuse is blo SUPPLY CIF ect DVD pla bltage betw	RCUIT C yer conn veen the	16 15 ure to elim HECK ector M20 DVD play	inate caus 5. /er connec	Battery powe Ignition switc e of malfunc ctor M205 a	tion before installin	31 4 ng new fuse.

- >> Check connector housings for disconnected or loose terminals.
- Repair harness or connector.

# $3. {\tt GROUND} \, {\tt CIRCUIT} \, {\tt CHECK}$

#### 1. Turn ignition switch OFF.

Check continuity between DVD player harness connector M206 2. terminal 22 and ground.

Connector	Terminal		Continuity
M206	22	Ground	Yes

Are the continuity results as specified?

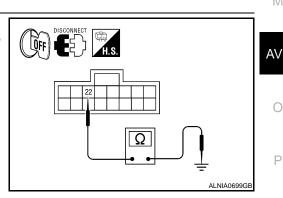
YES >> Inspection End.

NO >> Repair DVD player ground.

# **VIDEO MONITOR**

# **VIDEO MONITOR : Diagnosis Procedure**

1. CHECK POWER SUPPLY CIRCUIT



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# AV-241

#### < COMPONENT DIAGNOSIS >

- 1. Turn ignition switch to ACC.
- 2. Check voltage between video monitor harness connector R202 and ground.

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Signal name	Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
Display B+	R202	11	ACC	12V
Display D+	11202	12	A00	12.0

Does specified voltage exist?

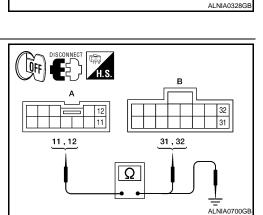
YES >> GO TO 3.

NO >> GO TO 2.

# 2. CHECK POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect the video monitor connector R202 and the DVD player connector M206.
- Check continuity between the video monitor harness connector R202 (A) and the DVD player connector M206 (B).

	A	l	В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
R202	11	M206	31	Yes
R202	12	101200	32	165



4. Check continuity between video monitor harness connector R202 (A) and ground.

	A		Continuity	
Connector	Terminal		Continuity	
R202	11	Ground	No	
	12	Ground	NO	

Are continuity test results as specified?

YES >> Check DVD player power and ground supply. Refer to <u>AV-48, "DVD PLAYER : Diagnosis Proce-</u> <u>dure"</u>.

NO >> Repair harness or connector.

# 3. CHECK GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect video monitor connector.
- 3. Check continuity between video monitor harness connector R202 and ground.

Connector No.	Terminal No.	—	Continuity
R202	3	Ground	Yes

#### Does continuity exist?

YES >> INSPECTION END

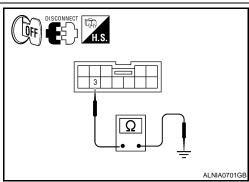
NO >> Repair harness or connector.

#### AUDIO AMP

AUDIO AMP : Diagnosis Procedure

**1.**CHECK FUSE

Check that the audio amp. fuses are not blown.



#### < COMPONENT DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

Unit		Terminal	Signal	name	Fuse No.
Audio amp.		1	Battery power		31
-		17			17
re the fuses OK?	0				
YES >> GO TO NO >> Be sure		cause of malfunction	on before installing	new fuse	
CHECK POWER					
<ul> <li>Turn ignition sw</li> <li>Disconnect aud</li> </ul>		ector.			R
. Check voltage		io amp. harness	connector M112	H.S.	UFF
and ground.					
(+)					1
Connector	Terminal	(-)	Voltage (approx.)	<u>_1</u> ,	,17
N4440	1		Detten		
M112	17	- Ground	Battery voltage		
battery voltage pr	resent?				
YES >> GO TO					
NO >> Check		en audio amp. an	d fuse.		
NO >> Check		een audio amp. an	d fuse.		
NO >> Check   CHECK GROUN	ID CIRCUIT		d fuse.	DISCONNECT	<b>D</b> .
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NO >> Check I CHECK GROUN . Turn ignition sw . Disconnect aud	ID CIRCUIT /itch OFF. lio amp. conne			H.S. DISCONNECT (	
NO >> Check I CHECK GROUN . Turn ignition sw . Disconnect aud . Check continuit and ground.	ID CIRCUIT /itch OFF. lio amp. conne	ector.			
NO >> Check I CHECK GROUN . Turn ignition sw . Disconnect aud . Check continuit and ground.	ID CIRCUIT /itch OFF. lio amp. conne ty between au	ector. dio amp. harness		H.S. DISCONNECT H.S. LISCONNECT ( 4 20 4,20	
NO >> Check I CHECK GROUN . Turn ignition sw . Disconnect aud . Check continuit and ground.	ID CIRCUIT vitch OFF. lio amp. conne ty between au Terminal	ector.	connector M112	4 20	
NO >> Check I CHECK GROUN Disconnect aud Check continuit and ground.	ID CIRCUIT vitch OFF. lio amp. conne ty between au Terminal 4	ector. dio amp. harness	connector M112	4 20	
NO >> Check I CHECK GROUN Turn ignition sw Disconnect aud Check continuit and ground. (+) Connector M112	ID CIRCUIT vitch OFF. lio amp. conne ty between au Terminal 4 20	ector. dio amp. harness	connector M112 Continuity	4 20	
NO >> Check I CHECK GROUN . Turn ignition sw . Disconnect aud . Check continuit and ground. (+) Connector M112 Does continuity exis	ID CIRCUIT vitch OFF. lio amp. conne ty between au Terminal 4 20 <u>St?</u>	ector. dio amp. harness	connector M112 Continuity	4 20	
NO >> Check I CHECK GROUN . Turn ignition sw . Disconnect aud . Check continuit and ground. (+) Connector M112 Does continuity exis YES >> Inspect	ID CIRCUIT vitch OFF. lio amp. conne ty between au Terminal 4 20 <u>st?</u> ion End.	ector. dio amp. harness 	connector M112 Continuity	4 20	
NO >> Check I CHECK GROUN . Turn ignition sw . Disconnect aud . Check continuit and ground. (+) Connector M112 Does continuity exis YES >> Inspect NO >> Repair	ID CIRCUIT vitch OFF. lio amp. connectly ty between au Terminal 4 20 st? ion End. harness or con	ector. dio amp. harness 	connector M112 Continuity	4 20	
NO >> Check I CHECK GROUN Turn ignition sw Disconnect aud Check continuit and ground. (+) Connector M112 Does continuity exis YES >> Inspect NO >> Repair SLUETOOTH (	ID CIRCUIT vitch OFF. lio amp. conne ty between au Terminal 4 20 <u>st?</u> ion End. harness or co CONTROL	ector. dio amp. harness - (-) - Ground	connector M112 Continuity Yes	4,20	
NO >> Check I CHECK GROUN . Turn ignition sw . Disconnect aud . Check continuit and ground. (+) Connector M112 Does continuity exis YES >> Inspect	ID CIRCUIT vitch OFF. lio amp. conne ty between au Terminal 4 20 <u>st?</u> ion End. harness or co CONTROL	ector. dio amp. harness - (-) - Ground	connector M112 Continuity Yes	4,20	
NO >> Check I CHECK GROUN Turn ignition sw Disconnect aud Check continuit and ground. (+) Connector M112 Does continuity exis YES >> Inspect NO >> Repair SLUETOOTH C	ID CIRCUIT vitch OFF. lio amp. conne ty between au Terminal 4 20 <u>st?</u> ion End. harness or co CONTROL	ector. dio amp. harness - (-) - Ground	connector M112 Continuity Yes	4,20	ALNIA0755GB
NO >> Check   CHECK GROUN Turn ignition sw Disconnect aud Check continuit and ground. (+) Connector M112 Oes continuity exis YES >> Inspect NO >> Repair LUETOOTH ( LUETOOTH ( CHECK FUSE	ID CIRCUIT vitch OFF. lio amp. conne ty between au Terminal 4 20 st? ion End. harness or con CONTROL	ector. dio amp. harness (-) Ground	connector M112 Continuity Yes	4,20	ALNIA0755GB
NO >> Check I CHECK GROUN Turn ignition sw Disconnect aud Check continuit and ground. (+) Connector M112 Does continuity exis YES >> Inspect NO >> Repair SLUETOOTH C CHECK FUSE	ID CIRCUIT vitch OFF. lio amp. conne ty between au Terminal 4 20 st? ion End. harness or con CONTROL	ector. dio amp. harness (-) Ground	connector M112 Continuity Yes	4,20	ALNIA0755GB
NO >> Check I CHECK GROUN Turn ignition sw Disconnect aud Check continuit and ground. (+) Connector M112 Does continuity exis YES >> Inspect NO >> Repair SLUETOOTH C CHECK FUSE	ID CIRCUIT vitch OFF. lio amp. conne ty between au Terminal 4 20 st? ion End. harness or con CONTROL	ector. dio amp. harness (-) Ground	connector M112 Continuity Yes	Dwn.	ALNIA0755GB
NO >> Check I CHECK GROUN Turn ignition sw Disconnect aud Check continuit and ground. (+) Connector M112 Does continuity exis YES >> Inspect NO >> Repair SLUETOOTH C CHECK FUSE Check that the follow	ID CIRCUIT vitch OFF. lio amp. conne ty between au Terminal 4 20 st? ion End. harness or con CONTROL	ector. dio amp. harness - (-) - Ground nnector. . UNIT UNIT : Diagno the Bluetooth con	connector M112 Continuity Yes	Dwn.	ALNIA0755GB
NO >> Check I CHECK GROUN Turn ignition sw Disconnect aud Check continuit and ground. (+) Connector M112 Does continuity exis YES >> Inspect NO >> Repair SLUETOOTH C CHECK FUSE Check that the follow	ID CIRCUIT vitch OFF. lio amp. conne ty between au Terminal 4 20 st? ion End. harness or con CONTROL	ector. dio amp. harness (-) Ground nnector. UNIT UNIT : Diagno the Bluetooth con Terminal	connector M112 Continuity Yes Sis Procedure trol unit are not blo	Dwn.	INFOID:000000001691200

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

2. CHECK POWER SUPPLY CIRCUIT

#### < COMPONENT DIAGNOSIS >

Check voltage between Bluetooth control unit harness connector B142 and ground.

Connector No.	Terminal No.	Ignition switch position	Value (Approx.)
	1	OFF	
B142	2	ACC	Battery voltage
	3	ON	

Is battery voltage present as specified?

YES >> GO TO 3.

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

- **3.**CHECK GROUND CIRCUIT
- 1. Turn ignition switch OFF.
- 2. Disconnect Bluetooth control unit connector.
- 3. Check continuity between Bluetooth control unit harness connector B142 and ground.

Connector No.	Terminal No.	Ignition switch position	Continuity
B142	4, 20, 23	OFF	Yes

Are continuity results as specified?

YES >> INSPECTION END

NO >> Repair harness or connector.

### MICROPHONE

### **MICROPHONE : Diagnosis Procedure**

# 1.CHECK POWER SUPPLY CIRCUIT (MICROPHONE SIDE)

- 1. Turn ignition switch ON.
- 2. Check voltage between microphone harness connector R109 terminal 4 and ground.

Signal name	Connector No.	Terminal No.	Ignition switch posi- tion	Value (Ap- prox.)
MIC power	R109	4	ON	5V

Is approximately 5V present?

YES >> GO TO 3.

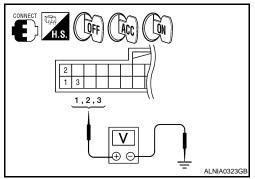
NO >> GO TO 2.

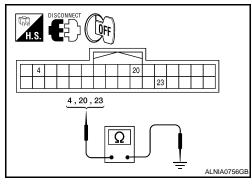
# 2. CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

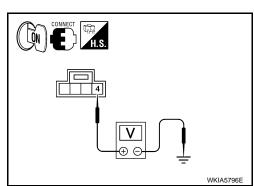
- 1. Turn ignition switch OFF.
- 2. Disconnect microphone and Bluetooth control unit harness connectors.
- Check continuity between microphone harness connector R109 (A) terminal 4 and Bluetooth control unit harness connector B142 (B) terminal 29.

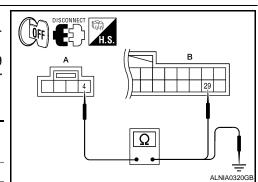
	А		В	
Connector	Terminal	Connector	Terminal	Continuity
R109	4	B142	29	Yes

 Check continuity between microphone harness connector R109 (A) terminal 4 and ground.









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[PREMIUM WITH NAVIGATION]

#### < COMPONENT DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

A       Continuity         R109       4       Ground       No         Ver the continuity test results as specified?       Yes       > Replace the Bluetooth control unit. Refer to AV-207, "Removal and Installation".         NO       >> Replat harness or connector.       Secondary in the control unit harness connector R109 and Bluetooth control unit harness connector R109 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector R109 (A) terminal
re the continuity test results as specified?         YES       >> Replace the Bluetooth control unit. Refer to AV-207. "Removal and Installation".         NO       >> Repair harness or connector.         OCHECK GROUND CIRCUIT         .       Disconnect microphone harness connector R109 and Bluetooth control unit harness connector B142.         .       Check continuity between microphone harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector B142.         .       A       B         Connector       Terminal       Connector         R109       2       B142       8         Vess continuity exist?       YES       >> Inspection End.
YES → Replace the Bluetooth control unit. Refer to <u>AV-207, "Removal and Installation"</u> . NO → Repair harness or connector. CHECK GROUND CIRCUIT Turn ignition switch OFF. Disconnect microphone harness connector R109 and Bluetooth control unit harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector B142. (B) terminal 8. More than the second s
NO →> Repair harness or connector. .CHECK GROUND CIRCUIT Turn ignition switch OFF. Disconnect microphone harness connector R109 and Bluetooth control unit harness connector B142. Check continuity between microphone harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector B142 (B) terminal 8. <u>A</u> <u>B</u> Continuity R109 2 B142 8 Yes Des continuity exist? (ES >> Inspection End.
Disconnect microphone harness connector R109 and Bluetooth control unit harness connector B142. Check continuity between microphone harness connector R109 (A) terminal 2 and Bluetooth control unit harness connector B142 (B) terminal 8. A       B       Continuity         Mathematical Connector       Terminal       Continuity         Mathematical Connector       Terminal       Continuity         R109       2       B142       8       Yes         Des continuity exist?       ALNIA03220B       ALNIA03220B
(A) terminal 2 and Bluetooth control unit harness connector B142 (B) terminal 8.         A       B         Connector       Terminal         R109       2       B142       8       Yes         Des continuity exist?       Yes       ALNIA0322GB
Connector     Terminal     Connector     Terminal       R109     2     B142     8     Yes       Des continuity exist?       /ES     >> Inspection End.
Connector       Terminal       Connector       Terminal         R109       2       B142       8       Yes         Des continuity exist?       ALNIA0322GB       ALNIA0322GB         VES       >> Inspection End.       Image: Content of the second secon
Des continuity exist? /ES >> Inspection End.
'ES >> Inspection End.

#### < COMPONENT DIAGNOSIS >

# RGB (R: RED) SIGNAL CIRCUIT

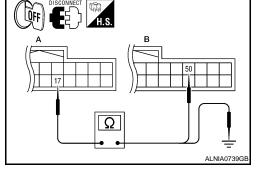
### Description

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

#### Diagnosis Procedure

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

- 1. Turn ignition switch OFF.
- Disconnect display unit connector M93 and display control unit connector M95.
- Check continuity between display unit harness connector M93 (A) terminal 17 and display control unit harness connector M95 (B) terminal 50.



- ABContinuityConnectorTerminalConnectorTerminalM9317M9550Yes
- Check continuity between display unit harness connector M93 (A) terminal 17 and ground.

	A		Continuity	
Connector	Terminal		Continuity	
M93	17	Ground	No	

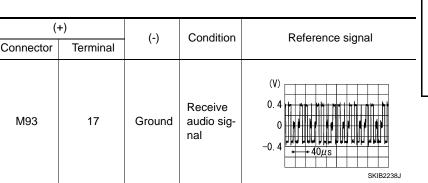
Are the continuity results as specified?

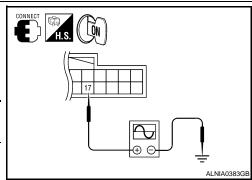
YES >> GO TO 2.

NO >> Repair harness or connector.

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

- 1. Connect display unit connector M93 and display control unit connector M95.
- 2. Turn ignition switch ON.
- Check signal between display unit harness connector M93 terminal 17 and ground.





Are the voltage readings as specified?

- YES >> Replace display unit. Refer to AV-335, "Removal and Installation"
- NO >> Replace display control unit. Refer to <u>AV-335, "Removal and Installation"</u>

### **RGB (G: GREEN) SIGNAL CIRCUIT**

#### < COMPONENT DIAGNOSIS >

# RGB (G: GREEN) SIGNAL CIRCUIT

### Description

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

#### Diagnosis Procedure

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

- 1. Turn ignition switch OFF.
- Disconnect display unit connector M93 and display control unit connector M95.
- Check continuity between display unit harness connector M93 (A) terminal 6 and display control unit harness connector M95 (B) terminal 52
  - (B) terminal 52.

A			В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M93	6	M95	52	Yes

 Check continuity between display unit harness connector M93 (A) terminal 6 and ground.

	A		Continuity
Connector	Terminal		Continuity
M93	6	Ground	No

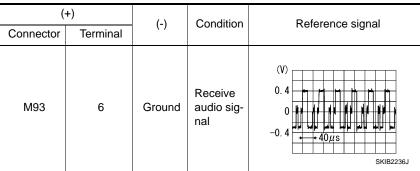
Are the continuity results as specified?

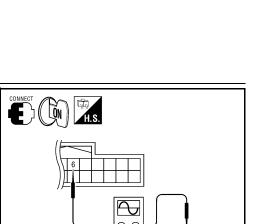
YES >> GO TO 2.

NO >> Repair harness or connector.

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

- 1. Connect display unit connector M93 and display control unit connector M95.
- 2. Turn ignition switch ON.
- Check signal between display unit harness connector M93 terminal 6 and ground.





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Are voltage readings as specified?

YES >> Replace display unit. Refer to AV-335, "Removal and Installation"

NO >> Replace display control unit. Refer to <u>AV-335, "Removal and Installation"</u>

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### **RGB (B: BLUE) SIGNAL CIRCUIT**

#### < COMPONENT DIAGNOSIS >

# RGB (B: BLUE) SIGNAL CIRCUIT

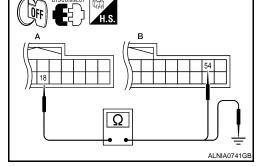
### Description

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

#### Diagnosis Procedure

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

- 1. Turn ignition switch OFF.
- Disconnect display unit connector M93 and display control unit connector M95.
- Check continuity between display unit harness connector M93 (A) terminal 18 and display control unit harness connector M95 (B) terminal 54.



- ABContinuityConnectorTerminalConnectorTerminalM9318M9554Yes
- Check continuity between display unit harness connector M93 (A) terminal 18 and ground.

А			Continuity	
Connector	Terminal		Continuity	
M93	18	Ground	No	

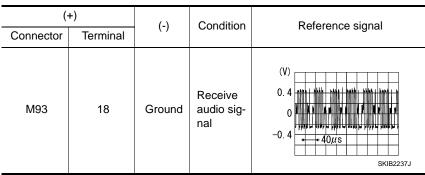
Are continuity results as specified?

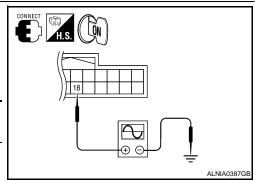
YES >> GO TO 2.

NO >> Repair harness or connector.

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

- 1. Connect display unit connector M93 and display control unit connector M95.
- 2. Turn ignition switch ON.
- Check signal between display unit harness connector M93 terminal 18 and ground.





Are voltage readings as specified?

- YES >> Replace display unit. Refer to AV-335, "Removal and Installation"
- NO >> Replace display control unit. Refer to <u>AV-335, "Removal and Installation"</u>

### **RGB SYNCHRONIZING SIGNAL CIRCUIT**

#### < COMPONENT DIAGNOSIS >

# RGB SYNCHRONIZING SIGNAL CIRCUIT

### Description

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

#### Diagnosis Procedure

# 1. CHECK CONTINUITY RGB SYNCHRONIZING SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect display unit connector M93 and display control unit connector M95.
- Check continuity between display unit harness connector M93 (A) terminal 19 and display control unit harness connector M95 (B) terminal 56.

1						
ļ	Continuity	A B Continuity		I		
	Continuity	Terminal	Connector	Terminal	Connector	
	Yes	56	M95	19	M93	

 Check continuity between display unit harness connector M93 (A) terminal 19 and ground.

A			Continuity	
Connector	Terminal		Continuity	
M93	19	Ground	No	

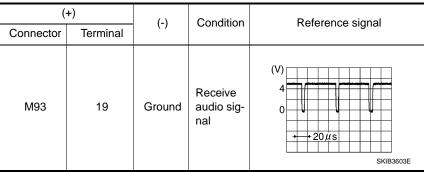
Are continuity results as specified?

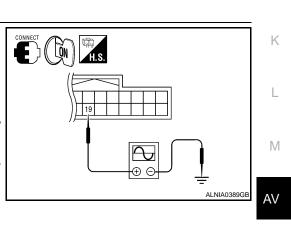
YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK RGB SYNCHRONIZING SIGNAL

- 1. Connect display unit connector M93 and display control unit connector M95.
- 2. Turn ignition switch ON.
- Check signal between display unit harness connector M93 terminal 19 and ground.





Are voltage readings as specified?

YES >> Replace display unit. Refer to <u>AV-335, "Removal and Installation"</u>

NO >> Replace display control unit. Refer to <u>AV-335, "Removal and Installation"</u>

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### **RGB AREA (YS) SIGNAL CIRCUIT**

#### < COMPONENT DIAGNOSIS >

# RGB AREA (YS) SIGNAL CIRCUIT

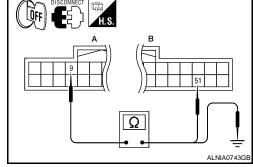
### Description

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

#### **Diagnosis Procedure**

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

- 1. Turn ignition switch OFF.
- Disconnect display unit connector M93 and display control unit connector M95.
- Check continuity between display unit harness connector M93 (A) terminal 9 and display control unit harness connector M95 (B) terminal 51.



А			В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M93	9	M95	51	Yes

 Check continuity between display unit harness connector M93 (A) terminal 9 and ground.

A			Continuity	
Connector	Terminal		Continuity	
M93	9	Ground	No	
			•	

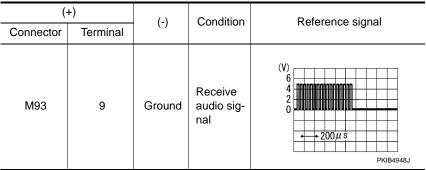
Are continuity results as specified?

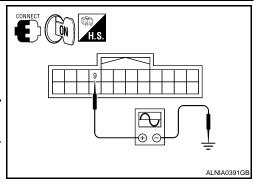
YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK RGB SYNCHRONIZING SIGNAL

- 1. Connect display unit connector M93 and display control unit connector M95.
- 2. Turn ignition switch ON.
- Check signal between display unit harness connector M93 terminal 9 and ground.





Are voltage readings as specified?

- YES >> Replace display unit. Refer to <u>AV-335</u>, "Removal and Installation"
- NO >> Replace display control unit. Refer to <u>AV-335. "Removal and Installation"</u>

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### HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

#### < COMPONENT DIAGNOSIS >

# HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

### Description

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

### **Diagnosis Procedure**

1. CHECK CONTINUITY HORIZONTAL SYNCHRONIZING (HP) SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect display unit connector M93 and display control unit connector M95.
- Check continuity between display unit harness connector M93 (A) terminal 8 and display control unit harness connector M95 (B) terminal 55.

А			В	Continuity
Connector	Terminal	Connector Terminal		Continuity
M93	8	M95	55	Yes

 Check continuity between display unit harness connector M93 (A) terminal 8 and ground.

A			Continuity
Connector	Terminal		Continuity
M93	8	Ground	No

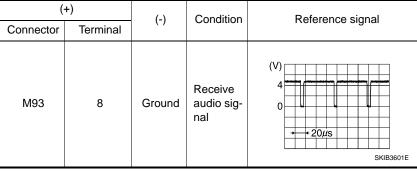
Are continuity results as specified?

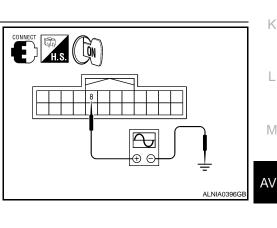
YES >> GO TO 2.

NO >> Repair harness or connector.

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

- 1. Connect display unit connector M93 and display control unit connector M95.
- 2. Turn ignition switch ON.
- 3. Check signal between display unit harness connector M93 terminal 8 and ground.





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Are voltage readings as specified?

YES >> Replace display control unit. Refer to <u>AV-335. "Removal and Installation"</u>

NO >> Replace display unit. Refer to <u>AV-335, "Removal and Installation"</u>



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### VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

#### < COMPONENT DIAGNOSIS >

# VERTICAL SYNCHRONIZING (VP) SIGNAL CIRCUIT

### Description

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

# **Diagnosis Procedure**

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

- 1. Turn ignition switch OFF.
- 2. Disconnect display unit connector M93 and display control unit connector M95.
- Check continuity between display unit harness connector M93 (A) terminal 20 and display control unit harness connector M95 (B) terminal 53.

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- ABContinuityConnectorTerminalConnectorTerminalM9320M9553Yes
- Check continuity between display unit harness connector M93 (A) terminal 20 and ground.

A			Continuity
Connector	Terminal		Continuity
M93	20	Ground	No

Are continuity results as specified?

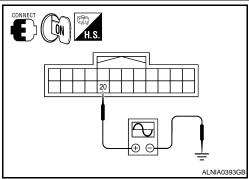
YES >> GO TO 2.

NO >> Repair harness or connector.

# 2. CHECK VERTICAL SINCHRONIZING (VP) SIGNAL

- 1. Connect display unit connector M93 and display control unit connector M95.
- 2. Turn ignition switch ON.
- 3. Check signal between display unit harness connector M93 terminal 20 and ground.

(+)		(-)	Condition	Reference signal	
Connector	Terminal	(-)	Condition	Reference signal	
M93	20	Ground	Receive audio sig- nal	(V) 4 0 • • • 4ms SKIB3598E	



Are voltage readings as specified?

YES >> Replace display control unit. Refer to AV-335, "Removal and Installation"

NO >> Replace display unit. Refer to <u>AV-335, "Removal and Installation"</u>

# FRONT DOOR SPEAKER

#### < COMPONENT DIAGNOSIS >

# FRONT DOOR SPEAKER

# Description

The audio unit sends audio signals to the audio amp. The audio amp. amplifies the audio signals before send-В ing them to the front door speakers using the audio signal circuits.

# **Diagnosis** Procedure

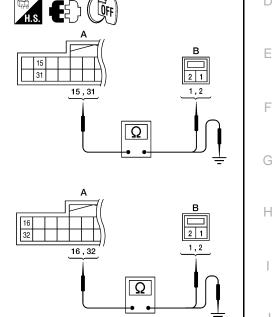
# **1.**SPEAKER HARNESS CHECK

- 1. Disconnect audio amp. connector M113 and suspect speaker connector.
- Check continuity between audio amp. harness connector M113 2. (A) and suspect speaker harness connector (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	15	D12	1	
M113	31		2	Yes
WITS	16	<b>D</b> 440	1	165
	32	D112	2	

3. Check continuity between audio amp. harness connector M113 (A) and ground.

	А		Continuity
Connector	Terminal		Continuity
	15		No
M113	31	Ground	
IVIT13	16	Giouna	
	32	_	



Are continuity test results as specified?

YES >> GO TO 2

NO >> • Check connector housings for disconnected or loose terminals. • Repair harness or connector.

2.FRONT DOOR SPEAKER SIGNAL CHECK

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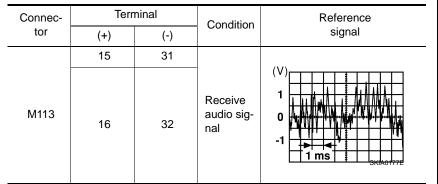
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INFOID:000000001691202

# FRONT DOOR SPEAKER

#### < COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connector M113 and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio amp. harness connector M113 terminals with CONSULT-III or oscilloscope.



#### Is audio signal voltage as specified?

YES >> Replace suspect speaker. Refer to <u>AV-95. "Removal</u> and Installation".

NO >> GO TO 3

# **3.**PRE-AMP HARNESS CHECK

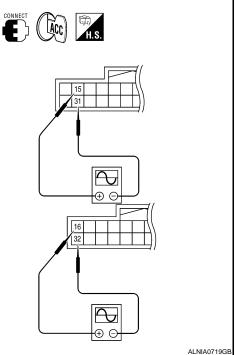
- Disconnect audio unit connector M43 and audio amp. connector M113.
- 2. Check continuity between audio unit harness connector M43 (A) and audio amp. harness connector M113 (B).

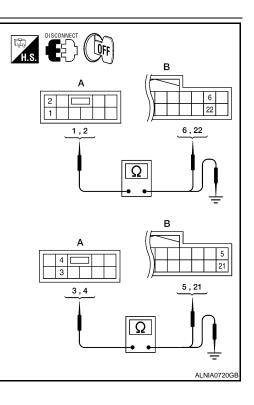
	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	1	M113	6	
M43	2		22	Yes
	3		5	Tes
	4		21	

3. Check continuity between audio unit harness connector M43 (A) and ground.

	A			Continuity	
_	Connector	Terminal		Continuity	
_		1	Ground	No	
		2			
M43	3	Ground	INU		
		4			

# [PREMIUM WITH NAVIGATION]





Are continuity test results as specified?

YES >> GO TO 4

NO

- >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

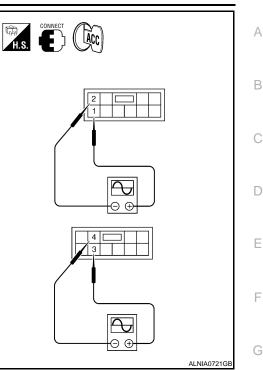
**4.**PRE-AMP SIGNAL CHECK

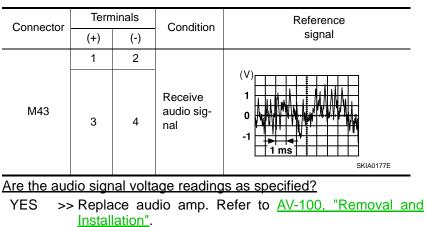
# FRONT DOOR SPEAKER

#### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector and audio amp. connector.
- 2. Turn ignition switch ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.

#### [PREMIUM WITH NAVIGATION]





NO >> Replace audio unit. Refer to <u>AV-92, "Removal and</u> <u>Installation"</u>.

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# < COMPONENT DIAGNOSIS >

# FRONT TWEETER

# Description

The audio unit sends audio signals to the audio amp. The audio amp. amplifies the audio signals before sending them to the tweeters using the audio signal circuits.

# **Diagnosis Procedure**

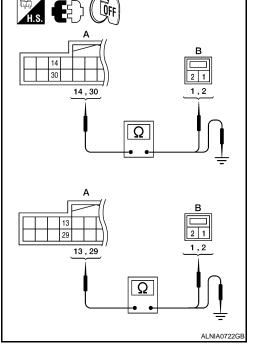
# **1.**HARNESS CHECK

- 1. Disconnect audio amp. connector M113 and suspect tweeter connector.
- Check continuity between audio amp. harness connector M113 (A) and suspect tweeter harness connector (B).

	A	В		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
	14	M109	M100	1	
M113	30		2	Yes	
	13	M111	1	165	
	29		2		

 Check continuity between audio amp. harness connector M113 (A) and ground.

	А		Continuity
Connector	Terminal		
	14		No
M113	30	Ground	
101113	13	Ground	
	29		



Are continuity test results as specified?

YES >> GO TO 2

NO >> • Check connector housings for disconnected or loose terminals.
 • Repair harness or connector.

2.FRONT TWEETER SIGNAL CHECK

# [PREMIUM WITH NAVIGATION]

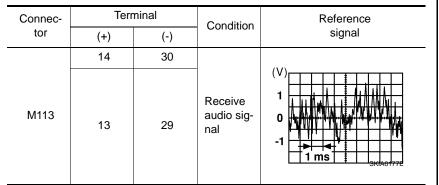
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INFOID:000000001691205

# **FRONT TWEETER**

#### < COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connector M113 and suspect tweeter connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio amp. harness connector M113 terminals with CONSULT-III or oscilloscope.



#### Is audio signal voltage as specified?

YES >> Replace suspect tweeter. Refer to AV-191, "Removal and Installation".

NO >> GO TO 3

# **3.**PRE-AMP HARNESS CHECK

- 1. Disconnect audio unit connector M43 and audio amp. connector M113.
- 2. Check continuity between audio unit harness connector M43 (A) and audio amp. harness connector M113 (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	1	M113	1 6	
M43	2		22	Yes
10143	3		5	Tes
	4		21	

3. Check continuity between audio unit harness connector M43 (A) and ground.

		А		Continuity
-	Connector	Terminal		Continuity
-	M43	1	- Ground	No
		2		
		3		
		4		

#### Are continuity test results as specified?

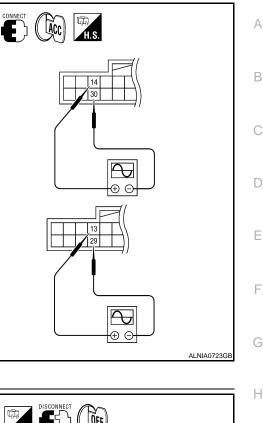
YES >> GO TO 4

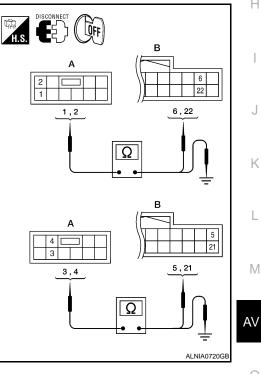
NO

- >> Check connector housings for disconnected or loose terminals.
  - · Repair harness or connector.

**4.**PRE-AMP SIGNAL CHECK

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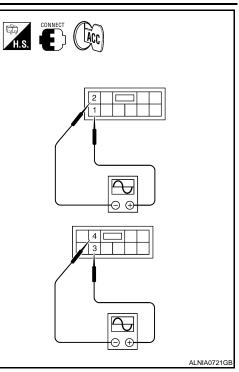
L

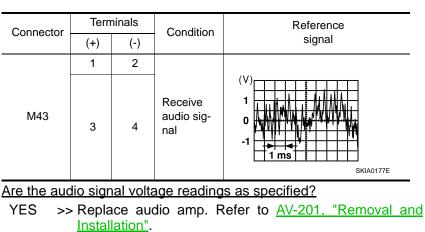
# **FRONT TWEETER**

#### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector and audio amp. connector.
- 2. Turn ignition switch ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.

## [PREMIUM WITH NAVIGATION]





NO >> Replace audio unit. Refer to <u>AV-189</u>, "<u>Removal and</u> <u>Installation</u>".

# CENTER SPEAKER

# < COMPONENT DIAGNOSIS >

# CENTER SPEAKER

# Description

The audio unit sends audio signals to the audio amp. The audio amp. amplifies the audio signals before send-В ing them to the center speaker using the audio signal circuits.

# **Diagnosis** Procedure

# **1.**CENTER SPEAKER HARNESS CHECK

- 1. Disconnect audio amp. connector M113 and center speaker connector M110.
- 2. Check continuity between audio amp. harness connector M113 (A) and center speaker harness connector M110 (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M113	10	M110	1	Yes
101113	26		2	163

3. Check continuity between audio amp. harness connector M113 (A) and ground.

	А		Continuity
Connector	Terminal		Continuity
M113	10	Ground	No
	26	Glound	NO

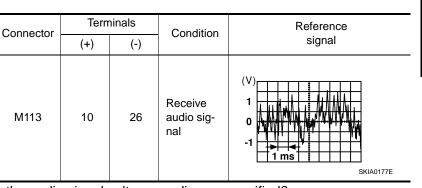
# Are continuity test results as specified?

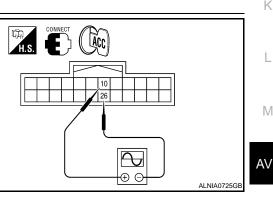
YES >> GO TO 2

- NO >> • Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

# 2.center speaker signal check

- 1. Connect audio amp. connector M113 and center speaker connector M110.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio amp. harness connector M113 terminals with CONSULT-III or oscilloscope.



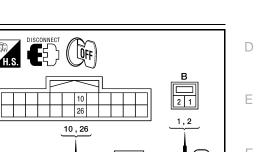


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Is the audio signal voltage reading as specified?

YES >> Replace center speaker. Refer to AV-192, "Removal and Installation".

 $\mathbf{3.}$ pre-amp harness check



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NO >> GO TO 3

# **CENTER SPEAKER**

#### < COMPONENT DIAGNOSIS >

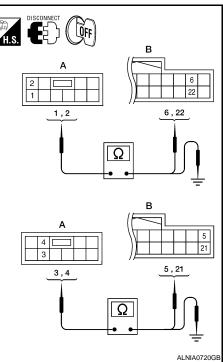
- Disconnect audio unit connector M43 and audio amp. connector M113.
- 2. Check continuity between audio unit harness connector M43 (A) and audio amp. harness connector M113 (B).

А		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	1	M113	6	
M43	2		22	Yes
	3		5	165
	4		21	

3. Check continuity between audio unit harness connector M43 (A) and ground.

	A		Continuity
Connector	Terminal		Continuity
	1		
M43	2 Ground		No
10143	3	Giouna	INO
	4		

# [PREMIUM WITH NAVIGATION]



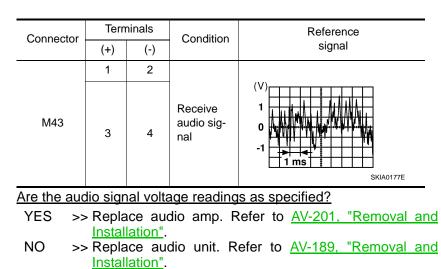
Are continuity test results as specified?

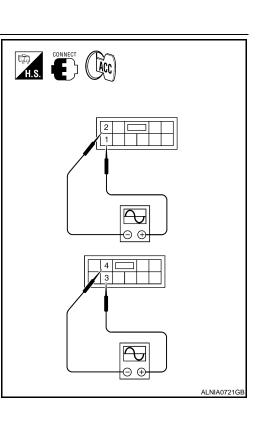
YES >> GO TO 4 NO >> • Check of

- >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

# **4.**PRE-AMP SIGNAL CHECK

- 1. Connect audio unit connector and audio amp. connector.
- 2. Turn ignition switch ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M43 terminals with CONSULT-III or oscilloscope.





# REAR DOOR SPEAKER

#### < COMPONENT DIAGNOSIS >

# REAR DOOR SPEAKER

# Description

The audio unit sends audio signals to the audio amp. The audio amp. amplifies the audio signals before sending them to the rear door speakers using the audio signal circuits.

# **Diagnosis Procedure**

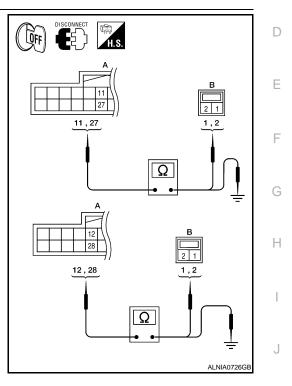
# **1.**SPEAKER HARNESS CHECK

- 1. Disconnect audio amp. connectors M113 and suspect speaker connector.
- Check continuity between audio amp. harness connectors M113 (A) and suspect speaker harness connector (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	11	D207 (crew cab)	1	
M113	27	B76 (king cab)	2	Yes
	12	D307 (crew cab)	1	165
	28	B159 (king cab)	2	

 Check continuity between audio amp. harness connectors M113 (A) and ground.

Connector	Terminal	-	Continuity	
	11		No	
M113	27	Ground		
INT IS	12	Giodria		
	28			



Are the continuity test results as specified?

YES >> GO TO 2

NO >> • Check connector housings for disconnected or loose terminals.

Repair harness or connector.

2.SPEAKER SIGNAL CHECK

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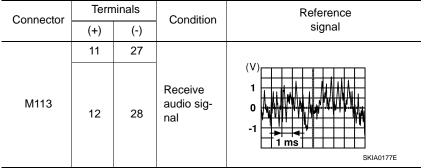
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# **REAR DOOR SPEAKER**

# < COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connectors and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio amp. harness connectors M113 terminals with CONSULT-III or oscilloscope.



#### Are audio signal voltage readings as specified?

YES >> Replace suspect speaker. Refer to <u>AV-194</u>, "<u>Removal</u> and <u>Installation</u>".

# **3.**PRE-AMP HARNESS CHECK

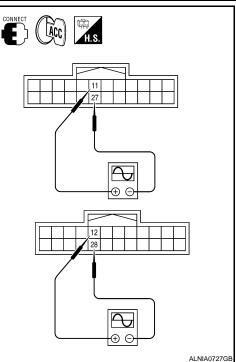
- Disconnect audio unit connector M44 and audio amp. connector M113.
- 2. Check continuity between audio unit harness connector M44 (A) and audio amp. harness connector M113 (B).

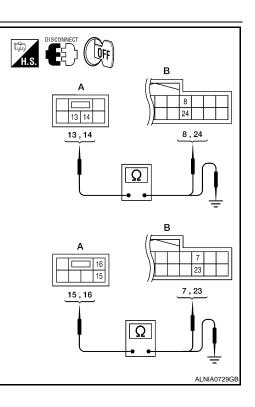
	А		В	
Connector	Terminal	Connector	Terminal	Continuity
	13		8	
M44	14	M113	24	Yes
	15		7	Tes
	16		23	

3. Check continuity between audio unit harness connector M44 (A) and ground.

	A			Continuity	
-	Connector	Terminal		Continuity	
-		13		No	
	M44	14	Ground		
		15	Ground		
		16			

# [PREMIUM WITH NAVIGATION]





Are the continuity test results as specified?

- YES >> GO TO 4 NO >> • Check of
  - >> Check connector housings for disconnected or loose terminals.
    - Repair harness or connector.

**4.**PRE-AMP SIGNAL CHECK

# **REAR DOOR SPEAKER**

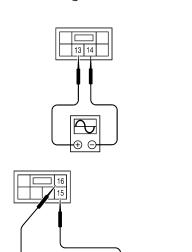
#### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector M44 and audio amp. connector M113.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M44 terminals with CONSULT-III or oscilloscope.

#### Terminals Reference Connector Condition signal (+) (-) 13 14 (V Receive M44 audio sig-0 15 16 nal -1 SKIA0177E Is the audio signal voltage reading as specified?

- YES >> Replace audio amp. Refer to <u>AV-201, "Removal and Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-189</u>, "<u>Removal and</u> <u>Installation</u>".

# H.S. CONNECT



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#### < COMPONENT DIAGNOSIS >

# REAR DOOR TWEETER

# Description

The audio unit sends audio signals to the audio amp. The audio amp. amplifies the audio signals before sending them to the rear door tweeters using the audio signal circuits.

# **Diagnosis Procedure**

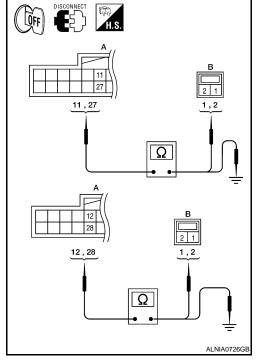
# **1.**SPEAKER HARNESS CHECK

- 1. Disconnect audio amp. connectors M113 and suspect speaker connector.
- Check continuity between audio amp. harness connectors M113 (A) and suspect speaker harness connector (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	11	D208	1	
M113	27	D200	2	Yes
	12	Daaa	1	165
	28	D308	2	

3. Check continuity between audio amp. harness connectors M113 (A) and ground.

Connector	Terminal	-	Continuity
	11		No
M113	27	Ground	
IVITI3	12	Ground	
	28		



#### Are the continuity test results as specified?

YES >> GO TO 2

NO >> • Check connector housings for disconnected or loose terminals.

• Repair harness or connector.

2.SPEAKER SIGNAL CHECK

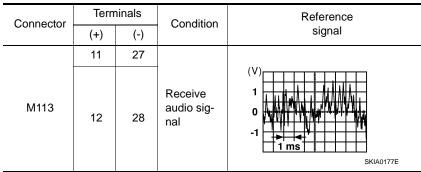
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# REAR DOOR TWEETER

## < COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connectors and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- Check the signal between audio amp. harness connectors M113 4. terminals with CONSULT-III or oscilloscope.



#### Are audio signal voltage readings as specified?

YES >> Replace suspect speaker. Refer to AV-194, "Removal and Installation".

# **3.**PRE-AMP HARNESS CHECK

- 1. Disconnect audio unit connector M44 and audio amp. connector M113.
- 2. Check continuity between audio unit harness connector M44 (A) and audio amp. harness connector M113 (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	13		8	
M44	14	M113	24	Yes
	15		7	Tes
	16		23	

3. Check continuity between audio unit harness connector M44 (A) and ground.

	A			Continuity
-	Connector	Terminal		Continuity
-		13		No
	M44	14	Ground	
		15	Ground	
		16		

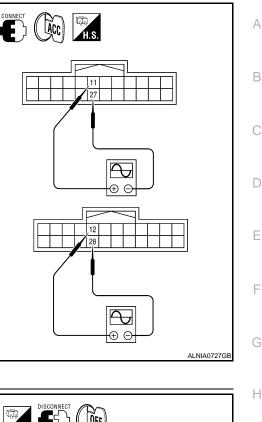
## Are the continuity test results as specified?

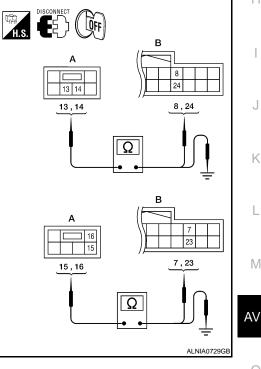
YES >> GO TO 4

NO

- >> Check connector housings for disconnected or loose terminals.
  - · Repair harness or connector.
- **4.**PRE-AMP SIGNAL CHECK

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# **REAR DOOR TWEETER**

#### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector M44 and audio amp. connector M113.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M44 terminals with CONSULT-III or oscilloscope.

#### Terminals Reference Connector Condition signal (+) (-) 13 14 (V)Receive M44 audio sig-0 15 16 nal SKIA0177E Is the audio signal voltage reading as specified?

- YES >> Replace audio amp. Refer to <u>AV-201, "Removal and</u> <u>Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-189, "Removal and</u> <u>Installation"</u>.

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# **SUBWOOFER**

# < COMPONENT DIAGNOSIS > SUBWOOFER

# Description

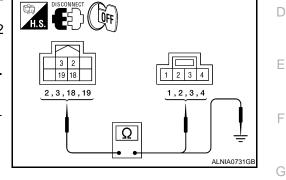
The audio unit sends audio signals to the audio amp. The audio amp. amplifies the audio signals before sending them to the subwoofer using the audio signal circuits.

# **Diagnosis Procedure**

# **1.**SPEAKER HARNESS CHECK

- 1. Disconnect audio amp. connector M112 and subwoofer connector B72.
- Check continuity between audio amp. harness connector M112 (A) and subwoofer harness connector B72 (B).

A		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	2		1	
M112	3	B72	3	Yes
	18		2	165
	19		4	



[PREMIUM WITH NAVIGATION]

3. Check continuity between audio amp. harness connector M112 (A) and ground.

A			Continuity	
Connector	Terminal		Continuity	
	2		No	
M112	3	Ground		
IVI I I Z	18	Ground		
	19			

Are the continuity test results as specified?

YES >> GO TO 2

NO

- >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

2.SPEAKER SIGNAL CHECK

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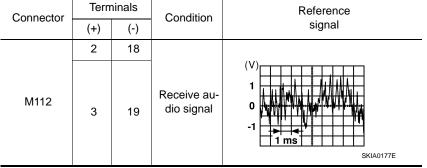
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# SUBWOOFER

#### < COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connector M112 and subwoofer connector B72.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio amp. harness connector M112 terminals with CONSULT-III or oscilloscope.



#### Is the audio signal voltage as specified?

YES >> Replace subwoofer. Refer to <u>AV-196</u>, "<u>Removal and</u> <u>Installation</u>".

# **3.**PRE-AMP HARNESS CHECK

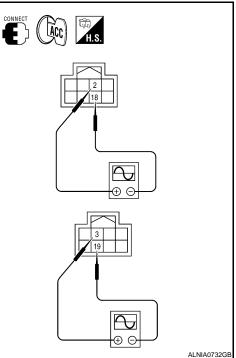
- 1. Disconnect audio unit connector M44 and audio amp. connector M113.
- 2. Check continuity between audio unit harness connector M44 (A) and audio amp. harness connector M113 (B).

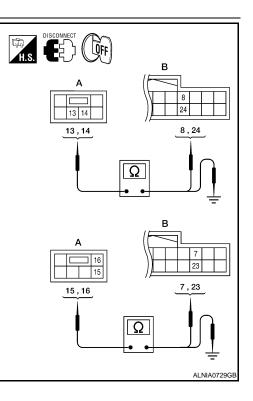
А		В		
Connector	Terminal	Connector	Terminal	Continuity
	13		8	
M44	14	M113	24	Vac
	15		7	Yes
	16		23	

3. Check continuity between audio unit harness connector M44 (A) and ground.

	A			Continuity	
-	Connector	Terminal		Continuity	
-		13		No	
	M44	14	Ground		
		15	Ground		
		16			

# [PREMIUM WITH NAVIGATION]





Are the continuity test results as specified?

YES >> GO TO 4

NO

- >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

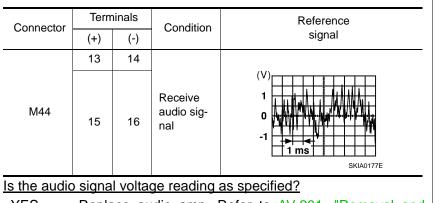
**4.**PRE-AMP SIGNAL CHECK

# SUBWOOFER

AV-269

#### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector M44 and audio amp. connector M113.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M44 terminals with CONSULT-III or oscilloscope.



- YES >> Replace audio amp. Refer to <u>AV-201, "Removal and</u> <u>Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-189</u>, "<u>Removal and</u> <u>Installation</u>".

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# AMP ON SIGNAL CIRCUIT

# Description

When the audio system is turned on, a voltage signal is supplied from the audio unit to the audio amp. When this signal is received, the audio amp. will turn on.

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# **Diagnosis Procedure**

# 1.CHECK AMP ON SIGNAL

- 1. Turn audio system ON.
- 2. Check voltage between audio amp. harness connector M113 terminal 9 and ground.

#### 9 - Ground

: More than 6.5V

Is battery voltage present?

- YES >> Inspection End.
- NO >> GO TO 2.

# 2. CHECK AMP ON SIGNAL (AUDIO UNIT)

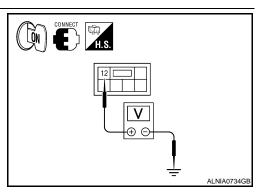
Check voltage between audio unit harness connector M44 terminal 12 and ground.

#### 12 - Ground

: More than 6.5V

Is battery voltage present?

- YES >> Repair harness or connector.
- NO >> Replace audio unit. Refer to <u>AV-189</u>, "<u>Removal and</u> <u>Installation</u>".



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# STEERING SWITCH

# < COMPONENT DIAGNOSIS >

# STEERING SWITCH

# Description

When one of the steering wheel audio control switches is pushed, the resistance in the steering wheel audio В control switch circuit changes depending on which button is pushed.

# **Diagnosis** Procedure

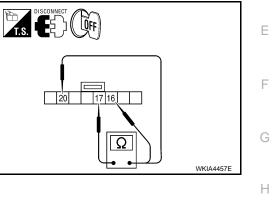
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# 1. CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

- 1. Turn ignition switch OFF.
- 2. Disconnect steering wheel audio control switch connector M102.
- Check resistance between steering switch connector terminals. 3.

Terminal		Signal name	Condition	Resistance (Ω) (Approx.)
		Seek (down)	Depress $ abla$ switch.	165
		Volume (down)	Depress VOL down switch.	487
16	17	Mode (without Bluetooth)	Depress MODE switch.	
		Phone/Send (with Blue- tooth)	Depress MODE switch.	0
		Seek (up)	Depress $\Delta$ switch.	165
20	17	Volume (up)	Depress VOL up switch.	487
20	17	Power (without Bluetooth)	Depress PWR switch.	0
		Mode/End (with Bluetooth)	Depress 🌈 🏑 switch.	0



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Do the steering wheel audio control switches check OK?

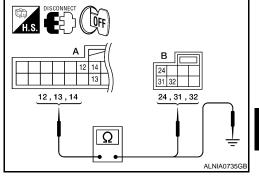
YES >> GO TO 2

NO >> Replace steering wheel audio control switch. Refer to AV-197, "Removal and Installation".

# 2.CHECK HARNESS

- 1. Disconnect Bluetooth control unit connector B142 and spiral cable connector M30.
- 2. Check continuity between Bluetooth control unit harness connector B142 (A) and spiral cable harness connector M30 (B).

А		В		Continuity
Connector	Terminal	Connector Terminal		Continuity
	12		24	
B142	13	M30	32	Yes
	14		31	



3. Check continuity between Bluetooth control unit connector B142 (A) and ground.

	A		Continuity
Connector	Terminal		
	12		
B142	13	Ground	No
	14		

Are the continuity results as specified?

YES >> GO TO 3

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# STEERING SWITCH

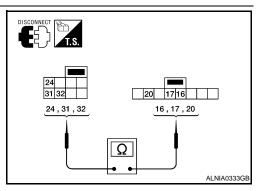
## < COMPONENT DIAGNOSIS >

# NO >> Repair harness.

# 3.Spiral Cable Check

- 1. Disconnect spiral cable connector M102.
- Check continuity between spiral cable harness connector M30 (A) and M102 (B).

	Spiral	Continuity		
Connector	Terminal	Connector	Terminal	Continuity
	24		20	
M30	31	M102	17	Yes
	32		16	



#### Does the spiral cable check OK?

YES >> Inspection End.

NO >> Replace spiral cable. Refer to <u>SR-6, "Removal and Installation"</u>.

## < COMPONENT DIAGNOSIS >

# COMMUNICATION SIGNAL CIRCUIT SATELLITE RADIO TUNER

# SATELLITE RADIO TUNER : Description

Communication signals are exchanged between the audio unit and satellite radio tuner using the communication circuits.

# SATELLITE RADIO TUNER : Diagnosis Procedure

# **1.**CHECK HARNESS - REQ1

- 1. Turn ignition switch OFF.
- 2. Disconnect satellite radio tuner (factory installed) connector M41 and audio unit connector M42.
- 3. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 28 and audio unit harness connector M42 (B) terminal 48.

	A		Continuity	
Connector	Terminal	Connector	Terminal	Continuity
M41	28	M42	48	Yes

4. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 28 and ground.

	A		Continuity
Connector	Terminal		Continuity
M41	28	Ground	No

Are continuity results as specified?

YES >> GO TO 2

NO >> Repair harness or connector.

2.CHECK HARNESS - TXD

Check continuity between satellite radio tuner (factory installed) 1. harness connector M41 (A) terminal 29 and audio unit harness connector M42 (B) terminal 49.

A				Continuity	
Conne	ctor	Terminal	Connector	Terminal	Continuity
M4	1	29	M42	49	Yes

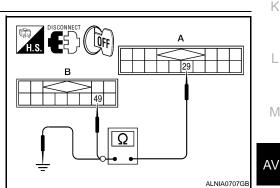
2. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 29 and ground.

	A		Continuity
Connector	Connector Terminal		Continuity
M41	29	Ground	No

Are continuity results as specified?

YES >> GO TO 3

- NO >> Repair harness or connector.
- $\mathbf{3.}$ CHECK HARNESS RXD



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# **COMMUNICATION SIGNAL CIRCUIT**

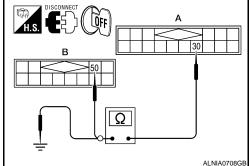
#### < COMPONENT DIAGNOSIS >

1. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 30 and audio unit harness connector M42 (B) terminal 50.

	A		Continuity	
Connector	Terminal	Connector	Terminal	Continuity
M41	30	M42	50	Yes

2. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 30 and ground.

	A		Continuity
Connector	Terminal		Continuity
M41	30	Ground	No



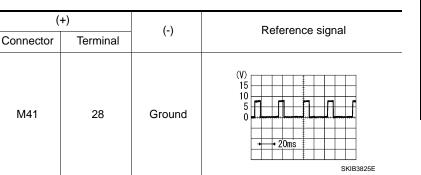
#### Are continuity results as specified?

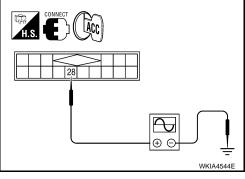
YES >> GO TO 4

NO >> Repair harness or connector.

**4.**CHECK REQ1 SIGNAL

- 1. Connect satellite radio tuner (factory installed) connector and audio unit connector.
- 2. Turn ignition switch to ACC
- Check signal between satellite radio tuner (factory installed) harness connector M41 terminal 28 and ground with CONSULT-III or oscilloscope.





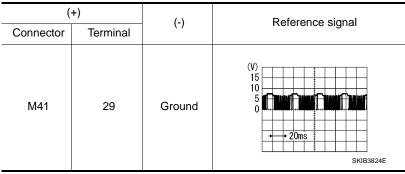
Are voltage readings as specified?

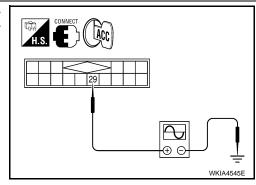
#### YES >> GO TO 5

NO >> Replace audio unit. Refer to <u>AV-92, "Removal and Installation"</u>.

## **5.**CHECK TXD SIGNAL

Check signal between satellite radio tuner (factory installed) harness connector M41 terminal 29 and ground with CONSULT-III or oscillo-scope.





Are the voltage readings as specified?

# [PREMIUM WITH NAVIGATION]

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# **COMMUNICATION SIGNAL CIRCUIT**

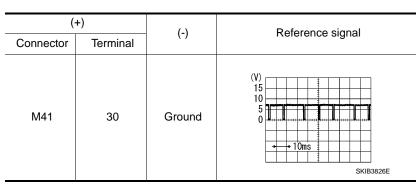
< COMPONENT DIAGNOSIS >

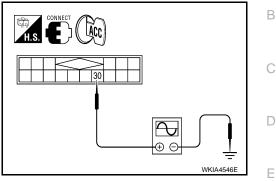
[PREMIUM WITH NAVIGATION]

YES >> GO TO 6 NO >> Replace satellite radio tuner.

6.CHECK RXD SIGNAL

Check signal between satellite radio tuner (factory installed) harness connector M41 terminal 30 and ground with CONSULT-III or oscillo-scope.





Are the voltage readings as specified?

YES >> Replace satellite radio tuner.

NO >> Replace audio unit. Refer to <u>AV-92. "Removal and Installation"</u>.

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< COMPONENT DIAGNOSIS >

# SOUND SIGNAL CIRCUIT SATELLITE RADIO TUNER

# SATELLITE RADIO TUNER : Description

Left and right channel audio signals are supplied from the satellite radio tuner to the audio unit through the sound signal circuits.

# SATELLITE RADIO TUNER : Diagnosis Procedure

# LEFT CHANNEL

# 1.CHECK HARNESS

- 1. Turn ignition switch OFF.
- 2. Disconnect satellite radio tuner (factory installed) connector M41 and audio unit connector M42.
- 3. Check continuity between satellite radio tuner (factory installed) connector M41 (A) and audio unit connector M42 (B).

Δ	N	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M41	21	M42	41	Yes
1714 1	22	10142	42	165

4. Check continuity between satellite radio tuner (factory installed) connector M41 (A) and ground.

	А		Continuity
Connector	Terminal		Continuity
M41	21	Ground	No
	22	Cround	NO

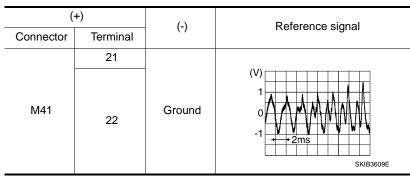
Are continuity results as specified?

YES >> GO TO 2

NO >> Repair harness or connector.

2. CHECK LEFT CHANNEL AUDIO SIGNAL

- 1. Connect satellite radio tuner (factory installed) and audio unit.
- 2. Turn ignition switch ON.
- Check signal between satellite radio tuner (factory installed) connector M41 terminals 21 and 22 with CONSULT-III or oscilloscope.

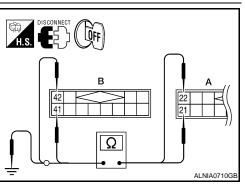


Are voltage readings as specified?

YES >> Replace audio unit. Refer to <u>AV-92, "Removal and Installation"</u>.

NO >> Replace satellite radio tuner. Refer to <u>AV-102. "Removal and Installation"</u>.

#### RIGHT CHANNEL



#### [PREMIUM WITH NAVIGATION]

INFOID:000000001691221

INFOID:000000001691220

# SOUND SIGNAL CIRCUIT

#### < COMPONENT DIAGNOSIS >

# [PREMIUM WITH NAVIGATION]

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# **1.**CHECK HARNESS

- 1. Turn ignition switch OFF.
- 2. Disconnect satellite radio tuner (factory installed) connector M41 and audio unit connector M42.
- 3. Check continuity between satellite radio tuner (factory installed) M41 (A) and audio unit M42 (B).

А		E	Continuity		
Connector	Terminal Connector		Terminal	Continuity	
M41	23	M42	43	Yes	
10141	24	10142	44	Tes	

4. Check continuity between satellite radio tuner (factory installed) connector M41 (A) and ground.

	А		Continuity	
Connector	Terminal		Continuity	
 M41	23	Ground	No	
10141	24	Gibunu	NO	

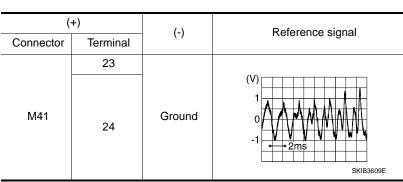
Are continuity results as specified?

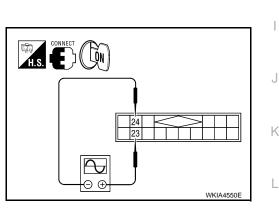
YES >> GO TO 2

NO >> Repair harness or connector.

# **2.**CHECK RIGHT CHANNEL AUDIO SIGNAL

- 1. Connect satellite radio tuner (factory installed) and audio unit.
- 2. Turn ignition switch ON.
- Check signal between satellite radio tuner (factory installed) connector M41 terminals 23 and 24 with CONSULT-III or oscilloscope.





Are voltage readings as specified?

YES >> Replace audio unit. Refer to <u>AV-92, "Removal and Installation"</u>.

NO >> Replace satellite radio tuner. Refer to <u>AV-102, "Removal and Installation"</u>.

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# **MICROPHONE SIGNAL CIRCUIT**

#### < COMPONENT DIAGNOSIS >

# MICROPHONE SIGNAL CIRCUIT

# Description

Voice signals are transmitted from the microphone to the Bluetooth control unit using the microphone signal circuits.

Continuity

Yes

# **Diagnosis** Procedure

# 1. CHECK HARNESS BETWEEN BLUETOOTH CONTROL UNIT AND MICROPHONE

1. Turn ignition switch OFF.

А

Terminal

7

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29

Connector

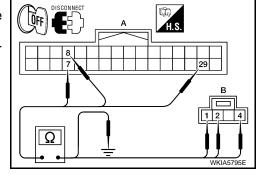
B142

- Disconnect Bluetooth control unit connector and microphone 2. connector.
- Check continuity between Bluetooth control unit harness con-3. nector B142 (A) and microphone harness connector R109 (B).

Connector

R109

В



Check continuity between Bluetooth control unit harness connector B142 (A) and ground. 4.

Terminal

1

2

4

	А	_	Continuity	
Connector	Terminal		Continuity	
	7			
B142	8	Ground	No	
	29			
Are the contin	nuity test results as speci	fied?		
NO >> F	GO TO 2 Repair harness or connec IICROPHONE POWER S			
nector. 2. Turn ignit	Bluetooth control unit co		·	CONNECT THE
terminal 4	oltage between microph 4 and ground.		connector R109	
4 - Gr	ound	: Approx. 5V		
Is voltage rea	ding approx. 5 volts?			
VES SS (				

YES >> GO TO 3

>> Replace Bluetooth control unit. Refer to AV-207, NO "Removal and Installation".

 ${f 3.}$ CHECK MICROPHONE SIGNAL

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INFOID:000000001691223

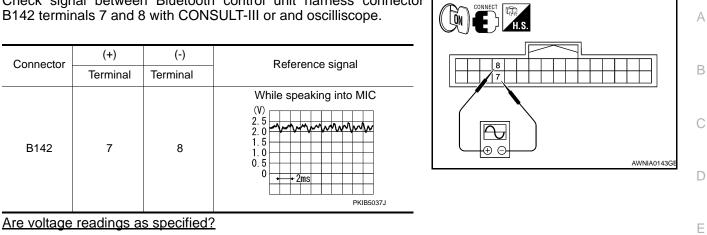
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# **MICROPHONE SIGNAL CIRCUIT**

#### < COMPONENT DIAGNOSIS >

Check signal between Bluetooth control unit harness connector B142 terminals 7 and 8 with CONSULT-III or and oscilliscope.

#### [PREMIUM WITH NAVIGATION]



YES	>> Replace Bluetooth control unit. Refer to <u>AV-207, "Removal and Installation"</u> .
NO	>> Replace microphone. Refer to <u>AV-205, "Removal and Installation"</u> .

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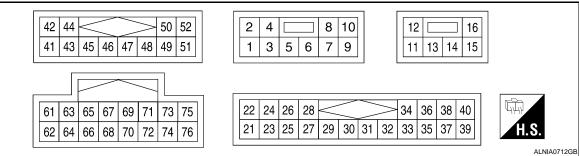
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# AUDIO UNIT

# Reference Value

INFOID:000000001691224

# **TERMINAL LAYOUT**



# PHYSICAL VALUES

	minal e color)	Item	Signal input/		Condition	Reference value (Approx.)
+	-		output			( 11 - 7
2 (L/W)	1 (L/R)	Audio sound signal front LH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1
4 (W/B)	3 (L/B)	Audio sound signal front RH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1
6 (Y)	Ground	Battery power	Input	_	_	Battery voltage
7 (BR)	Ground	Illumination control signal	Input	Ignition switch ON	Illumination control switch is operated by lighting switch in 1st position.	Changes between 0 and 12V
8	Ground	Illumination signal	Input	OFF	Lighting switch is in 1st position.	Battery voltage
(R/L)	Ground	mummation signal	Input	UFF	Lighting switch is OFF.	0V
10 (V)	Ground	ACC signal	Input	Ignition switch ON	-	Battery voltage

#### < ECU DIAGNOSIS >

	ninal color)	Item	Signal input/		Condition	Reference value (Approx.)
+	-		output			(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
14 (SB)	13 (B/Y)	Audio sound signal rear LH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 SKIA0177E
16 (O/L)	15 (R/L)	Audio sound signal rear RH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5
21 (V)	Ground	Remote control A	Output	Ignition switch ON	Audio unit ON	5V
22 (P)	Ground	Remote control B	Output	Ignition switch ON	Audio unit ON	5V
23 (BR/Y)	Ground	Remote control C	Output	Ignition switch ON	Audio unit ON	5V
24 (L)	Ground	Remote control D	Output	Ignition switch ON	Audio unit ON	5V
25 (LG)	Ground	Remote control ground	_	-	_	0V
27 (O/L)	26 (O)	Audio sound signal LH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
29 (W)	28 (W/L)	Audio sound signal RH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
30	-	Shield	-		-	0V
31 (O)	Ground	Remote control en- able signal	Output	Ignition switch ON	Audio unit ON	5V
32 (V)	Ground	Remote control switch power sup- ply	Output	Ignition switch ON	Audio unit ON	12V

## < ECU DIAGNOSIS >

	minal color)	Item	Signal input/		Condition	Reference value (Approx.)
+	-		output			(******
35 (B)	34 (W)	Family entertain- ment system left channel audio input	Input	lgnition switch ON	DVD operating	(V) 1 0 -1 + 2ms SKIB3609E
37 (R)	36 (G)	Family entertain- ment system right channel audio input	Input	Ignition switch ON	DVD operating	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
39 (Y/L)	Ground	Family entertain- ment system en- able	Output	Ignition switch ON	DVD operating	12V
40 (L/W)	Ground	Audio ON	Input	Ignition switch ON	DVD operating	12V
42 (R)	41 (G)	Satellite radio au- dio signal LH	Input	Ignition switch ON	Satellite radio tuner operating	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
44 (W)	43 (B)	Satellite radio au- dio signal RH	Input	Ignition switch ON	Satellite radio tuner operating	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
45	-	Ground	_	_	_	0V
46	-	Data ground	_	_	_	0V
48 (L)	-	REQ (SAT→Audio unit)	Input	Ignition switch ON	_	_
49 (O/L)	-	RX (SAT→Audio unit)	Input	Ignition switch ON	_	_
50 (W/L)	-	TX (Audio unit→- SAT)	Input	Ignition switch ON	-	_

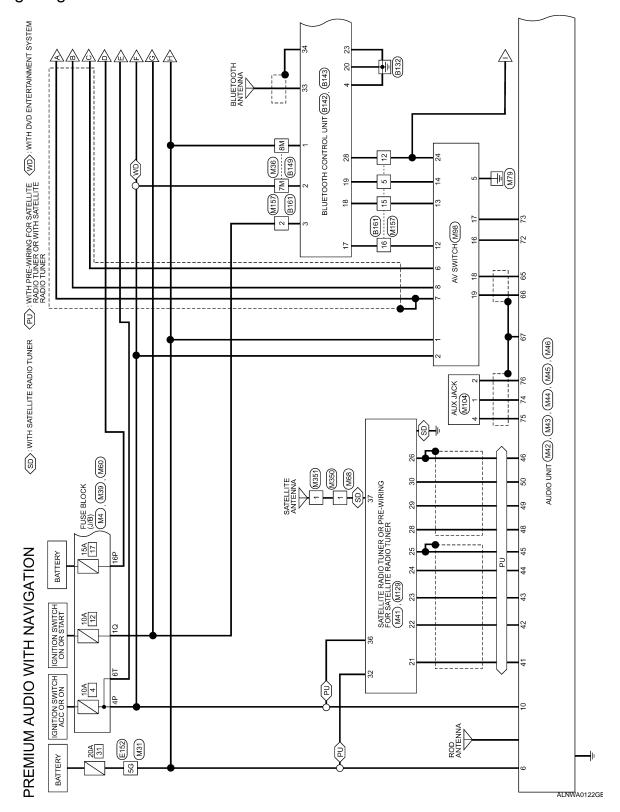
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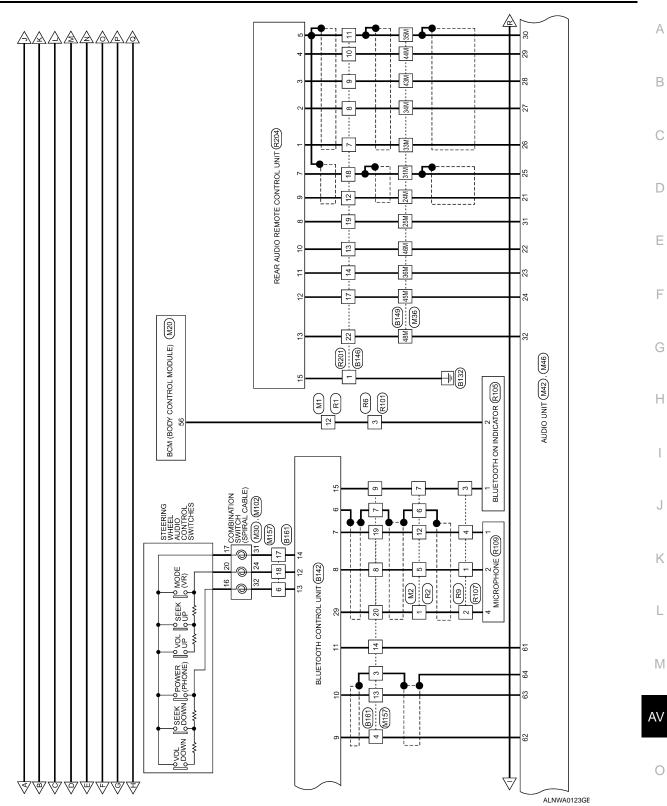
	ninal color)	Item	Signal input/		Condition	Reference value (Approx.)	А
+	_		output			(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
65 (O/L)	Ground	Audio RX	Input	Ignition switch ON	Operate audio vol- ume	(V) 6 4 2 0 • • • 5ms SKIA4403E	B C D
66 (W/L)	Ground	Audio TX	Output	lgnition switch ON	Operate audio vol- ume	(V) 6 4 2 0 • • • 2ms SKIA4402E	E
67	_	Shield	_	Ignition switch ON	_	0V	G
70	_	Shield	_	Ignition switch ON	-	0V	Н
71 (B)	69 (W)	NAVI voice	Input	lgnition switch ON	NAVI system oper- ating	SKIA0171J	l J
72 (W/B)	Ground	CD eject signal	Input	Ignition switch ON	Operate EJECT but- ton	$0V \rightarrow 5V$	K
73 (Y/B)	Ground	CD load signal	Input	Ignition switch ON	Operate LOAD but- ton	$0V \rightarrow 5V$	L
74 (W)	Ground	Auxiliary audio in- put RH (+)	Input	lgnition switch ON	Receive audio sig- nal (AUX input)	(V) 1 0 -1 SKIA0177E	M
75 (R)	Ground	Auxiliary audio in- put LH (+)	Input	lgnition switch ON	Receive audio sig- nal (AUX input)	(V) 1 0 -1 1 ms 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	P
76 (B)	_	Shield	-	_	_	0V	

#### [PREMIUM WITH NAVIGATION]

# < ECU DIAGNOSIS > Wiring Diagram

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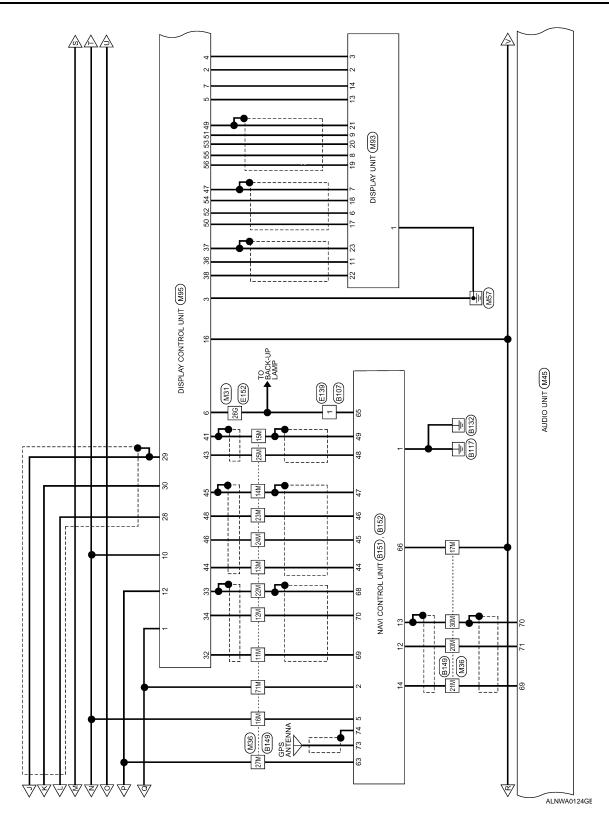


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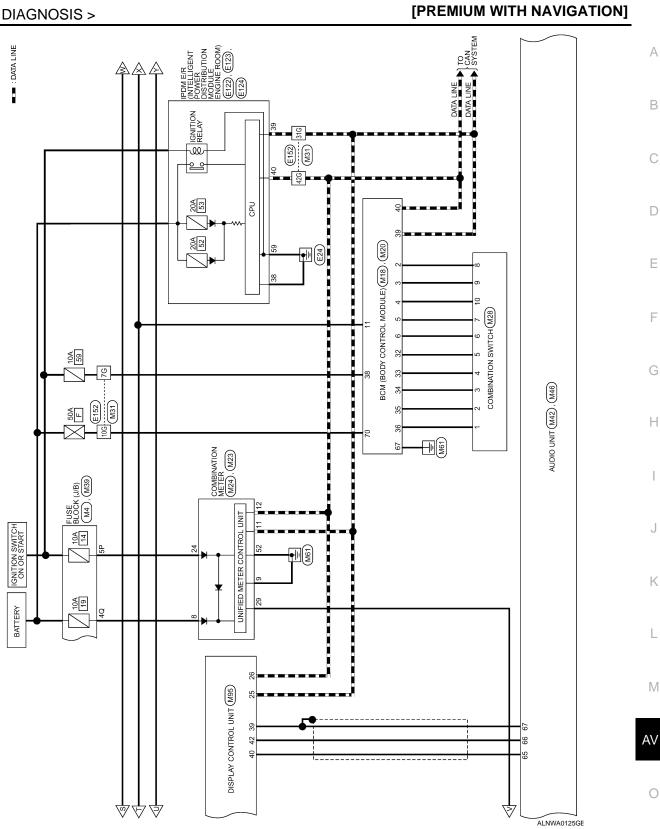
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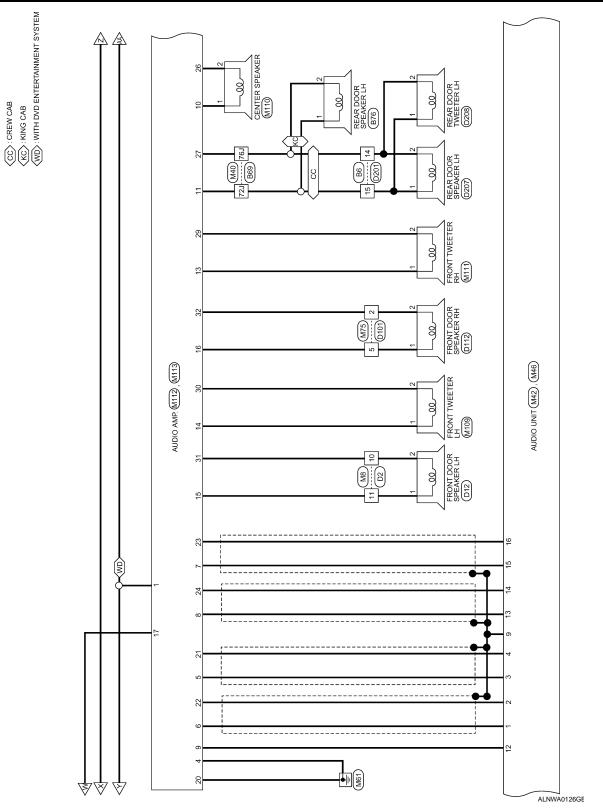
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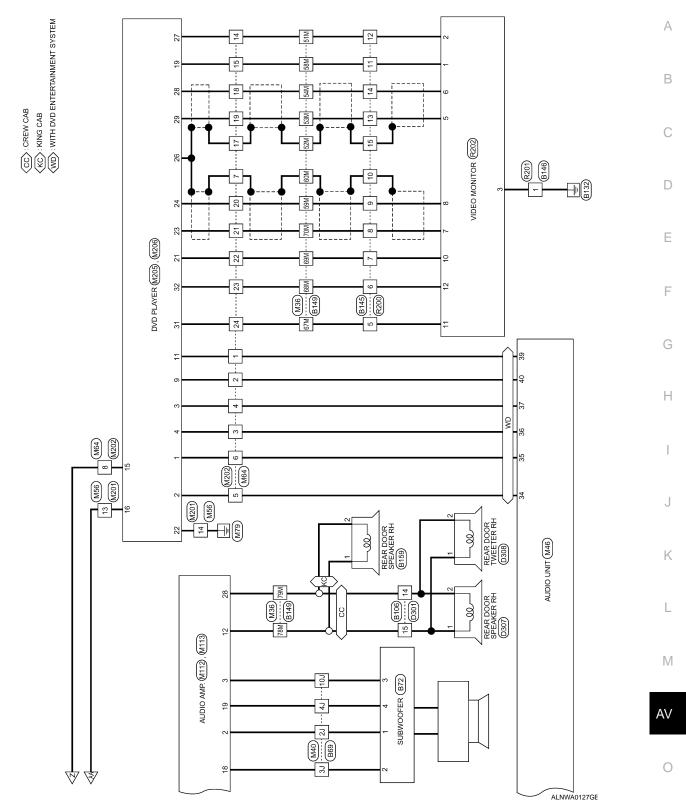
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		Aame	Name SSW UT-5 UT-4 UT-4 UT-4 UT-1 VT-1 F-H	
M4 FUSE BLOCK (J/B) WHITE	72 (62 (52 42 (11 10 10 13 12 11 10 13 12 12 14 13 13 12 14 13 13 13 13 13 13 13 13 13 13 13 13 13	Signal Name	Signal Name ACC SW OUTPUT-5 OUTPUT-3 OUTPUT-2 OUTPUT-2 IGN SW CAN-H CAN-L	
	7P 6P 5P 16P 15P 14P 1	Color of Wire V	- Color of Wire R/G R/A R/V - C O/B R/W L - L - L - L - L	
Connector No. Connector Name Connector Color	回 H.S.	Terminal No. 4P 5P 16P	Terminal No.           11           32           33           35           36           38           39           39           40	
TORS Connector No. M2 Connector Name WIRE TO WIRE Connector Color WHITE	H.S. 12 11 10 9 8 7 6	Terminal No.Color of WireSignal Name1R/W-5R/L-6SHIELD-7GR-12B-	118           CM (BODY           00DULE)           11111           11111           111111	6 V INPUT-1
PREMIUM AUDIO WITH NAVI CONNECTORS Connector No. M1 Connector Name WIRE TO WIRE Connector Color WHITE	(1) H.S.	Terminal No.     Color of Wire     Signal Name       12     R/G     -	Connector No.       M8         Connector Name       WIRE TO WIRE         Connector Color       Wire         Connector Color       Wire         Connector Color       Wire         Connector Color       Signal Name         Connector Color       Signal Name	NIAOBO

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## **AUDIO UNIT**

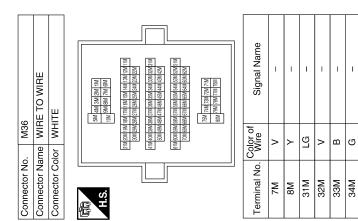
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Signal Name	1	1	1	1	1	1	1	1	1	I	1	1	1	I	I	I	I	1	I	1	1
Color of Wire	SHIELD	BR/Y	æ	8	ГG	٩	0	>	B/Y	SHIELD	BB	7	B/W	_	SHIELD	SB	BR	G/Y	B/W	O/L	R/L
Terminal No.	35M 9	36M	43M	44M	45M	46M	47M	48M	51M	52M 5	53M	54M	58M	59M	60M	67M	68M	69M	70M	78M	M97



M31 WIRE TO WIRE	WHITE	50         60         50         100           50         60         80         100         100           50         60         80         100         100           50         80         80         100         100         100           50         100         100         100         100         100         100           50         100	Signal Name	I	1
		210 200 180 100 180 180 101 100 180 180 101 100 180 180 191 191 191 191	Color of Wire	W/L	W/B
Connector No. Connector Name	Connector Color	S.H	Terminal No.	7G	10G

Signal Name	I	I	I	I	I	I	
Color of Wire	W/L	W/B	GR	L	Р	٢	
Terminal No. Wire	7G	10G	26G	31G	42G	72G	

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M39	Connector Name FUSE BLOCK (J/B)	WHITE	30 20 10	
Connector No.	Connector Name	Connector Color WHITE	E Contraction of the second se	

80 70 60 50 40	Signal Ne
80.7	Color of Wire
H.S.	Terminal No.

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Signal Name	I	I	
Color of Wire	G/R	Y/R	
Terminal No.	đ	4Q	

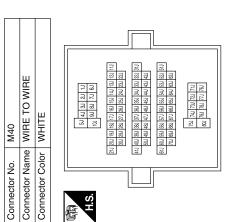
### **AUDIO UNIT**

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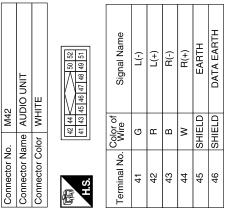
	MI41 SATELLITE RADIO TUNER	WHITE	32 34	27 28 29 30 31 33 35	Signal Name	SAT_LCH(-)	SAT_LCH(+)	SAT_RCH(-)	SAT_RCH(+)	EARTH SIG	DATA_GND	REQ1 (SAT-COMBI)	TXD (SAT-COMBI)	RXD (COMBI-SAT)	BACKUP	ACC
F	e	_	24	21 23 25	Color of Wire	G	æ	ш	×	SHIELD	SHIELD	_	OL	W/L	≻	>
	Connector No.	Connector Color	цП П	H.S.	Terminal No.	21	22	23	24	25	26	28	29	30	32	36
Γ	<b>I</b>			_					•							

**AUDIO UNIT** 

Signal Name							
Color of Wire	٢	В	BR	BR/W	SB	B/Y	
Terminal No. Color of	2J	3J	4J	101	72J	76J	



Signal Name	REQ (CD-COMBI)	RX (CD-COMBI)	TX (COMBI-CD)	
Color of Wire	L	O/L	W/L	
Terminal No. Color of Wire	48	49	50	



L(-)	(+)	R(-)	R(+)	EARTH	DATA EARTH	
פ	щ	В	Μ	SHIELD	SHIELD	
41	42	43	44	45	46	

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M45 AUDIO UNIT	ITE	6 67 69 71 73 75 6 68 70 72 74 76	Signal Name	TEL_SIG_INPUT (-)	TEL_SIG_INPUT (+)	TEL_SIG_ON_TRIG	TEL_SIG_GND	RX (DCU-H/U)	TX (H/U-DCU)	SHIELD	NAVI_VOICE+	EJECT	LOAD	AUX_R+	AUX_L+	AUX_EARTH	
e e	lor WHITE	61 63 65 64 66	Color of Wire	œ	σ	≻	SHIELD	0/L	W/L	SHIELD	в	W/B	Y/B	M	В	В	
Connector No. Connector Name	Connector Color	मिन H.S.	Terminal No.	61	62	63	64	65	99	67	71	72	73	74	75	76	

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**AUDIO UNIT** 

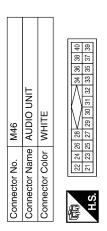
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	INIT		8 10	Signal Name	FR_SP_LH-	FR_SP_LH+	FR_SP_RH-	FR_SP_RH+	BACK_UP	CASE_GND	ACC
M43	ne AUDIO UNIT	or WHITE	2 4 1 3 5 6	Color of Wire	В	N	BR	٢	~	SHIELD	^
Connector No.	Connector Name	Connector Color	品 H.S.	Terminal No.	+	N	e	4	9	6	10

Signal Name	R_CH_OUTPUT (+)	SHIELD	ENABLE	SWITCH_B(+)	FES_L_CHI/P (-)	FES_L_CHI/P (+)	FES_R_CHI/P (-)	FES_R_CH/P (+)	FES_ENABLE	AUDIO_ON
Color of Wire	N	SHIELD	0	>	N	в	σ	В	Y/L	L/W
Terminal No. Color of	29	30	31	32	34	35	36	37	39	40

Signal Name	REMOTE_A	REMOTE_B	REMOTE_C	REMOTE_D	REMOTE_GND	L_CH_OUTPUT (-)	L_CH_OUTPUT (+)	R_CH_OUTPUT (-)	R_CH_OUTPUT (+)
Color of Wire	>	٩	BR/Y	_	Ľ	0	0/L	M/L	Ν
Terminal No.	21	22	23	24	25	26	27	28	29



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Connector Name FUSE BLOCK (J/B)

Connector Name WIRE TO WIRE

Connector No. M56

Connector Color WHITE

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Connector No. M60

Connector Color WHITE

### **AUDIO UNIT**

#### [PREMIUM WITH NAVIGATION]

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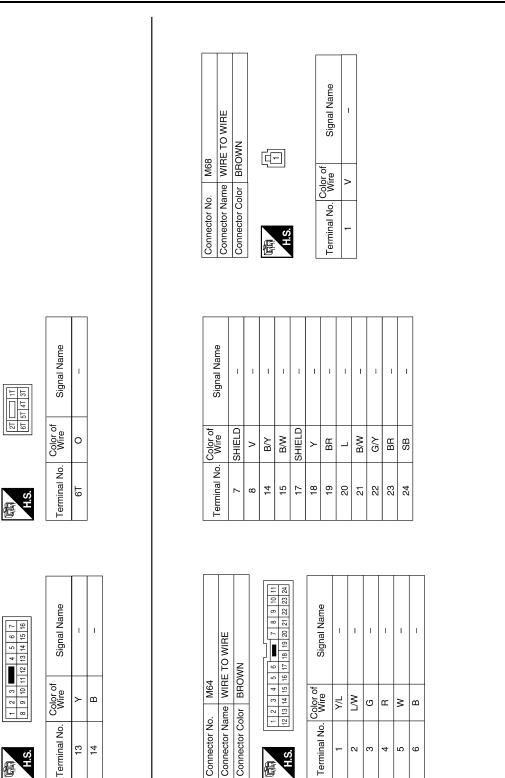
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M94	Connector Name DISPLAY CONTROL UNIT	WHITE	6         8         10         12         14         16         18         22         24           5         7         9         11         13         15         17         19         21         23
Connector No.	Connector Name	Connector Color WHITE	開 H.S.
			2 1

3 15 16

H.S. f

H.S.

						-				-		-				
Signal Name	GND	INV_VCC	SIGN_VCC	ŋ	RGBGND	ΥS	DCU-DSP	INV_GND	SIGN_GND	ж	в	RGB_SYNC	VP	SYNC_GND	DSP-DCU	BUS_GND
Color of Wire	в	۲W	L/R	R/W	SHIELD	в	B/W	٩.	P/L	R/L	в	σ	N	SHIELD	L	SHIELD
Terminal No.	-	2	e	9	7	6	1	13	14	17	18	19	20	21	22	23

SIGN\_GND

0 B/L G/R

> 10 12 16

RV

GR ٩

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ACC IGN

INV\_GND

SPEED-8P

W/R

Connector No.	M75
Connector Name WIRE TO WIRE	WIRE TO WIRE
Connector Color WHITE	WHITE
<b>山</b>	4 3 2 1

Connector Name DISPLAY UNIT

Connector No. M93

Connector Color WHITE

Signal Name	-
Color of Wire	L/B
Terminal No.	2

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W/B

2

Signal Name

Color of Wire

Terminal No.

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INV\_VCC GND SIGN\_VCC

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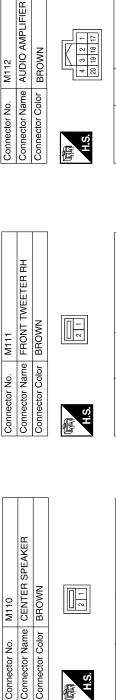
Connector No.				Terminal No.	Color of Wire	Signal Name	ame		Connector No.			
Connector Name Connector Color		DISPLAY CONTROL UNIT WHITE	-1	39	SHIELD	SHIELD	9		Connector Name		A/C AND AV SWITCH ASSEMBLY	 _
	_			40	0/L	DCU-AUDIO	OIDI		Connector Color	olor WHITE	Ш	
E				41	SHIELD	SHIELD	D-					
SH		[		42	M/L	AUDIO-DCU	DCU		L E			[
				43	Μ	RGB_SYNC	YNC		H.S.	4 6 8 5 7	14 16 18 13 15 17	24
26 28 30 32 3 <sup>,</sup>	4 36 38 40 4	26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 20 20 20 20 20 20 20 20 20 20 20 20 20 2		44	R/L	۳.				/ 6 6	cl 21 11	53
20 27 29 31 3	3 30 3/ 39 4	1 45 45 49 47 48 51 53 53		45	SHIELD	SHIELD	q			•		
	Color of			46	R/W	U			Terminal No.	Color of Wire	Signal Name	e
Terminal No.		Sig		47	SHIELD	SHIELD	q		+	~	Ρ	
28	>	BUS+		48	В	В			2	>	ACC	
29	SHIELD	SHIELD		49	SHIELD	SHIELD	q		5	В	GND	
30	ГG	BUS-		50	R/L	æ			9	>	M-CAN1_L BUS (+)	S (+)
32	_		1	51	в	ΥS			7	SHIELD	SHIELD-1	
33	SHIELD	SHIELD		52	R/W	U			8	P	BUS (-)	
34	٩	Ч		53	Μ	۷P			12	>	REMOTE A CONT	NT A
36	B/W	B/W		54	В	В			13	G/D	REMOTE B CONT B	NT B
37	SHIELD	SHIELD		55	æ	Ъ			14		BEMOTE CONT	
38		DSP-DCU		56	U	RGB_SYNC	YNC		t 4			
Connector No.	lo. M102	32	-	Connector No.	. M104	+			Connector No.		0	
Connector Name		COMBINATION SWITCH (SPIRAL CABLE)		Connector Name AUX JACK Connector Color WHITE	Ine AUX JA	JACK TE			Connector Name Connector Color		FRONT TWEETER LH BROWN	т
Connector Color	olor GRAY	AY										
	14 15 1	14 15 16 17 18 19 20 21		品. H.S.		4 3 2 1			H.S.H		5 1	
Ď												
Terminal No.	Color of Wire	Signal Name		Terminal No.	Color of Wire	Signal Name	ame		Terminal No.	Color of Wire	Signal Name	e
16	œ	1	_	-	8	AUX_AUDIO_RH	RH +		-	ΓM	I	
17	ВВ	I		2	в	AUX_GND	DN		2	L/R	I	
20	×	1		4	æ	AUX_AUDIO_LH +	D_LH +					
0	AV	L	K	J		Н	G	F	D		B	A

#### < ECU DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

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ALNIA0811GB



Connector Color BROWN

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Connector No. M110

	Signal Name	I	I
-	Color of Wire	L/W	L/B
限 H.S.	Terminal No.	Ļ	2

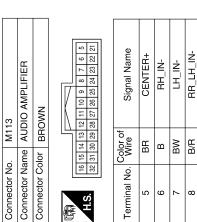
		_
키	Signal Name	
7	Color of Wire	
H.S.	Terminal No.	Ŧ

			-
	Signal Name	I	I
]	Color of Wire	W/B	L/B
ú	iinal No.	Ŧ	2

4         3         2         1           20         19         18         17	Signal Name	BATT	WOOFER+1	WOOFER+2	GND	BATT	WOOFER+1	WOOFER+2	GND
4	Color of Wire	≻	N	BR/W	ш	Y/G	в	BR	В
H.S.	Terminal No.	-	2	3	4	17	18	19	20

			_						
Signal Name	RR_RH_IN+	RR_LH_IN+	CTR_OUT-	RR_LH_OUT-	RR_RH_OUT-	FR_RH_TW-	FR_LH_TW-	FR_LH_OUT-	FR_RH_OUT-
Color of Wire	_	BR	L/B	B/Y	R/L	L/B	L/R	L/R	L/B
Terminal No.	23	24	26	27	28	29	30	31	32

Signal Name	AMP_ON	CTR_OUT+	RR_LH_OUT+	RR_RH_OUT+	FR_RH_TW+	FR_LH_TW+	FR_LH_OUT+	FR_RH_OUT+	GND	FR_RH_IN+	FR_LH_IN+
Color of Wire	G/W	۲N	SB	OL	W/B	۲ ۲	۲Ŵ	W/B	в	≻	×
Terminal No.	6	10	1	12	13	14	15	16	20	21	22



ALNIA0812GB

## **AUDIO UNIT**

#### [PREMIUM WITH NAVIGATION]

	nnector Color						2
		Connector C			13	æ	1
			_		14	~	1
Imation       Control       Signal hame       Control       Signal hame       Control       Signal hame         37       B       - </td <td></td> <td></td> <td>0876 5 5 3 3 3</td> <td></td> <td>15</td> <td>G/O</td> <td>1</td>			0876 5 5 3 3 3		15	G/O	1
Iminal No.       Option       Signal Name       Iminal No.       Option       Signal Name         37       B       -			20 19 18 17 16 15 14 13 12 1	10	16	>	I
Imain loo       Color of loo       Signal Name         37       B		ю <b>.</b> П.О.			17	Y/R	1
Minal No.     Wine     Signal Name       37     B     -       38     B     -       17     SHELD     -       18     B     -       19     B     -       10     -     -       11     -     -       12     -     -       13     -     -	Color of		Color of		19	m	1
37     B     -       32     B     -       2     C/R     -       3     SHELD     -       3     SHELD     -       5     RB     -       5     RB     -       5     RB     -       6     RL     -       7     SHELD     -       7     SHELD     -       8     RL     -       7     SHELD     -       8     RL     -       9     GR     -       9     GR     -       10     WHE     -       11     NHE     -       12     NHE     -       13     V     -       14     B     -       13     V     -       14     R     -       13     V     -       14     B     -       15     B/W       16     P       17     SHELD	Wire	Terminal No	Wire	lame	20	R/W	1
2     G/R       3     SHELD       3     SHELD       5     SHELD       5     SHELD       7     Shell       7     Shell	в	-					
Image: Signal Name     Image: Signal Name       Image: Signal Name     Image: Signal Name <td></td> <td>2</td> <td></td> <td></td> <td></td> <td></td> <td></td>		2					
Image: Signal Name     Image: Signal Name       1     1		m					
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Image: Normal Sector Name       M201       Image: Normal Sector Name       M201       Image: Normal Sector Name       M201         Image: Normal Nice To Wire       Image: Normal Nice To Wire       Image: Normal Nice To Wire       Image: Normal Nice Nice Nice       Image: Normal Nice Nice Nice Nice       Image: Normal Nice Nice Nice Nice       Image: Nice Nice Nice Nice Nice Nice Nice       Image: Nice Nice Nice Nice Nice Nice Nice Nice		0					
Image: constraint of the state of the st		0					
Image: relation in the state of the sta		, ÷					
metor No.         M201           metor Name         WIE TO WIE           metor Name         WIE TO WIE           metor Name         WIE TO WIE           metor Color         BOM           metor Color         BOM           mial No.         Connector Name           13         Y           14         B           13         V           14         B           1         VIL           2         BM           2							
Image: Name		Connector N	Vo. M202		Terminal No.	Color of Wire	Signal Name
		Connector	Color BROWN		ω	>	1
Image: Signal Name       Image: Si	_		_		14	B/Y	1
Image: Description of a bit in the image: Description o		E		2 1	15	B/W	1
Color of Write       Signal Name       18       Y         V       -       -       19       BR         V       -       -       20       L         B       -       -       21       B/W         3       G       -       23       B/R         4       R       -       23       B/R         5       W       -       23       B/R         7       SHELD       -       23       B/R	16 15 14 13 12 11 10 9		24 23 22 21 20 19 18 17 16 15 1	4 13 12	17	SHIELD	1
Color of Wire         Signal Name         1         VL         Signal Name         19         BR         20         L         20         L         200         L         D         200         D         D         D         200         D		2			18	~	I
Wire         Signal Name         20         L           Y         -         -         -         20         L           B         -         -         -         -         21         B/W           2         L/W         -         -         -         22         G/Y         -           3         G         -         -         -         23         B/H         -           5         W         -         -         -         23         B/H         -           7         SHELD         -         -         -         24         SB         -	Color of	Terminal No	Color of	Vame	19	BB	1
YL         Z1         WL         Z2         BW         Z2         BW         Z2         GY         Z2         Z2         GY         Z2         Z2         GY         Z2         Z3         B H         Z2         Z3         B H         Z2         Z4         Z3         D H         Z2         Z4         Z3         Z4         Z4 <thz< td=""><td>Wire</td><td></td><td></td><td></td><td>20</td><td></td><td>1</td></thz<>	Wire				20		1
2       LW         3       G         3       G         4       R         5       W         6       B         7       SHIELD         7       SHIELD	~	-	- //L		21	B/W	1
3       G         4       H         5       K         6       H         7       K         8       H         7       SHED	m	5			22	× ت	
R     -       W     -       B     -       SHELD     -		ო			50	a	
SHELD I I		4			2	5 8	
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### [PREMIUM WITH NAVIGATION]

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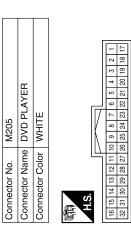
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M206	DVD PLAYER	WHITE	
Connector No.	Connector Name	Connector Color	品.S.H

Signal Name	FES_L+_OUTPUT	FES_LOUTPUT	FES_R+_OUTPUT	FES_R_OUTPUT		FES_ENABLE	ACC	B+
Color of Wire	в	Ν	ж	J	ΓM	۲/L	>	≻
Terminal No.	-	2	e	4	6	11	15	16

**AUDIO UNIT** 

Signal Name	GND	SW_POWER +5V	GND	VTR+	VTR-	SHIELD	GND	DATA_RX	DATA TX	+Β	Ρ
Color of Wire	B/W	G/Y	в	B/W	_	SHIELD	B/Y	≻	ВВ	SB	ВВ
Terminal No.	19	21	22	23	24	26	27	28	29	31	32



Connector No.	Connector Name		Connector Color	明 H.S. 48
M351	Connector Name SATELLITE ANTENNA	BROWN		
Connector No.	Connector Name	Connector Color BROWN		HIS.

Connector No.	M350
Connector Name WIRE TO WIRE	WIRE TO WIRE
Connector Color BROWN	BROWN
际 H.S.	Ē

Signal Name T Terminal No. Color of ш -

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### [PREMIUM WITH NAVIGATION]

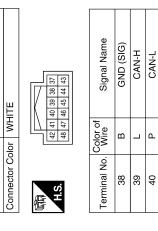
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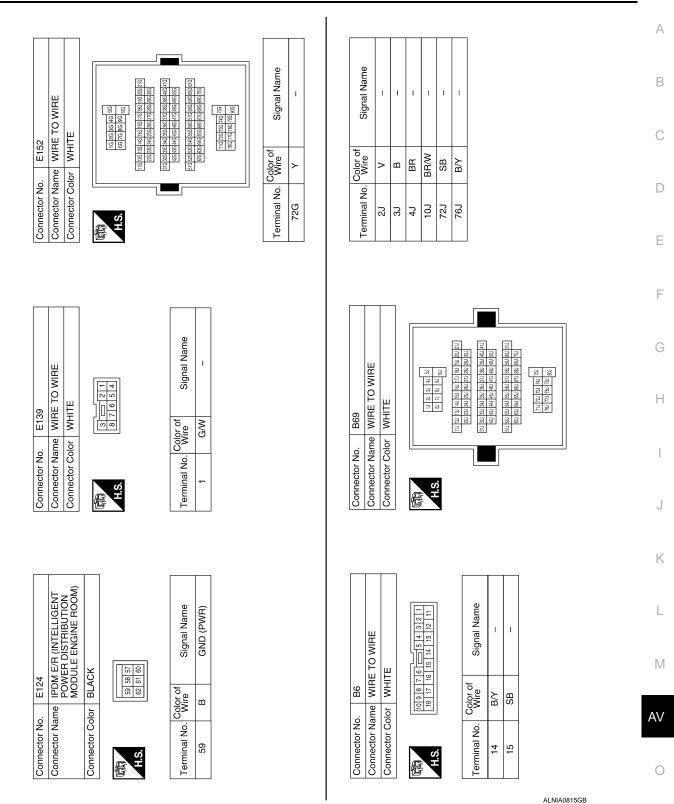
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IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

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### < ECU DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

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Connector No. B106 Connector Name WIRE TO WIRE Connector Color WHITE	[項] H.S.	Terminal No.     Color of Wire     Signal Name       14     R/L     -		Color of	erminal No. Wire Signal Name 8 R/L MIC_IN-	9 G AUDIO_OUT+	10 R AUDIO_OUT- 11 Y MUTE CONTROL	R/G	G/W	15 GR LED_IND_1	17 V LADDER_OUT_1	G/O LADDER_OI	R/B LADDE	20 B CONT1	23 B CONT4	W/R S	29 R/W MIC_POWER	
Connector No. B76 Connector Name REAR DOOR SPEAKER LH Connector Color WHITE	H.S.	al No. Color of Signa Signa		Connector No. B142	Connector Name BLUETOOTH CONTROL UNIT	Connector Color WHITE		H.S.		1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31		Terminal No. Wire Signal Name	1 Y BATT	2 V ACC	3 G/R IGN	B/W	6 SHIELD MIC_SHIELD	7 B MIC_IN+
Connector No. B72 Connector Name SUBWOOFER Connector Color BROWN	H.S.	Terminal No. Color of Signal Name 1 W WOOFER+1	3 ~	Connector No. B107	-			2				Terminal No. Color of Signal Name	1 G/W –					

ALNIA0816GB

## **AUDIO UNIT**

#### < ECU DIAGNOSIS >

### [PREMIUM WITH NAVIGATION]

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Signal Name		I	I	I	I	1	I	I	I	I	I
Color of Wire	SB	BR	G/Y	×	_	SHIELD	B/W	B/Υ	თ	_	SHIELD
Terminal No. Wire	പ	9	7	8	6	10	11	12	13	14	15

Connector No.	B145
Connector Name WIRE TO WIRE	WIRE TO WIRE
Connector Color WHITE	WHITE
-	2 3 9 4 5 6 7
H.S.	9 10 11 12 13 14 15 16

Connector No.	B143
Connector Name	Connector Name BLUETOOTH ANTENNA
Connector Color BLACK	BLACK

888

Signal Name	I	I
Color of Wire	в	В
Terminal No.	33	34

Signal Name	I	I	I	I	I	I	I	I	I
Color of Wire	×	SHIELD	>	٩	BR/Y	0	_	ГG	^
Terminal No. Color of Wire	10	11	12	13	14	15	17	18	22
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			0 10 11					ame	

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<u> </u>	
Terminal No	-
	Terminal No. Color of Signal Name

Connector No. B146 Connector Name WIRE TO WIRE Connector Color BROWN

Signal Name	-	I	I	I
Color of Wire	В	в	თ	щ
Terminal No.	ł	7	8	6

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### [PREMIUM WITH NAVIGATION]

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Terminal No.         Coord of Virte         Signal Name           10         W         -           11         SHIELD         -           12         V         -           13         P         -           14         BR/Y         -           15         O         -           17         L         -           17         L         -           17         L         -           18         LG         -           22         V         -										
Terminal No. Color of Mire 10 Wire 11 Wire 11 W 11 NHIELD 11 NHIEL	Signal Name	1	I	1	1	1	1	1	1	1
Terminal No. 10 11 12 13 13 14 15 17 17 18 22	Wire	×	SHIELD	>	٩	BR/Y	0	_	Ъ	>
	Terminal No.	10		12	13	14	15	17	18	22

Connector No. B149	Term
~	
Connector Color WHITE	
11M [2M [3M [4M] 5M	-
11.5.1 In 1911	-
111M12M12M14M15M17M18M17W18M2M2M	
22M[23M[23M[23M[23M[23M[23M[23M]30M]	-
311M SEAN SEAN SEAN SEAN SEAN SEAN SEAN SEAN	N
5 INIGENIESAN (SEAN SEAN SEAN SEAN SEAN SEAN SEAN SEAN	Q
62M 63M 64M 65M 65M 66M 67M 66M 70M	Q
1857 Just Just Just Just	N
Wei With Same	N
]	N
	e
Connector No. B151	Conn
Connector Name NAVI CONTROL UNIT	Conn
Connector Color WHITE	Conn
(項) H.S.	语 F
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 56 38 40 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 23 55 37 39	42 44 41 43
Terminal No. Wire Signal Name	

Signal Name	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
Color of Wire	_	٩	R/L	SHIELD	SHIELD	0	W/R	в	×	SHIELD	в	R/W	×	G/R	SHIELD	
minal No.	11M	12M	13M	14M	15M	16M	17M	20M	21M	22M	23M	24M	25M	27M	30M	

L P R/L SHIELD SHIELD B R/W R/W B R/W W R/W W SHIELD SHIELD SHIELD	B SHIELD W W W W G/R SHIELD	M	в	W/R	0	SHIELD	SHIELD	R/L	٩	_	
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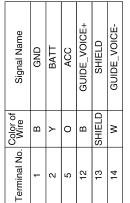
onnector No.	B152	
onnector Name	onnector Name NAVI CONTROL UNIT	
onnector Color WHITE	WHITE	

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		68 70	67 69	
		999	65	
		49	ß	
		53	61	
	17	60	59	
	11	58	57	
	IN	56	55	
		54	53	
	5	52	51	
		50	49	
		48	47	
10		46	122	
Ϋ́		44	43	
		42	41	

I	I	I	I	I	I	I	I	I	I	I	I	I	I	
Β/Υ	SHIELD	W/L	P/B	P/B	_	W/R	SB	W/L	G/W	GR/R	≻	O/L	R/L	
51M	52M	53M	54M	58M	59M	60M	67M	68M	69M	70M	71M	78M	79M	

Signal Name	æ	9	в	RGB_GND	RGB_SYNC	SYNC_GND	IGN	RV	SPEED_8P	SHIELD	BUS+	BUS-
Color of Wire	R/L	МЛ	в	SHIELD	BR	SHIELD	G/R	G/W	W/R	SHIELD	_	Ч
Terminal No.	44	45	46	47	48	49	63	65	66	68	69	20

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## **AUDIO UNIT**

### [PREMIUM WITH NAVIGATION]

Signal Name

Terminal No. Color of Wire

	GNOSIS >		[PREMIUM WITH NAVIGAT
B13     Connector No.     B151       REA DOOR SPEXKER HH WHITE     Connector Name WHE TO WHE Connector Name WHE TO WHE     Connector Name WHE TO WHE       Image: Signal Name     Image: Signal Name     Image: Signal Name       Province Signal Name     Image: Signal Name     Image: Signal Name       Province Signal Name     Image: Signal Name     Image: Signal Name       Province Signal Name     Image: Signal Name     Image: Signal Name       Province Signal Name     Image: Signal Name     Image: Signal Name       Province Signal Name     Image: Signal Name     Image: Signal Name       Province Signal Name     Image: Signal Name     Image: Signal Name       Province Signal Name     Image: Signal Name     Image: Signal Name       Province Signal Name     Image: Signal Name     Image: Signal Name       Province Signal Name     Image: Signal Name     Image: Signal Name       Province Signal Name     Image: Signal Name     Image: Signal Name       Province Signal Name     Image: Signal Name     Image: Signal Name       Province Signal Name     Image: Signal Name     Image: Signal Name       Province Signal Name     Image: Signal Name     Image: Signal Name       Province Signal Name     Image: Signal Name     Image: Signal Name       Province Signal Name     Image: Signal Name     Image: Signal Name    <	Signal Name	TO WRE 11 10 9 8	Signal Name
B13       Connector Name Write TO WRE       B151       Termina No.         REAR DOOR SPEXKER HIL       Connector Name Write TO WRE       Connector Name Write TO WRE       Connector Name Write TO WRE         Image: State of the state	Color of Wire Of G/W BHIELD B/W		R/G Wire R/G
B139     Connector No       REAR DOOR SFEAKER RH     Connector No       WHITE     Connector No       Ommetor No     Connector No       Image: Signal Name     Image: Signal Name       Image: Signal Nam     I	Terminal No. 6 6 7 7 7 9 8 8 8 8 9 9 12 13 13 13 15 16 16 17 17 17 20	Connector No Connector Na Connector Co	Terminal No.
B139     Connector No       REAR DOOR SFEAKER RH     Connector No       WHITE     Connector No       Ommetor No     Connector No       Image: Signal Name     Image: Signal Name       Image: Signal Nam     I			
B139     Connector No       REAR DOOR SFEAKER RH     Connector No       WHITE     Connector No       Ommetor No     Connector No       Image: Signal Name     Image: Signal Name       Image: Signal Nam     I	TO WIRE E Signal Name 	TO WIRE	Signal Name
B159       REAR DOOR SPEAKER RH       WHITE       MHTE       Image: Signal Name	r No. B161 r Name WIRE r Color WHIT 1011121112		
	Connecto Connecto Connecto Terminal 3 3 5	Connecto Connecto Connecto	Terminal 5 7 7 12
	OR SPEAKER F Signal Name	MRE	signal Name
ector No. ector Name ector Name ector Name ector Name ector Name ector Name ector Name ector Name ector Color 1 0 0 00 1 1 0 0 0 00 1 1 0			
	Connector No. Connector Color A.S. Terminal No. Color Connector Color Connector Color Connector Color Connector Color Connector Color	Connector No. Connector Name Connector Color	

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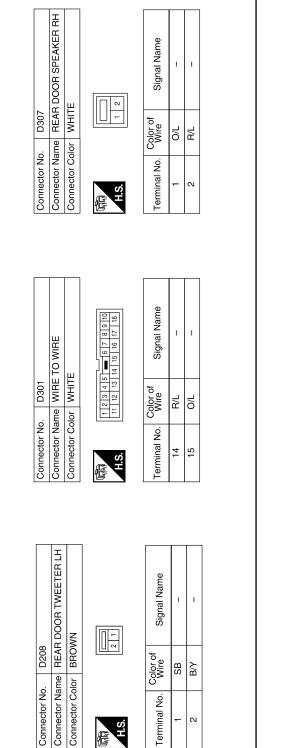
R105 BLUETOOTH ON INDICATOR WHITE	4	Signal Name		DAY/NIGHT_ILL_SIG		WIRE IO WIRE WHITE	12 11 12 11 10 9 8	Signal Name	I	I	I	I	I	I	I	1	-	I	I
		Color of Wire	R/G	B/L			7 6 5 4 16 15 14 13	Color of Wire	SB	BR	G/Y	8	_	SHIELD	B/W	В/Υ	G	L	SHIELD
Connector No. Connector Name Connector Color	子 H.S.H	Terminal No.	· N	e	Connector No.	Connector Name Connector Color	国 H.S.	Terminal No.	2	9	7	ω			11	12	13	14	15
Connector No. R101 Connector Name WIRE TO WIRE Connector Color WHITE	H.S.	Terminal No. Color of Signal Name 3 B/G -	5		Connector No. R109		H.S.	Terminal No. Color of Signal Name	1 B MIC_OUT_(+)	2 R/L MIC_OUT_(-)	4 R/W MIC_POWER								
Connector No. R9 Connector Name WIRE TO WIRE Connector Color WHITE	ALS.	Terminal No. Color of Signal Name	R/M	3 GR -	Connector No. R107	Connector Color WHITE	1 2 - 1 3 H.S.	Terminal No. Color of Signal Name	1 R/L –	2 R/W –	3 GR –	4 B –							

#### < ECU DIAGNOSIS >

H204 REAR AUDIO REMOTE CONTROL UNIT WHITE MHITE	Signal Name	L_CH_INPUT-	L_CH_INPUT+	R_CH_INPUT-	R_CH_INPUT+	SHIELD	REMOTE_GND	ENABLE	REMOTE_A	REMOTE_B	REMOTE_C	REMOTE_D	SWITCH_+B	GND	1 5
	Color of Wire	m	σ	æ	8	SHIELD	ГG	0	>	٩	BR/Y	σ	>	В	 h
Connector No. Connector Name Connector Color	Terminal No.		2	e	4	2	7	ω	6	10	1	12	13	15	
		1	1	1	1	1	1	1	1			1			-
NUDEO MONITOR WHITE	Signal Name	GND	GND	Q	DATA_RX	DATA_TX	VIDEO IN+	VIDEO IN-	SW POWER_+5V	FILTERED_BAT	FILTERED_BAT				
	Color of Wire	B/W	B/Y	ш	IJ		N	_	G/Y	SB	BR	-			
Connector Name Connector Color ALS	Terminal No.	-	N	ო	£	9	7	ω	10	1	12				
		1							1						1
WIRE TO WIRE BROWN 9 8 7 6 6 4 3 2 1 22 2 2 0 19 18 1 7 16 15 14 13 12	Signal Name	1	I	-	1	I	I	ļ	I	I	I	I	I	I	
	Color of Wire	В	в	g	н	M	SHIELD	>	٩.	BR/Y	0	В	GR	>	_
	Terminal No.	-	7	8	6	10	11	12	13	14	15	17	18	22	
															ALNIA0821GB

#### < ECU DIAGNOSIS >

[PREMIUM WITH NAVIGATION]



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Connector No.	D308
Connector Name	Connector Name REAR DOOR TWEETER RH
Connector Color BROWN	BROWN
际 H.S.	

**AUDIO UNIT** 

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ł	H.S.

Signal Name	I	I
Color of Wire	O/L	R/L
Terminal No.	-	5

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### NAVI CONTROL UNIT

### < ECU DIAGNOSIS >

### [PREMIUM WITH NAVIGATION]

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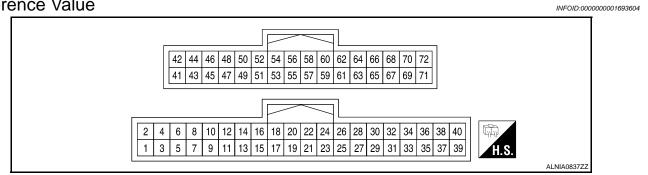
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## NAVI CONTROL UNIT

### Reference Value



Terminal No. (Wire color)		ltom	Signal		Condition	Voltage
+	-	Item	input/ output	Ignition switch	Operation	(Approx.)
1 (B)	Ground	Ground	_	ON	-	0V
2 (Y)	Ground	Battery power	Input	OFF	-	Battery voltage
5 (O)	Ground	ACC signal	Input	ACC	-	Battery voltage
12 (B)	14 (W)	Voice guide sig- nal	Output	ON	Press the "GUIDE/ VOICE" button.	SKIA0171J
13	-	Shield ground	-	-	_	-
44 (R/L)	47	RGB signal (R: red)	Output	ON	Select "Display Diagno- sis (NAVI)" of CONFIR- MATION/ ADJUSTMENT func- tion.	(V) 1.5 0.5 0 • • • 20µs SKIA4977E
45 (R/W)	47	RGB signal (G: green)	Output	ON	Select "Display Diagno- sis (NAVI)" of CONFIR- MATION/ ADJUSTMENT func- tion.	(V) 1.5 0 0 0 0 0 0 0 0 0 0 0 0 0
46 (B)	47	RGB signal (B: blue)	Output	ON	Select "Display Diagno- sis (NAVI)" of CONFIR- MATION/ ADJUSTMENT func- tion.	(V) 1.5 1 0.5 0 0 0 0 0 0 0 0 0 0 0 0 0
47	-	Shield ground	-	_	-	_

### NAVI CONTROL UNIT

#### < ECU DIAGNOSIS >

#### [PREMIUM WITH NAVIGATION]

Termina (Wire d		H	Signal		Condition	Voltage
+	-	Item	input/ output	Ignition switch	Operation	(Approx.)
48 (BR)	49	RGB synchro- nizing signal	Output	ON	Press the "MAP" but- ton.	(V) 6 2 0 
49	_	Shield ground	_	_	_	_
61 (R/L)	Ground	Illumination sig- nal	Input	ON	Lighting switch in 1st position	Battery voltage
					Lighting switch is OFF	3V or less
63 (G/R)	Ground	Ignition signal	Input	ON	-	Battery voltage
65 (G/W)	Ground	Reverse signal	Input	ON	A/T selector lever in R position A/T selector lever not in R position	Battery voltage 0V
66 (W/R)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	(V) 15 10 5 0 • • • 20ms • • • 20ms
68	-	Shield ground	_	_	-	_
69 (L)	Ground	Communica- tion signal (+)	Input/ output	ON	-	(V) 6 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 1 1 1 1 1 1 1 1 1 1 1 1
70 (P)	Ground	Communica- tion signal (–)	Input/ output	ON	-	(V) 6 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 1 1 1 1 1 1 1 1 1 1 1 1
73	74	GPS signal	Input	ON	Connector is not con- nected.	5V

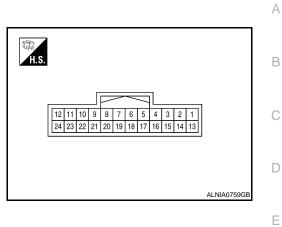
### [PREMIUM WITH NAVIGATION]

## < ECU DIAGNOSIS >

# DISPLAY UNIT

Reference Value

INFOID:000000001691698



	ninal No. (Wire col- or)		Signal		Condition	Voltage	
+	-	Item	input/ output	Ignition switch	Operation	(Approx.)	
1 (B)	Ground	Ground	_	ON	-	0V	
2 (L/W)	Ground	Power supply (Inverter)	Input	ON	-	9V	
3 (L/R)	Ground	Power supply (Signal)	Input	ON	_	9V	
6 (R/W)	7	RGB signal (G: green)	Input	ON	Select "Display Diag- nosis (DCU)" of CON- FIRMATION/ ADJUSTMENT func- tion.	(V) 1.5 0.5 0 ↓ 20µs SKIA4981E	
7	-	Shield ground	-	_	_	-	
8 (R)	21	Horizontal syn- chronizing (HP) signal	Output	ON	_	(V) 6 4 2 0 + 20µs SKIA4983E	
9 (B)	21	RGB area (YS) signal	Input	ON	Press the "TRIP" button.	(V) 6 4 2 0	
11 (B/W)	23	Display com- munication sig- nal (DCU-DSP)	Input	ON	_	(V) 6 4 2 0 + 0.2ms SKIA4364E	

### **DISPLAY UNIT**

#### < ECU DIAGNOSIS >

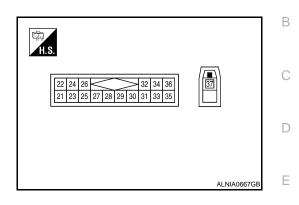
### [PREMIUM WITH NAVIGATION]

Terminal No. or		literer	Signal		Condition	Voltage
+	-	Item	input/ output	Ignition switch	Operation	(Approx.)
13 (P)	Ground	(Inverter) Ground	_	ON	_	0V
14 (P/L)	Ground	(Signal) Ground	_	ON	-	0V
17 (R/L)	7	RGB signal (R: red)	Input	ON	Select "Display Diag- nosis (DCU)" of CON- FIRMATION/ ADJUSTMENT func- tion.	(V) 1.5 0.5 0 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
18 (B)	7	RGB signal (B: blue)	Input	ON	Select "Display Diag- nosis (DCU)" of CON- FIRMATION/ ADJUSTMENT func- tion.	(V) 1.5 1 0.5 0 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
19 (G)	21	RGB synchro- nizing signal	Input	ON	Press the "TRIP" but- ton.	(V) 6 2 0 2 0 2 0 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
20 (W)	21	Vertical syn- chronizing (VP) signal	Output	ON	_	(V) 6 4 2 0 + + 20µs SKIA4983E
21	-	Shield ground	-	-	_	-
22 (L)	23	Display com- munication sig- nal (DSP-DCU)	Output	ON	_	(V) 6 4 2 0 ↓ ↓ ↓ 0.2ms SKIA4363E
23	-	Shield ground	_	_	_	_

### SATELLITE RADIO TUNER

### **Reference Value**

INFOID:000000001691226



### PHYSICAL VALUES

Ter	minal	Description				Reference value	•
+	-	Signal name	Input/ Output		Condition	(Approx.)	(
22 (R)	21 (G)	Satellite radio sound signal LH	Output	Ignition switch ON	When satellite radio mode is selected	(V) 1 0 -1 + 2ms SKIB3609E	ŀ
24 (W)	23 (B)	Satellite radio sound signal RH	Output	Ignition switch ON	When satellite radio mode is selected	(V) 1 0 -1 • • 2 ms SKIB3609E	ŀ
25	_	Shield		_	_	_	- 1
26	_	Shield	—	_	—	—	-
28 (L)	Ground	Request signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 + 10ms SKIA9299J	A
29 (O/L)	Ground	Communication signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 -10 -10 -10 -10 -10 -	

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### SATELLITE RADIO TUNER

#### < ECU DIAGNOSIS >

### [PREMIUM WITH NAVIGATION]

Terr	minal	Description				Reference value	
+	_	Signal name	Input/ Output		Condition	(Approx.)	
30 (W/L)	Ground	Communication signal (CONT→SAT)	Input	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 -10 -10 -10 -10 -10 -	
32 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage	
36 (V)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage	
37 (B)		Satellite antenna	Input	—		_	

### [PREMIUM WITH NAVIGATION]

## < ECU DIAGNOSIS >

## DVD PLAYER

**Reference Value** 

INFOID:000000001691227

А

E.



#### PHYSICAL VALUES

	Terminal Description				Condition	Reference value
+	_	Signal name	Input/ Output		Condition	(Approx.)
1 (B)	2 (W)	DVD audio signal LH	Output	Ignition switch ON	With operation of the DVD player	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
3 (R)	4 (G)	DVD audio signal RH	Output	lgnition switch ON	With DVD player operation	(V) 1 0 -1 + 2ms SKIB3609E
9 (L/W)	Ground	Audio ON	Output	Ignition switch ON	With DVD player operation	Battery voltage
10 (BR)	Ground	Illumination control	Input	Ignition switch ON	With lighting switch in 1st or 2nd position	Varies between 0 and Battery voltage
11 (Y/L)	Ground	Family entertainment sys- tem enable	Input	Ignition switch ON	With DVD player operation	Battery voltage
12 (R/L)	Ground	Illumination power	Input	Ignition switch ON	With lighting switch in 1st or 2nd position	Battery voltage
15 (V)	Ground	ACC power	Input	Ignition switch ACC or ON	_	Battery voltage
16 (Y)	Ground	Battery power	Input	_	_	Battery voltage

### **DVD PLAYER**

# < ECU DIAGNOSIS >

### [PREMIUM WITH NAVIGATION]

	minal color)	Description			Condition	Reference value	
+	-	Signal name	Input/ Output		Condition	(Approx.)	
19 (B/W)	Ground	Ground	_	Ignition switch ON	_	0V	
21 G/Y	Ground	Switch power	Output	Ignition switch ON	With DVD player operation	5V	
22 (B)	Ground	Ground	_	Ignition switch ON	_	0V	
23 (B/W)	Ground	VTR (+)	Output	Ignition switch ON	With DVD player operation	_	
24 (L)	Ground	VTR (-)	Output	Ignition switch ON	With DVD player operation	_	
26	—	Shield	_	—	—	_	
27 (B/Y)	Ground	Ground	_	Ignition switch ON	_	0V	
28 (Y)		Data receive	Input		_	_	
29 (BR)	_	Data transmit	Output		_	_	
31 (SB)	Ground	Battery power	Output		_	Battery voltage	
32 (BR)	Ground	Battery power	Output	_	_	Battery voltage	

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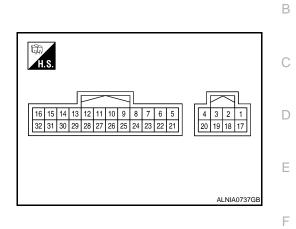
INFOID:000000001691229

### < ECU DIAGNOSIS >

## AUDIO AMP

**Reference Value** 

**TERMINAL LAYOUT** 



### PHYSICAL VALUES

	minal color)	Item	Signal input/		Condition	Reference value (Approx.)	G
+	-		output				
1 (Y)	Ground	Battery	Input	-	_	Battery voltage	Н
2 (W)	18 (B)	Subwoofer	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1	J
3 (BR/W)	19 (BR)	Subwoofer	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	K
4 (B)	Ground	Ground	_	Ignition switch ON	_		M
9 (G/W)	Ground	Amp. ON signal	Input	Ignition switch ON	-	More than 6.5V	AV
10 (L/W)	26 (L/B)	Center speaker	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5	O

### AUDIO AMP

#### < ECU DIAGNOSIS >

#### [PREMIUM WITH NAVIGATION]

	ninal color)	Item	Signal input/		Condition	Reference value (Approx.)
+	_		output			(Appiox.)
11 (SB)	27 (B/Y)	Rear door speak- er LH and rear door tweeter LH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
12 (O/L)	28 (R/L)	Rear door speak- er RH and rear door tweeter RH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 5KIA0177E
13 (W/B)	29 (L/B)	Front door tweet- er RH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
14 (L/W)	30 (L/R)	Front tweeter LH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5
15 (L/W)	31 (L/R)	Front door speak- er LH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
16 (W/B)	32 (L/B)	Front door speak- er RH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
17 (Y/G)	Ground	Battery	Input	_	_	Battery voltage
20 (B)	Ground	Ground	_	lgnition switch ON	-	-

### AUDIO AMP

#### < ECU DIAGNOSIS >

#### [PREMIUM WITH NAVIGATION]

	ninal color) _	ltem	Signal input/ output		Condition	Reference value (Approx.)	A
21 (Y)	5 (BR)	Audio sound sig- nal front RH	Input	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 SKIA0177E	B C D
22 (W)	6 (B)	Audio sound sig- nal front LH	Input	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	E
23 (L)	7 (B/W)	Audio sound sig- nal rear RH	Input	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	G
24 (BR)	8 (B/R)	Audio sound sig- nal rear LH	Input	Ignition switch ON	Receive audio sig- nal	(V) 1 -1 -1 -1 -1 -1 -1 -1 -1 -1	J

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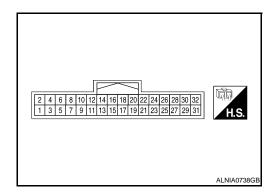
INFOID:000000001691230

## **BLUETOOTH CONTROL UNIT**

**Reference Value** 

TERMINAL LAYOUT

PHYSICAL VALUES



Terminal (wire color)		Description		Condition		Reference value	
+	_	Signal name	Input/ output	Condition		(Approx.)	
1 (Y)	Ground	Battery power	Input	_	-	Battery voltage	
2 (V)	Ground	ACC power	Input	Ignition switch ACC/ON	-	Battery voltage	
3 (G/R)	Ground	IGN power	Input	lgnition switch ON/ START	_	Battery voltage	
4 (B/W)	Ground	Ground	-	Ignition switch ON	_	٥V	
6	-	Shield	-	-	-	-	
7 (B)	8 (R/L)	MIC in signal	Input	_	-	_	
9 (G)	10 (R)	Audio out	Output	Ignition switch ACC/ON	Bluetooth control unit sends audio signal	(V) 1 0 -1 2ms SKIB3609E	
11 (Y)	_	Mute control	_	_	_	_	
					Pressing 🌈 🏑 switch	0V	
12	14 (Y/R)	J In	100014	Ignition switch	Pressing $\Delta$ switch	0.75	
(R/G)			Input	ON	Pressing VOL up switch	2V	
					Except for above	5V	

### **BLUETOOTH CONTROL UNIT**

#### < ECU DIAGNOSIS >

#### [PREMIUM WITH NAVIGATION]

Terminal (wire color)		Description	n	Condition		Reference value				
+	_	Signal name	Input/ output	Condition		(Approx.)				
					Pressing	0V				
13	14	14 Steering switch (Y/R) signal B	Input	Ignition switch	Pressing $ abla$ switch	0.75V				
(G/W)	(Y/R)		mpar	ON	Pressing VOL down switch	2V				
					Except for above	5 V				
15 (G/R)	Ground	LED power	Output	Ignition switch ON	-	Battery voltage				
					Pressing 🌈 📈 switch	0V				
17	19	Steering switch	Output	Ignition switch	Pressing $\Delta$ switch	0.75				
(V)	(R/B)	signal A		ON	Pressing VOL up switch	2V				
					Except for above	5V				
					Pressing MODE switch	OV				
18	19			Oulput Switch ON Pressir		Pressing $ abla$ switch	0.75V			
(G/O) (R/B)	(R/B)							·		
					Except for above	5V				
20 (B)	Ground	Ground	-	-	_	OV				
23 (B)	Ground	Ground	_	_	_	0V				
28 (W/R)	Ground	Vehicle speed sig- nal (8-pulse)	Input	lgnition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	(V) 15 10 5 0 * 20ms PKIA1935E				
29 (R/W)	Ground	Microphone power	Output	lgnition switch ON	-	5V				

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### < SYMPTOM DIAGNOSIS >

## SYMPTOM DIAGNOSIS AUDIO SYSTEM

# Symptom Table

INFOID:000000001663740

### AUDIO SYSTEM

Symptom	Possible cause	Reference page
Inoperative	<ul><li>Audio unit power and ground circuit</li><li>Audio unit</li></ul>	• <u>AV-236</u>
Steering switch does not operate	<ul><li>Steering switch</li><li>Audio unit</li></ul>	• <u>AV-271</u> • <u>AV-236</u>
All speakers do not sound	<ul> <li>Audio unit power and ground circuit</li> <li>Audio amp. ON signal</li> <li>Audio amp. power and ground circuit</li> </ul>	<ul> <li><u>AV-236</u></li> <li><u>AV-270</u></li> <li><u>AV-242</u></li> </ul>
One or several speakers do not sound	<ul> <li>Front door speaker</li> <li>Front tweeter</li> <li>Center speaker</li> <li>Rear door tweeter (crew cab)</li> <li>Rear door speaker</li> <li>Subwoofer</li> </ul>	<ul> <li>AV-253</li> <li>AV-256</li> <li>AV-259</li> <li>AV-264</li> <li>AV-261</li> <li>AV-267</li> </ul>

### NAVIGATION SYSTEM

Symptom	Possible cause	Reference page
Inoperative	<ul><li>Audio unit power and ground circuit</li><li>Audio unit</li></ul>	<ul> <li><u>AV-236</u></li> <li><u>AV-236</u></li> </ul>
Steering switch does not operate	<ul><li>Steering switch</li><li>Audio unit</li></ul>	<ul> <li><u>AV-271</u></li> <li><u>AV-280</u></li> </ul>
Voice activated control does not operate	<ul><li>Microphone</li><li>Steering switch</li><li>Audio unit</li></ul>	<ul> <li><u>AV-244</u></li> <li><u>AV-271</u></li> <li><u>AV-236</u></li> </ul>

### HANDS-FREE PHONE SYSTEM

Symptom	Possible cause	Reference page
Inoperative	<ul><li>Audio unit power and ground circuit</li><li>Audio unit</li></ul>	<ul> <li><u>AV-236</u></li> <li><u>AV-280</u></li> </ul>
Steering switch does not operate	<ul><li>Steering switch</li><li>Audio unit</li></ul>	• <u>AV-271</u> • <u>AV-280</u>
Voice activated control does not operate	<ul><li>Microphone</li><li>Steering switch</li><li>Audio unit</li></ul>	<ul> <li><u>AV-278</u></li> <li><u>AV-271</u></li> <li><u>AV-280</u></li> </ul>

### DVD PLAYER

Symptom	Possible cause	Reference page
DVD player inoperative	<ul><li>Power supply and ground circuits</li><li>DVD player</li></ul>	<ul> <li><u>AV-241</u></li> <li><u>AV-315</u></li> </ul>
No sound when playing a DVD	<ul><li>Audio signal circuits</li><li>Audio unit</li><li>DVD player</li></ul>	<ul> <li><u>AV-280</u></li> <li><u>AV-280</u></li> <li><u>AV-315</u></li> </ul>
Video monitor is inoperative/does not display properly	<ul> <li>Power supply and ground circuits</li> <li>Video out circuit</li> <li>DVD player</li> <li>Display monitor</li> </ul>	<ul> <li><u>AV-241</u></li> <li><u>AV-315</u></li> <li><u>AV-315</u></li> <li><u>AV-315</u></li> </ul>

### **AUDIO SYSTEM**

#### < SYMPTOM DIAGNOSIS >

#### [PREMIUM WITH NAVIGATION]

Symptom	Possible cause	Reference page	
DVD remote control is inoperative/does not operate properly	<ul><li>DVD player</li><li>Rear audio remote control unit</li></ul>	• <u>AV-315</u> • <u>AV-315</u>	A
Headphones inoperative	<ul> <li>Headphone batteries</li> <li>Headphone audio signal circuits from Audio unit</li> <li>Audio unit</li> <li>Rear audio remote control unit</li> </ul>	<ul> <li><u>AV-315</u></li> <li><u>AV-280</u></li> <li><u>AV-315</u></li> </ul>	В
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#### < SYMPTOM DIAGNOSIS >

### NORMAL OPERATING CONDITION

### Description

INFOID:000000001663741

[PREMIUM WITH NAVIGATION]

#### AUDIO SYSTEM

The majority of the audio troubles are the result of outside causes (bad CD, electromagnetic interference, etc.).

Noise

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

- 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 the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off mountains or buildings.

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 determine the cause.

#### NOTE:

The source of the noise can be found easily by listening to the noise while removing the fuses of electrical components, one by one.

Type of Noise and Possible Cause

C	Possible cause	
Occurs only when engine is ON. A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed.		Ignition components
The occurrence of the noise is lin	Fuel pump condenser	
Noise only occurs when various	A cracking or snapping sound occurs with the operation of various switches.	Relay malfunction, audio unit malfunction
electrical components are oper- ating.	The noise occurs when various motors are operat- ing.	<ul><li>Motor case ground</li><li>Motor</li></ul>
The noise occurs constantly, not	<ul> <li>Rear defogger coil malfunction (if equipped)</li> <li>Open circuit in printed heater</li> <li>Poor ground of antenna feeder line</li> </ul>	
A cracking or snapping sound occ it is vibrating excessively.	<ul><li>Ground wire of body parts</li><li>Ground due to improper part installation</li><li>Wiring connections or a short circuit</li></ul>	

#### NAVIGATION SYSTEM

#### Basic Operation

Symptom	Cause	Remedy
No image is shown.	Display brightness adjustment is set fully to DARK side.	Adjust the display brightness.
No guide sound is heard.	Volume control is set to OFF, MIN or MAX.	Adjust the audio guide volume.
Audio guide volume is too low or too high.	Audio guidance is not available while the vehicle is driving on a dark pink route.	System is not malfunctioning.
Screen is too dark. Motion of the image is too slow.	Temperature inside the vehicle is low.	Wait until the temperature inside the vehicle reaches the proper temperature.
Small black or bright spots appear on the screen.	Symptom peculiar to a liquid crystal display (display unit).	System is not malfunction.

Vehicle Mark

### < SYMPTOM DIAGNOSIS >

### [PREMIUM WITH NAVIGATION]

Symptom	Cause	Remedy
Map screen and BIRDVIEW™ Name of the place vary with the screen.	Some thinning of the character data is done to pre- vent the display becoming to complex. In some cases and in some locations, the display contents may differ. The same place name, street name, etc. may not be displayed every time on account of the data processing.	System is not malfunctioning.
Vehicle mark is not positioned cor- rectly.	Vehicle is transferred by ferry or by towing after its ignition switch is turned to OFF.	Drive the vehicle for a while in the GPS sat- ellite signal receiving condition.
Screen will not switch to nighttime mode after the lighting switch is turned ON.	The daytime screen is selected by the "SWITCH SCREENS" when the last time the screen dim- ming setting is done. Switching between daytime/nighttime screen may be inhibited by the automatic illumination adjust- ment function.	Perform screen dimming and select the nighttime screen by "SWITCH SCREENS".
Map screen will not scroll in accor- dance with the vehicle travel.	Current location is not displayed.	Press "MAP" button to display the current lo- cation.
Vehicle mark will not be shown.	Current location is not displayed.	Press "MAP" button to display the current lo- cation.
Accuracy indicator (GPS satellite mark) on the map screen stays gray.	GPS satellite signal is intercepted because the vehicle is in or behind a building.	Move the vehicle out to an open space.
	GPS satellite signal cannot be received because an obstacle is placed on top of the instrument pan- el.	Do not place anything on top of the meter dis- play (instrument panel).
	GPS satellites are not visible from current location.	Wait until GPS satellites are visible by mov- ing the vehicle.
Vehicle location accuracy is low.	Accuracy indicator (GPS satellite mark) on the map screen stays gray.	Current location is not determined.
	Vehicle speed setting by the vehicle speed pulse has been deviated (advanced or retarded) from the actual vehicle speed because tire chain is fit- ted or the system has been used on another vehi- cle.	Drive the vehicle for a while [for approx. 30 minutes at approx. 30 km/h (19 MPH)] and the deviation will be automatically adjusted. If advancement or retard still occur, perform the distance adjustment by CONFIRMA-TION/ADJUSTMENT mode of diagnosis function.
	Map data has error or omission. (Vehicle mark is always deviated to the same position.)	As a rule, an updated map DVD–ROM will be released once a year.

### Destination, Passing Points and Menu Items Cannot be Selected/Set

			- N
Symptom	Cause	Remedy	
Destination cannot be set.	Destination to be set is on an expressway.	Set the destination on an ordinary road.	
Passing point is not searched when re-searching the route.	The vehicle has already passed the passing point, or the system judged so.	To include the passing points that have been passed into the route again, set the route again.	A۷
Route information will not be displayed.	Route searching has not been done.	Set the destination and perform route searching.	С
	Vehicle mark is not on the recommended route.	Drive on the recommended route.	•
	Route guide is turned OFF.	Turn route guide ON.	Р
	Route information is not available on the dark pink route.	System is not malfunctioning.	
After the route searching, no guide sign will appear as the vehicle goes near the entrance/exit to the toll road.	Vehicle mark is not on the recommended route. (On the display, only guide signs related to the rec- ommended route will be shown.)	Drive on the recommended route.	

### AV-325

### < SYMPTOM DIAGNOSIS >

### [PREMIUM WITH NAVIGATION]

Symptom	Cause	Remedy
Automatic route searching is not possible.	Vehicle is driving on a highway (gray route), or no recommended route is available.	Drive on a road to be searched. Or re–search the route manually. In this case, however, the whole route will be searched.
Performed automatic detour search (or detour search). Howev- er, the result is the same as that of the previous search.	Performed search with every conditions consid- ered. However, the result is the same as that of the previous search.	System is not malfunctioning.
Passing points cannot be set.	More than five passing points were set.	Passing points can be set up to five. To stop at more than five points, perform sharing in several steps.
When setting the route, the starting point cannot be selected.	The current vehicle location is always set as the starting point of a route.	System is not malfunctioning.
Some menu items cannot be se- lected.	The vehicle is being driven.	Stop the vehicle at a safe place and then operate the system.

### Voice Guide

Symptom	Symptom Cause	
Voice guide will not operate.	Note: Voice guide is only available at intersections that satisfy certain conditions (indicated by $\bullet$ on the map). Therefore, guidance may not be given even when the route on the map changes direction.	System is not malfunctioning.
	The vehicle is not on the recommended route.	Return to the recommended route or re- search the route.
	Voice guide is turned OFF.	Turn voice guide ON.
	Route guide is turned OFF.	Turn route guide ON.
Voice guide does not match the ac- tual road pattern.	Voice guide may vary with the direction to which the vehicle is turn and the connection of the road to other roads.	Drive in conformity to the actual traffic rules.

### **Route Search**

Symptom	Cause	Remedy
No route is shown.	No road to be searched is found around the des- tination.	Find wider road (orange road or wider) near- by and reset the destination and passing points onto it. Take care of the traveling direc- tion when there are separate up and down roads.
	Starting point and the destination are too close.	Set the destination at more distant point.
	Conditional traffic regulation (day of the week/ time of the day) is set at the area around the cur- rent location or the destination.	Turn the time-regulating search conditions OFF. Turn "Avoid regulation time" in the search conditions OFF.
Indicated route is intermittent.	In some areas, highways (gray routes) are not used for the search <sup>(Note)</sup> Therefore, the route to the current location or the passing points may be intermittent.	System is not malfunctioning.
When the vehicle has passed the recommended route, it is deleted from the screen.	A recommended route is controlled by each sec- tion. When the vehicle has passed the passing point 1, then the map data from the starting point up to the passing point 1 will be deleted. (The data may remain undeleted in some area.)	System is not malfunctioning.

### < SYMPTOM DIAGNOSIS >

### [PREMIUM WITH NAVIGATION]

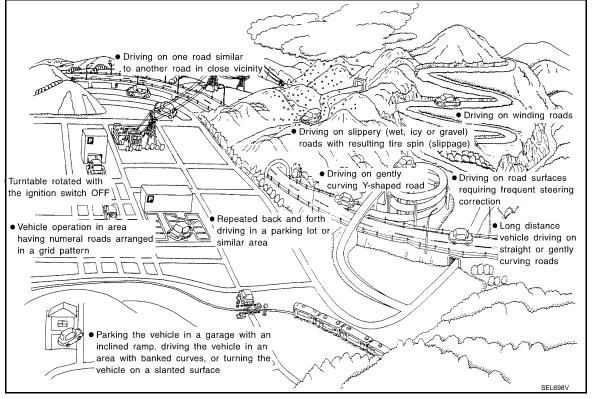
Symptom	Cause	Remedy
Detouring route is recommended.	In some areas, highways (gray routes) are not used for the search. (Note). Therefore, detour route may be recommended.	Set the route closer to the basic route (gray route).
	A detour route may be shown when some traffic regulation (one-way traffic, etc.) is set at the area around the starting point or the destination.	Slightly move the starting point or the destina- tion, or set the passing point on the route of your choice.
	In the area where highways (gray routes) are used for the search, left turn has priority around the current location and the destination (passing points). For this reason, the recommended route may be detouring.	System is not malfunctioning.
Landmarks on the map do not match the actual ones.	This can be happen due to omission or error in the map data.	As a rule, an updated map DVD-ROM will be released once a year. Wait until the latest map has become available.
Recommended route is far from the starting point, passing points, and destination.	Starting point, passing points, and destination of the route guide were set far from the desired points because route searching data around these area were not stored.	Reset the destination onto the road nearby. If this road is one of the highways (gray routes), an ordinary road nearby may be displayed as the recommended route.

#### NOTE:

Except for the ordinance-designated cities. (Malfunctioning areas may be changed in the updated map disc.)

#### Examples of Current-Location Mark Displacement

Vehicle's travel amount is calculated by reading its travel distance and turning angle. Therefore, if the vehicle is driven in the following manner, an error will occur in the vehicle's current location display. If correct location has not been restored after driving the vehicle for a while, perform location correction.



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### < SYMPTOM DIAGNOSIS >

### [PREMIUM WITH NAVIGATION]

Cause (con	dition) –: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
	Y-intersections	At a Y intersection or similar gradual divi- sion of roads, an error in the direction of travel deduced by the sensor may result in the current-location mark appearing on the wrong road.	
	Spiral roads		
	ELK0193D	When driving on a large, continuous spiral road (such as loop bridge), turning angle error is accumulated and the vehicle mark may deviate from the correct location.	
Road config-	Straight roads	When driving on a long, straight road and slow curve without stopping, map-matching does not work effectively enough and dis- tance errors may accumulate. As a result, the vehicle mark may deviate from the cor- rect location when the vehicle is turned at a corner.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform lo-
uration	Zigzag roads	When driving on a zigzag road, the map may be matched to other roads in the simi- lar direction nearby at every turn, and the vehicle mark may deviate from the correct location.	cation correction and, if neces- sary, direction correction.
	Roads laid out in a grid pattern	When driving where roads are laid out in a grid pattern, or where many roads are run- ning in the similar direction nearby, the map may be matched to them by mistake and the vehicle mark may deviate from the cor- rect location.	
	Parallel roads		
		When two roads are running in parallel (such as highway and sideway), the map may be matched to the other road by mis- take and the vehicle mark may deviate from the correct location.	

### < SYMPTOM DIAGNOSIS >

### [PREMIUM WITH NAVIGATION]

Cause (cor	ndition) –: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
	In a parking lot	When driving in a parking lot, or other loca- tion where there are no roads on the map, matching may place the vehicle mark on a nearby road. When the vehicle returns to the road, the vehicle mark may have devi- ated from the correct location. When driving in circle or turning the steer- ing wheel repeatedly, direction errors accu- mulate, and the vehicle mark may deviate from the correct location.	
Place	Turntable	When the ignition switch is OFF, the navi- gation system cannot get the signal from the gyroscope (angular speed sensor). Therefore, the displayed direction may be wrong and the correct road may not be eas- ily returned to after rotating the vehicle on a turntable with the ignition OFF.	
	Slippery roads	On snow, wet roads, gravel, or other roads where tires may slip easily, accumulated mileage errors may cause the vehicle mark to deviate from the correct road.	If after travelling about 10 km (6 miles) the correct location has
	Slopes	When parking in sloped garages, when travelling on banked roads, or in other cas- es where the vehicle turns when tilted, an error in the turning angle will occur, and the vehicle mark may deviate from the road.	not been restored, perform lo- cation correction and, if neces- sary, direction correction.
	Road not displayed on the map screen	When driving on new roads or other roads not displayed on the map screen, map matching does not function correctly and matches the location to a nearby road. When the vehicle returns to a road which is	
••	SEL699V	on the map, the vehicle mark may deviate from the correct road.	
Map data	Different road pattern (Changed due to repair)	If the road pattern stored in the map data and the actual road pattern are different, map matching does not function correctly	
	ELK0201D	and matches the location to a nearby road. The vehicle mark may deviate from the cor- rect road.	
Vehicle	Use of tire chains	When tire chains are used, the mileage is not correctly detected, and the vehicle mark may deviate from the correct road.	Drive the vehicle for a while. If the distance still deviates, ad- just it by using the distance ad- justment function. (If the tire chain is removed, recover the original value.)

### < SYMPTOM DIAGNOSIS >

### [PREMIUM WITH NAVIGATION]

Cause (condition) -: While driving ooo: Display		Driving condition	Remarks (correction, etc.)
	Just after the engine is started	If the vehicle is driven just after the engine is started when the gyroscope (angular speed sensor) correction is not completed, the vehicle can lose its direction and may have deviated from the correct location.	Wait for a short while before driving after starting the engine.
Precautions for driving	Continuous driving without stopping	When driving long distances without stop- ping, direction errors may accumulate, and the current-location mark may deviate from the correct road.	Stop and adjust the orientation.
	Abusive driving	Spinning the wheels or engaging in other kinds of abusive driving may result in the system being unable perform correct detec- tion, and may cause the vehicle mark to de- viate from the correct road.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform lo- cation correction and, if neces- sary, direction correction.
How to cor-	Position correction accuracy Within 1 mm (0.04 in)	If the accuracy of location settings is poor, accuracy may be reduced when the correct road cannot be found, particularly in places where there are many roads.	Enter in the road displayed on the screen with an accuracy of approx. 1mm. Caution: Whenever possible, use detailed map for the correc- tion.
rect location	Direction when location is corrected Direction calibration adjustment SEL702V	If the accuracy of location settings during correction is poor, accuracy may be re- duced afterwards.	Perform direction correction.

Location Correction by Map-Matching is Slow

- The map-matching function needs to refer to the data of the surrounding area. It is necessary to drive some distance for the function to work.
- Because map-matching operates on this principle, when there are many roads running in similar directions in the surrounding area, no matching determination may be made. The location may not be corrected until some special feature is found.

### Name of Road is Not Displayed

The current road name may not be displayed if there are no road names displayed on the map screen.

Contents of Display Differ for Birdview<sup>™</sup> and the (Flat) Map Screen

Difference of the BIRDVIEW<sup>™</sup> screen from the flat map screen are as follows.

- The current place name displays names which are primarily in the direction of vehicle travel.
- The amount of time before the vehicle travel or turn angle is updated on the screen is longer than for the (flat) map display.
- The conditions for display of place names, roads, and other data are different for nearby areas and for more distant areas.
- Some thinning of the character data is done to prevent the display becoming too complex. In some cases and in some locations, the display contents may differ.
- The same place name, street name, etc. may be displayed multiple times.

Vehicle Mark Shows a Position Which is Completely Wrong

In the following cases, the vehicle mark may appear on completely different position in the map depending on the GPS satellite signal receiving conditions. In this case, perform location correction and direction correction.

- When location correction has not been done
- If the receiving conditions of the GPS satellite signal is poor, if the vehicle mark becomes out of place, it may move to a completely different location and not come back if location correction is not done. The position will be corrected if the GPS signal can be received.
- When the vehicle has traveled by ferry, or when the vehicle has been being towed

### AV-330

### < SYMPTOM DIAGNOSIS >

### [PREMIUM WITH NAVIGATION]

- Because calculation of the current location cannot be done when traveling with the ignition off, for example when traveling by ferry or when being towed, the location before travel is displayed. If the precise location A can be detected with GPS, the location will be corrected.

### Vehicle Mark Jumps

In the following cases, the vehicle mark may appear to jump as a result of automatic correction of the current B location.

- When map matching has been done
- If the current location and the vehicle mark are different when map matching is done, the vehicle mark may seem to jump. At this time, the location may be "corrected" to the wrong road or to a location which is not on a road.
- When GPS location correction has been done
- If the current location and the vehicle mark are different when the location is corrected using GPS measurements, the vehicle mark may seem to jump. At this time, the location may be "corrected" to a location which is not on a road.

### Vehicle Mark is in a River or Sea

The navigation system moves the vehicle mark with no distinction between land and rivers or sea. If the vehicle mark is somehow out of place, it may appear that the vehicle is driving in a river or the sea.

### Vehicle Mark Automatically Rotates

The system wrongly memorizes the rotating status as stopping when the ignition switch is turned ON with the turntable rotating. That causes the vehicle mark to rotate when the vehicle is stopped.

When Driving on Same Road, Sometimes Vehicle Mark is in Right Place and Sometimes it is in Wrong Place <sup>G</sup> The conditions of the GPS antenna (GPS data) and gyroscope (angular speed sensor) change gradually. Depending on the road traveled and the operation of the steering wheel, the location detection results will be different. Therefore, even on a road on which the location has never been wrong, conditions may cause the vehicle mark to deviate.

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# < PRECAUTION > PRECAUTION PRECAUTIONS

Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSION-ER"

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 and SB section of this Service Manual.

### WARNING:

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

### Precaution for Trouble Diagnosis

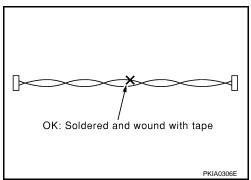
### AV COMMUNICATION SYSTEM

- 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

### AV COMMUNICATION SYSTEM

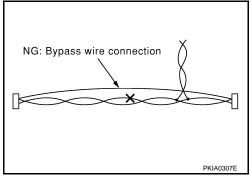
• Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]



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• 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.)



### AV-332

### [PREMIUM WITH NAVIGATION]

### < PREPARATION >

### PREPARATION

### PREPARATION

### **Commercial Service Tools**

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Tool name		Description	
		Loosening bolts and nuts	
Power tool			
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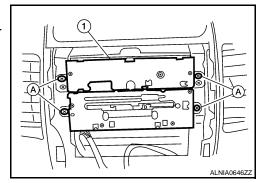
# <u>ON-VEHICLE REPAIR ></u> ON-VEHICLE REPAIR AUDIO UNIT

Removal and Installation

### AUDIO UNIT

Removal

- 1. Disconnect the battery negative terminal.
- 2. Remove the cluster lid C. Refer to IP-13, "Removal and Installation".
- 3. Remove the audio unit screws (A), using power tool.
- 4. Pull out the audio unit (1) and disconnect the audio unit connectors.

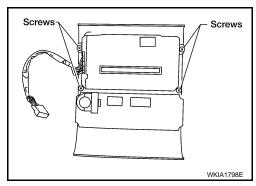


Installation Installation is in the reverse order of removal.

AV SWITCH

Removal

- 1. Disconnect battery negative terminal.
- 2. Remove the cluster lid C. Refer to IP-13, "Removal and Installation".
- 3. Remove the AV switch screws.
- 4. Carefully remove the AV switch.



Installation Installation is in the reverse order of removal.

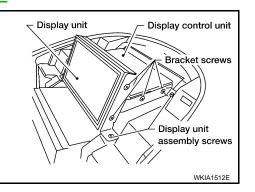
### DISPLAY UNIT

### Removal and Installation

### **DISPLAY UNIT**

Removal

- 1. Remove the center console. Refer to IP-18, "Removal and Installation".
- 2. Remove the cluster lid D. Refer to IP-14, "Removal and Installation".
- 3. Remove the display control unit.
- 4. Disconnect the display unit connectors.



- 5. Remove the display unit.
- 6. Remove the display unit brackets.

### Installation

Installation is in reverse order of removal.



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### FRONT TWEETER

Removal and Installation

For removal and installation, refer to AV-34, "Removal and Installation".

AV-336

### **CENTER SPEAKER**

< ON-VEHICLE REPAIR >	[PREMIUM WITH NAVIGATION]
CENTER SPEAKER	
Removal and Installation	A INFOID:000000001572789
For removal and installation, refer to AV-94, "Removal and Installation".	В
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### FRONT DOOR SPEAKER

Removal and Installation

For removal and installation, refer to <u>AV-35, "Removal and Installation"</u>.

# REAR DOOR SPEAKER A Removal and Installation INFOID:0000001572791 REAR DOOR SPEAKER B For removal and installation, refer to AV-36, "Removal and Installation". B REAR DOOR TWEETER C

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### WOOFER

Removal and Installation

SUBWOOFER (BOSE SYSTEM) For removal and installation. Refer to <u>AV-97, "Removal and Installation"</u>.

### **STEERING SWITCH**

### [PREMIUM WITH NAVIGATION]

# < ON-VEHICLE REPAIR > STEERING SWITCH

### Removal and Installation

For removal and installation of the steering wheel audio control switch, refer to <u>AV-98, "Removal and Installa-</u> <u>B</u> tion".

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### REAR AUDIO REMOTE CONTROL UNIT

Removal and Installation

For removal and installation, refer to AV-99. "Removal and Installation"

	< ON-VEHICLE REPAIR >	[PREMIUM WITH NAVIGATION]
	BOSE AMP.	
For removal and installation, refer to <u>AV-100, "Removal and Installation"</u> .	Removal and Installation	INFOID:000000001572798
	For removal and installation, refer to AV-100, "Removal and Installation".	

## AUDIO ANTENNA

Location of Antenna

For location of antenna, refer to AV-37, "Location of Antenna".

### SATELLITE RADIO ANTENNA

< ON-VEHICLE REPAIR >	[PREMIUM WITH NAVIGATION]
SATELLITE RADIO ANTENNA	
Removal and Installation	INFOID:000000001572801
For removal and installation, refer to AV-102. "Removal and Installation".	

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### SATELLITE RADIO TUNER

Removal and Installation

For removal and installation, refer to <u>AV-103</u>, "Removal and Installation".

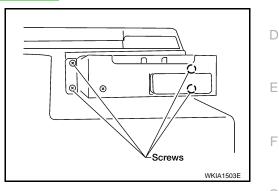
### DVD ENTERTAINMENT SYSTEM

Removal and Installation

### DVD PLAYER

### Removal

- 1. Disconnect the battery negative terminal.
- 2. Remove the center console bin. Refer to IP-18, "Removal and Installation".
- 3. Remove the DVD player screws.



4. Remove the DVD player.

Installation Installation is in reverse order of removal.

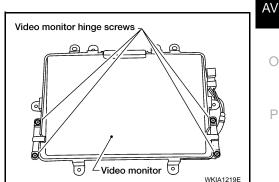
### **VIDEO MONITOR**

### Removal

- 1. Remove the rear roof console assembly. Refer to INT-21, "Removal and Installation".
- 2. Disconnect the video monitor connector.
- 3. Remove the video housing screws.

Screw Screw Video Wildeo connector WKIA1502E

- 4. Remove the video monitor and housing.
- 5. Remove the video monitor hinge screws and remove the video monitor.



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### MICROPHONE

Removal and Installation

For removal and installation, refer to <u>AV-205, "Removal and Installation"</u>.

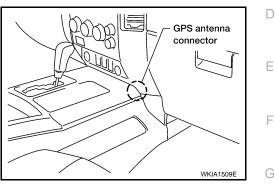
### GPS ANTENNA

### **Removal and Installation**

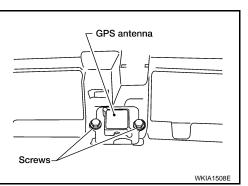
### **GPS ANTENNA**

Removal

- 1. Remove the center console. Refer to IP-18, "Removal and Installation".
- 2. Remove the cluster lid D. Refer to IP-14, "Removal and Installation".
- 3. Remove the defroster grille. Refer to IP-11, "Removal and Installation".
- 4. Disconnect the GPS antenna connector.



5. Remove the GPS antenna.



Installation Installation is in the reverse order of removal.



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### NAVI CONTROL UNIT

### Removal and Installation

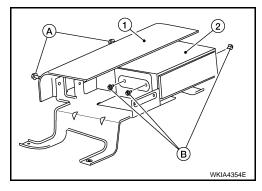
### NAVI CONTROL UNIT

### Removal

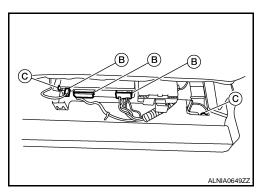
### CAUTION:

### To avoid damage, eject map DVD-ROM before removing the NAVI control unit.

- 1. Disconnect the negative battery terminal.
- 2. Remove the Bluetooth control unit. Refer to AV-207, "Removal and Installation".
- 3. Remove the front passenger seat. Refer to SE-28, "Removal and Installation".
- 4. Remove the NAVI control unit kick shield screws (A).
  - NAVI control unit (2)
    - NAVI control unit screws (B)
- 5. Remove the NAVI control unit kick shield (1).



- 6. Disconnect the NAVI control unit connectors (B).Bluetooth bracket rear bolts (C)
- 7. Remove the NAVI control unit screws.



8. Remove the NAVI control unit.

Installation

Installation is in the reverse order of removal.