SECTION AV AUDIO, VISUAL & NAVIGATION SYSTEM С

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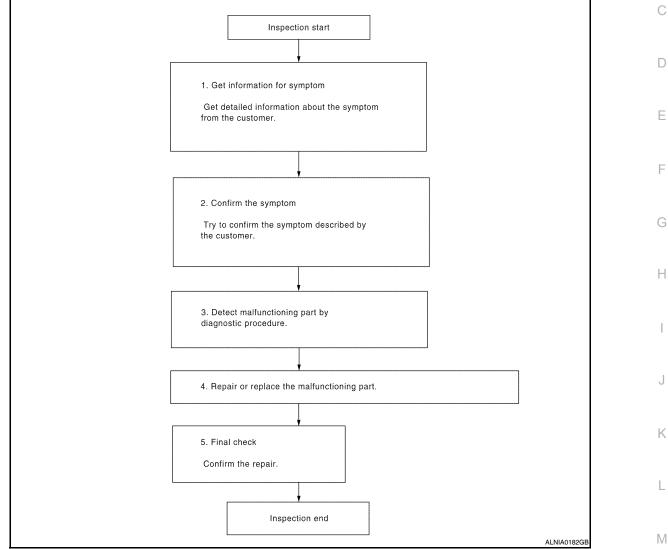
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BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

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).

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.

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[BASE AUDIO]

Is malfunctioning part detected?

YES >> GO TO 4. >> GO TO 2.

NO

 ${\bf 4.} {\sf REPAIR} \text{ or REPLACE THE MALFUNCTIONING PART}$

1. Repair or replace the malfunctioning part.

Reconnect parts or connectors disconnected during Diagnostic Procedure. 2.

>> GO TO 5.

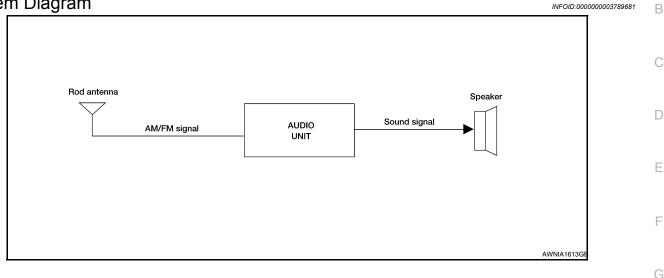
5.FINAL CHECK

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

YES >> Inspection End.

>> GO TO 2. NO

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 (if equipped)
- Rear door speakers (if equipped)
- Rear door tweeters (crew cab, if equipped)

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 (if equipped), rear door speakers (if equipped) and rear door tweeters (crew cab, if equipped).

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

[BASE AUDIO]

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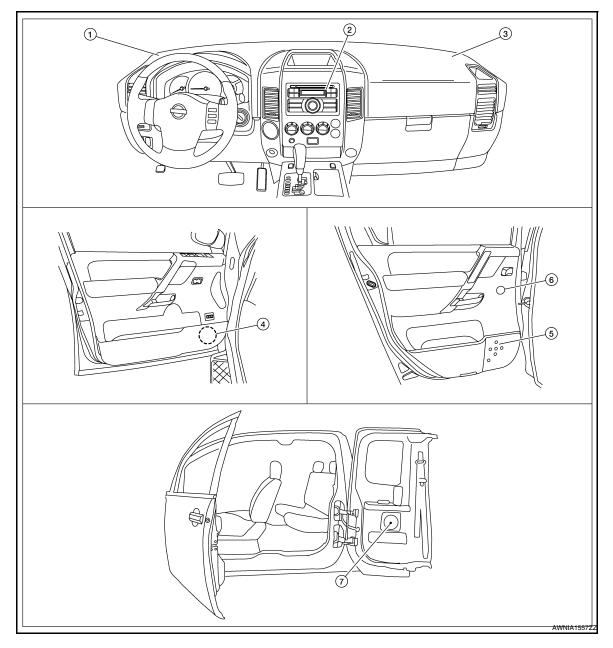
AUDIO SYSTEM

< FUNCTION DIAGNOSIS >

Component Parts Location

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[BASE AUDIO]



- 1. Front tweeter LH M109 (if equipped)
- 4. Front door speaker LH D12 RH D112
- Rear door speaker (king cab, if equipped) LH B76 RH B159
- 2. Audio unit M168
- Rear door speaker (crew cab, if equipped) LH D207 RH D307
- 3. Front tweeter RH M111 (if equipped)
- Rear door tweeter (crew cab, if equipped) LH D208 RH D308

AUDIO SYSTEM

< FUNCTION DIAGNOSIS >

Component Description

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Part name	Description	
Audio unit	Controls audio system functions	
Front door speakers	Outputs audio signal from audio unitOutputs high, mid and low range sounds	
Front tweeters (if equipped)	Outputs audio signal from audio unitOutputs high range sounds	
Rear door speakers (if equipped)	Outputs audio signal from audio unitOutputs high, mid and low range sounds	
Rear door tweeters (crew cab, if equipped)	Outputs audio signal from audio unitOutputs high range sounds	

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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	dio unit		31
	7	Ignition switch ACC or ON	4

Are the fuses OK?

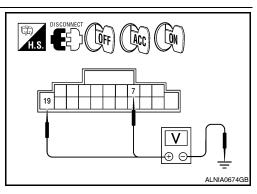
YES >> GO TO 2.

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

2. POWER SUPPLY CIRCUIT CHECK

- Disconnect audio unit connector M168. 1
- Check voltage between the audio unit connector M168 ground. 2.

(+)		(-)	OFF	ACC	ON
Connector	Terminal	(-) OFF		ACC	
M168	7	Ground 0V		Battery voltage	Battery voltage
WITOO	19	Ground	Battery voltage	Battery voltage	Battery voltage



Are the voltage results as specified?

YES >> Inspection end. NO

>> • 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.

>> Repair audio unit case ground. NO

[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 M168 and suspect speaker connector.
- Check continuity between audio unit harness connector M168 (A) terminal and suspect speaker harness connector (B) terminal.

	A		В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	2	D12	1	
M168	3	DIZ	2	Yes
WI TOO	11	D112	1	Tes
	12	DTIZ	2	•

 Check continuity between audio unit harness connector M168 (A) terminal and ground.

	А		Continuity	
Connector	Connector Terminal		Continuity	
	2		No	
M168	3	Ground		
100	11	Ground		
	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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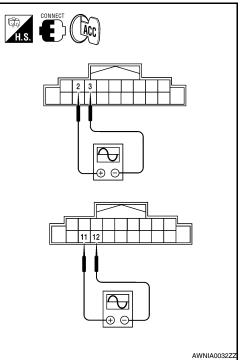
FRONT DOOR SPEAKER

< COMPONENT DIAGNOSIS >

[BASE AUDIO]

- 1. Connect audio unit connector M168 and front speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M168 terminals with CONSULT-III or oscilloscope.

	(+)	(-)			
Con- nector	Terminal	Terminal	Condition	Reference signal	
	2	3			
M168	11	12	Receive audio sig- nal	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1	



- Is the audio signal voltage as specified?
- YES >> Replace speaker. Refer to <u>AV-36. "Removal and Instal-</u> lation".
- NO >> Replace audio unit. Refer to <u>AV-34, "Removal and</u> <u>Installation"</u>.

FRONT TWEETER

< COMPONENT DIAGNOSIS >

FRONT TWEETER

Description

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

Diagnosis Procedure

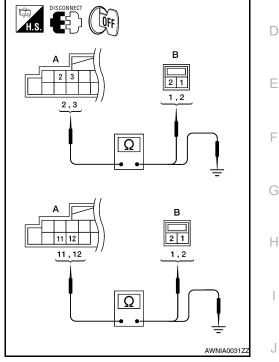
1.HARNESS CHECK

- 1. Disconnect audio unit connector M168 and suspect front tweeter connector.
- Check continuity between audio unit harness connector M168 (A) and suspect front tweeter harness connector (B).

Α		В		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
	2	M109	1		
M168	3		2	Yes	
	11		1	Tes	
	12	M111	2	•	

 Check continuity between audio unit harness connector M168 (A) and ground.

	А		Continuity	
Connector Terminal			Continuity	
	2		No	
M168	3	Ground		
IVI I UO	11	Ground		
	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

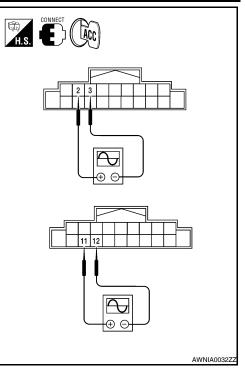
< COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector M168 and front tweeter connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M168 terminals with CONSULT-III or oscilloscope.

	(+)	(-)		
Con- nector	Terminal	Terminal	Condition	Reference signal
	2	3		
M168	11	12	Receive audio sig- nal	(V) 1 -1 -1 -1 -1 -1 -1 -1 -1 -1

Is the audio signal voltage as specified?

- YES >> Replace the suspect front tweeter. Refer to <u>AV-35.</u> <u>"Removal and Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-34</u>, "<u>Removal and</u> <u>Installation</u>".



[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

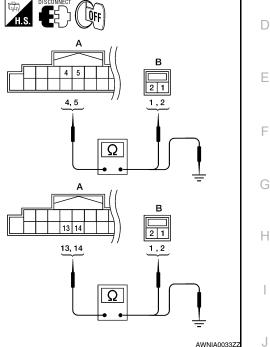
1.HARNESS CHECK

- 1. Disconnect audio unit connector M168 and suspect rear door speaker connector.
- 2. Check continuity between audio unit harness connector M168 (A) and suspect rear door speaker harness connector (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M168	4	D207 (crew cab) B76 (king cab)	1	
	5		2	Yes
	13	D307 (crew cab)	1	ies
	14	B159 (king cab)	2	

3. Check continuity between audio unit harness connector M168 (A) and ground.

_		A		Continuity	
	Connector	Terminal		Continuity	
_		4		No	
	M168	5	Ground		
		13	Ground		
		14			



Are the continuity results as specified?

YES >> GO TO 2.

NO

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

AV-17

· Repair harness or connector.

2.REAR DOOR SPEAKER SIGNAL CHECK

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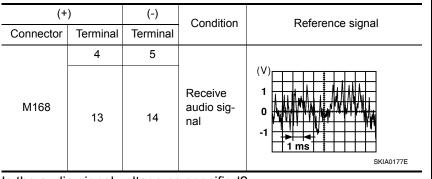
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REAR DOOR SPEAKER

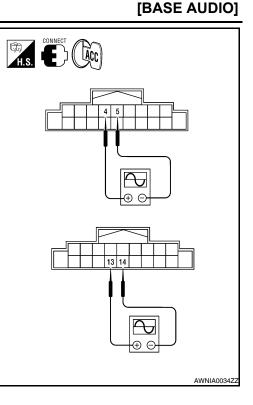
< COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector and rear door speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- Check the signal between audio unit harness connector M168 4. terminals with CONSULT-III or oscilloscope.



Is the audio signal voltage as specified?

- YES >> Replace the suspect rear door speaker. Refer to AV-36, "Removal and Installation".
- >> Replace audio unit. Refer to AV-34, "Removal and NO Installation".



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

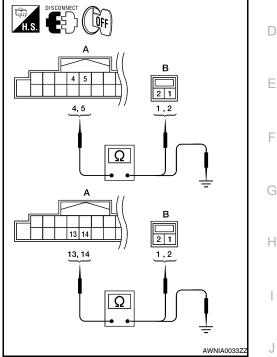
1.HARNESS CHECK

- Disconnect audio unit connector M168 and suspect rear door tweeter connector.
- Check continuity between audio unit harness connector M168 (A) and suspect rear door tweeter harness connector (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M168	4	D208	1	
	5		2	Yes
	13	D209	1	
	14	D308	2	

3. Check continuity between audio unit harness connector M168 (A) and ground.

	А		Continuity
Connector	Terminal		Continuity
	4		
M168	5	Ground	No
	13	Giouna	NO
	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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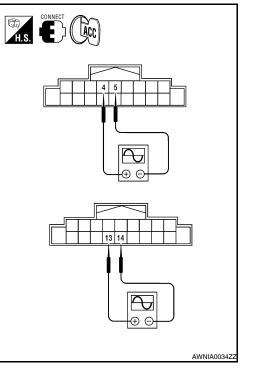
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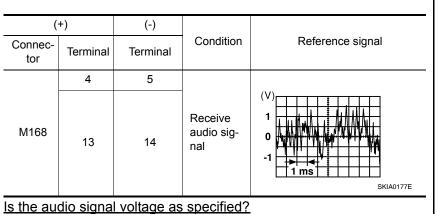
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REAR DOOR TWEETER

< COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector and rear door tweeter connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M168 terminals with CONSULT-III or oscilloscope.





- YES >> Replace the suspect rear door tweeter. Refer to <u>AV-37</u>, "Removal and Installation".
- NO >> Replace audio unit. Refer to <u>AV-34</u>, "<u>Removal and</u> <u>Installation</u>".

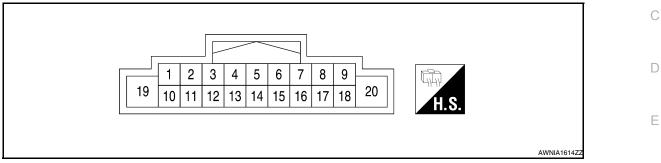
[BASE AUDIO]

ECU DIAGNOSIS

AUDIO UNIT

Reference Value

TERMINAL LAYOUT



PHYSICAL VALUES

	minal e color)	Description			Condition	Reference value	C
+	_	Signal name	Input/ Output		Condition	(Approx.)	
2 (L/W)	3 (L/R)	Sound signal front door speaker and front tweeter LH (if equipped)	Output	lgnition switch ON	Audio output	(V) 1 0 -1 + 2ms SKIB3609E	H
4 (SB)	5 (B/Y)	Sound signal rear door speaker and rear tweeter LH (if equipped)	Output	lgnition switch ON	Audio output	(V) 1 0 -1 + 2ms SKIB3609E	k
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC or ON		Battery voltage	Ν
9 (R/L)	8 (BR)	Illumination	Input	Ignition switch ACC or ON	Exterior lights ON	Battery voltage	A
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC or ON		Battery voltage	F

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< ECU DIAGNOSIS >

	minal color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output			(Approx.)
11 (W/B)	12 (L/B)	Sound signal front door speaker and front tweeter RH (if equipped)	Output	Ignition switch ON	Voice output	(V) 1 0 -1 -1 SKIB3609E
13 (O/L)	14 (R/L)	Sound signal rear door speaker and rear tweeter RH (if equipped)	Output	Ignition switch ON	Voice output	(V) 1 0 -1 + 2ms SKIB3609E
19 (Y)	Ground	Battery power supply	Input	lgnition switch OFF	_	Battery voltage

[BASE AUDIO] < ECU DIAGNOSIS > Wiring Diagram INFOID:000000003789695 А <CC>: CREW CAB KC>: KING CAB SG>: WITH 6 OR 8 SPEAKENS В REAR DOOR TWEETER RH D308 REAR DOOR SPEAKER RH (B159) ą С 14 REAR DOOR SPEAKER RH D307 B149 SG 8 D 15 ŝ Ε F Î REAR DOOR TWEETER LH D208 REAR DOOR SPEAKER LH B76 ą ą G Ref 12 14 REAR DOOR SPEAKER LH D207 AUDIO UNIT (M168) 8 ą D201 Н g 72.1 15 FRONT TWEETER RH (M11) g J FRONT DOOR SPEAKER RH D112 12 g M75 Κ ß FUSE BLOCK (J/B) (M4 FRONT TWEETER LH (M109) L 13 IGNITION SWITCH ACC OR ON 40A Μ **BASE AUDIO SYSTEM** SG FRONT DOOR SPEAKER LH D12 10 ą AV E152 M31 11 20A 31 BATTERY 0

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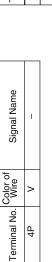


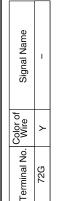


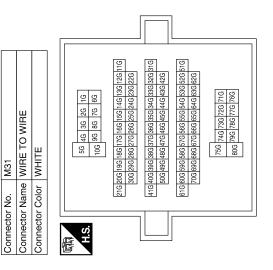
Connector No. M8



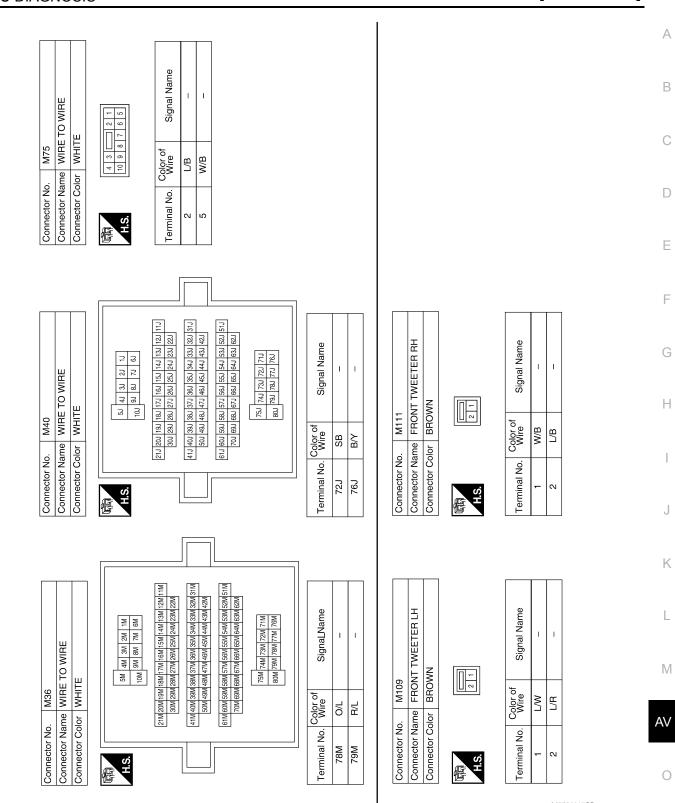








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AUDIO UNIT

< ECU DIAGNOSIS >

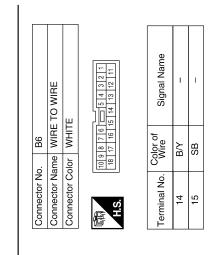
[BASE AUDIO]

AV-25

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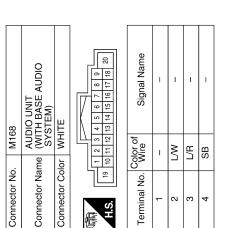
< ECU DIAGNOSIS >

Signal Name	I	I	I	I	I
Color of Wire	I	I	I	Y	I
Terminal No. Color of	16	17	18	19	20



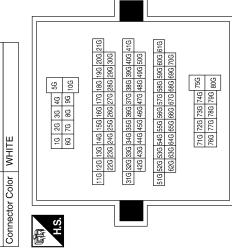
AUDIO UNIT

Signal Name	I	I	I	I	I	I	I	1	1	I	I	
Color of Wire	B/Y	I	>	ВВ	R/L	I	W/B	L/B	0/L	R/L	I	
Terminal No. Color of	5	9	2	8	6	10	11	12	13	14	15	



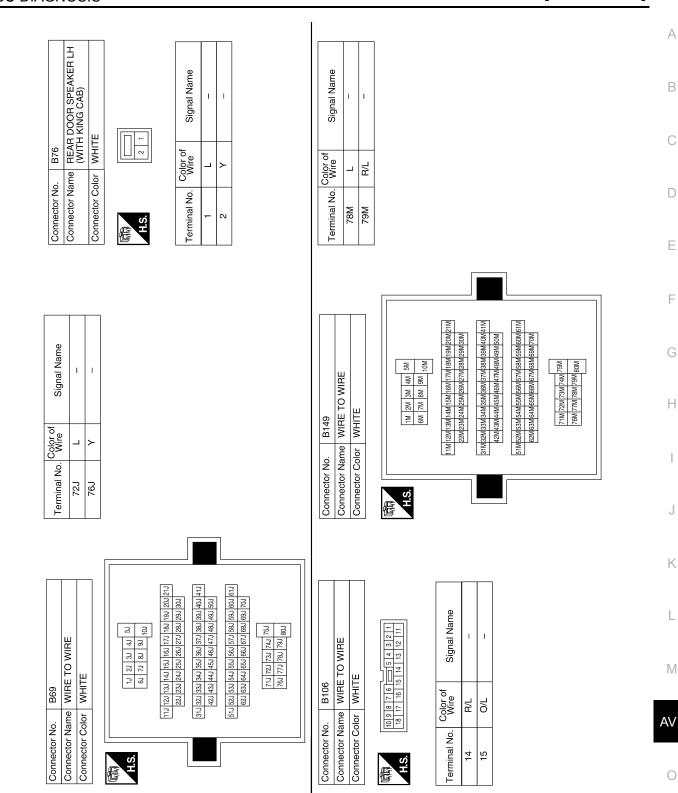


Signal Name



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AV-26



ABNIA0221GB

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AUDIO UNIT

< ECU DIAGNOSIS >

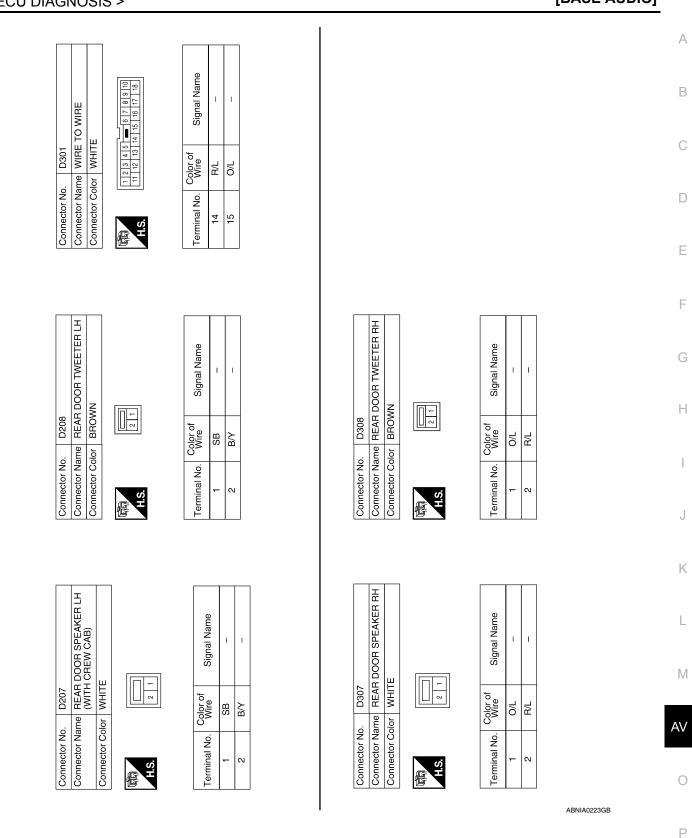
[BASE AUDIO]

	AGINUSIS >				[0/
0. D2 ame WIRE TO WIRE 0ior WIRE TO WIRE 0ior WIRE TO WIRE 0ior WIRE 0ior U/R 1 1					
0. D2 ame WIRE TO WIRE 0ior WIRE TO WIRE 0ior WIRE TO WIRE 0ior WIRE 0ior U/R 1 1		Signal Name	TO WIRE	Signal Name	
0. D2 ame WIRE TO WIRE 0ior WIRE TO WIRE 0ior WIRE TO WIRE 0ior WIRE TO WIRE 0ior UR 1 2 1 2 1 2 1 2 1 1 1 2 1 1 <td>or WHITE</td> <td>Color of Wire L/R</td> <td>D201 me WIRE or WHITE</td> <td>Color of Wire B/Y SB</td> <td></td>	or WHITE	Color of Wire L/R	D201 me WIRE or WHITE	Color of Wire B/Y SB	
	Connector No. Connector Nar Connector Col		Connector No. Connector Nat Connector Col		
	TO WIRE	Signal Name	DOOR SPEAKER RH	Signal Name	
	D2 NHITE 011112	Color of Wire L/R		Color of Wire L/B	
	nector Nan nector Nan ∎		nector No.		
		Terr		Tern	
	COOR SPE	Signal Na		Signal Na	
Signal Name Signal Name Signal Name		Nor of Mire R/L		Wire Wire W/B	
B159 REABO (WITH KID) WHITE WHITE D101 MIRE TO WIRE TO	ector No. ector Name sector Color	2 Terminal No. Co	Connector No. Connector Nam G利利	Terminal No. C	
			Conne Conne H.S.		

< ECU DIAGNOSIS >

[BASE AUDIO]

AV-28



< ECU DIAGNOSIS >

[BASE AUDIO]

AV-29

SYMPTOM DIAGNOSIS AUDIO SYSTEM

Symptom Table

INFOID:000000003789696

AUDIO SYSTEM

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

CD

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

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, $_{\rm B}$ 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 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, audio unit malfunction
ating.	The noise occurs when various motors are operat- ing.	Motor case groundMotor
The noise occurs constantly, not	ust under certain conditions.	 Rear defogger coil malfunction Open circuit in printed heater Poor ground of antenna feeder line
A cracking or snapping sound occ it is vibrating excessively.	urs while the vehicle is being driven, especially when	 Ground wire of body parts Ground due to improper part installation Wiring connections or a short circuit

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[BASE AUDIO]

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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.

PREPARATION

< PREPARATION > PREPARATION

PREPARATION

Commercial Service Tools

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Power tool		Description	Tool name
	(Loosening bolts and nuts	
	C		Power tool
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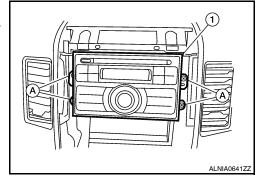
< ON-VEHICLE REPAIR > ON-VEHICLE REPAIR AUDIO UNIT

Removal and Installation

AUDIO UNIT

Removal

- 1. Disconnect the battery negative terminal.
- 2. Remove the cluster lid C. Refer to IP-14, "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:000000003789700

FRONT TWEETER

[BASE AUDIO]

INFOID:000000003789701

< ON-VEHICLE REPAIR > FRONT TWEETER

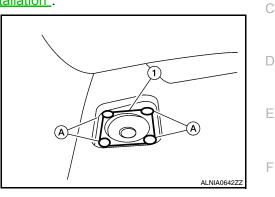
FRUNTIWEETER

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.

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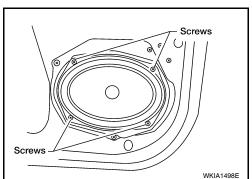
FRONT DOOR SPEAKER

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:000000003789702

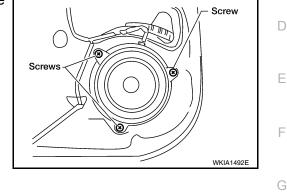
REAR DOOR SPEAKER

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.

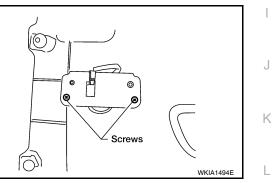


Installation Installation is in the reverse order of removal.

REAR DOOR TWEETER

Removal

- 1. Remove the rear door finisher. Refer to <u>INT-10, "Removal and Installation"</u> Crew Cab.
- 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.

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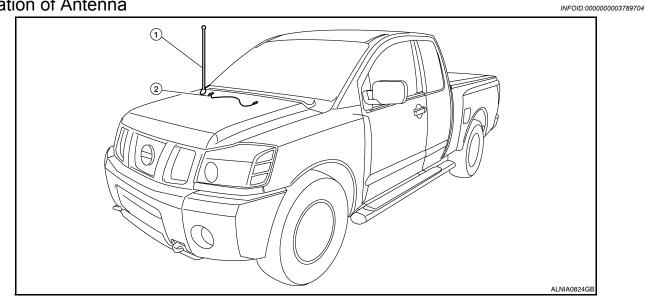
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AUDIO ANTENNA

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

Location of Antenna

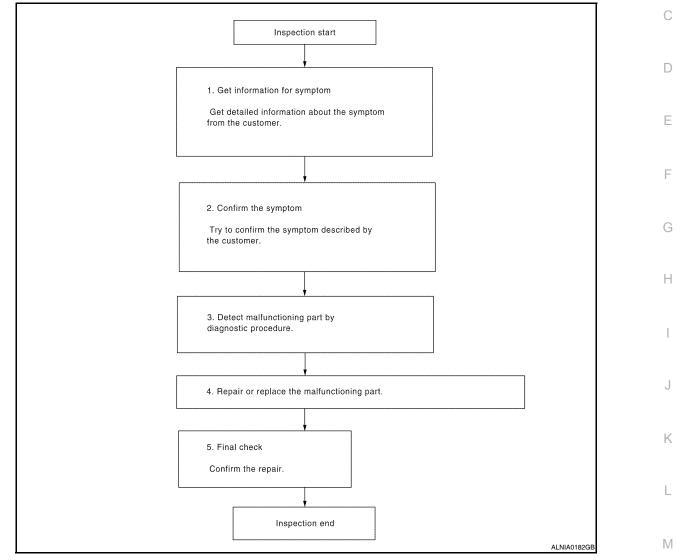


1. Antenna 2. Main feeder cable

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).

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.

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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[MID AUDIO]

Is malfunctioning part detected?

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

NO >> GO TO 2.

 ${\bf 4.} {\bf REPAIR OR REPLACE THE MALFUNCTIONING PART}$

1. Repair or replace the malfunctioning part.

2. Reconnect parts or connectors disconnected during Diagnostic Procedure.

>> GO TO 5.

5.FINAL CHECK

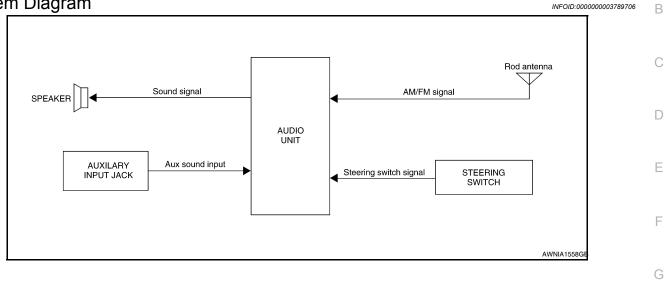
Refer to confirmed symptom in step 2, and make sure that the symptom is not detected. <u>Was the repair confirmed?</u>

YES >> Inspection End.

NO >> GO TO 2.

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
- 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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[MID AUDIO]

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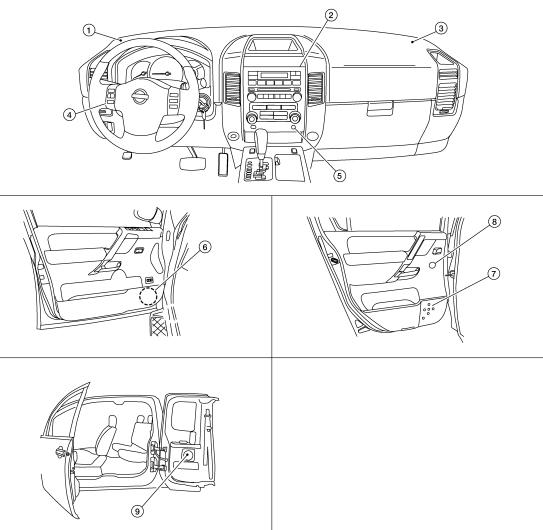
AUDIO SYSTEM

< FUNCTION DIAGNOSIS >

Component Parts Location

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[MID AUDIO]



1. Front tweeter LH M109

- 4. Steering wheel audio control switch- 5. es
- 7. Rear door speaker (crew cab) LH D207 RH D307
- Audio unit M165, M166, M167
 Aux jack M104
- Rear door tweeter (crew cab) LH D208 RH D308

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- 3. Front tweeter RH M111
- 6. Front door speaker LH D12 RH D112
- 9. Rear door speaker (king cab) LH B76 RH B159

INFOID:000000003789709

Part name	Description
Audio unit	Controls audio system and satellite radio system functions
Steering wheel audio control switches	Audio operation can be operatedSteering switch signal is output to the audio unit
Front door speakers	Outputs audio signal from audio unitOutputs high, mid and low range sounds
Front tweeters	Outputs audio signal from audio unitOutputs high range sounds

Component Description

AUDIO SYSTEM

< FUNCTION DIAGNOSIS >

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Part name	Description	
Rear door speakers	Outputs audio signal from audio unitOutputs high, mid and low range sounds	A
Rear door tweeters (crew cab)	Outputs audio signal from audio unitOutputs high range sounds	В

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< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (AUDIO UNIT) AV SWITCH

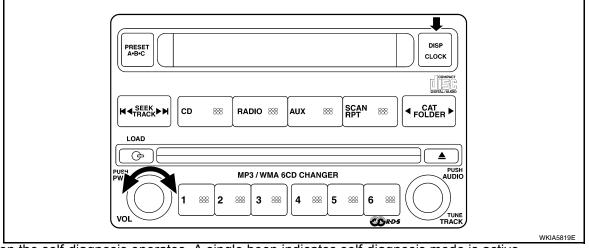
AV SWITCH : Component Function Check

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[MID AUDIO]

STARTING THE SELF-DIAGNOSIS MODE

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



Then the self-diagnosis operates. A single beep indicates self-diagnosis mode is active.

- 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 pressed.

DIAGNOSIS FUNCTION

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

EXITING THE SELF-DIAGNOSIS MODE

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

POWER SUPPLY AND GROUND CIRCUIT < 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	Ε

Are the fuses OK?

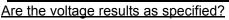
YES >> GO TO 2.

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 M165.
- Check voltage between the audio unit connector M165 and ground.

(+)	(-)	OFF	ACC	ON
Connector	Terminal	(-)	OIT	700	
M165	6	Ground	0V	Battery voltage	Battery voltage
W 105	10	Ground	Battery voltage	Battery voltage	Battery voltage



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.

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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 audio signal circuits.

Diagnosis Procedure

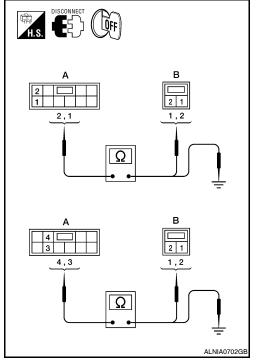
1.HARNESS CHECK

- 1. Disconnect audio unit connector M165 and suspect speaker connector.
- Check continuity between audio unit harness connector M165 (A) and suspect speaker harness connector (B).

	А		В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	1	D12 -	2	
M165	2		1	Yes
10100	3		2	165
	4		1	

 Check continuity between audio unit harness connector M165 (A) and ground.

	A		Continuity
Connector	Terminal		Continuity
	1		No
M165	2	Ground	
01105	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

[MID AUDIO]

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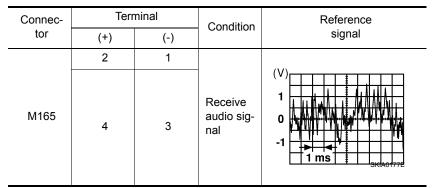
FRONT DOOR SPEAKER

AV-47

< COMPONENT DIAGNOSIS >

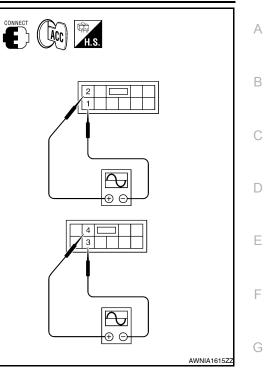
[MID AUDIO]

- 1. Connect audio unit connector M165 and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M165 terminals with CONSULT-III or oscilloscope.





- YES >> Replace suspect speaker. Refer to <u>AV-72, "Removal</u> and Installation".
- NO >> Replace the audio unit. Refer to <u>AV-70, "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

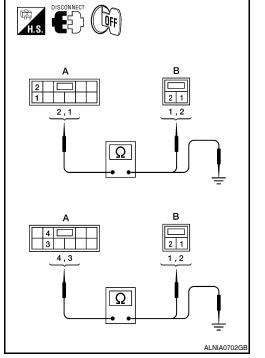
1.HARNESS CHECK

- 1. Disconnect audio unit connector M165 and suspect tweeter connector.
- 2. Check continuity between audio unit harness connector M165 (A) and suspect tweeter harness connector (B).

	A	В		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity		
	1	M109 -	2			
M165	2		1	Yes		
W105	3		2	165		
	4		1			

3. Check continuity between audio unit harness connector M165 (A) and ground.

	A		Continuity
Connector	Terminal		Continuity
	1		No
M165	2	Ground	
101105	3	Ground	
	4		



Are continuity test results as specified?

YES >> GO TO 2.

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

· Repair harness or connector.

2.FRONT TWEETER SIGNAL CHECK

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[MID AUDIO]

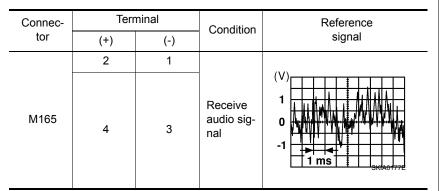
FRONT TWEETER

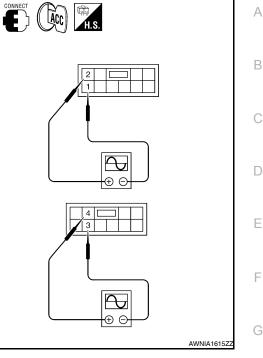
< COMPONENT DIAGNOSIS >

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- 1. Connect audio unit connector M165 and suspect tweeter connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M165 terminals with CONSULT-III or oscilloscope.





Is audio signal voltage as specified?

- YES >> Replace suspect tweeter. Refer to AV-71, "Removal and Installation".
- NO >> Replace the audio unit. Refer to AV-70, "Removal and Installation".

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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

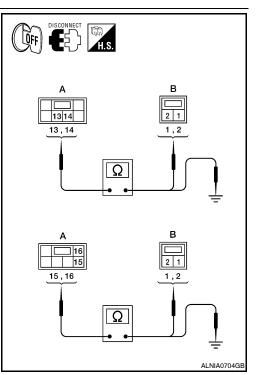
- 1. Disconnect audio unit connector M166 and suspect speaker connector.
- 2. Check continuity between audio unit harness connectors M166 (A) and suspect speaker harness connector (B).

А		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	13	D207 (crew cab)	2	
M166	14	B76 (king cab)	1	Yes
101100	15	D307 (crew cab)	2	165
	16	B159 (king cab)	1	

3. Check continuity between audio unit harness connectors M166 (A) and ground.

Connector	Terminal	-	Continuity	
	13			
M166	14	Ground	No	
WI TOO	15	Ground	NO	
	16			





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.REAR DOOR SPEAKER SIGNAL CHECK

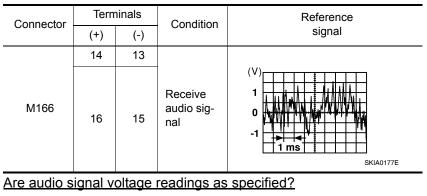
INFOID:000000003789724

INFOID:000000003789725

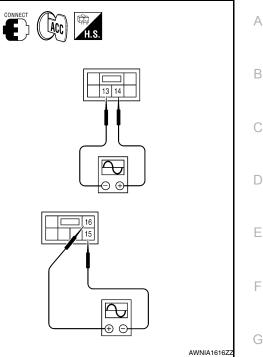
REAR DOOR SPEAKER

< 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 M166 terminals with CONSULT-III or oscilloscope.



- YES >> Replace suspect speaker. Refer to AV-73, "Removal and Installation".
- NO >> Replace audio unit. Refer to AV-70, "Removal and Installation".



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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 M166 and suspect tweeter connector.
- Check continuity between audio unit harness connectors M166 (A) and suspect tweeter harness connector (B).

	А	В		Continuity
Connecto	r Terminal	Connector	Terminal	Continuity
	13	D208	2	
M166	14		1	Yes
INI TOO	15		2	Tes
-	16	0300	1	1

 Check continuity between audio unit harness connectors M166 (A) and ground.

Connector	Terminal	-	Continuity
	13		No
M166	14	Ground	
101100	15	Ground	INO
	16		



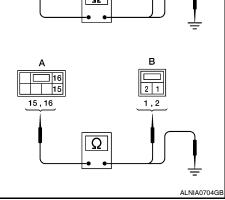
YES >> GO TO 2.

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

2.REAR DOOR TWEETER SIGNAL CHECK

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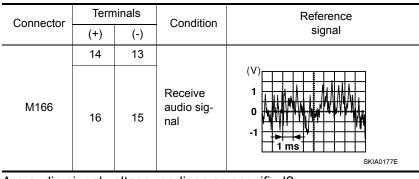
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REAR DOOR TWEETER

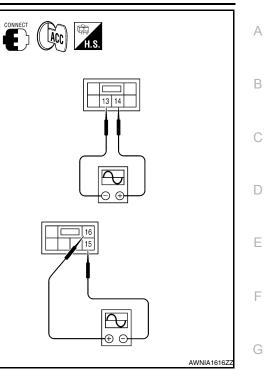
< COMPONENT DIAGNOSIS >

- 1. Connect audio unit connectors and suspect tweeter connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connectors M166 terminals with CONSULT-III or oscilloscope.



Are audio signal voltage readings as specified?

- YES >> Replace suspect tweeter. Refer to <u>AV-73, "Removal and</u> <u>Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-70, "Removal and</u> <u>Installation"</u>.



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STEERING SWITCH

< COMPONENT DIAGNOSIS >

STEERING SWITCH

Description

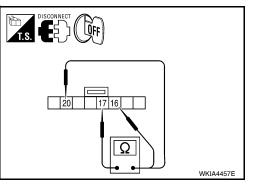
When one of the steering wheel audio control switches is pushed, the resistance in the steering wheel audio control switch circuit changes depending on which button is pushed.

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
		Power	Depress PWR switch.	0
		Seek (up)	Depress Δ switch.	165
20	17	Volume (up)	Depress VOL up switch.	487
		Mode	Depress MODE switch.	0



Do the steering wheel audio control switches check OK?

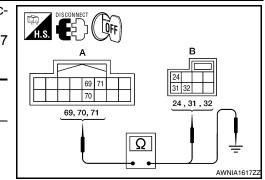
YES >> GO TO 2.

NO >> Replace steering wheel audio control switch. Refer to <u>AV-74, "Removal and Installation"</u>.

2.CHECK HARNESS

- Disconnect audio unit connector M167 and spiral cable connector M169.
- Check continuity between audio unit harness connector M167 (A) and spiral cable harness connector M169 (B).

A	١		В	Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
	69		24		
M167	70	M169	M169	32	Yes
	71		31		



3. Check continuity between audio unit connector M167 (A) and ground.

	A		Continuity
Connector	Terminal	_	Continuity
	69		
M167	70	Ground	No
	71		

Are the continuity results as specified?

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

3.SPIRAL CABLE CHECK

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INFOID-000000003789729

STEERING SWITCH

< COMPONENT DIAGNOSIS >

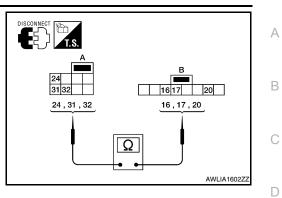
- 1. Disconnect spiral cable connector M102.
- Check continuity between spiral cable harness connector M169 (A) and M102 (B).

	A		В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	24		20	
M169	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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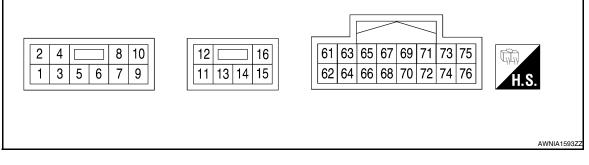
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AUDIO UNIT

Reference Value

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TERMINAL LAYOUT



PHYSICAL VALUES

(Wire	minal e color)	ltem	Signal input/		Condition	Reference value (Approx.)
+	-		output			
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
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	munimation signal	input	UFF	Lighting switch is OFF.	0V
10 (V)	Ground	ACC signal	Input	Ignition switch ON	-	Battery voltage

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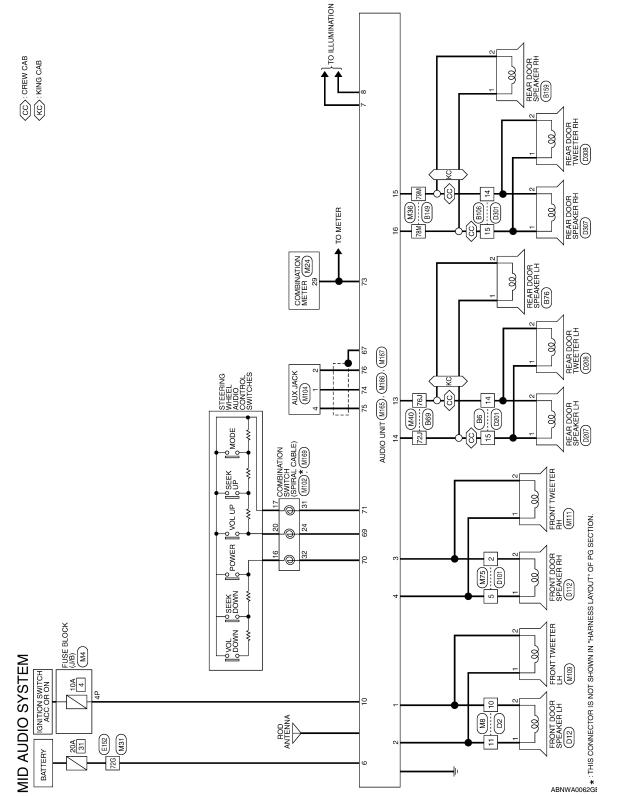
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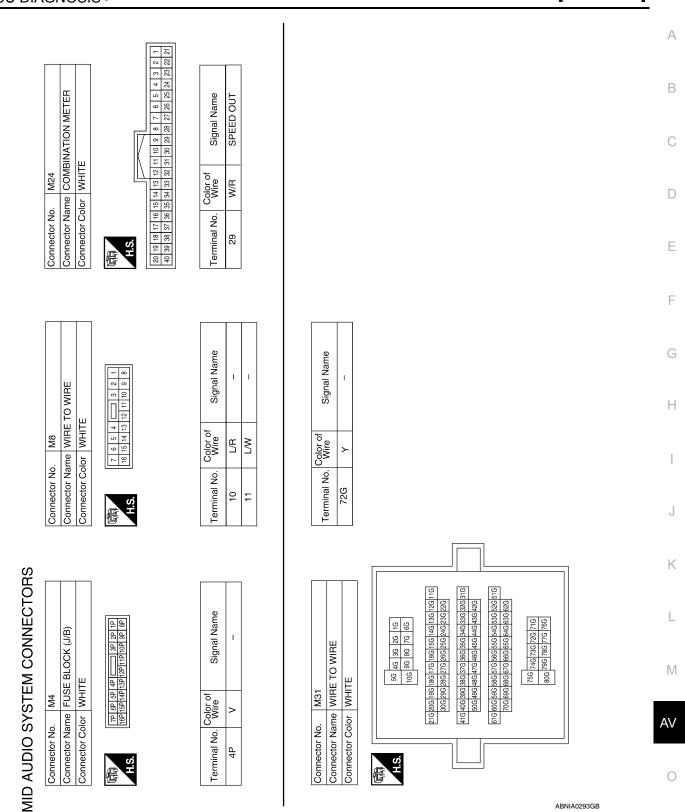
(Wire	ninal color)	Item	Signal input/ output		Condition	Reference value (Approx.)	А
+ 14 (SB)	- 13 (B/Y)	Audio sound signal rear LH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1	B C
16 (O/L)	15 (R/L)	Audio sound signal rear RH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 ms 5 KIA0177E	D E F
67	_	Shield	_	Ignition switch ON	_	0V	G
69 (R)	Ground	Remote control A	Output	Ignition switch ON	Audio unit ON	5V	Н
70 (G)	Ground	Remote control B	Output	Ignition switch ON	Audio unit ON	5V	I
71 (L)	Ground	Remote control ground	_	_	_	0V	
73 (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	J K L
74 (W)	Ground	Auxiliary audio in- put RH (+)	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	M
75 (R)	Ground	Auxiliary audio in- put LH (+)	Input	lgnition switch ON	Receive audio sig- nal (AUX input)	(V) 1 0 -1 5 KIA0177E	O
76 (B)	_	Shield	_	_	_	0V	

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Wiring Diagram

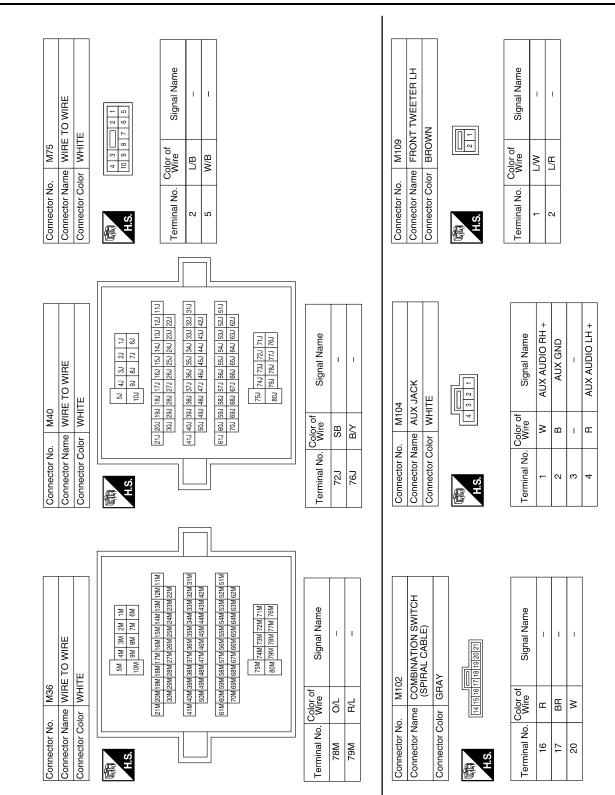
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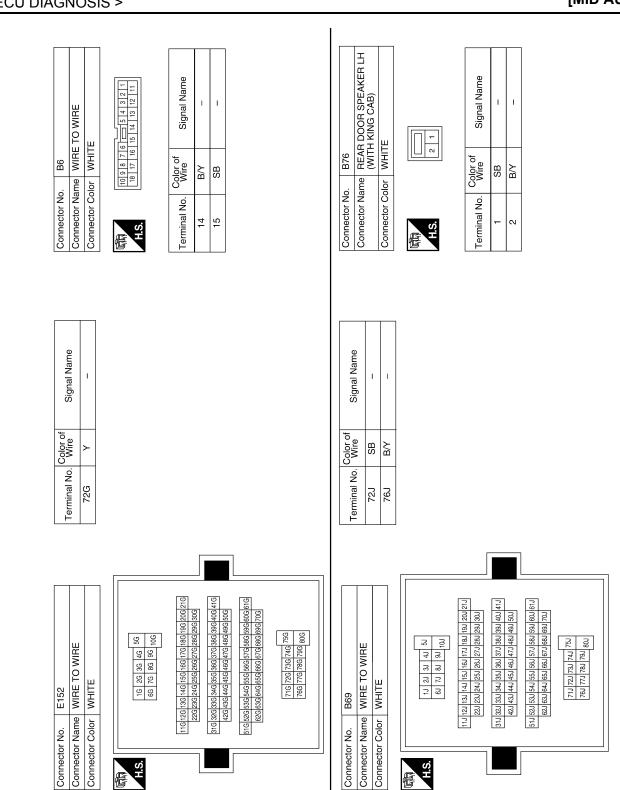
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AUDIO UNIT

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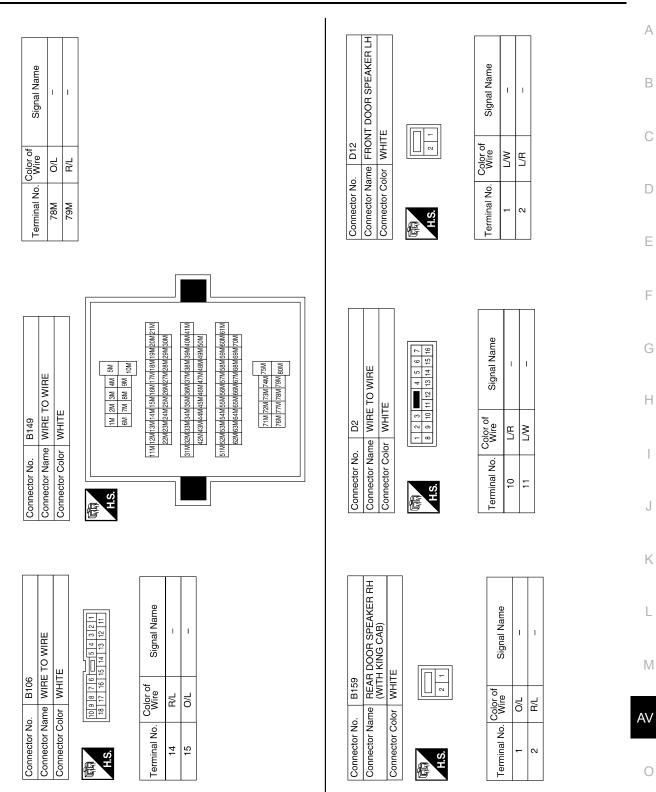
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D201 me WIRE TO WIRE or WHITE	Signal Name	D301 ne WIRE TO WIRE or WHITE 12 13 11 12 12 13	Signal Name
. D201 me WIRE T lor WHIE 112345	Color of Wire B/Y SB	. D301 me WIRE T mr WHITE 11[2]3[4]5	Color of Wire R/L O/L
Connector No. D201 Connector Name WIRE TO WIRE Connector Color WHITE	Terminal No. 14 15	Connector No. D301 Connector Name WIRE TO WIRE Connector Color WHITE Image: Connector Color Image: Connector Color Image: Connector Color Image: Connector Color Image: Connector Color Image: Connector Color	Terminal No. 14 15
Connector No. D112 Connector Name FRONT DOOR SPEAKER RH Connector Color WHITE	Signal Name	D208 REAR DOOR TWEETER LH BROWN	Signal Name
D112 FRONT DC	Color of Wire L/B		Color of Wire SB B/Y
Connector No. Connector Name Connector Color	Terminal No. C	Connector No. Connector Name Connector Color	Terminal No. 0
			[]]
D101 WIRE TO WIRE WHITE	Signal Name	D207 REAR DOOR SPEAKER LH (WITH CREW CAB) WHITE	Signal Name
	Color of Wire W/B		Color of Wire SB B/Y
Connector No. Connector Name Connector Color H.S.	Terminal No. 5	Connector No. Connector Name Connector Color	Terminal No.
			ABM

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Connector No.	D307
Connector Name	Connector Name REAR DOOR SPEAKER RH (WITH CREW CAB)
Connector Color WHITE	WHITE
E	

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H.S.

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

国 H.S.

Signal Name	I	I
Color of Wire	0/L	B/L
Terminal No.	٢	2

Signal Name

Color of Wire

Terminal No.

1 1

O/L B/L

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AUDIO UNIT

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SYMPTOM DIAGNOSIS

AUDIO SYSTEM

Symptom Table

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AUDIO SYSTEM

Symptom	Possible cause	Reference page
Inoperative	Audio unit power circuitAudio unit	• <u>AV-45</u> • <u>AV-70</u>
Steering switch does not operate	Steering switchAudio unit	• <u>AV-54</u> • <u>AV-70</u>
All speakers do not sound	Audio unitAudio unit power circuit	• <u>AV-70</u> • <u>AV-45</u>
One or several speakers do not sound	 Front door speaker Front tweeter Rear door speaker Rear door tweeter (crew cab) 	 <u>AV-46</u> <u>AV-48</u> <u>AV-50</u> <u>AV-52</u>

CD

Symptom	Possible cause	Reference page
CD cannot be inserted.	Audio unit	
CD cannot be ejected.		A) / 70
The CD cannot be played.		<u>AV-70</u>
The sound skips, stops suddenly, or is distorted.		

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, $_{\rm B}$ 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

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 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.	Motor case groundMotor
The noise occurs constantly, not just under certain conditions.		 Rear defogger coil malfunction (crew cab) Open circuit in printed heater Poor ground of antenna feeder line
A cracking or snapping sound occurs while the vehicle is being driven, especially when it is vibrating excessively.		 Ground wire of body parts Ground due to improper part installation Wiring connections or a short circuit

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[MID AUDIO]

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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.

PREPARATION

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PREPARATION

Commercial Service Tools

	Description	C
	Loosening bolts and nuts	(
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		F
	PBIC0191E	Loosening bolts and nuts

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

Removal and Installation

AUDIO UNIT

Removal

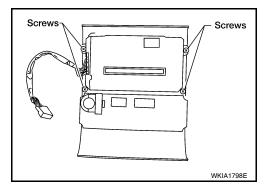
- 1. Disconnect the battery negative terminal.
- 2. Remove the cluster lid C. Refer to IP-14, "Removal and Installation".
- 3. Remove the audio unit screws (A), using power tool.
- 4. Pull out the audio unit (1) and disconnect the audio unit connectors.

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-14, "Removal and Installation".
- 3. Remove the AV switch screws.
- 4. Carefully remove the AV switch.



Installation Installation is in the reverse order of removal.

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FRONT TWEETER

[MID AUDIO]

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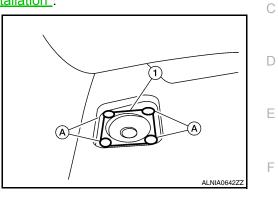
FRONT TWEETER

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.

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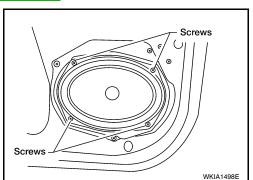
FRONT DOOR SPEAKER

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. [MID AUDIO]

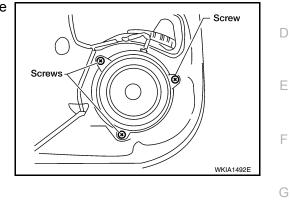
REAR DOOR SPEAKER

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.

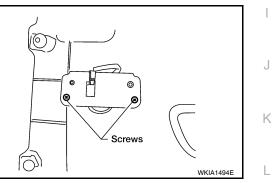


Installation Installation is in the reverse order of removal.

REAR DOOR TWEETER

Removal

- 1. Remove the rear door finisher. Refer to <u>INT-10, "Removal and Installation"</u> Crew Cab.
- 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.

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[MID AUDIO]

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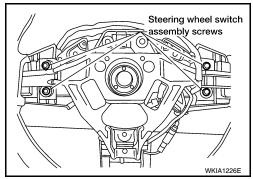
STEERING SWITCH

Removal and Installation

STEERING WHEEL AUDIO CONTROL SWITCHES

Removal

- 1. Remove the steering wheel. Refer to ST-11. "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:000000003789746

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AUDIO ANTENNA

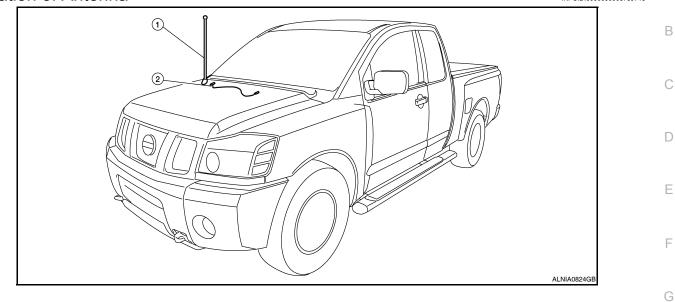
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[MID AUDIO]

Location of Antenna



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1. Antenna

2. Main feeder cable

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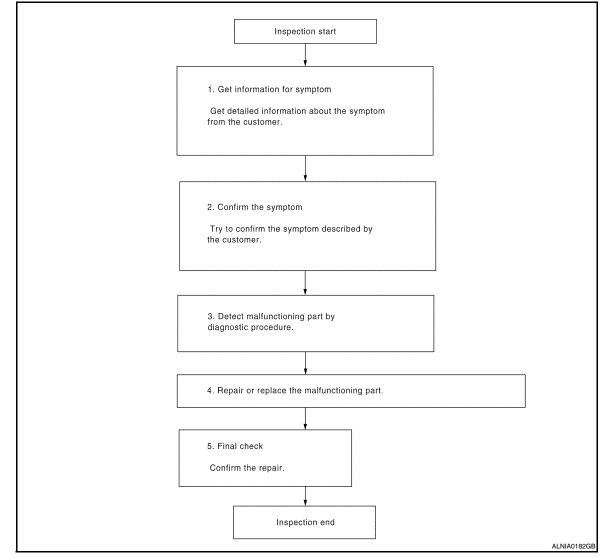
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BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

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.

\mathbf{3}. Detect malfunctioning part by diagnostic procedure

Inspect according to Diagnostic Procedure of the system.

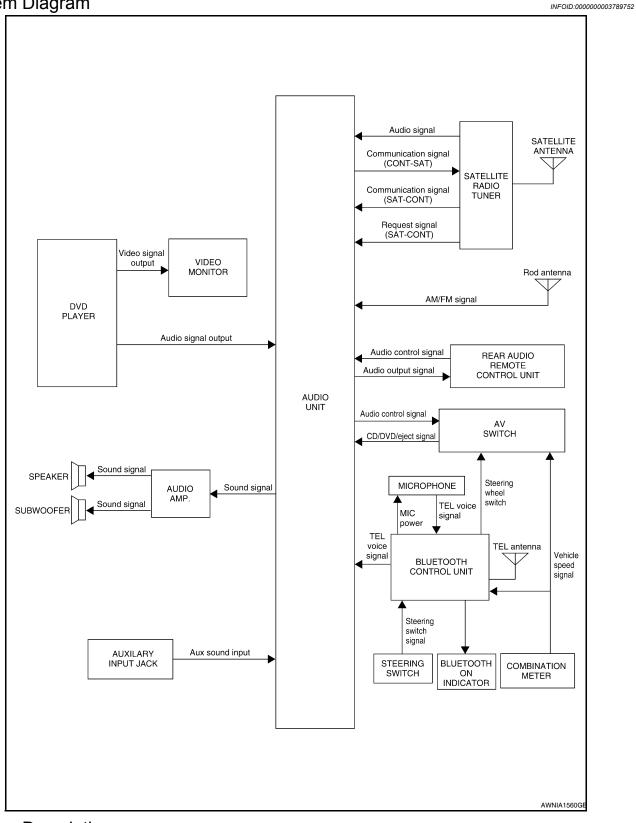
CONTRACTOR STATES AND REPAIR WORKFLOW	
< BASIC INSPECTION > [PREMIUM WITHOUT NAVIGA Is malfunctioning part detected?	
YES >> GO TO 4.	ŀ
NO >> GO TO 2.	
4. REPAIR OR REPLACE THE MALFUNCTIONING PART	-
 Repair or replace the malfunctioning part. Reconnect parts or connectors disconnected during Diagnostic Procedure. 	E
>> 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.	E
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< FUNCTION DIAGNOSIS > FUNCTION DIAGNOSIS AUDIO SYSTEM

System Diagram



System Description

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< FUNCTION DIAGNOSIS >

The audio system consists of the following components	
Audio unit	А
Audio amp.	
Rod antenna	
Steering wheel audio control switches	В
• AV switch	
Rear audio remote control unit	
Front door speakers	-
Front tweeters	С
Center speaker	
Rear door speakers	
Rear door tweeters (crew cab)	D
• Subwoofer	
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-woofer.	E
Refer to Owner's Manual for audio system operating instructions.	
	_
SATELLITE RADIO SYSTEM	F
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.	
level can be selected by the customer. Refer to owner's Manual for operating instructions.	
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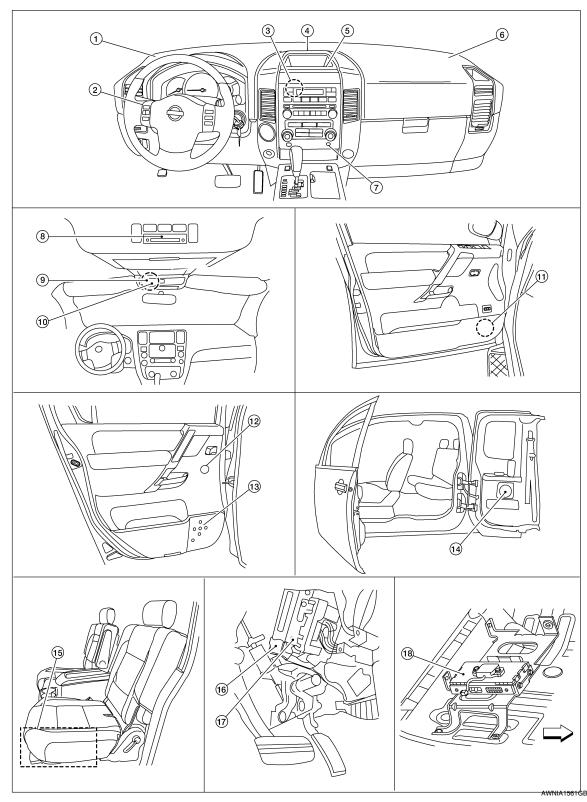
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Component Parts Location

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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, M46, M164
- 6. Front tweeter RH M111
 - Microphone R109

AUDIO SYSTEM

LH D12

LH B76

RH B159

RH D112

< FUNCTION DIAGNOSIS >

- 10. Bluetooth ON indicator R105
- 13. Rear door speaker (crew cab) LH D207 RH D307
- 16. 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 D208 RH D308 14. Rear door speaker (king cab) 15. Subwoofer B72 (under driver's seat) В 18. Bluetooth control unit B142, B143 (view with passenger front seat re-С moved)

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Part name	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 a dio signals to each speaker.		
Steering wheel audio control switches	Audio operation can be operatedSteering switch signal is output to audio unit		
Front door speakers	Outputs audio signal from audio amp.Outputs high, mid and low range sounds		
Front tweeters	Outputs audio signal from audio amp.Outputs high range sounds		
Center speaker	Outputs audio signal from audio amp.Outputs high range sounds		
Rear door speakers	Outputs audio signal from audio amp.Outputs high, mid and low range sounds		
Rear door tweeters (crew cab)	Outputs audio signal from audio amp.Outputs high range sounds		
Subwoofer	Outputs audio signal from audio amp.Outputs low range sounds		
Satellite radio tuner	Receives radio signals from satellite antennaSends audio signals to Audio unit		
Satellite antenna	Audio signal (satellite radio) is received and output to Audio unit.		

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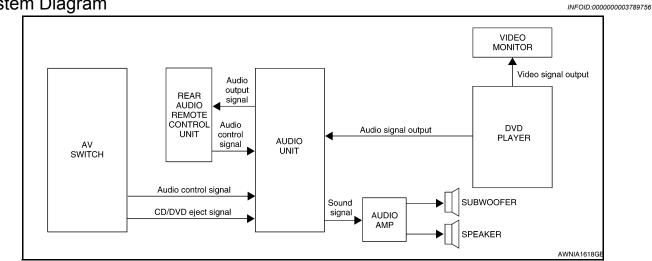
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DVD PLAYER

< 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 head-phones or through the audio amp. to the vehicle speakers. Refer to the Owner's Manual for complete DVD entertainment system operating instructions.

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DVD PLAYER

[PREMIUM WITHOUT NAVIGATION]

< FUNCTION DIAGNOSIS >

Component Parts Location

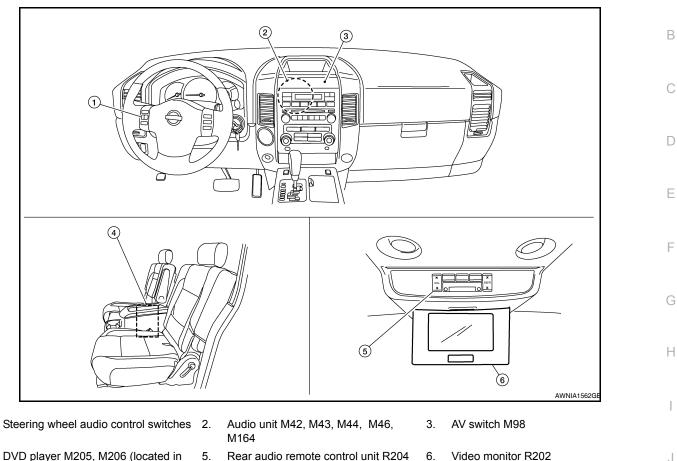
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4. DVD player M205, M206 (located in center console)

Component Description

1.

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

AV-83

DVD PLAYER

< FUNCTION DIAGNOSIS >

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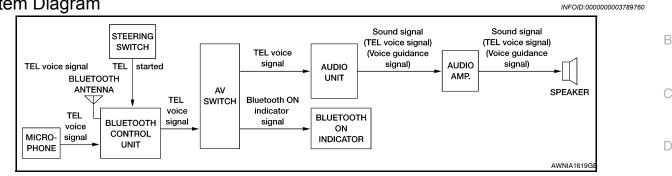
Part name	Description
Rear door tweeters (crew cab)	Outputs audio signal from audio amp.Outputs high range sounds
Rear door speakers	Outputs audio signal from audio amp.Outputs high, mid and low range sounds
Subwoofer	Outputs audio signal from audio amp.Outputs low range sounds

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. Н 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.

AUDIO UNIT

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

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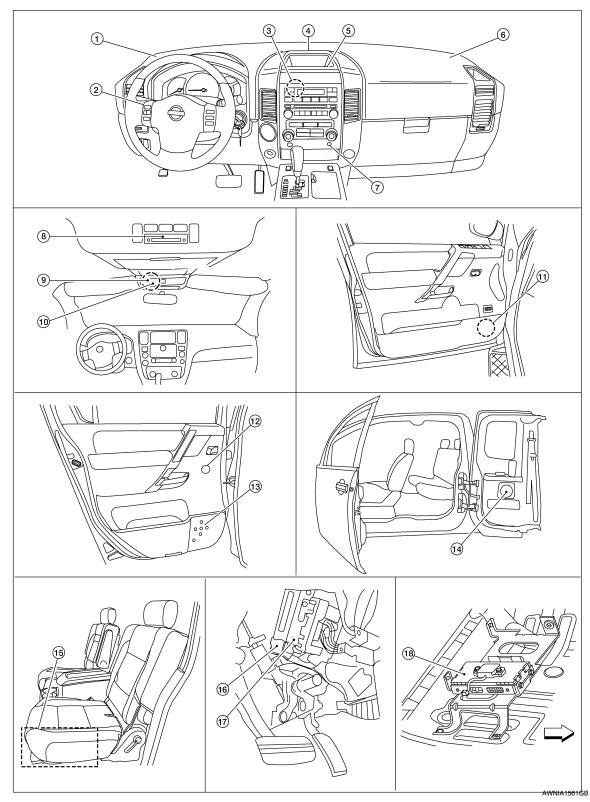
HANDS-FREE PHONE SYSTEM

< FUNCTION DIAGNOSIS >

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Component Parts Location

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<⊓: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, M46, M164
- 6. Front tweeter RH M111
 - Microphone R109

HANDS-FREE PHONE SYSTEM

< FUNCTION DIAGNOSIS >

- 10. Bluetooth ON indicator R105
- 13. Rear door speaker (crew cab) LH D207 RH D307
- RH D112 b) 14. Rear door speaker (king cab) LH B76 RH B159

LH D12

11. Front door speaker

 Audio amp M112, M113 (view behind 17. Satellite radio tuner M41, M129 instrument panel above accelerator pedal)

Component Description

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Part name	Description			
Audio unit	 Receives telephone voice signal from Bluetooth control unit Sends telephone voice and voice guidance signals to the speakers 			
Audio amp.	Recieves audio signals from the audio unitOutputs amplified audio signals to the speakers.			
Front door speaker				
Front tweeter	Receives telephone voice and voice guidance signals from the audio amp.			
Center speaker				
Steering wheel audio control switches	Start a voice recognition sessionAnswer and end telephone callsAdjust the volume level			
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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15. Subwoofer B72 (under driver's seat)

18. Bluetooth control unit B142, B143

(view with passenger front seat re-

12. Rear door tweeter (crew cab)

LH D208

RH D308

moved)

< FUNCTION DIAGNOSIS >

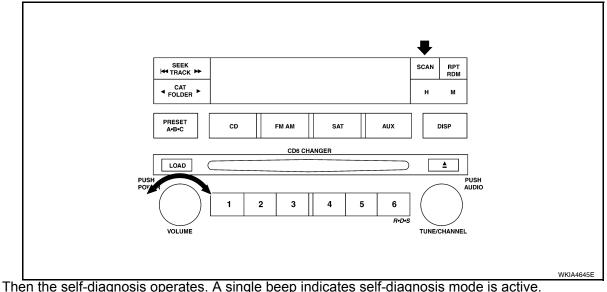
DIAGNOSIS SYSTEM (AUDIO UNIT) AV SWITCH

AV SWITCH : Component Function Check

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STARTING THE SELF-DIAGNOSIS MODE

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

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(₩)] 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 *𝐾* ↓ button for at least 5 seconds. The Bluetooth system will begin to play a verbal prompt.

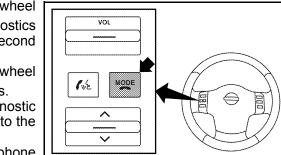
- While the prompt is playing, press and hold the steering wheel audio control switch ^{MOE} button until you hear the "Diagnostics mode" prompt. The Bluetooth system will sound a 5 second beep.
- 5. While the beep is sounding, press and hold the steering wheel audio control switch button again until 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-89</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-89, "Work Flow"</u>.
- 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-180, "Removal and Installation".	0	
"Bluetooth antenna open"	1. Inspect harness connection.	-	
"Bluetooth antenna shorted"	2. Replace Bluetooth antenna. Refer to <u>AV-179, "Removal and Installation"</u> .	Ρ	
"Phone/Send for Hands Free System is stuck"	Check steering wheel audio control switches. Refer to <u>AV-115. "Description"</u> .		
"Phone/End for the Hands Free System is stuck"	Check steering wheel audio control switches. Relet to <u>AV-115. Description</u> .		
"Microphone test" (failed interactive test)	 Inspect harness between Bluetooth control unit and microphone. Replace microphone. Refer to <u>AV-178</u>, "<u>Removal and Installation</u>". 	-	

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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?

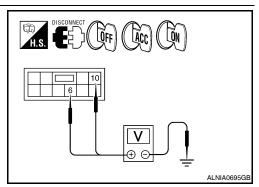
YES >> GO TO 2.

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	(-)	011	Noo	
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 co

>> • 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
	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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< 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
Mao	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.

M98 5 Ground Yes	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?

NO

YES >> GO TO 2.

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

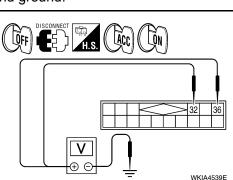
AV-91

2. POWER SUPPLY CIRCUIT CHECK

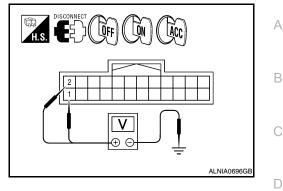
- 1. Turn ignition switch OFF.
- Disconnect satellite radio tuner (factory installed) connector M41. 2.
- Check voltage between the satellite radio tuner (factory installed) and ground. 3.

(+)		(-)	OFF	ACC	ON
Connector	Terminal	(-)	OIT	700	ON
M41	32	Ground	Battery voltage	Battery voltage	Battery voltage
M41	36		0V	Battery voltage	Battery voltage
Are the voltage readings as specified?					

YES >> GO TO 3.



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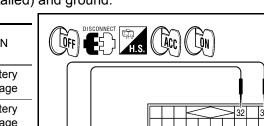
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< COMPONENT DIAGNOSIS >

>> • 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

NO

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?

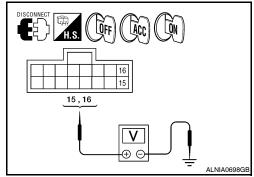
YES >> GO TO 2.

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

(+	(+)		OFF	ACC	ON
Connector	Terminal	(-)	OTT	7.00	
M205	16	16 Battery voltage		Battery voltage	Battery voltage
WZ00	M205 Gr	Gibuna	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?

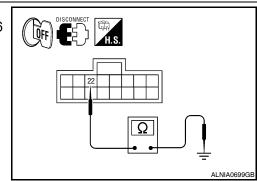
YES >> Inspection End.

NO >> Repair DVD player ground.

VIDEO MONITOR

VIDEO MONITOR : Diagnosis Procedure

1. CHECK POWER SUPPLY CIRCUIT



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AV-92

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< COMPONENT DIAGNOSIS >

1. Turn ignition switch to ACC.

2. Check voltage between video monitor harness connector R202 and ground.

	(+)	(-)	Value (Approx.)
Connector	Terminal	(-)	
R202	11	Ground	Battery voltage
11202	12	Giouna	Dallery Vollage

Does specified voltage exist?

YES >> GO TO 3.

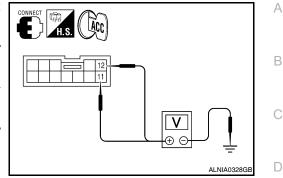
NO >> GO TO 2.

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
R202	11	M206	31	Yes
RZUZ	12	IVI200	32	165



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

	A		Continuity
Connector	Terminal		Continuity
R202	11	Ground	No
11202	12	Giouna	INO

Are continuity test results as specified?

- YES >> Check DVD player power and ground supply. Refer to <u>AV-92, "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	Terminal	—	Continuity
_	R202	3	Ground	Yes

Does continuity exist?

YES >> Inspection End.

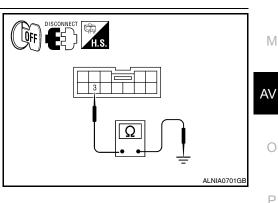
NO >> Repair harness or connector.

AUDIO AMP

AUDIO AMP : Diagnosis Procedure

1.CHECK FUSE

Check that the audio amp. fuses are not blown.



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Unit			Terminal	Sign	al name	Fuse No.	
Audio amp		1 Battery power			31		
Audio amp.			17	Ballery power		17	
Are the fuses OK YES >> GO T NO >> Be su 2.CHECK POW	O 2. Ure to elimin			on before installin	g new fuse.		
and ground.	udio amp. c je between	onnecto		connector M112			
Connector	+) Termina	al	(-)	Voltage (approx.)		7	
M112	M112 17		Ground	Battery voltage			
Is battery voltage YES >> GO T NO >> Chec 3.CHECK GROUND	O 3. k harness b		audio amp. an	d fuse.		ALNIA0754GB	
2. Disconnect a	 Disconnect audio amp. connector. Check continuity between audio amp. harness connector M112 						
Connector	Termina	al	—	Continuity	20		
M112	4 20		Ground	Yes			
	ection End. ir harness c						

BLUETOOTH CONTROL UNIT : Diagnosis Procedure

1.CHECK FUSE

Check that the following fuses for the Bluetooth control unit are not blown.

Unit	Terminal	Signal name	Fuse No.
	1	Battery power	31
Bluetooth control unit	2	Ignition switch ACC or ON	4
	3	Ignition switch ON or START	12

Is inspection result OK?

YES >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT



POWER SUPPLY AND GROUND CIRCUIT [PREMIUM WITHOUT NAVIGATION]

< COMPONENT DIAGNOSIS >

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

Connector	Terminal 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
- Turn ignition switch OFF. 1.
- 2. Disconnect Bluetooth control unit connector.
- 3. Check continuity between Bluetooth control unit harness connector B142 and ground.

Connector	Terminal	—	Continuity
	4		
B142	20	Ground	Yes
	23		

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.

(+)		(-)	Value (Approx.)	
Connector	Terminal	(-)		
R109	4	Ground	5V	

Is approximately 5V present?

YES >> GO TO 3.

NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

- 1. Turn ignition switch OFF.
- 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

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

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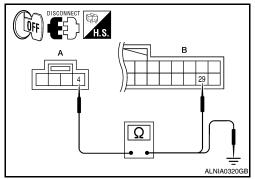
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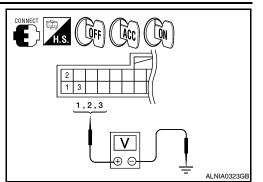
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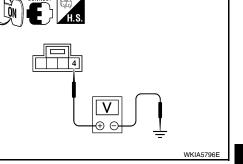
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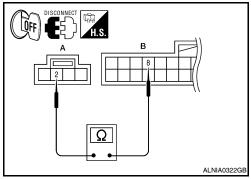
A			Continuity
Connector	Terminal		Continuity
R109	4	Ground	No

Are the continuity test results as specified?

- YES >> Replace the Bluetooth control unit. Refer to <u>AV-180, "Removal and Installation"</u>.
- NO >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. 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		В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
R109	2	B142	8	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 audio amp. The audio amp. amplifies the audio signals before sending them to the front door speakers using the audio signal circuits.

Diagnosis Procedure

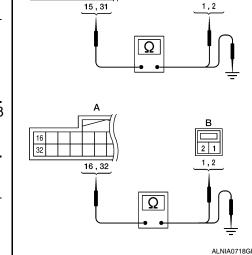
1.SPEAKER HARNESS CHECK

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

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

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

	А		Continuity
Connector	Terminal		Continuity
M113	15		No
	31	Ground	
	16	Giouna	NO
	32		



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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 DOOR SPEAKER SIGNAL CHECK

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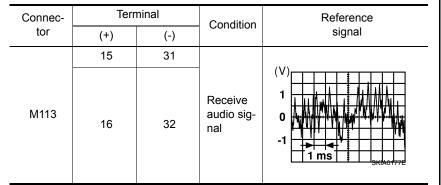
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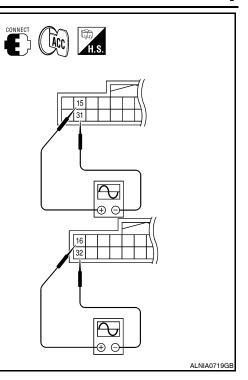
FRONT DOOR SPEAKER

< 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.



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Is audio signal voltage as specified?

YES >> Replace suspect speaker. Refer to <u>AV-168</u>, "<u>Removal</u> and Installation".

NO >> GO TO 3.

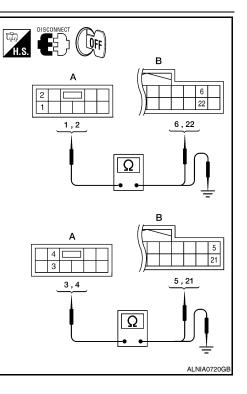
3.PRE-AMP HARNESS CHECK

- 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	
Connector	Terminal	Connector	Terminal	Continuity
	1		6	
M43	2	M113	22	Yes
	3		5	res
	4		21	

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

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



Are continuity test results as specified?

- YES >> GO TO 4.
- NO >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

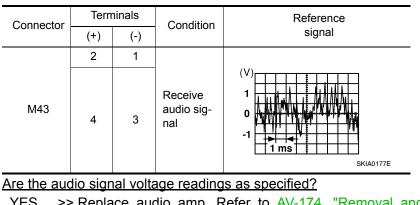
4.PRE-AMP SIGNAL CHECK

FRONT DOOR SPEAKER [PREMIUM WITHOUT NAVIGATION]

AV-99

< 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.



- YES >> Replace audio amp. Refer to AV-174, "Removal and
- Installation". >> Replace audio unit. Refer to AV-165, "Removal and NO Installation".

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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

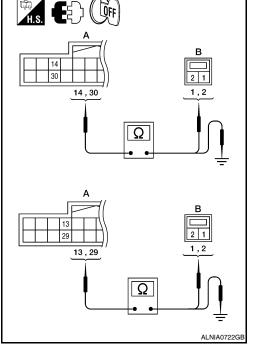
1.HARNESS CHECK

- 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	1	
M113	30	– M109 –	2	Yes
WIT IS	13		1	165
	29	IVI I I	2	

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

	А		Continuity
Connector	Terminal		Continuity
	14		No
M113	30	Ground	
WITTS	13	Giouna	NO
	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 WITHOUT NAVIGATION]

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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.

Connec-	Terr	minal	Condition	Reference
tor	(+)	(-)	Condition	signal
	14	30		
M113	13	29	Receive audio sig- nal	(V) 1 0 -1 1 ms strant/

Is audio signal voltage as specified?

YES >> Replace suspect tweeter. Refer to <u>AV-166</u>, "<u>Removal</u> and <u>Installation</u>".

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		6	
M43	2		22	Yes	
	3		5	165	
	4	•	21		

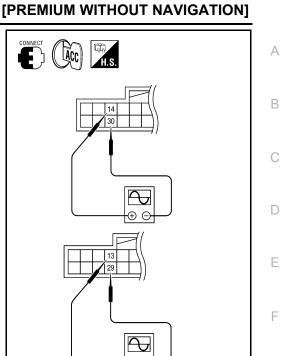
 Check continuity between audio unit harness connector M43 (A) and ground.

		А		Continuity	
-	Connector	Connector Terminal		Continuity	
-	M43	1	Ground	No	
		2			
10145	3	Ground	INU		
		4			

Are continuity test results as specified?

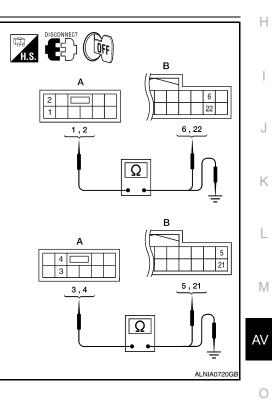
- YES >> GO TO 4.
- NO >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

4.PRE-AMP SIGNAL CHECK



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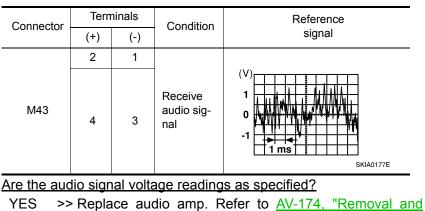


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FRONT TWEETER

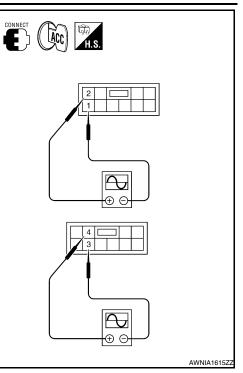
< COMPONENT DIAGNOSIS >

- 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.



- YES >> Replace audio amp. Refer to <u>AV-174</u>, "<u>Removal and</u> <u>Installation</u>".
- NO >> Replace audio unit. Refer to <u>AV-165</u>, "<u>Removal and</u> <u>Installation</u>".

[PREMIUM WITHOUT NAVIGATION]



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 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).

А		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M113	10	M110	1	Yes
WITTS	26	WITTO	2	165

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

	А		Continuity	
Connector	Terminal		Continuity	
M113	10	Ground	No	
	26	Ground	NU	

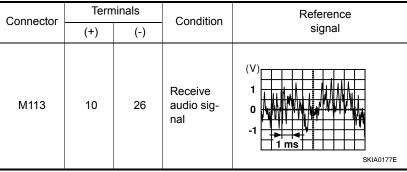
Are continuity test results as specified?

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 "POWER" switch.
- Check the signal between audio amp. harness connector M113 terminals with CONSULT-III or oscilloscope.

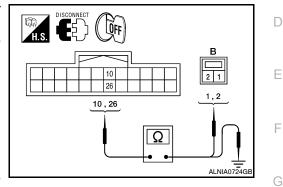


Is the audio signal voltage reading as specified?

YES >> Replace center speaker. Refer to AV-167. "Removal and Installation".

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).

А		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	1		6	
M43	2	M113	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	Ground	
	4		

[PREMIUM WITHOUT NAVIGATION]

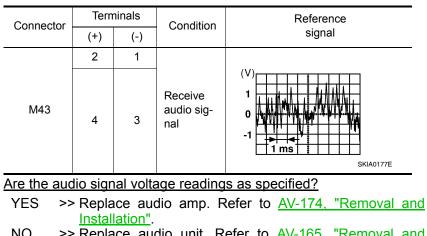
Are continuity test results as specified?

YES >> GO TO 4. NO >> • Check c

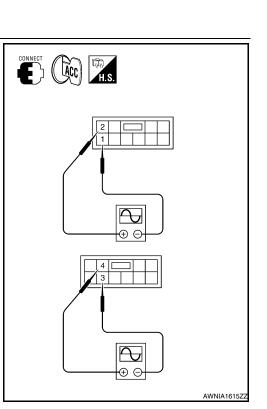
- >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

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.



NO >> Replace audio unit. Refer to <u>AV-165</u>, "Removal and <u>Installation"</u>.



< 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

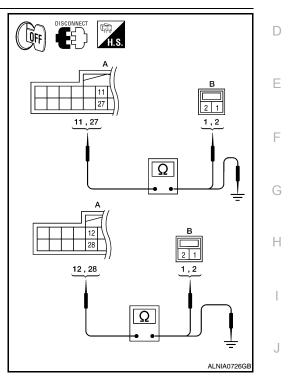
1.SPEAKER HARNESS CHECK

- 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	163
	28	B159 (king cab)	2	

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

Connector	Terminal	-	Continuity	
	11			
M113	27	Ground	No	
WITS	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

[PREMIUM WITHOUT NAVIGATION]

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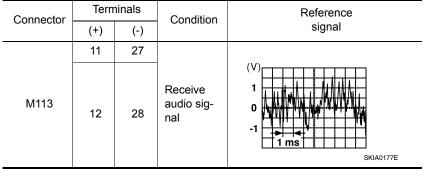
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REAR DOOR SPEAKER

< 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-169</u>, "<u>Removal</u> and <u>Installation</u>".

3.PRE-AMP HARNESS CHECK

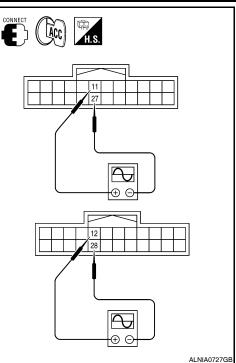
- Disconnect audio unit connector M44 and audio amp. connector M113.
- 2. Check continuity between audio unit harness connector M44 (A) and audio amp. harness connector M113 (B).

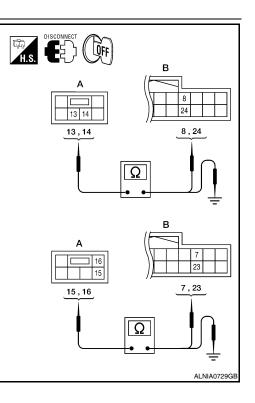
Α		В		
Connector	Terminal	Connector	Terminal	Continuity
-	13	M113	8	
M44	14		24	Yes
	15		7	fes
	16		23	

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

-		А		Continuity
-	Connector Terminal			Continuity
-		13	Ground	No
	M44	14		
101-1-1	15	Ground	NO	
		16	1	

[PREMIUM WITHOUT 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

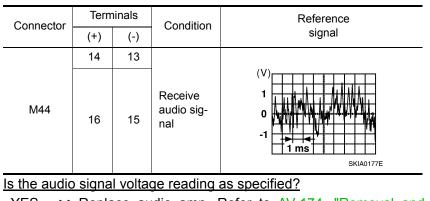
REAR DOOR SPEAKER

AV-107

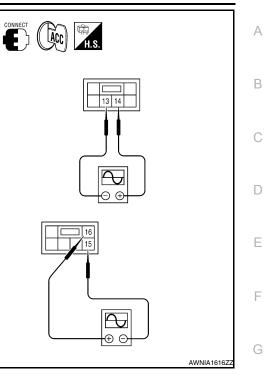
< COMPONENT DIAGNOSIS >

[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-174. "Removal and</u> <u>Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-165, "Removal and</u> <u>Installation"</u>.



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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

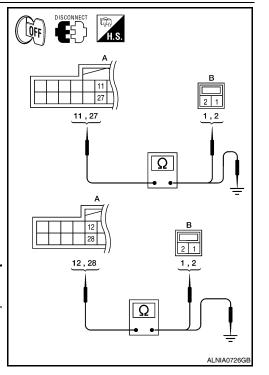
1.TWEETER HARNESS CHECK

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

A		В	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
	11	D208	1	
M113	27	0200	2	Yes
	12	D308	1	163
	28	0306	2	

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

А		_	Continuity	
Connector	Terminal		Continuity	
	11		No	
M113	27	Ground		
	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.TWEETER SIGNAL CHECK

[PREMIUM WITHOUT NAVIGATION]

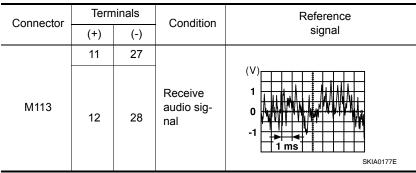
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REAR DOOR TWEETER

< COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connectors and suspect tweeter 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 tweeter. Refer to AV-169, "Removal and Installation". NO >> GO TO 3.



- 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	Yes
	15		7	ies
	16		23	

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

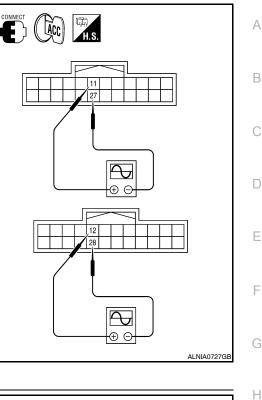
-		А		Continuity	
-	Connector	Connector Terminal		Continuity	
-	M44	13	Ground	No	
		14			
		15	Ground		
		16			

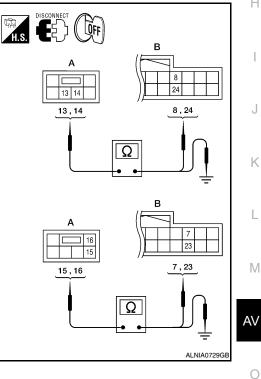
Are the continuity test results as specified?

- 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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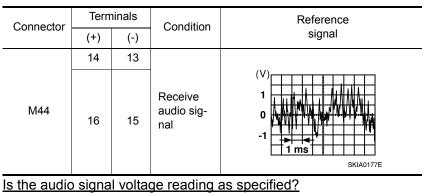
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REAR DOOR TWEETER

< COMPONENT DIAGNOSIS >

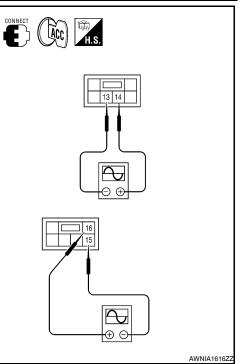
- 1. Connect audio unit connector M44 and audio amp. connector M113.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M44 terminals with CONSULT-III or oscilloscope.



YES >> Replace audio amp. Refer to <u>AV-174</u>, "<u>Removal and</u>

NO >> Replace audio unit. Refer to <u>AV-165</u>, "Removal and

Installation".



< COMPONENT DIAGNOSIS >

SUBWOOFER

Description

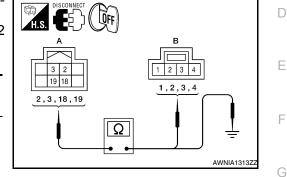
The audio unit sends audio signals to the audio amp. The audio amp. amplifies the audio signals before sending them to the subwoofer using the audio signal circuits.

Diagnosis Procedure

1.SUBWOOFER 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	B72 3 2	3	Yes
	18			2	165
	19	*	4		



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

	А		Continuity	
Connector	Connector Terminal		Continuity	
	2	Ground	No	
M112	3			
WITZ	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.SUBWOOFER SIGNAL CHECK

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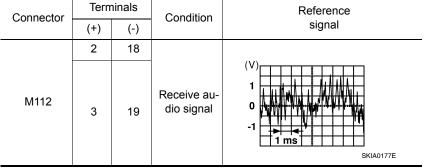
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SUBWOOFER

< 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-170</u>, "<u>Removal and</u> <u>Installation</u>".

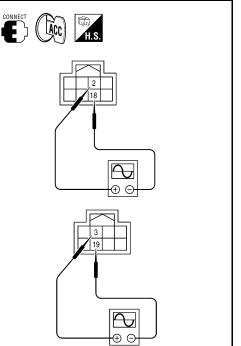
3.PRE-AMP HARNESS CHECK

- 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).

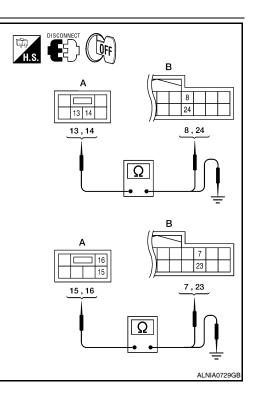
А		В		Continuity	
Connector	Terminal	Connector Terminal		Continuity	
	13		8		
M44	14	M113	24	Yes	
	15		7	res	
	16		23		

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

		А		Continuity	
-	Connector	Terminal			
-	 M44	13	Ground	No	
		14			
10144	15	Ground	INU		
		16			



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Are the continuity test results as specified?

- YES >> GO TO 4.
- NO >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

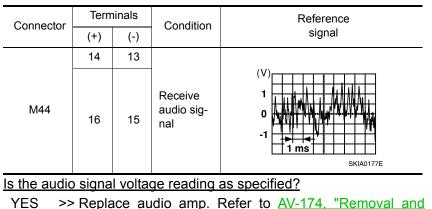
4.PRE-AMP SIGNAL CHECK

[PREMIUM WITHOUT NAVIGATION]

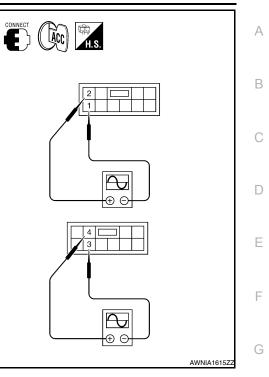
SUBWOOFER

< 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-174, "Removal and</u> <u>Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-165, "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.

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.

(+)		(-)	Voltage (approx.)	
Connector	Terminal	(-)	voltage (approx.)	
M113	9	Ground	More than 6.5V	

Is inspection result normal?

YES >> Inspection End.

NO >> GO TO 2.

2. CHECK AMP ON SIGNAL (AUDIO UNIT)

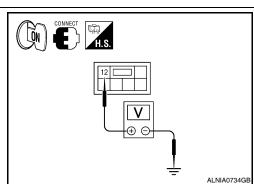
Check voltage between audio unit harness connector M44 terminal 12 and ground.

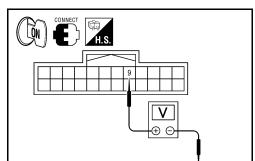
(+)		(-)	Voltage (approx.)	
Connector	Terminal	(-)	voltage (approx.)	
M44	12	Ground	More than 6.5V	

Is inspection result normal?

- YES >> Repair harness or connector.
- NO >> Replace audio unit. Refer to <u>AV-165</u>, "<u>Removal and</u> <u>Installation</u>".

AV-114





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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 В control switch circuit changes depending on which button is pushed.

Diagnosis Procedure

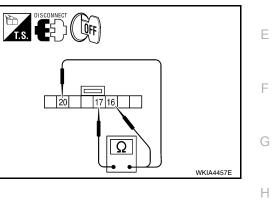
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1. CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

- 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	Signal name Condition	
		Seek (down)	Depress $ abla$ switch.	165
16	17	Volume (down)	Depress VOL down switch.	487
		Phone/Send	Depress MODE switch.	0
		Seek (up)	Depress Δ switch.	165
20	17	Volume (up)	Depress VOL up switch.	487
		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 AV-171, "Removal and Installation".

2. CHECK HARNESS

- Disconnect Bluetooth control unit connector B142 and spiral 1 cable connector M30.
- Check continuity between Bluetooth control unit harness con-2. nector B142 (A) and spiral cable harness connector M30 (B).

A	١		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.

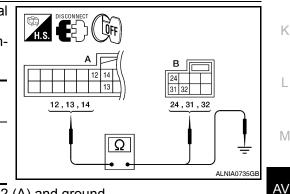
	А		Continuity
Connector	Terminal	—	Continuity
	12		
B142	13	Ground	No
	14		

Are the continuity results as specified?

YES >> GO TO 3.

NO >> Repair harness.

 ${\it 3.}$ SPIRAL CABLE CHECK



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STEERING SWITCH

< COMPONENT DIAGNOSIS >

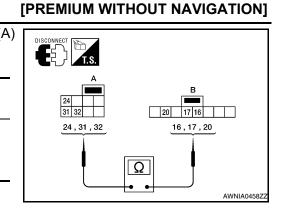
Check continuity between spiral cable harness connector M30 (A) and M102 (B).

	А		В	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>.



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.

	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) 1. harness connector M41 (A) terminal 29 and audio unit harness connector M42 (B) terminal 49.

	A		В		Continuity
Conr	nector	Terminal	Connector	Terminal	Continuity
М	41	29	M42	49	Yes

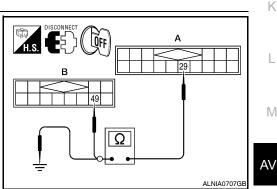
2. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 29 and ground.

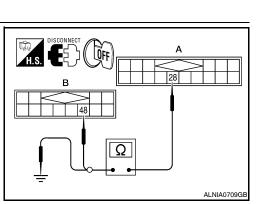
А			Continuity
Connector	Terminal		Continuity
M41	29	Ground	No

Are continuity results as specified?

YES >> GO TO 3.

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







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COMMUNICATION SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

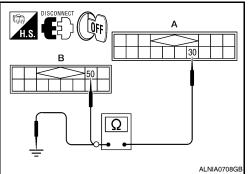
1. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 30 and audio unit harness connector M42 (B) terminal 50.

	A		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

[PREMIUM WITHOUT NAVIGATION]



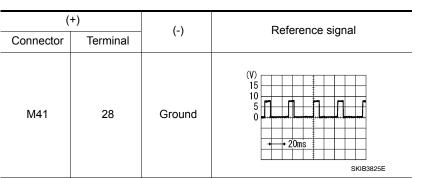
Are continuity results as specified?

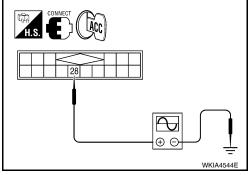
YES >> GO TO 4.

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.





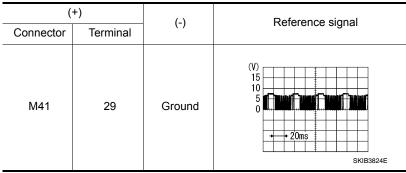
Are voltage readings as specified?

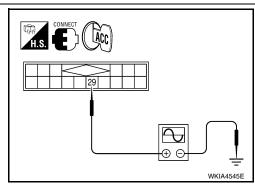
YES >> GO TO 5.

NO >> Replace audio unit. Refer to <u>AV-165, "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?

COMMUNICATION SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

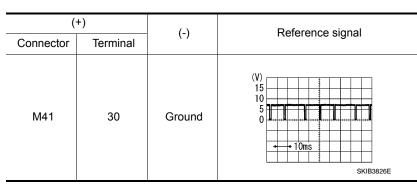
[PREMIUM WITHOUT NAVIGATION]

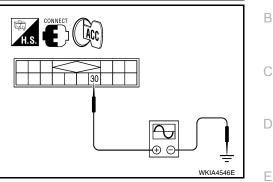
YES >> GO TO 6.

NO >> Replace satellite radio tuner. Refer to <u>AV-177, "Removal and Installation"</u>.

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. Refer to AV-177, "Removal and Installation".

NO >> Replace audio unit. Refer to <u>AV-165, "Removal and Installation"</u>.

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SOUND SIGNAL CIRCUIT

< 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).

A	N .	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M41	21	M42	41	Yes
1014-1	22	10142	42	165

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

A			Continuity
Connector	Terminal		Continuity
M41	21	Ground	No
	22	Crodina	No

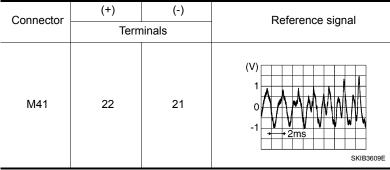
Are continuity results as specified?

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.



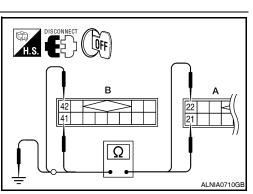
Are voltage readings as specified?

YES >> Replace audio unit. Refer to <u>AV-165, "Removal and Installation"</u>.

NO >> Replace satellite radio tuner. Refer to <u>AV-177, "Removal and Installation"</u>.

RIGHT CHANNEL

AV-120



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SOUND SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

[PREMIUM WITHOUT NAVIGATION]

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H.S.

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).

ŀ	Ą	E	3	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M41	23	M42	43	Yes
1014-1	24	10142	44	Tes

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

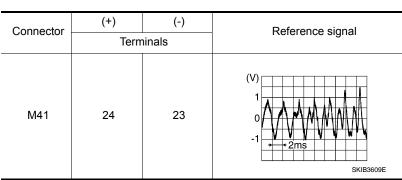
	A		Continuity
Connector	Terminal		Continuity
 M41	23	Ground	No
1714 1	24	Giouna	INO

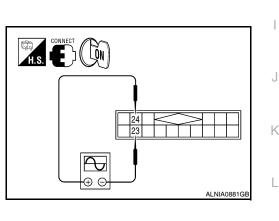
Are continuity results as specified?

- 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.
- 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-165</u>, "Removal and Installation".
- NO >> Replace satellite radio tuner. Refer to AV-177. "Removal and Installation".

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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

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

1. Turn ignition switch OFF.

А

Terminal

7

8

29

Connector

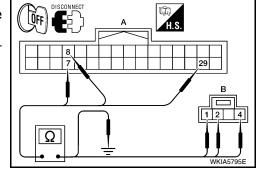
B142

- 2. Disconnect Bluetooth control unit connector and microphone connector.
- Check continuity between Bluetooth control unit harness connector B142 (A) and microphone harness connector R109 (B).

Connector

R109

В



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

Terminal

1

2

4

	А		Continuity
Connector	Terminal		Continuity
	7		
B142	8	Ground	No
_	29		

Are the continuity test results as specified?

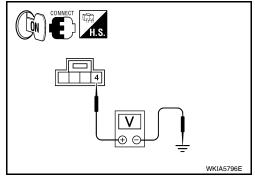
YES >> GO TO 2.

NO >> Repair harness or connector.

2.CHECK MICROPHONE POWER SUPPLY

- 1. Connect Bluetooth control unit connector and microphone connector.
- 2. Turn ignition switch ON.
- 3. Check voltage between microphone harness connector R109 terminal 4 and ground.

	(+)	(-)	Value (Approx.)
Connector	Terminal		value (Applox.)
R109	4	Ground	5V



Is voltage reading approx. 5 volts?

YES >> GO TO 3.

NO >> Replace Bluetooth control unit. Refer to <u>AV-180, "Removal and Installation"</u>.

3.CHECK MICROPHONE SIGNAL

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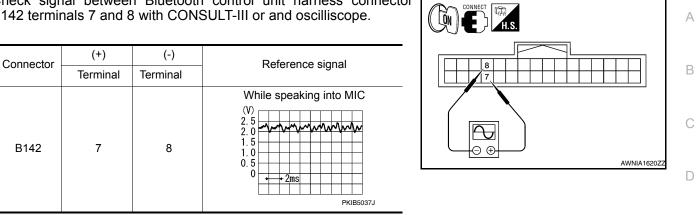
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MICROPHONE SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

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

[PREMIUM WITHOUT NAVIGATION]



Are voltage readings as specified?

YES	>> Replace Bluetooth control unit. Refer to <u>AV-180, "Removal and Installation"</u> .
NO	>> Replace microphone. Refer to <u>AV-178. "Removal and Installation"</u> .

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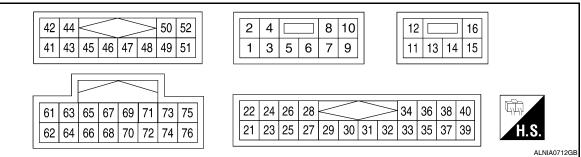
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AUDIO UNIT

Reference Value

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TERMINAL LAYOUT



PHYSICAL VALUES

	minal e color)	Item	Signal input/		Condition	Reference value (Approx.)
+	-		output			(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
2 (W)	1 (B)	Audio sound signal front 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
4 (Y)	3 (BR)	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	illumination signal	Input	UFF	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	-	More than 6.5V

AV-124

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	minal e color)	Item	Signal input/		Condition	Reference value (Approx.)
+	_		output			
14 (BR)	13 (B/R)	Audio sound signal rear LH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 SKIA0177E
16 (L)	15 (B/W)	Audio sound signal rear RH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
21 (V)	Ground	Remote control A	Output	lgnition 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 SKIA0177E
29 (W)	28 (W/L)	Audio sound signal RH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 5KIA0177E
30	_	Shield	_	_	_	0V
31 (O)	Ground	Remote control en- able signal	Output	lgnition switch ON	Audio unit ON	5V
32 (V)	Ground	Remote control switch power sup- ply	Output	lgnition switch ON	Audio unit ON	12V

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	ninal color)	Item	Signal input/ Condition output		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	lgnition switch ON	DVD operating	(V) 1 0 -1 • 2ms SKIB3609E
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	lgnition switch ON	Satellite radio tuner operating	(V) 1 0 −1 → 2ms SKIB3609E
45	-	Ground	-	-	_	0V
46	_	Data ground	-	_	_	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	_	_

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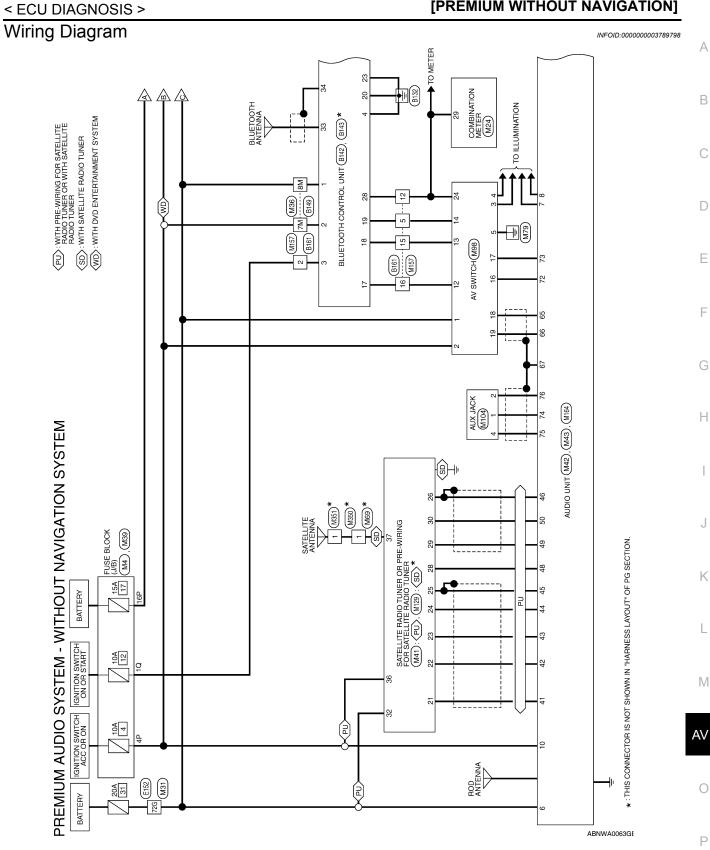
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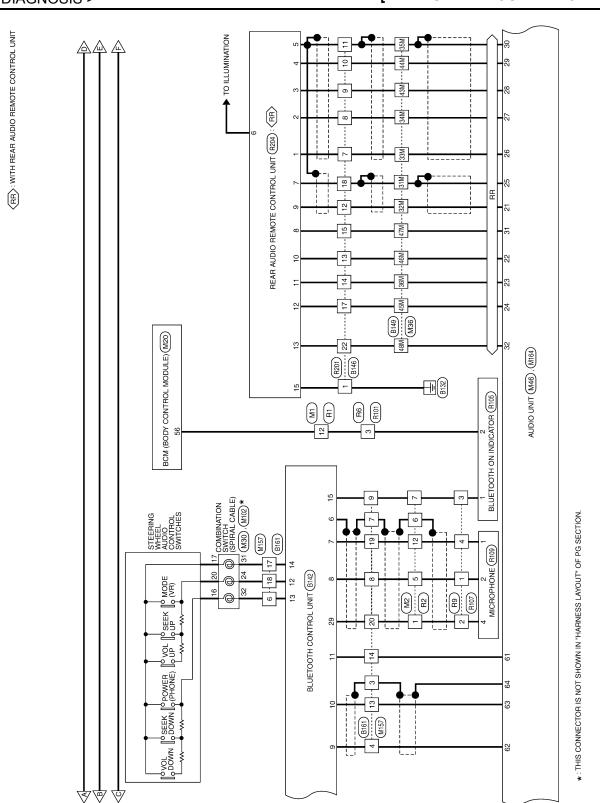
	minal e color)	Item	Signal input/		Condition	Reference value (Approx.)
+	-		output		7	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
62 (G)	61 (Y)	Tel audio sig	Input	lgnition switch ON	Bluetooth control unit sends audio signal	(V) 1 0 −1 → 2ms SKIB3609E
63 (R)	_	Mute control	_	_	_	_
64	-	Shield	-	Ignition switch ON	-	0V
65 (O/L)	Ground	Audio RX	Input	lgnition switch ON	Operate audio vol- ume	(V) 6 4 2 0 • • • 5ms SKIA4403E
66 (W/L)	Ground	Audio TX	Output	Ignition switch ON	Operate audio vol- ume	(V) 6 4 2 0 • • • 2ms 5 KIA4402E
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 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1

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(Wire	ninal color)	Item	Signal input/		Condition	Reference value (Approx.)
+	-		output		1	
75 (R)	Ground	Auxiliary audio in- put LH (+)	Input	lgnition switch ON	Receive audio sig- nal (AUX input)	(V) 1 0 -1 SKIA0177E
76 (B)	_	Shield	_	_	_	٥V



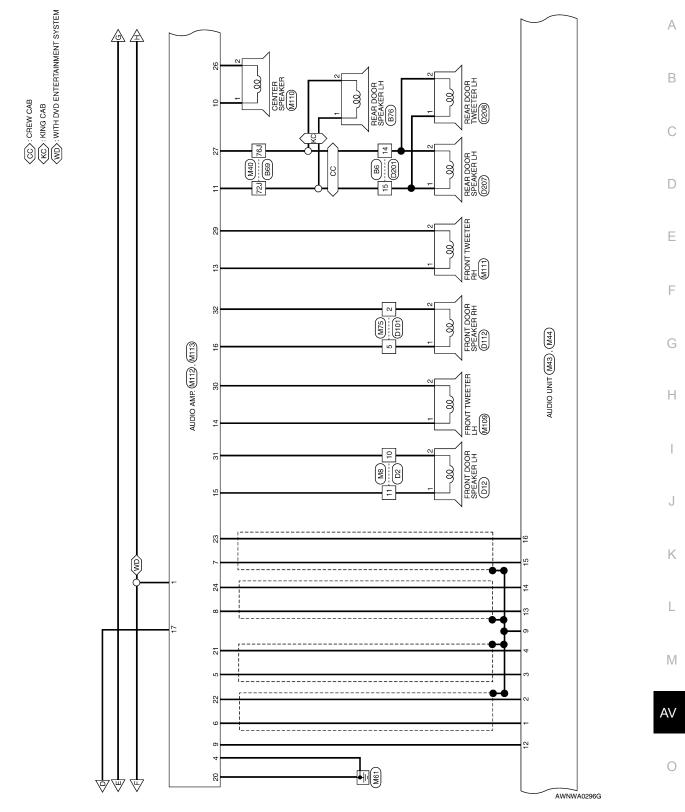


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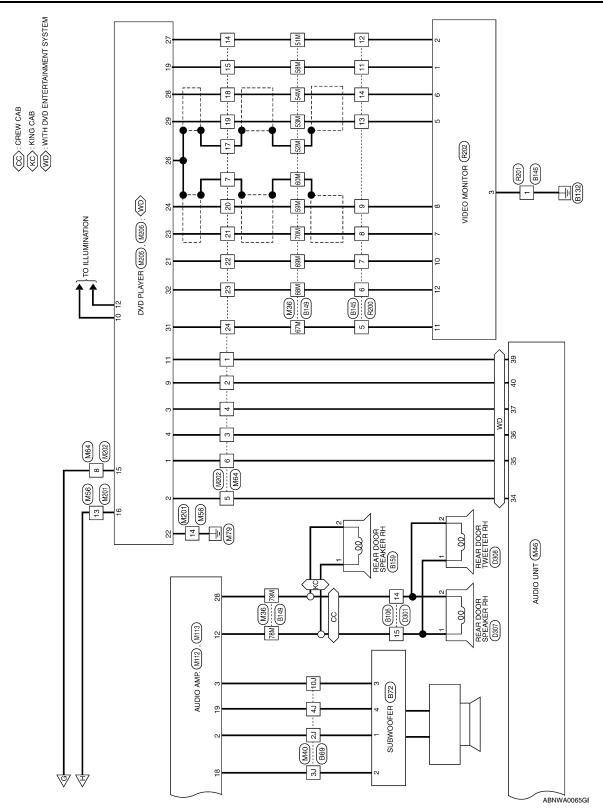
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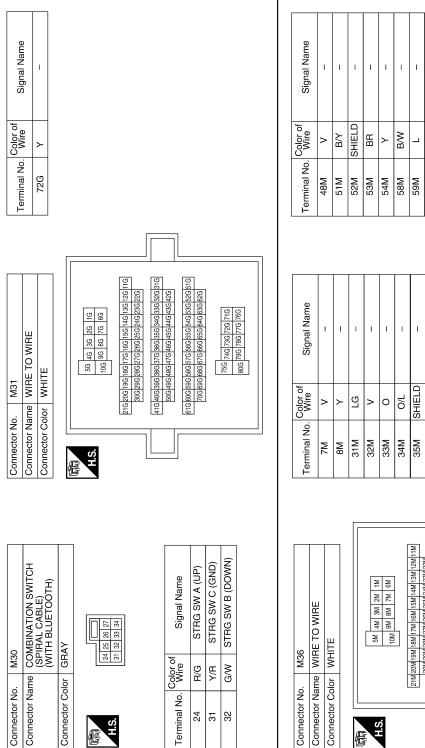
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Connector No. M4 Connector Name FUSE BLOCK (J/B) Miltite Tentinal No. Terminal No. Color of Nice Icp V/G Icp V/G	Connector No. M24 Connector Name COMBINATION METER Connector Name COMBINATION METER Connector Color WHITE Mile Signal 1413 Signal 2111 Signal 21 Mile Signal No. Color of Wife Signal Name Signal Name Z9 W/R SPEED_OUT SPEED_OUT	
Definition of the problem of the prob	Connector No. M20 Connector Name BCM (BODY CONTROL Connector Color BLACK Connector Color BLACK MoDULE) Control Terminal No. Color of Mire Signal Name 56 R/G BatTERY SAVER	F G H J
Premium AUDIO SYSTEM CONNECT Connector No. M1 Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE Connector Name MIRE To WIRE Connector Color WHITE Connector Name Mire To WIRE Connector Solor WHITE Toru Toru Terminal No. Color of Nire Signal Name 12 R/G -	Connector No. M8 Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE Connector Signal Name To 1 LW 1 LW	

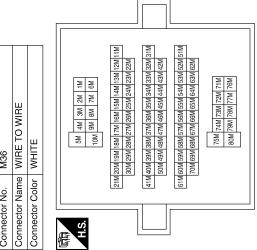
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I. L I. I. Т Т SHIELD B/W Я ß ВВ G∖ R/L 60M 67M 68M 69M 70M 78M 79M

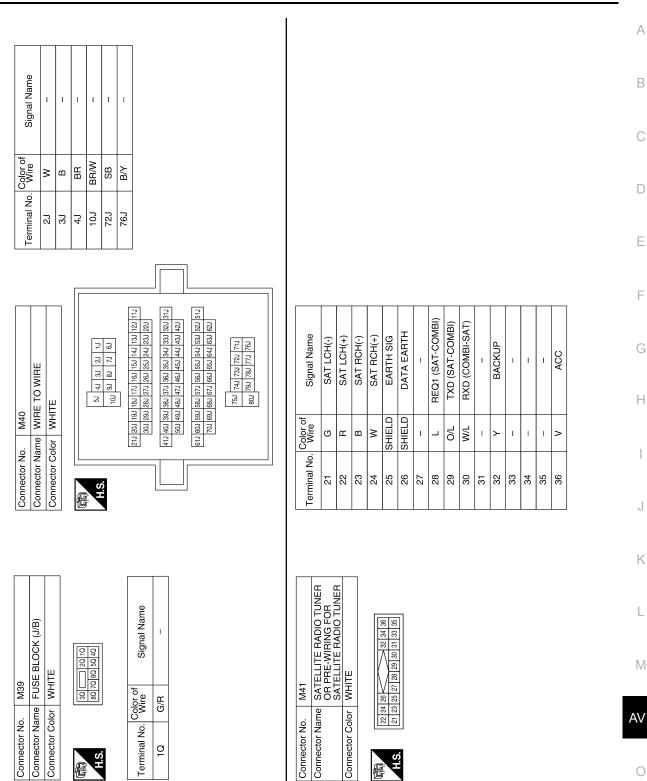
Signal Name	I	I	I	I	I	I	I	I	I	I	I	I	1
Color of Wire	>	≻	ГG	>	0	O/L	SHIELD	BR/Υ	W/L	×	_	٩.	0
Terminal No. Color of	Μ	8M	31M	32M	33M	34M	35M	36M	43M	44M	45M	46M	47M



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AUDIO UNIT

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AUDIO UNIT

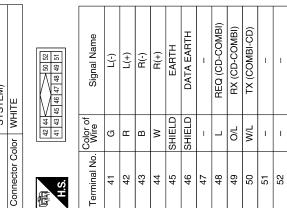
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Connector No. M43 Connector Name AUDIO UNIT SYSTEM) Connector Color HITE Connector Color 13 Connector Color 11 1 Br 1 Br 1 Br 1 13 1 14 1 14 1 14 1 16 1 16 1 16 1 16 1 16	M44	AUDIO UNIT (WITH PREMIUM AUDIO SYSTEM)	WHITE	12 11 13 14 15	of Signal Name	1	V AMP ON	RR SP LH-	R SP LH+	V RR SP RH-	RR SP RH+							
			-	际 H.S.	Terminal No. Color of Wire	1	12 G/W	13 B/R	14 BR	15 B/W								
		OID			me		+		÷			Ц	8	Ą				
Connector No. Connector Name Connector Color Larminal No. Co 6 6 7 1 7 7 1 0 8 9 5 5 7 1 0 7 1 0 1 0 0 1 0 1 0 0 1 1 1 1 0 1 0	M43			4 8 3 5 6 7														
	Connector No.	Connector Name	Connector Color	同 H.S.		-			4	5	9							
	42	JDIO UNIT /ITH PREMIUM AUDIO YSTEM)	HITE	45 46 47 48 49 51	f Signal Name	(-)	(+)	R(-)	R(+)	EARTH	DATA EARTH	I	REQ (CD-COMBI)	RX (CD-COMBI)	TX (COMBI-CD)	1	1	-
42 DIO UNIT VITH PREMIUM AUDIO VSTEM) HITE 46 47 48 49 51 46 47 48 49 51 L(+) L(+) R(+) R(+) R(+) R(+) R(+) R(+) R(+) R(+) R(+) R(+) R(+) R(+) R(-)		1		42 44 41 43		σ	æ	в	8	SHIELD	SHIELD	I	_	0/L	W/L	I	I	
M42 AUDIO UNIT (WITH PREM) SYSTEM) WHITE WHITE V V V V V V V V V V V V V V V V V V R <	Connector No.	Connector Name	Connector Color	际 H.S.	Terminal No.	41	42	43	44	45	46	47	48	49	50	51	52	

AUDIO UNIT

	Signal Name	SHIELD	ENABLE	SWITCH B (+)	I	FES L CH IP (-)	FES L CH IP (+)	FES R CH IP (-)	FES R CH IP (+)	I	FES ENABLE	AUDIO ON
Color of	Wire	SHIELD	0	>	I	N	в	თ	н	I	۲/۲	۲M
	Terminal No.	30	31	32	33	34	35	36	37	38	39	40

Signal Name	REMOTE A	REMOTE B	REMOTE C	REMOTE D	REMOTE GND	Г СН ОПТРUT (-)	L CH OUTPUT (+)	R СН ОИТРИТ (-)	R CH OUTPUT (+)
Color of Wire	>	Ч.	BR/Y	_	ГG	0	0/L	W/L	Ν
Terminal No.	21	22	23	24	25	26	27	28	29



M46	AUDIO UNIT (WITH PREMIUM AUDIO SYSTEM)	WHITE	22 24 25 28 28 40 21 23 25 27 29 30 31 32 33 35 37 39
Connector No.	Connector Name	Connector Color WHITE	(前) 21 23 L

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WHTE Connector Color 2 101112 2 1 2 1 2 1 2 1 3 0 0 0 11 1	WHITE			WIRE TO WIRE	5		Wire	signal Name
	2 3 7 4 5 6 4 5 6 4 14 4 5 6	Connector (-	MN			SHIELD	1
	2 3 4 5 6 0 10 11 12 12 14 15		_		<u> </u>		>	I
	0 10 11 10 10 10 14 1E		1 2 3 4 5		-	4	B/Y	Ι
Mile Signal Name Terminal No. Signal Name 17 SHELD No	S 10 11 21 11 01 8	Ċ,	12 13 14 15 16	3 17 18 19 20 21 22 23 24	-	5	B/W	Ι
Mile Signal Name V - V - N					-		SHIELD	Ι
Method Contraction Contractio	Color of	Torminal	Color of	Cianal Mamo	-	8	Y	Η
V - 1 V/L - 2 LWW - - 22 BW - 3 G W - - 22 BW - 3 G W - - - 22 BW - 1 WHE TO WHE Connector Name WHE TO WHE - - - - - 23 BW - - - - 23 BW - - - - - - - 23 BW - - - - - 23 BW - <t< td=""><td>ANIE</td><td></td><td>v.</td><td></td><td>-</td><td>6</td><td>BR</td><td>I</td></t<>	ANIE		v.		-	6	BR	I
B -	>	-	٨٦	I		0		I
3 3 4 1 4 R - - 4 R - - 4 R - - 1 WRETOWRE Comector Nume WRETOWRE VOLET Omector Nume WRETOWRE 1 1 - 1 1 - 1 1	В	2	۲W	I		5	B/W	1
4 R - 6 B - 6 B - 6 B - 7 7 8 7 9 7 10 10 11 11 12 13 13 14 14 14 15 16 16		e	IJ	I		0	, G∖	1
Image: state of the line		4	œ	I		l g	ä	1
0 M83 0 M83 0 M84 0 M84 0 M1E 0		2	8	1	1 0	2 2	5 5	
M69 Connector No. M75 WIRE TO WIRE VIOLET Onnector Name VIOLET Connector Name WIRE TO P Onnector Color WHITE		9	B	1			8	I
WIRE TO WIRE Connector Name WIRE TO WIRE VIOLET Connector Name WIRE TO WIRE Image: Signal Name Image: Signal Name Image: Signal Name B - 2 U/B 5 W/B Image: Signal Name		Connector N						
VIOLET Connector Color MITE Image: Signal Name B - 2 V/B 5		Connector	Į d	E TO WIRE				
Image: signal Name Image: signal Name Image: signal Name Image: signal Name <td></td> <td>Connector C</td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td>		Connector C	_					
Color of B	-		-					
al No. Color of Signal Name B 2 L/B 5 W/B	Ē	。 明 H.S.	4 3 Γ 10 9 ε	0 12				
B Terminal No. Wire of Signal Name 2 U/B 5 W/B 5 W/B 5	الم المرادين		10 Join					
	Wire	Terminal Nc		Signal Name				
W/B		2	L/B	I				
		5	W/B	I				

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	Connector Name COMBINA HON SWITCH (SPIRAL CABLE)	Connector Color GRAY			Ś		9 - : - : - : - : - : - : - : - : - : -	Terminal No. Wire	16 R	17 BR	20 W						Connector No. M110	Connector Name CENTER SPEAKER	_	H.S.	Terminal No. Color of Wire	- LW	2 L/B		
Signal Name	1	1	1	REMOTE CONT A	REMOTE CONT B	REMOTE CONT C	1	EJECT	LOAD	TX	RX	1	1	1	1	8 PULSE		FRONT TWEETER LH BROWN			Signal Name	1	1		
Color of Wire	1	1	1	щ	σ		1	W/B	Y/B	O/L	M/L	I	1	1	1	N/R			-		Color of Wire	۲W	L/R		
Terminal No.	6	10	1	12	13	14	15	16	17	18	19	20	21	22	23	24	Connector No.	Connector Name Connector Color		日 H.S.	Terminal No.	-	2		
	Connector Name AV SWILCH	_			3 5 7 9 11 13 15 17 19 21			Terminal No. Wire Signal Name	- × +B	2 V ACC	3 R/L ILL+	4 BR ILL CONTROL	5 B GND		2	- I - I - 80	M104	Connector Name AUX JACK Connector Color WHITF		H.S.	Terminal No. Color of Signal Name	1 W AUX AUDIO RH +	2 B AUX GND	۱ ۲	4 R AUX AUDIO LH +

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																		-	
									Signal Name	OIGHAI MAILLO	RR RH IN+	RR LH IN+	I	CTR OUT-	RR LH OUT-	RR RH OUT-	FR RH TW-	FR LH TW-	
									Color of	A II A	_	BR	1	L/B	B/Υ	R/L	L/B	ЦЧ	
									Terminal No Wire		23	24	25	26	27	28	29	30	
Signal Name	BAT	WOOFER+1	WOOFER+2	GND	BAT	WOOFER-1	WOOFER-2	GND	Signal Name		AMP ON	CTR OUT+	RR LH OUT+	RR RH OUT+	FR RH TW+	FR LH TW+	FR LH OUT+	FR RH OUT+	
Wire	Y	M	BR/W	ш	Y/G	ш	BR	в	Color of		G/W	۲W	SB	O/L	W/B	N	LN	W/B	
Terminal No. Wire	F	2	ю	4	17	18	19	20	Terminal No Miro		თ	10	=	12	13	14	15	16	-
Signal Name	I	1							3	AUDIO AMP.	I IIII			თ	28 27 26 25 24 23 22 21		Signal Name	FR RH IN-	-
Wire	W/B	L/B							No. M113	Name AUD				15 14 13	32 31 30 29 2		Color of Wire	B	- -
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M112	UDIO AMP.	VHITE	
Connector No.	Connector Name AUDIO AMP.	Connector Color WHITE	

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IN	3	19
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Signal Name	BAT	WOOFER+1	WOOFER+2	GND	BAT	WOOFER-1	WOOFER-2	UND
Color of Wire	≻	×	BR/W	в	Y/G	в	BR	α
Terminal No.	-	2	e	4	17	18	19	00

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	۲W	SB	0/L	W/B	۲W	L/W	W/B	٢	×
Terminal No.	6	10	1	12	13	14	15	16	21	22



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Signal Name	l	I	
Color of Wire	W/B	L/B	
Terminal No.	ł	2	

8 51 8 21 11 11 11 11 10 10	3 DIO AMP TTE 2 11 10 9 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		Connector No. M113	Connector Name AUDIO AMP	Connector Color WHITE	16 15 14 13 12 11 10 9	32 31 30 29 2	
	AMP	AMP.	13	0 0	ШЩ	12 11	28 27	
24 23	23 ~1					9	23	l
	23 22	5 0				ŝ	5	I
24 23 22 21	7 6 5 23 22 21	25 21 5 25 21 5						_

-	Signal Name	FR RH IN-	FR LH IN-	RR RH IN-	RR LH IN-
-	Color of Wire	BR	в	BW	B/R
	Terminal No. Color of	2	9	7	8

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FR LH OUT-FR RH OUT-

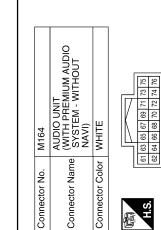
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16 15 14 13 12 11 10	Signal Name	I	I	I	I	I	I	I	I
9 8 7 6 201918171	Color of Wire	G/R	SHIELD	თ	B/B	G/W	SHIELD	R/L	GB
国 H.S.	Terminal No. Color of	2	e	4	വ	9	7	8	ი
I									
	Signal Name	Ι							
	Color of Wire	В							
国 H.S.	Terminal No. Wire	37							

0	17	18	19	20							
19 18 17 16 15 14 13 12 11 10			Signal Name	I	1	I	I	I	1	I	I
19 18 17		Color of	Wire	G/R	HIELD	G	R/B	G/W	негр	R/L	GR

I	I	I	I	I		Signal Name	TEL SIG INPUT (-)	TEL SIG INPUT (+)	
G/W	SHIELD	R/L	GR	W/R		Color of Wire	۲	ŋ	c
9	7	8	6	12		Terminal No. Color of	61	62	50



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Connector No. M157 Connector Name WIRE TO WIRE Connector Color WHITE

Connector No. M129 Connector Name SATELLITE RADIO TUNER

Connector Color VIOLET

Signal Name	I	I	I	I	I	I	I	I
Color of Wire	œ	≻	G/O	>	Y/R	R/G	В	R/W
Terminal No.	13	14	15	16	17	18	19	20

Signal Name	1	I	I	EJECT	LOAD	AUX R+	4UX L+	AUX EARTH
Colc Kic	'	-		W/B	Y/B	≥	æ	B
Terminal No. Color of	69	20	71	72	73	74	75	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	I	
Color of Wire	· ≻	ت ت	œ	SHIELD	O/L	W/L	SHIELD	1	
Terminal No.	61	62	63	64	65	66	67	68	

Connector No. M201 Connector No. M202 Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE Main Table Table Connector Name WIRE TO WIRE Main Table Table Connector Color BROWN Main Table Table Table Main Main Signal Name Terminal No. Color of Nire Signal Name 13 Y L Y/L Z V/L Z 13 Y Z V/L Z V/L Z 14 B Z V/L Z V/L Z Z 7 SHIELD Z V/L Z Z V/L Z Z 13 Y Z V/L Z Z Z Z Z Z <													
O WIRE O WIRE Connector Ni Connector Ni Connector C Connector C C Connector C C Connector C C C C C C C C C C C C C C C C C C C	N	e to wire	NW	6 - 5 4 3 2 1 19 18 17 16 15 14 13 12			I	I	I	I	I	I	I
O WIRE O WIRE Connector Ni Connector Ni Connector C Connector C C Connector C C Connector C C C C C C C C C C C C C C C C C C C		me WIRI	or BRO	1 10 9 8 7 4 23 22 21 20	Color of	wire	۲/۲	L/W	IJ	œ	3	в	SHIELD
O WIRE Signal Name	Connector No.	Connector Nai	Connector Col	ு	Tourised No		-	2	3	4	ى ك	9	

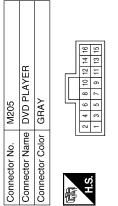
M202	WIRE TO	BROWN	1414010101515
Connector No.	Connector Name WIRE TO	Connector Color BROWN	
			1

	3 2 1	16 15 14 13 12 11 10 9 8	Signal Name	
╟	6 5 4	14 13	r of e	
	76	16 15	Color of Wire	
9		ЯН	Terminal No.	(1

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

Signal Name	ILL-	FES_ENABLE	LIGHTING_SW	-	I	ACC	B+
Color of Wire	BR	7/L	R/L	I	I	^	۲
Terminal No.	10	11	12	13	14	15	16

Signal Name	FES_L+_OUTPUT	FES_LOUTPUT	FES_R+_OUTPUT	FES_R_OUTPUT	I	I	I	I	AUDIO_ON
Color of Wire	B	W	R	GFE	I	-	-	-	L/W
Terminal No.	-	2	e	4	£	9	7	8	6



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Signal Name

Color of Wire

Terminal No.

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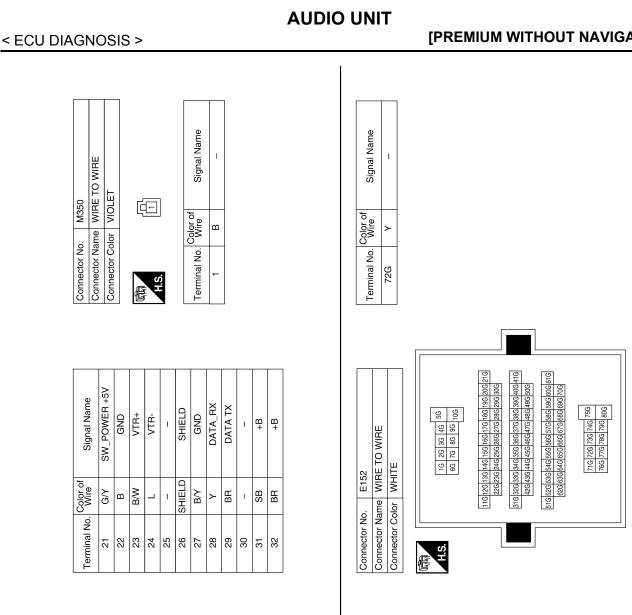
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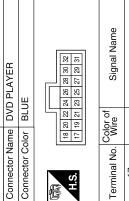
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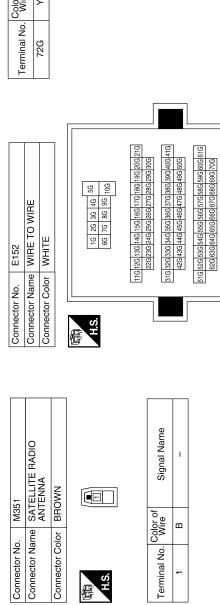
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Connector No. M206

Signal Name	I	-	GND	-	
Color of Wire	I	I	B/W	I	
Terminal No.	17	18	19	20	

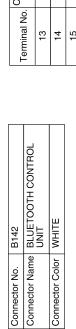


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Signal Name		o. B106 ame WIRE TO WIRE olor WHIE 10918 716 117 16 118 17 118 17 116 15 Wire Signal Name R/L - O/L -	
. Color of Wire of A Mire		Connector No. B10 Connector Name WIR Connector Color WHI Entitie 14 R/L 15 O/L	
Terminal No. 2J 3J 4J 10J 72J		Connector N Connector N Connector N LLS 14	
[
B69 WIRE TO WIRE WHITE & 11 21 31 41 51 & 12 81 91 101	11.1 [12] [12] [14.1 [15.1 [16.1 [17.1 [18.1 [19.1 200] 21.1] [22.2 [23.1 [24.1] [25.1 [25	B76 REAR DOOR SPEAKER LH (WITH KING CAB) WHITE 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	
Connector No. B69 Connector Name WIRE T Connector Color WHITE	11.1 [221 [221] 222 [221] 31.1 [222] 422 [423] 51.1 [522] 51.1 [522] 53.1 [52] 53.1 [52] 53	Connector No. B76 Connector Name REA Connector Color WHI Connector Color WHI	
B6 WIRE TO WIRE WHITE 16 15 4 3 2 1 16 15 4 3 2 1 16 15 4 3 2 1	Signal Name	B72 SUBWOOFER WHITE eef Signal Name wooFER-1 w wooFER-1 a wooFER-2	
	SB SB		
Connector No. Connector Color M.S. H.S.	Terminal No. 14 15	Connector No. Connector Name Connector Color Terminal No. Color 3 BB	

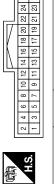
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B143 BLUETO	BLACK			8	35							BT/											
	_	_	/						Color of	MILE	m	SHIELD											
Connector No. Connector Name	Connector Color		E	S H	ò				Torminol No		33	34											
]		
Signal Name	LADDER IN 2	LADDER IN GND	LED IND 1	I	LADDER OUT 1	LADDER OUT 2	LADDER OUT GND	CONT1	1		CONT4	1	1	1	1	SPEED SIGNAL	MIC POWER	1	1	I			Signal Name
Color of Wire	G/W	Y/R	GR	1	>	G/O	R/B	в	1	1	В	1	1	1	ı	W/R	M/H	1	1	ı	-	Color of	Wire
Terminal No.	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32			Terminal No. Wire
CONTROL					18 20 22 24 26 28 30 32 17 19 21 23 25 27 29 31				BATT	ACC	IGN	GND	I	SHIELD	IC IN+	AIC IN-	010 OUT+	DIO OUT-	CONTROL	DER IN 1			3E



Connector Color WHITE

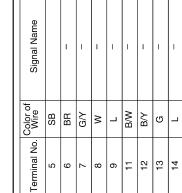
Connector No. B142

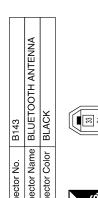


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	Signal Name	BATT	ACC	IGN	GND	I	MIC SHIELD	MIC IN+	MIC IN-	AUDIO OUT+	AUDIO OUT-	MUTE CONTROL	LADDER IN 1	
	Color of Wire	۲	>	G/R	B/W	I	SHIELD	в	R/L	თ	щ	۲	R/G	
IJ	Terminal No.	-	5	e	4	5	9	7	80	6	10	11	12	

Connector No. B145	Connector Name WIRE TO WIRE	Connector Color WHITE	開入 日本 H.S. 10 11 12 13 14 15 16 11 12 13 14 15 16 H.S.
Con	Con	Con	日 H.

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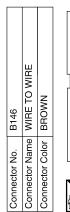
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	Terminal No. Color of	Color of Wire	Signal Name	Terminal No. Color of Wire	. Color of Wire	Signal Name
	Μ۲	>	1	51M	B/Υ	I
_	8M	~	1	52M	SHIELD	I
	31M	ΓC	1	53M	σ	I
41 Aut and Aut 5M	32M	>	1	54M	_	I
ZIM 3M 4M	33M	B	1	58M	B/W	I
	34M	IJ	1	59M		I
11M 12M13M14M15M16M17M18M19M20M21M	35M	SHIELD	1	60M	SHIELD	I
22M/23M/24M/25M/26M/27M/28M/30M	36M	BR/Y	1	67M	SB	I
20M230M35M35M35M35M32M30M30M341	43M	æ	1	68M	BR	I
321113-30111-301113-30111-30111-30111-30111-30111-30111-40111-41111	44M	8	1	69M	G/Y	1
	45M	_	1	70M	×	I
51M52M54M55M56M56M56M57M58M59M60M61M	46M	٩.	1	78M	_	1
MU/IMEdIMBdM/alimadimcalmEdimEdimZa	47M	0	1	79M	R/L	I
	48M	>	1			

Signal Name ī I Т I. T Т T T. I I. Т Color of Wire SHIELD BR/Y ≝ ≥ ٩ 0 0 <u>m</u> G _ > Terminal No. 9 11 10 4 13 15 17 18 ω - \sim



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Connector Name WIRE TO WIRE
Connector Color
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Connector Name WIRE TO WIRE
Connector Color
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R105 BLUETOOTH ON WHITE	Signal Name LED 1 (AMBER) LED POWER DAYNIGHT ILL SIG	. R200 me WIRE TO WIRE lor WHITE 7 6 5 4 1 16 15 14 13 12 1	Signal Name
	Color of Wire GR R/G R/L		Color of Wire of BR BR BR Color of Color of BR BR Color of Color o
Connector No. Connector Name Connector Color	Terminal No. 0	Connector No. Connector Name Connector Color H.S.	Terminal No. 5 6 7 7 9 11 12 13 14
R101 MIRE TO WIRE r WHITE 1 2 8 10 11 12	Signal Name	MICROPHONE WHITE	Signal Name MIC OUT (+) MIC OUT (-) - MIC POWER
R101 ne WIRE T WHITE 1 2 3 10 11 11	Color of Wire R/G		Color of Wire B B R/L R/W
Connector No. Connector Name Connector Color	Terminal No. C 3	Connector No. Connector Name Connector Color H.S.	Terminal No. 0
R9 WIRE TO WIRE WHITE	Signal Name	R107 WIRE TO WIRE WHITE	Signal Name
	Color of Wire R/W GR B B		Color of Wire of R/L B/L B/L B/L B/L B/L B/L B/L B/L B/L B
Connector No. Connector Name Connector Color	Terminal No. 0.	Connector No. Connector Name Connector Color H.S.	Terminal No. 22
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R202	VIDEO MONITOR	NHITE	4 1012 3 5 7 8 11
Connector No.	Connector Name VIDEO MONITOR	Connector Color WHITE	R.H
Connector No. R201	Connector Name WIRE TO WIRE	Connector Color BROWN	10 9 8 7 6 5 4 3 2 1 23 22 21 20 19 18 17 16 15 14 13 12

	Signal Name	I	1	I	I	I	I	I	I
	Color of Wire	в	в	9	щ	Μ	SHIELD	٨	Ч
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Terminal No.

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	2 4 6 7 10 12	4 6

Signal Name	GND	GND	Q	I	DATA RX	DATA TX	VIDEO IN+	VIDEO IN-	I	SW POWER +5V	FILTERED BAT	FILTERED BAT
Color of Wire	B/W	B/Y	в	I	σ	_	×		1	G/Y	SB	BR
Terminal No.	-	2	e	4	£	9	7	8	6	10	÷	12

R204	e REAR AUDIO REMOTE CONTROL UNIT	r WHITE	1 2 3 4 5 6 7 8	0 10 11 10 12 14 1E 1E
Connector No.	Connector Name	Connector Color WHITE		S H

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H.S.	9 10	9 10 11 12 13 14 15 16
Terminal No.	Color of Wire	Signal Name
-	в	L CH INPUT-
2	σ	L CH INPUT+
e	щ	R CH INPUT-
4	۸	R CH INPUT+
5	SHIELD	SHIELD
9	R/L	ILL
7	ГG	REMOTE GND
8	0	ENABLE
6	>	REMOTE A
10	Р	REMOTE B
11	BR/Y	REMOTE C
12	L	REMOTE D
13	~	SWITCH +B
14	I	I
15	В	GND
16	I	I

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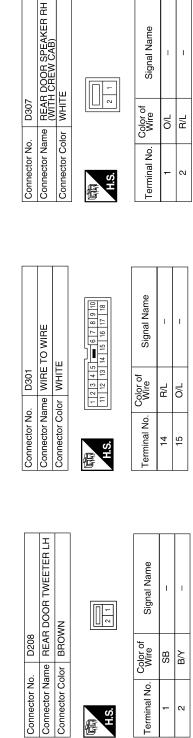
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Connector No. D101 Connector Name WIRE TO WIRE Connector Color WIRE TO WIRE Onnector Color WIRE TO WIRE Image: State of the stateof the state of the state of the state of the state of the	Connector No. D207 Connector Name REAR DOOR SPEAKER LH Connector Color WITH CREW SAB) Connector Name Rear Door SPEAKER LH Connector Color WITH CREW SAB) Connector Name Rear Door SPEAKER LH Connector Color WITH CREW SAB) Connector Name Rear Door SPEAKER LH Connector Color WITH CREW SAB) Connector Color WITH CREW SAB Connector Color<
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Connector No. D12 Connector Name FRONT DOOR SPEAKER LH Connector Name FRONT DOOR SPEAKER LH Connector Color WHITE Time 2	Connector No. D201 Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE Connector Color WHITE Terminal No. Wire 15 SB
	K
D2 WIRE TO WIRE WHITE WHITE 9 10 11 12 13 14 15 15 9 10 11 12 13 14 15 16 0 11 12 15 15 15 15 15 15 15 15 15 15 15 15 15	Connector No. D112 Connector No. D112 Connector Name FRONT DOOR SPEAKER RH Connector Color WHITE Terminal No. Color of Wite 2 UB 2 UB
Color of L/W L/W	A WILLE
	AX
Connector No. Connector Name Connector Color A.S. Terminal No. Qo V	
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Connector No.	D308
Connector Name	Connector Name REAR DOOR TWEETER RH
Connector Color BROWN	BROWN

AV-150



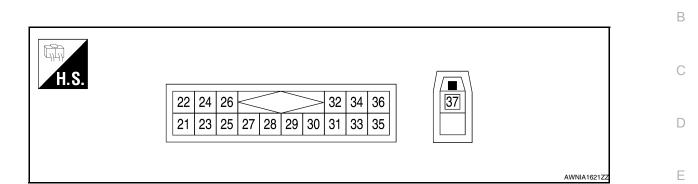
]	Signal Name	-	-
]	Color of Wire	0/L	R/L
	Terminal No.	ł	2

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SATELLITE RADIO TUNER

Reference Value

INFOID:000000003789799



PHYSICAL VALUES

Teri	minal	Description				
+	_	Signal name	Input/ Output		Condition	Reference value (Approx.)
22 (R)	21 (G)	Satellite radio sound signal LH	Output	lgnition switch ON	When satellite radio mode is selected	(V) 1 0 -1 • • 2ms SKIB3609E
24 (W)	23 (B)	Satellite radio sound signal RH	Output	lgnition switch ON	When satellite radio mode is selected	(V) 1 0 -1 -2ms SKIB3609E
25	_	Shield	_		_	_
26	—	Shield	—	—	—	_
28 (L)	Ground	Request signal (SAT→CONT)	Output	lgnition switch ON	When satellite radio mode is selected	(V) 10 0 -10 -10 -10 -10 -10 -10 -
29 (O/L)	Ground	Communication signal (SAT→CONT)	Output	lgnition switch ON	When satellite radio mode is selected	(V) 10 0 -10 • • 1ms SKIA9300J

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SATELLITE RADIO TUNER

< ECU DIAGNOSIS >

[PREMIUM WITHOUT 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 WITHOUT NAVIGATION]

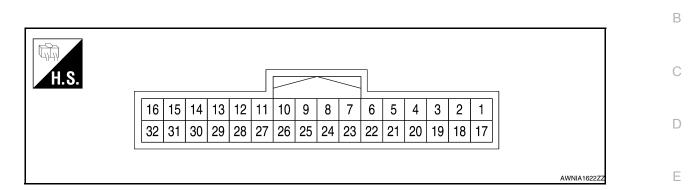
< ECU DIAGNOSIS >

DVD PLAYER

Reference Value

INFOID:000000003789800

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PHYSICAL VALUES

	minal e color)	Description			Condition	Reference value
+	_	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	lgnition switch ON	With DVD player operation	Battery voltage
10 (BR)	Ground	Illumination control	Input	lgnition 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	lgnition switch ON	With DVD player operation	Battery voltage
12 (R/L)	Ground	Illumination power	Input	lgnition 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 WITHOUT NAVIGATION]

	ninal 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

[PREMIUM WITHOUT NAVIGATION]

< ECU DIAGNOSIS > AUDIO AMP

Reference Value

INFOID:000000003789801

TERMINAL LAYOUT

H.S.]]							_]]						(
	16	15	14	13	12	11	10	9	8	7	6	5		4	3	2	1						[
	32	31	30	29	28	27	26	25	24	23	22	21		20	19	18	17						
																			AV	VNIA16	623ZZ		E

PHYSICAL VALUES

(wire	minal color)	ltem	Signal input/ output		Condition	Reference value (Approx.)
+	-	Detten				Detter veltere
(Y)	Ground	Battery	Input	_	-	Battery voltage
2 (W)	18 (B)	Subwoofer	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
3 (BR/W)	19 (BR)	Subwoofer	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 (B)	Ground	Ground	_	Ignition switch ON	_	_
9 (G/W)	Ground	Amp. ON signal	Input	Ignition switch ON	-	More than 6.5V
10 (L/W)	26 (L/B)	Center speaker	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

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AUDIO AMP

< ECU DIAGNOSIS >

[PREMIUM WITHOUT 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	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 -1 -1 -1 -1 -1 -1 -1 -1 -1
13 (W/B)	29 (L/B)	Front door tweet- er RH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 5KIA0177E
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	_	lgnition switch ON	_	_

AUDIO AMP

< ECU DIAGNOSIS >

[PREMIUM WITHOUT NAVIGATION]

(wire	minal color)	Item	Signal input/ output		Condition	Reference value (Approx.)
+ 21 (Y)	5 (BR)	Audio sound sig- nal front RH	Input	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 5KIA0177E
22 (W)	6 (B)	Audio sound sig- nal front LH	Input	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
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
24 (BR)	8 (B/R)	Audio sound sig- nal rear LH	Input	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1

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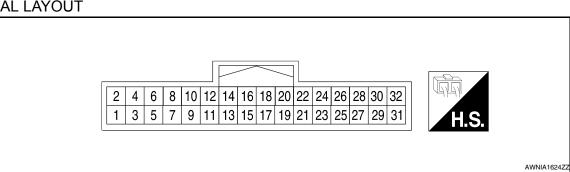
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BLUETOOTH CONTROL UNIT

Reference Value

TERMINAL LAYOUT

INFOID:000000003789802



PHYSICAL VALUES

	ninal color)	Descriptic	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	_	lgnition switch ON	_	0V
6	-	Shield	-	-	-	_
7 (B)	8 (R/L)	MIC in signal	Input	_	_	-
9 (G)	10 (R)	Audio out	Output	lgnition switch ACC/ON	Bluetooth control unit sends audio signal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
11 (Y)	_	Mute control	-	_	_	_
					Pressing 🌈 📈 switch	0V
12	14	Steering switch	Input	Ignition switch	Pressing Δ switch	0.75
(R/G)	(Y/R)	signal A	mput	ON	Pressing VOL up switch	2V
					Except for above	5V

BLUETOOTH CONTROL UNIT

< ECU DIAGNOSIS >

[PREMIUM WITHOUT NAVIGATION]

	ninal color)	Descriptio	n		Condition	Reference value
+	_	Signal name	Input/ output		Condition	(Approx.)
					Pressing Switch	0V
13	14	Steering switch	Input	Ignition switch	Pressing $ abla$ switch	0.75V
(G/W)	(Y/R)	signal B	mpat	ON	Pressing VOL down switch	2V
					Except for above	5 V
15 (GR)	Ground	LED power	Output	lgnition switch ON	-	Battery voltage
					Pressing 🌈 🏑 switch	0V
17	19	Steering switch	Output	Ignition switch	Pressing Δ switch	0.75
(V)	(R/B)	signal A	output	ON	Pressing VOL up switch	2V
					Except for above	5V
					Pressing MODE switch	0V
18	19	Steering switch	Output	Ignition switch	Pressing $ abla$ switch	0.75V
(G/O)	(R/B)	signal B	Capat	ON	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:000000003789803

AUDIO SYSTEM

Symptom	Possible cause	Reference page
Inoperative	Audio unit power circuitAudio unit	• <u>AV-90</u> • <u>AV-165</u>
Steering switch does not operate	Steering switchAudio unit	• <u>AV-115</u> • <u>AV-90</u>
All speakers do not sound	 Audio unit Audio unit power circuit Audio amp. ON signal Audio amp. power/ground circuit Audio amp. 	 AV-90 AV-90 AV-114 AV-93 AV-174
One or several speakers do not sound	 Front door speaker Front tweeter Center speaker Rear door speaker Rear door tweeter (crew cab) Subwoofer 	 AV-97 AV-100 AV-103 AV-105 AV-108 AV-111

CD

Symptom	Possible cause	Reference page
CD cannot be inserted.		
CD cannot be ejected.	Audio unit	٨٧/ ٥٥
The CD cannot be played.		<u>AV-90</u>
The sound skips, stops suddenly, or is distorted.		

SATELLITE RADIO

Symptom	Possible cause	Reference page
Inoperative	 Satellite radio tuner power or ground circuit Satellite radio tuner communication circuit Satellite radio tuner 	• <u>AV-91</u> • <u>AV-117</u> • <u>AV-165</u>
Right or left channel does not sound	 Satellite radio tuner right channel audio signal circuit Satellite radio tuner left channel audio signal circuit Satellite radio tuner 	• <u>AV-165</u>

HANDS-FREE PHONE

Symptom	Possible cause	Reference page
Inoperative	Bluetooth control unit power and ground circuitBluetooth control unit	 <u>AV-94</u> <u>AV-89</u>
Steering switch does not operate	Steering switchBluetooth control unit	 <u>AV-115</u> <u>AV-89</u>
Voice activated control does not operate	MicrophoneSteering switchBluetooth control unit	• <u>AV-122</u> • <u>AV-115</u> • <u>AV-89</u>

DVD PLAYER

AUDIO SYSTEM

< SYMPTOM DIAGNOSIS >

[PREMIUM WITHOUT NAVIGATION]

Symptom	Possible cause	Reference page
DVD player inoperative	Power supply and ground circuitsDVD player	• <u>AV-92</u>
No sound when playing a DVD	Audio signal circuitsAudio unitDVD player	<u>AV-153</u> <u>AV-90</u> <u>AV-92</u>
Video monitor is inoperative/does not display properly	 Power supply and ground circuits Video out circuit DVD player Video monitor 	• <u>AV-92</u> • <u>AV-153</u> • <u>AV-92</u> • <u>AV-92</u>
DVD remote control is inoperative/does not operate properly	DVD playerRear audio remote control unit	• <u>AV-92</u> • <u>AV-172</u>
Headphones inoperative	 Headphone batteries Headphone audio signal circuits from audio unit Audio unit Rear audio remote control unit 	• <u>AV-124</u> • <u>AV-124</u> • <u>AV-172</u>

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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

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 electrical components are oper-	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.	Motor case groundMotor
The noise occurs constantly, not just under certain conditions.		 Rear defogger coil malfunction (crew cab) Open circuit in printed heater Poor ground of antenna feeder line
A cracking or snapping sound occurs while the vehicle is being driven, especially when it is vibrating excessively.		 Ground wire of body parts Ground due to improper part installation Wiring connections or a short circuit

< 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

Tool name		Description
		Loosening bolts and nuts
Power tool		
	PBIC0191E	

< ON-VEHICLE REPAIR >

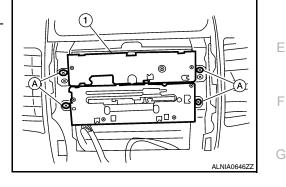
ON-VEHICLE REPAIR AUDIO UNIT

Removal and Installation

AUDIO UNIT

Removal

- 1. Disconnect the battery negative terminal.
- 2. Remove the cluster lid C. Refer to IP-14, "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.

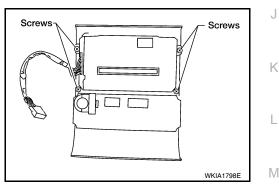


Installation Installation is in the reverse order of removal.

AV SWITCH

Removal

- 1. Disconnect battery negative terminal.
- 2. Remove the cluster lid C. Refer to IP-14, "Removal and Installation".
- 3. Remove the AV switch screws.
- 4. Carefully remove the AV switch.



Installation Installation is in the reverse order of removal.

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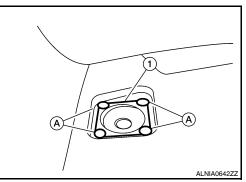
FRONT TWEETER

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.

< ON-VEHICLE REPAIR > CENTER SPEAKER

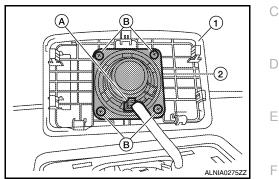
Removal and Installation

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.

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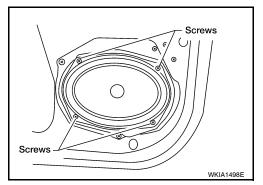
FRONT DOOR SPEAKER

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.

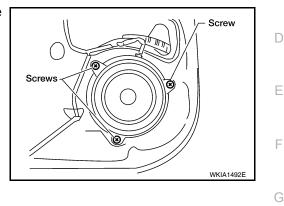
REAR DOOR SPEAKER

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.

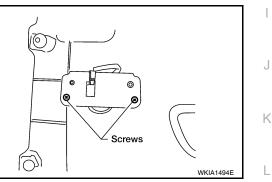


Installation Installation is in the reverse order of removal.

REAR DOOR TWEETER

Removal

- 1. Remove the rear door finisher. Refer to <u>INT-10, "Removal and Installation"</u> Crew Cab.
- 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.

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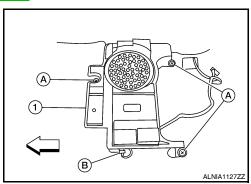
WOOFER

Removal and Installation

SUBWOOFER

Removal

- 1. Remove the front seat LH. Refer to <u>SE-31, "Removal and Installation"</u>.
- 2. Disconnect the subwoofer connector (B).
 - <>: Vehicle front
- 3. Remove the subwoofer bolts (A).
- 4. Remove the subwoofer (1).



Installation Installation is in the reverse order of removal.

[PREMIUM WITHOUT NAVIGATION]

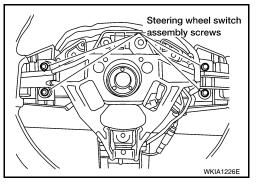
< ON-VEHICLE REPAIR > STEERING SWITCH

Removal and Installation

STEERING WHEEL AUDIO CONTROL SWITCHES

Removal

- 1. Remove the steering wheel. Refer to ST-11. "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. А

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< ON-VEHICLE REPAIR >

REAR AUDIO REMOTE CONTROL UNIT

Removal and Installation

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.

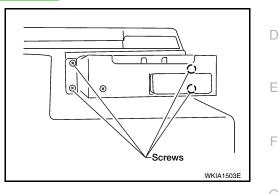
DVD ENTERTAINMENT SYSTEM

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.

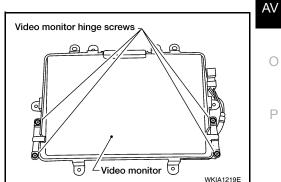
VIDEO MONITOR

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.

J Screw Screw Κ L Video monitor housing Video monitor Screws connector Μ WKIA1502E

- 4. Remove the video monitor and housing.
- 5. Remove the video monitor hinge screws and remove the video monitor.



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< ON-VEHICLE REPAIR >

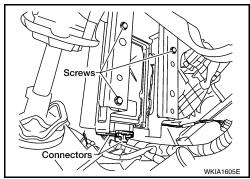
AUDIO AMP.

Removal and Installation

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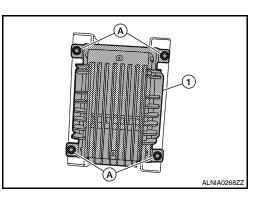
REMOVAL

- 1. Remove the BCM. Refer to BCS-53, "Removal and Installation".
- 2. Remove the accelerator pedal. Refer to ACC-3, "Removal and Installation".
- 3. Disconnect the audio amp. speaker amp. connectors.
- 4. Remove the audio amp. speaker amp. and bracket assembly screws and slide the audio amp. speaker amp. bracket assembly down.



[PREMIUM WITHOUT NAVIGATION]

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



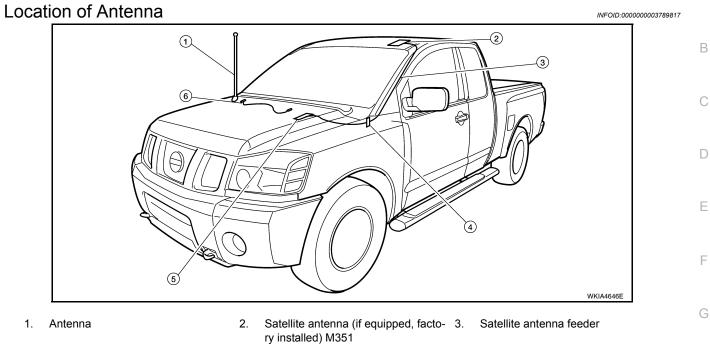
INSTALLATION Installation is in the reverse order of removal.

AUDIO ANTENNA

[PREMIUM WITHOUT NAVIGATION]

< ON-VEHICLE REPAIR >

AUDIO ANTENNA



4. M69, M350

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

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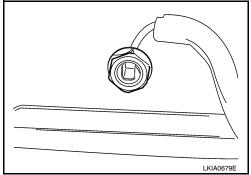
SATELLITE RADIO ANTENNA

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.

SATELLITE RADIO TUNER

SATELLITE RADIO TUNER

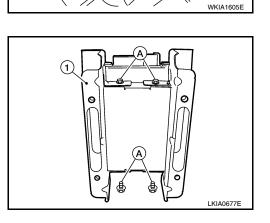
Removal and Installation

SATELLITE RADIO TUNER

Removal

- 1. Remove the accelerator pedal assembly. Refer to ACC-3, "Removal and Installation".
- 2. Remove the BCM. Refer to BCS-53, "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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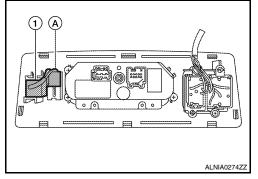
< ON-VEHICLE REPAIR >

MICROPHONE

Removal and Installation

REMOVAL

- 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 Installation is in the reverse order of removal. INFOID:000000003789820

[PREMIUM WITHOUT NAVIGATION]

[PREMIUM WITHOUT NAVIGATION]

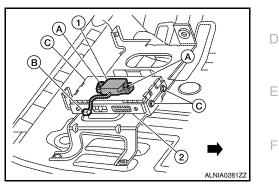
< ON-VEHICLE REPAIR >

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)
 - =:Front of vehicle



INSTALLATION Installation is in the reverse order of removal.



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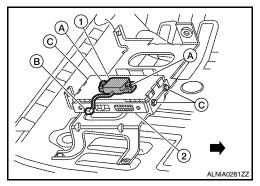
L

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.

BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

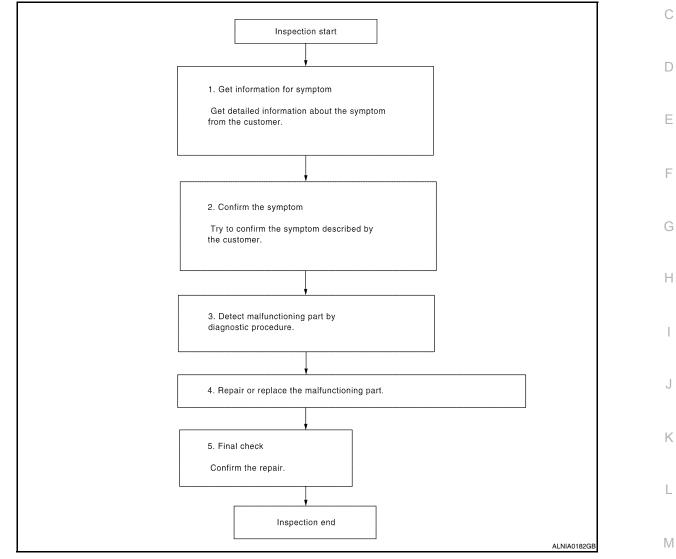
Work Flow

INFOID:000000003789823

А

[PREMIUM WITH NAVIGATION]

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).

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
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DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

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>Was the repair confirmed?</u>

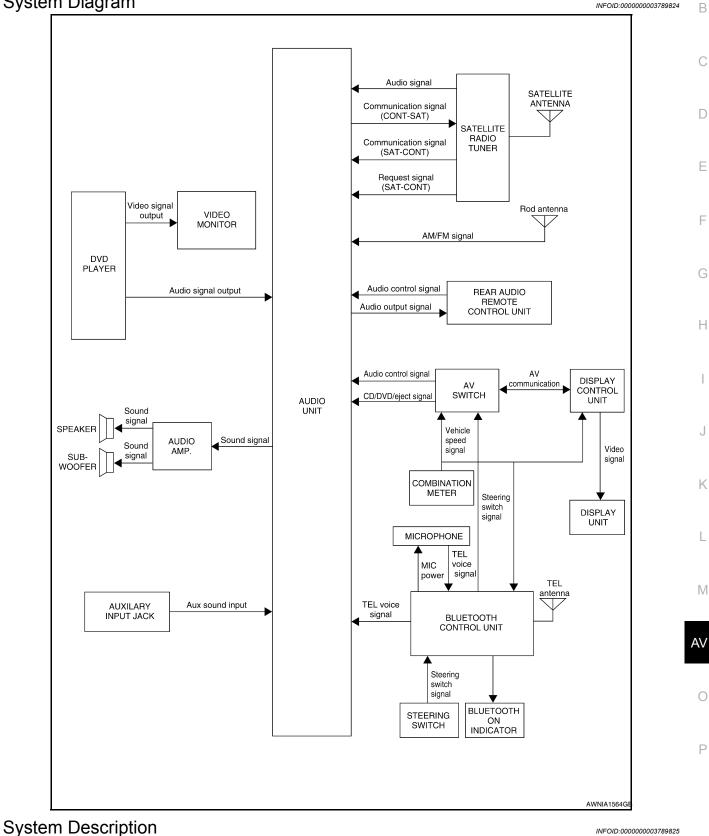
YES >> Inspection End.

NO >> GO TO 2.

< FUNCTION DIAGNOSIS >

FUNCTION DIAGNOSIS AUDIO SYSTEM

System Diagram



AUDIO SYSTEM

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INFOID:000000003789824

< FUNCTION DIAGNOSIS >

The audio system consists of the following components

- Audio unit
- · Display unit
- Display control unit
- Audio amp.
- Rod antenna
- Steering wheel audio control switches
- AV switch
- Rear audio remote control unit
- · Front door speakers
- Front tweeters
- · Center speaker
- 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 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.

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

SATELLITE RADIO SYSTEM

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.

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.

AUDIO SYSTEM

[PREMIUM WITH NAVIGATION]

< FUNCTION DIAGNOSIS >

Component Parts Location

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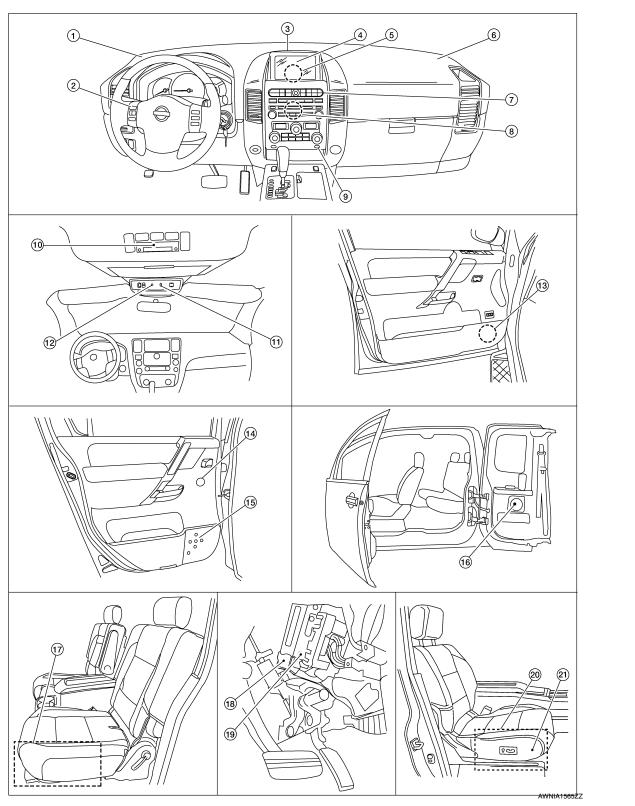
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<⊐:FRONT

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

2. Steering wheel audio control switch- 3. es

5.

- Display control unit M94, M95
- 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
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)
19.	Satellite radio tuner M41, M129	20.	NAVI control unit B151, B152, B160 (located under passenger front seat)	21.	Bluetooth control unit B142, B143 (with Bluetooth)

Component Description

INFOID:000000003789827

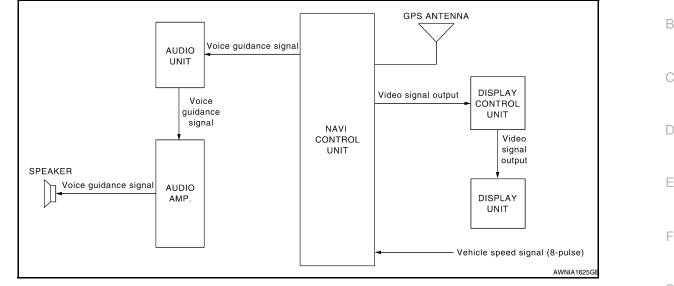
[PREMIUM WITH NAVIGATION]

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 dis- play 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	Audio operation can be operatedSteering switch signal is output to audio unit		
Front door speakers	Outputs audio signal from audio amp.Outputs high, mid and low range sounds		
Front tweeters	Outputs audio signal from audio amp.Outputs high range sounds		
Center speaker	Outputs audio signal from audio amp.Outputs high range sounds		
Rear door speakers	Outputs audio signal from audio amp.Outputs high, mid and low range sounds		
Rear door tweeters (crew cab)	Outputs audio signal from audio amp.Outputs high range sounds		
Subwoofer	Outputs audio signal from audio amp.Outputs low range sounds		
Satellite radio tuner	Receives radio signals from satellite antennaSends audio signals to audio unit		
Satellite antenna	Audio signal (satellite radio) is received and output to audio unit.		

< FUNCTION DIAGNOSIS >

NAVIGATION SYSTEM





System Description

NOTE:

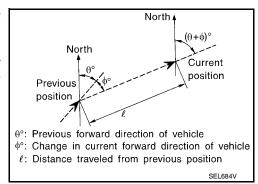
Refer to NAVI System Owner's Manual for system operation.

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.



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[PREMIUM WITH NAVIGATION]

< 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.

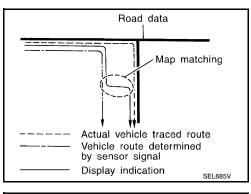
 Map-matching does not function correctly when the road on which the vehicle is driving is new and not recorded in the DVD-ROM, or when the road pattern stored in the map data and the actual road pattern are different due to repair.

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 current-location mark may leap to it.

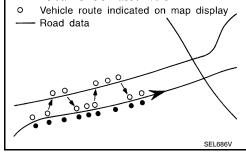
• Effective range for comparing the vehicle position and travel direction calculated by the distance and direction with the road data read from the DVD-ROM is limited. Therefore, when there is an excessive gap between the current vehicle position and the position on the map, correction by map-matching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

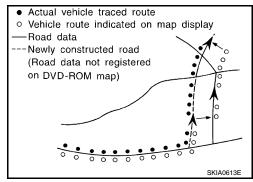
GPS (GLOBAL POSITIONING SYSTEM)

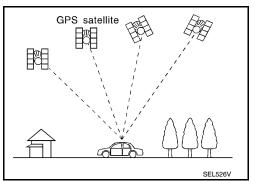
GPS (Global Positioning System) has been developed and controlled by the US Department of Defense. The system utilizes GPS satellite (NAVSTAR), sending out radio waves while flying on an orbit around the earth at the height of approx. 21,000 km (13,000 miles). The GPS receiver calculates the vehicle's 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).











< FUNCTION DIAGNOSIS >

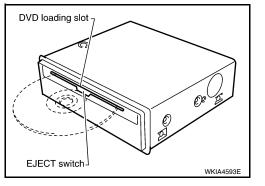
[PREMIUM WITH NAVIGATION]

- 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.

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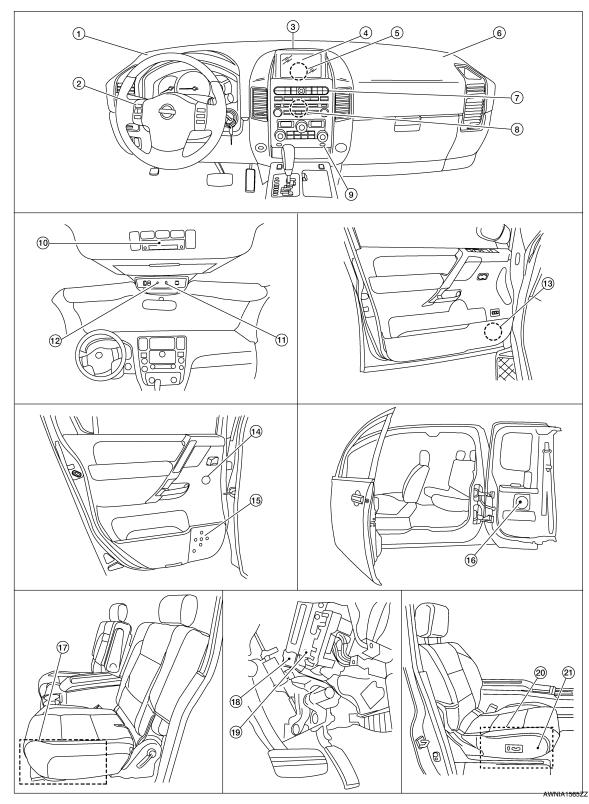
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< FUNCTION DIAGNOSIS >

Component Parts Location

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[PREMIUM WITH NAVIGATION]



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

- 2. Steering wheel audio control switch- 3. es
- Center speaker M110
- Display control unit M94, M95 5.
- Audio unit M42, M43, M44, M45, M46 9. Aux jack M104 8.
- 6. Front tweeter RH M111

< FUNCTION DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

	Rear audio remote control unit R204 Front door speaker LH D12 RH D112		Bluetooth ON indicator R105 Rear door tweeter (crew cab) LH D208 RH D308		Microphone R109 Rear door speaker (crew cab) LH D207 RH D307	А
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, B160 (located under passenger front seat)	21.	Bluetooth control unit B142, B143 (with Bluetooth)	С

Component Description

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Part name	Description	
Audio unit	Controls each operation of the navigation systemVoice guidance signal is output to audio amp.	-
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	 Each operation of navigation system can be performed Switch operating signal is output to audio unit 	-
Microphone	Sends voice signals to audio unit	-
GPS antenna	GPS signal is received and is output to audio unit.	-

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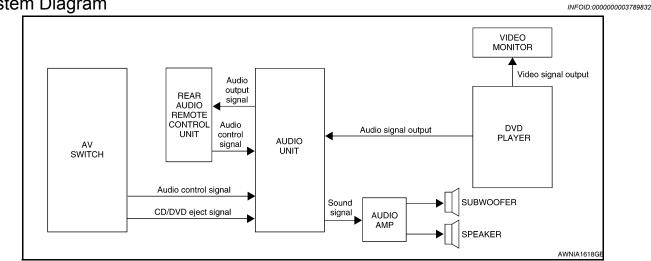
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DVD PLAYER

< 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 head-phones or through the audio amp. to the vehicle speakers. Refer to the Owner's Manual for complete DVD entertainment system operating instructions.

DVD PLAYER

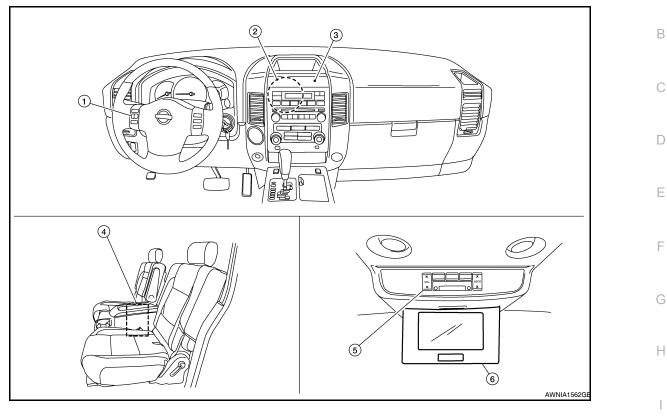
[PREMIUM WITH NAVIGATION]

< FUNCTION DIAGNOSIS >

Component Parts Location

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А



- 1. Steering wheel audio control switches 2. DVD player M205, M206 (located in
- Audio unit M42, M43, M44, M45, M46 3. Rear audio remote control unit R204

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- AV switch M98 6. Video monitor R202
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Component Description

center console)

4.

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Part name	Description	—
DVD player	Outputs DVD video to video monitorOutputs DVD audio to the audio unit	L
Video monitor	Receives and displays the DVD video signal	
Audio unit	Controls audio system and DVD entertainment system functions	M
Audio amp.	Recieves audio signals from the audio unitOutputs amplified audio signals to the speakers	101
AV switch	 All audio operations can be operated Switch signal is output to the audio unit	AV
Rear audio remote control unit	 Audio and DVD functions can be operated Switch signal is output to the audio unit Receives audio signal from audio unit for headphones 	0
Steering wheel audio control switches	Audio operation can be operatedSteering switch signal (operation signal) is output to audio unit	
Front door speakers	Outputs audio signal from audio amp.Outputs high, mid and low range sounds	P
Front tweeters	Outputs audio signal from audio amp.Outputs high range sounds	
Center speaker	Outputs audio signal from audio amp.Outputs high, mid and low range sounds	

DVD PLAYER

< FUNCTION DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

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

HANDS-FREE PHONE SYSTEM

AUDIO

UNIT

BLUETOOTH

ON

INDICATOR

TEL voice

signal

Bluetooth ON

indicator

signal

Sound signal

(TEL voice signal)

(Voice guidance

signal)

< FUNCTION DIAGNOSIS >

TEL voice signal

MICRO

PHONE

System Description

System Diagram

HANDS-FREE PHONE SYSTEM

STEERING

SWITCH

BLUETOOTH

CONTROL

UNIT

started

TEL

voice

signal

TEL

BLUETOOTH

ANTENNA

TEL

voice

sianal

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

AV

SWITCH

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.

[PREMIUM WITH NAVIGATION]

Sound signal

(TEL voice signal)

(Voice guidance

signal)

AUDIO

AMP.

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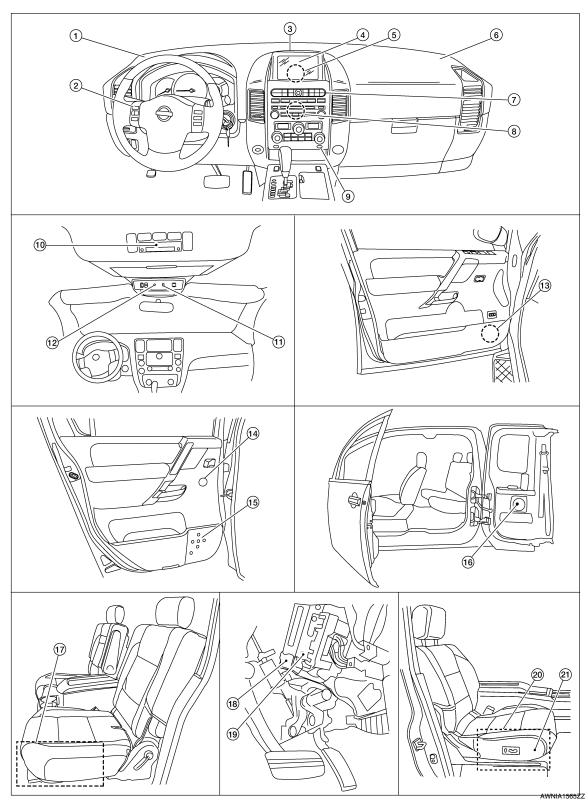
HANDS-FREE PHONE SYSTEM

< FUNCTION DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

Component Parts Location

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<⊓:FRONT

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

- 2. Steering wheel audio control switch- 3. es
 - Center speaker M110
- Display control unit M94, M95 5.
- Audio unit M42, M43, M44, M45, M46 9. Aux jack M104 8.
- 6. Front tweeter RH M111

HANDS-FREE PHONE SYSTEM

< FUNCTION DIAGNOSIS >

[PREMIUM	WITH	NAVIG	ATION]
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	Rear audio remote control unit R204 Front door speaker LH D12 RH D112	11. 14.	Bluetooth ON indicator R105 Rear door tweeter (crew cab) LH D208 RH D308		Microphone R109 Rear door speaker (crew cab) LH D207 RH D307	A	L
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, B160 (located under passenger front seat)	21.	Bluetooth control unit B142, B143 (with Bluetooth)	С	n P

Component Description

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Part name	Description	
Audio unit	 Receives telephone voice signal from Bluetooth control unit Sends telephone voice and voice guidance signals to the speakers 	
Audio amp.	Recieves audio signals from the audio unitOutputs amplified audio signals to the speakers.	
Front door speaker		
Front tweeter	Receives telephone voice and voice guidance signals from the audio amp.	
Center speaker		
Steering wheel audio control switches	 Start a voice recognition session Answer and end telephone calls Adjust the volume level 	
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

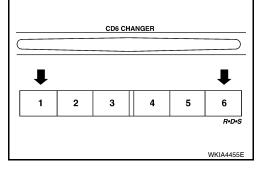
AUDIO UNIT : Diagnosis Description

For self-diagnosis function information, refer to <u>AV-199</u>, "<u>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]

INFOID:000000003789840

INFOID:000000003789841

< FUNCTION DIAGNOSIS >

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:000000003789843

INFOID:00000003789842

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ON BOARD SELF-DIAGNOSIS FUNCTION

Diagnosis Item

	Mode			Description
S	Self-diagnosis	(DCU)		Display control unit diagnosis.
Self-diagnosis (NAVI)				 NAVI Control unit diagnosis (DVD-ROM drive) will not be diagnosed when no map DVD-ROM is in it. Analyzes connection between the NAVI control unit and the GPS anten- na and operation of each unit.
	Display diagnosis			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 sig			On display control unit mode, analyzes the following vehicle signals: Vehicle speed signal, light signal ^{NOTE} , ignition switch signal, and reverse signal.
	Auto Climate Control (if equipped)			A/C self-diagnosis of A/C system.
	Navigation	Display diagnosis		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/				On NAVI C/U mode, analyzes the following vehicle signals: Vehicle speed signal, light signal, ignition switch signal, and reverse signal.
ADJUSTMENT				Error History
		Navigation	Naviga- tion	Speed Cali- bration
		gle A	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	T MONITO	DR	Display status of CAN communication.

NOTE:

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

SELF-DIAGNOSIS MODE (DCU)

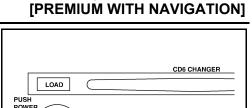
- 1. Start the engine.
- 2. Turn the audio system off.

Р

[PREMIUM WITH NAVIGATION]

< FUNCTION DIAGNOSIS >

- 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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SELF DIAGNOSIS

Select one of following

Self Diagnosis(DCU) Self Diagnosis(NAVI) Confirmation/Adjustment CAN DIAG SUPPORT MONITOR

 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. Perform self-diagnosis by selecting the "Self-Diagnosis".
 - Self-diagnosis subdivision screen will be shown and the operation enters the self-diagnosis mode.
 - A bar graph shown below the self-diagnosis subdivision screen indicates progress of the diagnosis.

- 6. When the self-diagnosis completes, optional part confirmation screen will be shown.
 - 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.
- SELF-DIAGNOSIS(DCU)

 Display
 Multifunction Switch **

 Audio Unit
 DCU

 Navigation

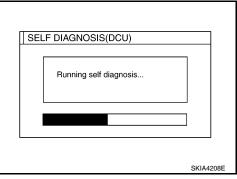
 GPS

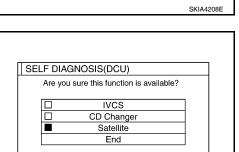
 Satellite

 X Multifunction switch = AV switch
- 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.
If a swarel	molfunctions are present in a unit color of its suit

• 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.





< 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

- 1. Select a 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.

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

*: DCU = Display control unit

CAUTION:

- When AV switch has a malfunction, you cannot start. Refer to <u>AV-198, "AV SWITCH : Component</u> <u>Function Check"</u>.
- When display unit has a malfunction, you cannot start. Refer to <u>AV-214, "DISPLAY CONTROL UNIT :</u> <u>Diagnosis Procedure"</u>.

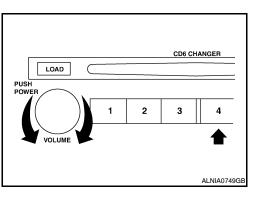
Self-Diagnosis Codes

Diagnosis No.	Possible cause	Reference page	L
1	Display control unit malfunction	Refer to AV-214 .	
2	Display communication line between display control unit and display unit	Refer to AV-292 .	
3	Audio unit power supply and ground circuit Audio communication line between display control unit and audio unit	Refer to <u>AV-212</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-212</u> .	AV

AV-201

SELF-DIAGNOSIS MODE (NAVI)

- 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.



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

[PREMIUM WITH NAVIGATION]

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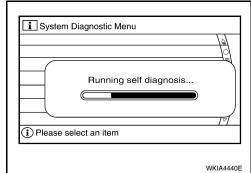
< FUNCTION DIAGNOSIS >

 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]

SELF DIA Select	one of following		
	Self Diagnosis(DCU		
	Self Diagnosis(NAV	,	
	Confirmation/Adjustme	ent	
CAN	DIAG SUPPORT MO	NITOR	

- 5. Perform self-diagnosis by selecting the "Self-diagnosis (NAVI)".
 - 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.

Green	ŝ	Not malfunctioning.	

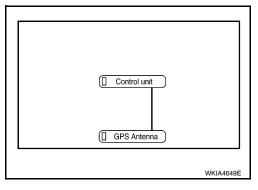
Yellow : Cannot be judged by self-diagnosis results.

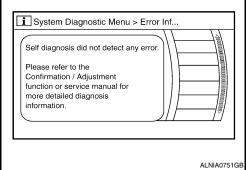
- Red : Unit is malfunctioning.
- Gray : Diagnosis has not been done.
- If several malfunctions are present in a unit, color of its switch on the screen will be either red, yellow, or gray, determined by the malfunction of the highest priority.
- 7. Select a switch on the "SELF DIAGNOSIS" screen and 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) DSIS > [PREMIUM WITH NAVIGATION]

< FUNCTION DIAGNOSIS >

	Screen switch			
Switch color	Control unit*	GPS antenna	Diagnosis No.	
Red	×		1	
Gray	×		2	B
	×		3	_
Yellow	×		4	С
	×	×	5	_

*: Control unit = NAVI control unit

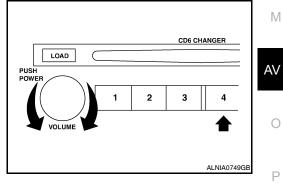
- **CAUTION:**
- When AV switch has a malfunction, you cannot start. Refer to <u>AV-198, "AV SWITCH : Component</u> <u>Function Check"</u>.
- When display unit has a malfunction, you cannot start. Refer to <u>AV-213, "DISPLAY UNIT : Diagnosis</u> <u>Procedure"</u>.

Self-diagnosis codes

Diagnosis No.	Possible cause	Reference page
1	NAVI control unit malfunction.	Refer to <u>AV-212</u>
2	No map DVD-ROM is inserted in the NAVI control unit.	Refer to <u>AV-187</u>
3	 When "DVD-ROM error. Please check disc." is shown. Eject map DVD-ROM and check if it is compatible with the system. Check ejected DVD-ROM for dirt, damage, and warpage. 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. 	Refer to <u>AV-187</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-187</u>
5	 GPS antenna system. Visually check for a broken wire in the GPS antenna coaxial cable. 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. 	Refer to <u>AV-331</u>

CONFIRMATION/ADJUSTMENT MODE

- 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.



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< FUNCTION DIAGNOSIS >

4. 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.

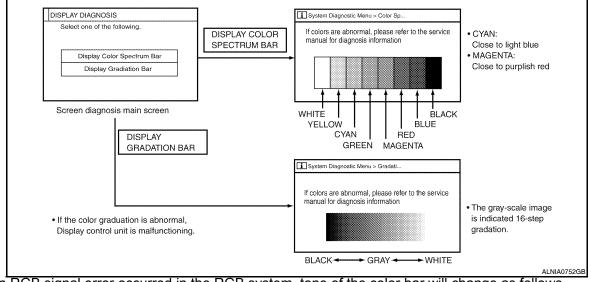
[PREMIUM WITH NAVIGATION]

SELF DIAGNOSIS Select one of following	
Self Diagnosis(DCU)	
Self Diagnosis(NAVI)	
Confirmation/Adjustment	
CAN DIAG SUPPORT MONITO)R

- 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.
- The initial trouble diagnosis screen will be shown, and items 6. "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.

ONFIRMATION/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 AV-222, "Description", AV-223, "Description" and AV-224, "Description" .

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	

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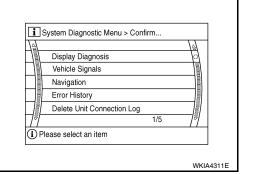
В

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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	
Light	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 approx. 1.5 seconds. This is normal.
	-	Ignition switch in ACC position	

NAVIGATION

- 1. 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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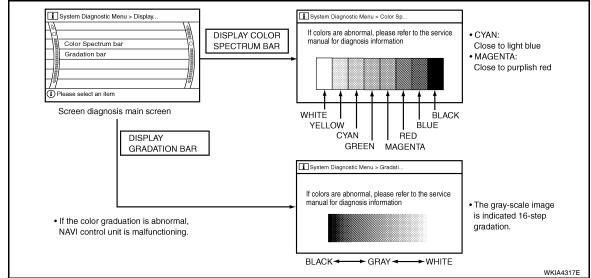
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< FUNCTION DIAGNOSIS >

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 : 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-222, "Description"</u>, <u>AV-223, "Description"</u> and <u>AV-224, "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.

i Sys	tem Diagnostic Me Vehicle speed Lights Ignition Reverse	nu > Vehicle OFF OFF ON OFF	
			WKIA4443E

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	
Lights	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	<u></u>
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	

< 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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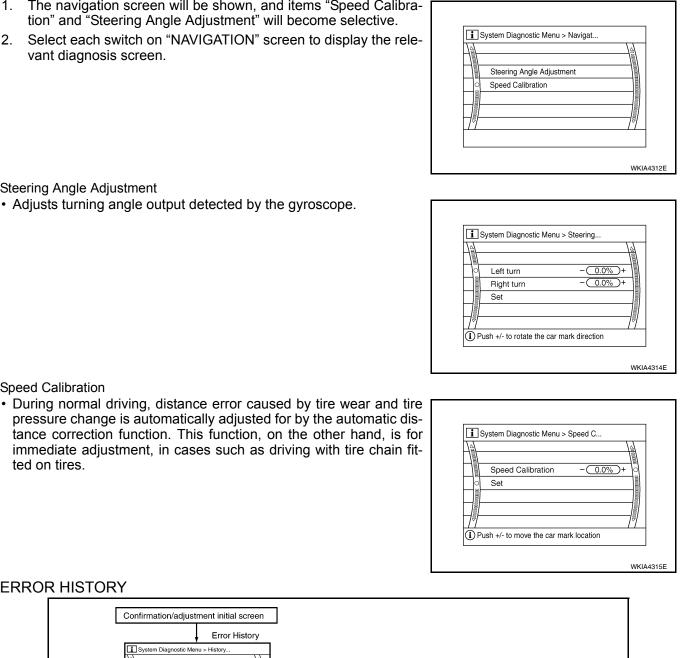
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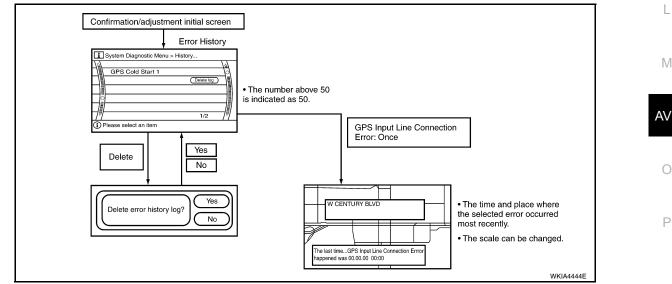
Steering Angle Adjustment

· 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.

Error item	Possible causes	Example of symptom
Enormenn	Action/symptom	Example of symptom
Gyro sensor disconnected	 Communications malfunction between NAVI control unit and internal gyro. Perform self-diagnosis. When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference. 	 Navigation location detection performance has deteriorated. (Angular velocity cannot be detected.)
	Communication error between NAVI control unit and internal GPS substrate.	Navigation location detection performance has
GPS discon- nected	 Perform self-diagnosis. When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference. 	 deteriorated. (Location correction using GPS is not performed.) GPS receiving status remains gray.
GPS trans-	Malfunctioning transmission wires to NAVI control unit and internal GPS substrate.	
mission ca- ble malfunction	 When the NAVI control unit is judged normal by self-diagnosis, 	 During self-diagnosis, GPS diagnosis is not performed.
GPS input	Malfunctioning receiving wires to NAVI control unit and internal GPS substrate.	Navigation location detection performance has deteriorated.
line connec- tion error	 Perform self-diagnosis. When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference. 	 (Location correction using GPS is not performed.) GPS receiving status remains gray.
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	 Perform self-diagnosis. 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. 	 deteriorated. (Location correction using GPS is not performed.) GPS receiving status remains gray.
000 001/	Contents of ROM (or RAM) in GPS substrate are malfunctioning.	Location detection accuracy of the navigation
GPS ROM malfunction GPS RAM malfunction	 Perform self-diagnosis. When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference. 	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.)

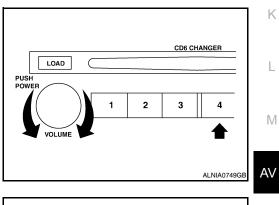
< FUNCTION DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

Error item	Possible causes	Example of symptom	٥
Enormenn	Action/symptom	Example of symptom	А
GPS RTC malfunction	 Clock IC in GPS substrate is malfunctioning. Perform self-diagnosis. When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference. 	 Correct time may not be displayed. After the power is turned on, the system always takes some time until GPS positioning becomes possible. (The GPS receiver starts positioning without re-collecting the whole satellite information when it judged the data stored in the receiver is correct.) Correct time of error occurrence may not be stored in the "Error History". 	B
GPS anten-	Malfunctioning connection between GPS substrate in NAVI control unit and GPS antenna.	Navigation location detection performance has deteriorated.	D
na discon- nected	 Perform self-diagnosis. 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. 	 (Location correction using GPS is not performed.) GPS receiving status remains gray. 	Е
	The power voltage supplied to the GPS circuit board has decreased.	Navigation location detection performance has deteriorated.	F
Low voltage of GPS	 Perform self-diagnosis. 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. 	 (Location correction using GPS is not performed.) GPS receiving status remains gray. 	G
	Malfunctioning NAVI control unit.	-	
DVD-ROM Malfunction	Dedicated map DVD-ROM is in the system, but the data cannot be read.	 The map of a particular location cannot be dis- played. 	Η
DVD-ROM Read error DVD-ROM Response Er- ror	 Is map DVD-ROM damaged, warped, or dirty? If damaged or warped, the map DVD-ROM is malfunctioning. If dirty, wipe the DVD-ROM clean with a soft cloth. Perform self-diagnosis. When NAVI control unit is judged normal by self-diagnosis, the symptom is judged intermittent, caused by vibration. 	 Specific guidance information cannot be displayed. Map display is slow. Guidance information display is slow. System has been affected by vibration. 	 J

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.

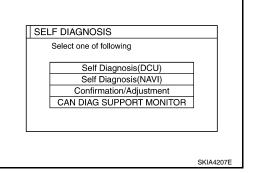


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- The initial self-diagnosis screen will be shown, and items "Self-4. Diagnosis (DCU)", "Self-Diagnosis (NAVI)", "Confirmation/ Adjustment" and "CAN DIAG SUPPORT MONITOR" will become selective.
- 5. Select "CAN DIAG SUPPORT MONITOR".



< 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(₩)] stuck closed
- Vehicle speed pulse count
- Microphone connection test (with playback to operator)
- Bluetooth inquiry check

OPERATION PROCEDURE

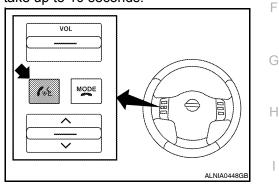
- 1. Turn ignition switch to ACC or ON.
- 2. Wait for the Bluetooth system to complete initialization. This may take up to 10 seconds.
- 3. Press and hold the steering wheel audio control switch *𝐾* ↓ button for at least 5 seconds. The Bluetooth system will begin to play a verbal prompt.

- While the prompt is playing, press and hold the steering wheel audio control switch ^{MOE} 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-199</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-199</u>, "Work Flow".
- 8. Self-diagnosis mode is complete when the voice prompt says "All diagnostic functions completed".

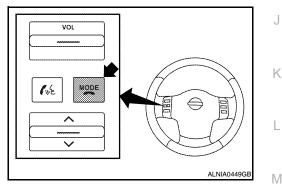
Work Flow

INFOID:00000003789845

Failure Message	Action		
"Internal failure"	Replace Bluetooth control unit. Refer to AV-180, "Removal and Installation".	0	
"Bluetooth antenna open"	1. Inspect harness connection.	-	
"Bluetooth antenna shorted"	2. Replace Bluetooth antenna. Refer to <u>AV-179, "Removal and Installation"</u> .	Р	
"Phone/Send for Hands Free System is stuck"	Charly steering wheel guide central switches. Defer to AV/115 "Description"	-	
"Phone/End for the Hands Free System is stuck"	Check steering wheel audio control switches. Refer to <u>AV-115, "Description"</u> .		
"Microphone test" (failed interactive test)	 Inspect harness between Bluetooth control unit and microphone. Replace microphone. Refer to <u>AV-178</u>, "<u>Removal and Installation</u>". 	-	



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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?

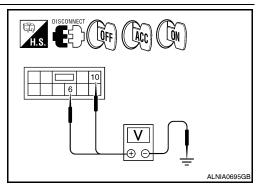
YES >> GO TO 2.

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	(-)	011	700	ÖN
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 co

>> • 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
ыл	5	ACC/ON	4
B152	55	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-212

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< COMPONENT DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect NAVI control unit connectors B151 and B152.

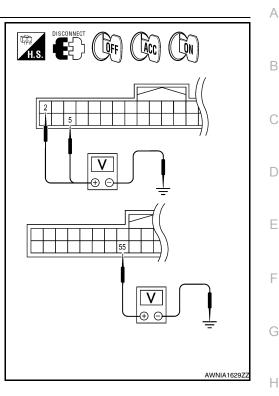
2. Check voltage between connectors and ground.

	(+)	()	OFF	ACC	ON
Connector	Terminal	()	UFF	ACC	ON
B151	2		Battery voltage	Battery voltage	Battery voltage
DIJI	5	Ground	0V	Battery voltage	Battery voltage
B152	55		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.

Connector	Terminal	—	Continuity
B151	1	Ground	Yes

Is continuity present?

YES >> Inspection End.

NO >> Repair or replace harness.

DISPLAY UNIT

DISPLAY UNIT : Diagnosis Procedure



Check power supply and ground circuit for display control unit. Refer to AV-214, "DISPLAY CONTROL UNIT	
Diagnosis Procedure".	A

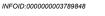
Did the power/ground supply check good?

YES >> GO TO 2.

NO >> Repair malfunctioning part.

2. CHECK POWER SUPPLY CIRCUIT FOR DISPLAY UNIT

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Value (Approx.)

9V

(-)

Ground

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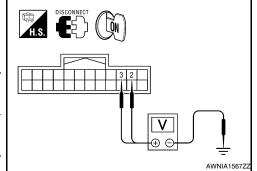
1. Disconnect display unit connector M93.

(+)

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

Terminal 2

3



Are voltage readings as specified?

YES >> GO TO 4.

Connector

M93

NO >> GO TO 3.

3. CHECK HARNESS

- 1. Turn ignition switch OFF.
- 2. Disconnect display control unit connector M94.

3. Check continuity between display unit harness connector M93 (A) terminals 2, 3 and display control unit harness connector M94 (B) terminals 2, 4.

I	4	В		Continuity	
Connector	Terminal	Connector Terminal		Continuity	
M93	2	M94	2	Yes	
10193	3	10194	4	Tes	

 Check continuity between display unit connector M93 and ground.

	A B
d	

A		Α	
Connector	Terminal		Continuity
M93	2	Ground	No
10135	3	Ground	NO

Are continuity test results as specified?

YES >> Replace display control unit. Refer to <u>AV-316, "Removal and Installation"</u>.

NO >> Repair harness.

4.CHECK GROUND CIRCUIT

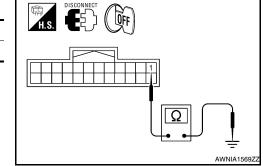
Check continuity between display unit and ground as follows.

-	Connector	Terminal		Continuity
	M93	1	Ground	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.



AV-214

[PREMIUM WITH NAVIGATION]

< COMPONENT DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

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

Are fuses OK?

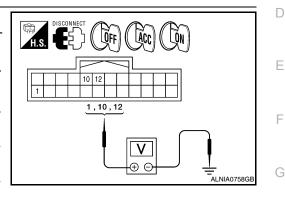
YES >> GO TO 2. NO >> If fuse is b

>> 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.

(+)		()	OFF	ACC	ON
Connector	Terminal	(-)		700	
	1		Battery voltage	Battery voltage	Battery voltage
M94	10	Ground	0V	Battery voltage	Battery voltage
	12		0V	0V	Battery voltage



H.S.

Are voltage readings as specified?

YES >> GO TO 3.

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

3.CHECK GROUND CIRCUIT

Check continuity between the following display control unit connector terminals and ground.

Connector	Terminal	—	Continuity
M94	3	Ground	Yes

Is continuity present?

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.	0
AV switch	1	Battery	31	
AV SWICH	2	Ignition switch ACC or ON	4	Ρ

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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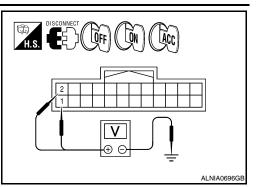
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< COMPONENT DIAGNOSIS >

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



Are the voltage results as specified?

YES >> GO TO 3. NO >> • Check c

>> • 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.

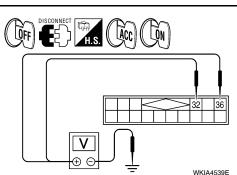
NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

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	ON
M41	32	Ground	Battery voltage	Battery voltage	Battery voltage
	36		0V	Battery voltage	Battery voltage
Are the volta	ge readings	as specifie	ed?		

YES >> GO TO 3.



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	Check conRepair har			connect	ted or loose ter	minals.	
~	D CIRCUIT C						
Inspect sate	ellite radio tur	er (factory i	nstalled) ca	ase grou	ind.		
	ground pass i						
	Inspection E Repair satell		er (factory	installed	d) case ground.		
DVD PLA					., 9		
DVD PLA	YER : Dia	gnosis Pi	rocedure	!			INFOID:000000003789852
1 .снеск р		0					
	he following	fuene for the		or are p	ot blown		
	ine following		e DVD play		ot biown.		
	Unit		Terminal		Signal	name	Fuse No.
DVD player			16		Battery power		31
			15		Ignition switch AC	C or ON	4
YES >> NO >> 2.POWER	GO TO 2. If fuse is blo SUPPLY CIF	RCUIT CHE	to eliminate CK			before installing	new fuse.
NO >> 2.POWER 1. Disconn 2. Check v	GO TO 2. If fuse is blo SUPPLY CIF nect DVD pla voltage betw	RCUIT CHE	to eliminate CK or M205.	e cause			
YES >> NO >> 2.POWER 1. Disconn	GO TO 2. If fuse is blo SUPPLY CIF nect DVD pla voltage betw	RCUIT CHE	to eliminate CK or M205.	e cause	of malfunction	before installing	
YES >> NO >> 2.POWER 1. Disconn 2. Check v ground. (+	GO TO 2. If fuse is blo SUPPLY CIF nect DVD pla voltage betw	RCUIT CHE	to eliminate CK or M205.	e cause	of malfunction or M205 and		
YES >> NO >> 2.POWER 1. Disconn 2. Check v ground.	GO TO 2. If fuse is blo SUPPLY CIF nect DVD pla voltage betw	RCUIT CHE yer connect reen the D\	to eliminate CK or M205. /D player o OFF	e cause connecto ACC	of malfunction or M205 and ON		F) (LACC) (LON)
YES >> NO >> 2.POWER 1. Disconn 2. Check v ground. (+ Connector	GO TO 2. If fuse is blo SUPPLY CIF nect DVD pla voltage betw	CUIT CHE yer connect reen the DV	to eliminate CK or M205. /D player o	e cause	of malfunction or M205 and ON y Battery		F) (LACC) (LON)
YES >> NO >> 2.POWER 1. Disconn 2. Check v ground. (+	GO TO 2. If fuse is blo SUPPLY CIF nect DVD pla voltage betw +) Terminal	RCUIT CHE yer connect reen the DV	to eliminate CK or M205. /D player o OFF Battery	e cause connecto ACC Batter voltago Batter	of malfunction or M205 and ON y Battery e voltage y Battery		F) (LACC) (LON)
YES >> NO >> 2.POWER 1. Disconn 2. Check v ground. (+ Connector	GO TO 2. If fuse is blo SUPPLY CIF nect DVD pla voltage betw +) Terminal	CUIT CHE yer connect een the DV (-) Ground	to eliminate CK or M205. /D player of OFF Battery voltage 0V	e cause connecto ACC Batter voltage	of malfunction or M205 and ON y Battery e voltage y Battery		F) CACC CON
YES >> NO >> 2.POWER 1. Disconn 2. Check v ground. (+ Connector M205 Are the volta YES >>	GO TO 2. If fuse is blov SUPPLY CIF nect DVD pla voltage betw +) Terminal 16 15 age results as GO TO 3.	CUIT CHE yer connect reen the DV (-) Ground	to eliminate CK or M205. /D player of OFF Battery voltage 0V	e cause connecto ACC Batter voltago voltago	of malfunction or M205 and ON y Battery e voltage y Battery e voltage	before installing	F) (Lacc) (D) 16 15 $V = 0$
YES >> NO >> 2.POWER 1. Disconn 2. Check v ground. (+ Connector M205 Are the volta YES >> NO >>	GO TO 2. If fuse is blov SUPPLY CIF nect DVD pla voltage betw +) Terminal 16 15 age results as GO TO 3. • Check con	RCUIT CHE yer connect reen the DV (-) Ground s specified?	to eliminate CK or M205. /D player of OFF Battery voltage 0V	e cause connecto ACC Batter voltago voltago	of malfunction or M205 and ON y Battery e voltage y Battery	before installing	F) (Lacc) (D) 16 15 $V = 0$
YES >> NO >> 2.POWER 1. Disconn 2. Check v ground. (+ Connector M205 Are the volta YES >> NO >>	GO TO 2. If fuse is blov SUPPLY CIF nect DVD pla voltage betw +) Terminal 16 15 age results as GO TO 3.	CUIT CHE yer connect een the DV (-) Ground s specified? nector hous ness or con	to eliminate CK or M205. /D player of OFF Battery voltage 0V	e cause connecto ACC Batter voltago voltago	of malfunction or M205 and ON y Battery e voltage y Battery e voltage	before installing	F) (Lacc) (D) 16 15 $V = 0$
YES >> NO >> 2.POWER 1. Disconn 2. Check v ground. (+ Connector M205 Are the volta YES >> NO >> 3.GROUNE	GO TO 2. If fuse is blov SUPPLY CIF nect DVD pla voltage betw +) Terminal 16 15 age results as GO TO 3. • Check con • Check con • Repair har O CIRCUIT C	CUIT CHE yer connect yer connect (-) Ground s specified? nector hous ness or con CHECK OFF.	to eliminate CK or M205. /D player of OFF Battery voltage 0V	e cause connecto ACC Batter voltago sconnect	of malfunction or M205 and ON y Battery e voltage y Battery e voltage ted or loose ter	before installing	F) (Lacc) (D) 16 15 $V = 0$
YES >> NO >> 2.POWER 1. Disconn 2. Check v ground. (+ Connector M205 Are the volta YES >> NO >> 3.GROUNE 1. Turn ign 2. Check c	GO TO 2. If fuse is blov SUPPLY CIF nect DVD pla voltage betw +) Terminal 16 15 age results as GO TO 3. • Check con • Repair har O CIRCUIT C nition switch (continuity between the second secon	CUIT CHE yer connect yer connect (-) Ground s specified? nector hous ness or con CHECK OFF. ween DVD	to eliminate CK or M205. /D player of OFF Battery voltage 0V	e cause connecto ACC Batter voltago sconnect	of malfunction or M205 and ON y Battery e voltage y Battery e voltage	before installing	F) (Lacc) (D) 16 15 $V = 0$
YES >> NO >> 2.POWER 1. Disconn 2. Check v ground. (+ Connector M205 Are the volta YES >> NO >> 3.GROUNE 1. Turn ign 2. Check c	GO TO 2. If fuse is blov SUPPLY CIF nect DVD pla voltage betw +) Terminal 16 15 age results as GO TO 3. • Check con • Check con • Repair har O CIRCUIT C	CUIT CHE yer connect yer connect (-) Ground s specified? nector hous ness or con CHECK OFF. ween DVD	to eliminate CK or M205. /D player of OFF Battery voltage 0V	e cause connecto ACC Batter voltago sconnect	of malfunction or M205 and ON y Battery e voltage y Battery e voltage ted or loose ter	before installing	F) (Lacc) (D) 16 15 $V = 0$
YES >> NO >> 2.POWER 1. Disconn 2. Check v ground. (+ Connector M205 Are the volta YES >> NO >> 3.GROUNE 1. Turn ign 2. Check c	GO TO 2. If fuse is blov SUPPLY CIF nect DVD pla voltage betw +) Terminal 16 15 age results as GO TO 3. • Check con • Repair har O CIRCUIT C nition switch of continuity beformed and ground tor	CUIT CHE yer connect yer connect (-) Ground s specified? nector hous ness or con CHECK OFF. ween DVD	to eliminate CK or M205. /D player of OFF Battery voltage 0V	e cause connecto ACC Batter voltago sconnect	of malfunction or M205 and ON y Battery e voltage y Battery e voltage ted or loose ter	before installing	F) (Lacc) (D) 16 15 $V = 0$

YES

>> Inspection End.>> Repair DVD player ground. NO

VIDEO MONITOR

VIDEO MONITOR : Diagnosis Procedure

1. CHECK POWER SUPPLY CIRCUIT

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< COMPONENT DIAGNOSIS >

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

(+)	(-)	Value (Approx.)
Connector	Terminal	(-)	
R202	11	Ground	12V
INZUZ	12	Ground	12 V

Does specified voltage exist?

YES >> GO TO 3.

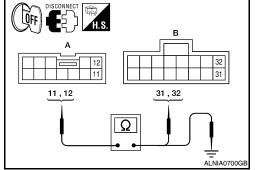
NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.

- Disconnect the video monitor connector R202 and the DVD player connector M206.
- 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
11202	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
1\202	12	Giouna	NO

Are continuity test results as specified?

- YES >> Check DVD player power and ground supply. Refer to <u>AV-217, "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.
- Check continuity between video monitor harness connector R202 and ground.

Connector	Terminal		Continuity
R202	3	Ground	Yes

Does continuity exist?

YES >> Inspection End.

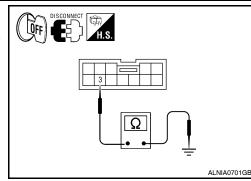
NO >> Repair harness or connector.

AUDIO AMP

AUDIO AMP : Diagnosis Procedure

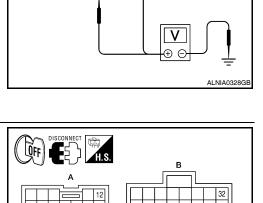
1.CHECK FUSE

Check that the audio amp. fuses are not blown.



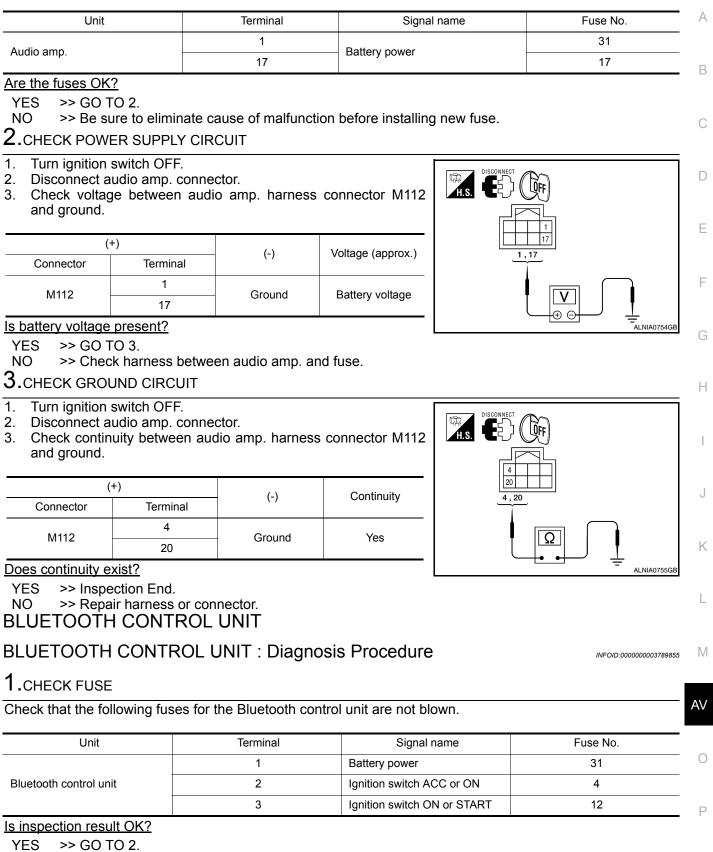
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[PREMIUM WITH NAVIGATION]



< COMPONENT DIAGNOSIS >

[PREMIUM WITH NAVIGATION]



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	Terminal	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	Terminal	—	Continuity
	4		
B142	20	Ground	Yes
	23		

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.

(+)	(-)	Value (Approx.)
Connector	Terminal	(-)	
R109	4	Ground	5V

Is approximately 5V present?

YES >> GO TO 3.

NO >> GO TO 2.

2. CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

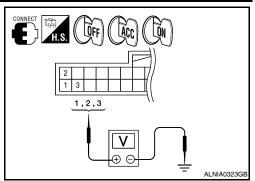
- 1. Turn ignition switch OFF.
- Disconnect microphone and Bluetooth control unit harness connectors.
- Check continuity between microphone harness connector R109 (A) terminal 4 and Bluetooth control unit harness connector B142 (B) terminal 29.

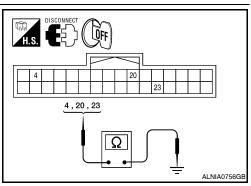
	А		В	Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
R109	4	B142	29	Yes	

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



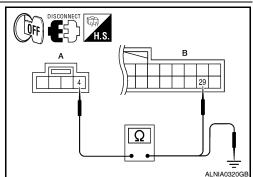
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< COMPONENT DIAGNOSIS >

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	А					
Connector	Termir	nal	_	Continuity		
R109	4	0	Ground	No	-	
	-	s as specified			-	
		etooth contro or connector.		er to <u>AV-180, "Rer</u>	moval and Installation".	
	OUND CIRC					
	on switch OFI					1
Disconnec	t microphone	harness con		09 and Bluetooth		
		nector B142. en microphor		connector R109		
(A) termin	al 2 and Bl			arness connector		
B142 (B) t	erminai o.					
A			В			
Connector	Terminal	Connector	Termina	Continuity	Ω	
R109	2	B142	8	Yes	ALNIA0322GI	3
<u>pes continuit</u>						
	spection End.					
	pair namess	or connector.				

< COMPONENT DIAGNOSIS >

RGB (R: RED) SIGNAL CIRCUIT

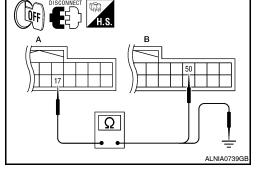
Description

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

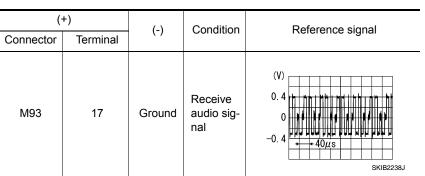
Are the continuity results as specified?

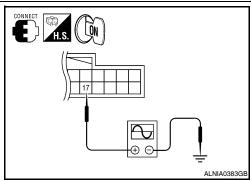
YES >> GO TO 2.

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 <u>AV-316, "Removal and Installation"</u>.
- NO >> Replace display control unit. Refer to <u>AV-316, "Removal and Installation"</u>.

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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.

	Α		Continuity	
Connector	Terminal		Continuity	
M93	6	Ground	No	

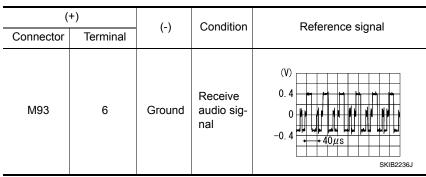
Are the continuity results as specified?

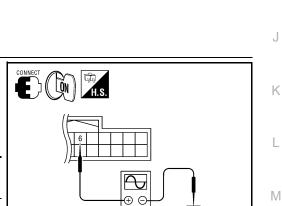
YES >> GO TO 2.

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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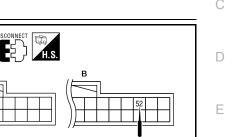
Are voltage readings as specified?

YES >> Replace display unit. Refer to AV-316, "Removal and Installation".

NO >> Replace display control unit. Refer to <u>AV-316, "Removal and Installation"</u>.



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RGB (B: BLUE) SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

RGB (B: BLUE) SIGNAL CIRCUIT

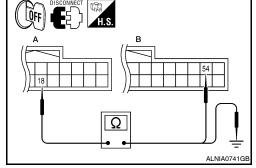
Description

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.

	A		Continuity	
Connector	Terminal		Continuity	
M93	18	Ground	No	

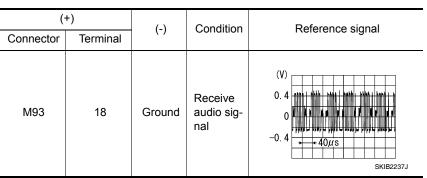
Are continuity results as specified?

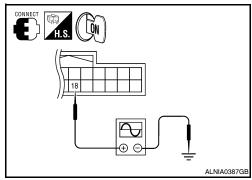
YES >> GO TO 2.

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-316, "Removal and Installation".

NO >> Replace display control unit. Refer to <u>AV-316, "Removal and Installation"</u>.

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RGB SYNCHRONIZING SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

RGB SYNCHRONIZING SIGNAL CIRCUIT

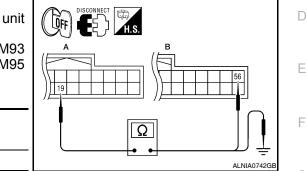
Description

Transmit the RGB synchronizing signal to the display unit so as to synchronize the RGB image displayed with В 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 2. connector M95.
- 3. Check continuity between display unit harness connector M93 (A) terminal 19 and display control unit harness connector M95 (B) terminal 56.



/	A		В	Continuity	
Connector	Terminal	Connector Terminal		Continuity	
M93	19	M95	56	Yes	

Check continuity between display unit harness connector M93 4 (A) terminal 19 and ground.

	A		Continuity
Connector	Terminal		
M93	19	Ground	No
		-	

Are continuity results as specified?

>> GO TO 2. YES

- NO >> Repair harness or connector.
- 2. CHECK RGB SYNCHRONIZING SIGNAL

(-)

Ground

- Connect display unit connector M93 and display control unit 1. connector M95.
- 2. Turn ignition switch ON.

Terminal

19

(+)

Connector

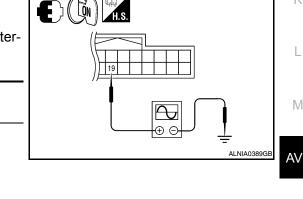
M93

Check signal between display unit harness connector M93 ter-3. minal 19 and ground.

Condition

Receive

audio signal





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Are voltage readings as specified?

YES >> Replace display unit. Refer to AV-316, "Removal and Installation".

NO >> Replace display control unit. Refer to AV-316, "Removal and Installation".

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Reference signal

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RGB AREA (YS) SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

RGB AREA (YS) SIGNAL CIRCUIT

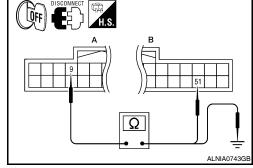
Description

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

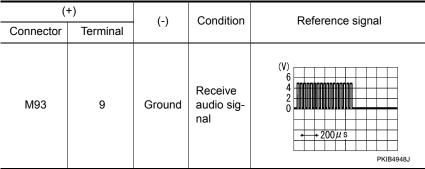
 Check continuity between display unit harness connector M93 (A) terminal 9 and ground.

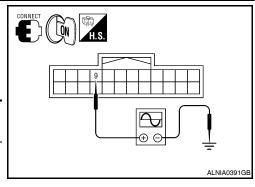
	A		Continuity	
Connector	Terminal		Continuity	
M93	9	Ground	No	

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-316, "Removal and Installation"</u>.

NO >> Replace display control unit. Refer to <u>AV-316, "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 2. connector M95.
- 3. 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 4 (A) terminal 8 and ground.

	٩		Continuity	
Connector	Terminal			
M93	8	Ground	No	

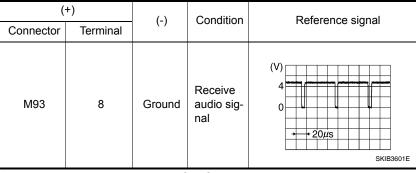
Are continuity results as specified?

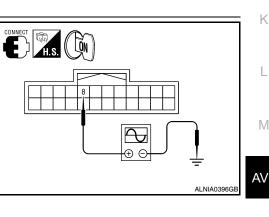
YES >> GO TO 2.

NO >> Repair harness or connector.

2.CHECK HORIZONTAL SYNCHRONIZING (HP) SIGNAL

- 1. Connect display unit connector M93 and display control unit connector M95.
- Turn ignition switch ON. 2.
- 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 AV-316, "Removal and Installation".

>> Replace display unit. Refer to AV-316, "Removal and Installation". NO



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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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[PREMIUM WITH NAVIGATION]

- ABContinuityConnectorTerminalConnectorTerminalM9320M9553Yes
- Check continuity between display unit harness connector M93 (A) terminal 20 and ground.

	Α		Continuity	
Connector	Terminal		Continuity	
M93	20	Ground	No	

Are continuity results as specified?

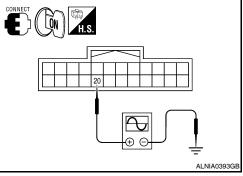
YES >> GO TO 2.

NO >> Repair harness or connector.

2. CHECK VERTICAL SINCHRONIZING (VP) SIGNAL

- 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 • • • 4 ms SKIB3598E	



Are voltage readings as specified?

YES >> Replace display control unit. Refer to <u>AV-316, "Removal and Installation"</u>.

NO >> Replace display unit. Refer to <u>AV-316</u>, "Removal and Installation".

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 sending them to the front door speakers using the audio signal circuits.

Diagnosis Procedure

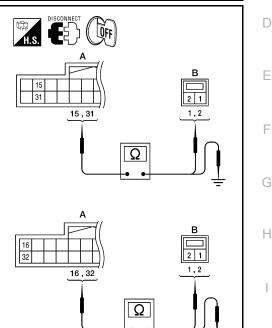
1.SPEAKER HARNESS CHECK

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

А		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	15	D12	1	
M113	31	DIZ	2	Yes
IVI I I 3	16	D112	1	165
	32		2	

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

	А		Continuity
Connector	Terminal		Continuity
M113	15		No
	31	Ground	
	16	Ground	NO
	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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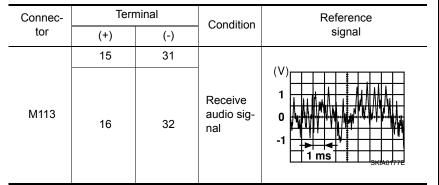
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FRONT DOOR SPEAKER

< 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-319</u>, "<u>Removal</u> and <u>Installation</u>".

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).

А		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	1	M113	6	
M43	2		22	Yes
	3		5	ies
	4		21	

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

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

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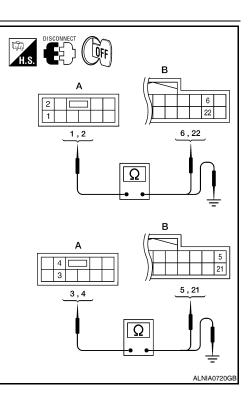
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Are continuity test results as specified?

- YES >> GO TO 4. NO >> • Check co
 - >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

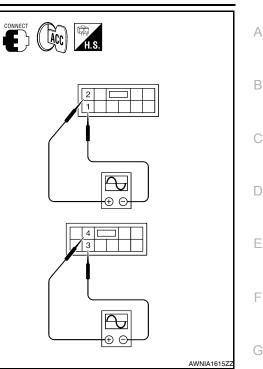
4.PRE-AMP SIGNAL CHECK

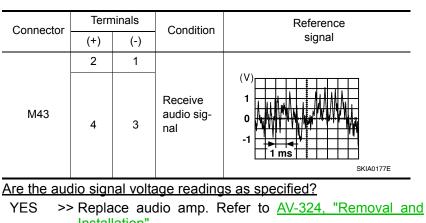
FRONT DOOR SPEAKER

< 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.

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NO >> Replace audio unit. Refer to <u>AV-315. "Removal and</u> Installation".

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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

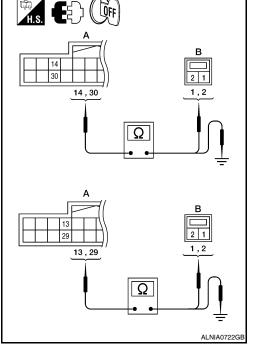
1.HARNESS CHECK

- 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	
M113	14	M109	M100	1	
	30		2	Yes	
	13	M111	1	165	
	29		2		

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

	А		Continuity
Connector	onnector Terminal		Continuity
	14		No
M113	30	Ground	
IMITIS	13	Giouria	NO
	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]

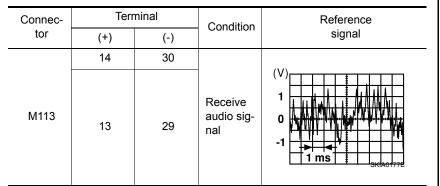
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FRONT TWEETER

< 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?

>> Replace suspect tweeter. Refer to AV-317, "Removal YES 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	
	3		5	165	
	4	•	21		

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

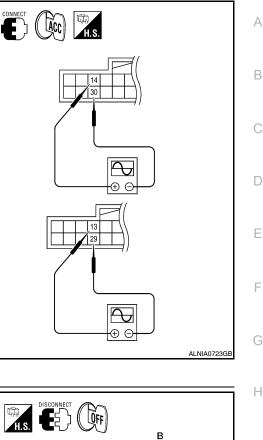
		А		Continuity	
-	Connector	Terminal			
-		1		No	
	M43	2	Ground		
		3	Ground		
		4			

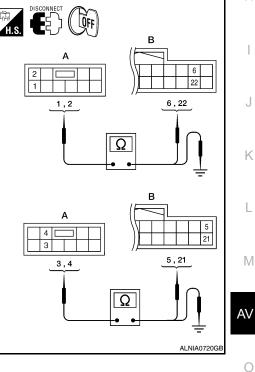
Are continuity test results as specified?

- 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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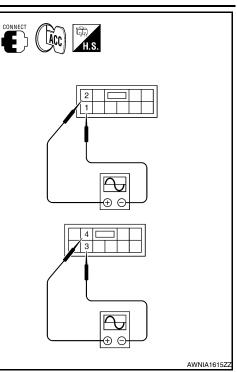
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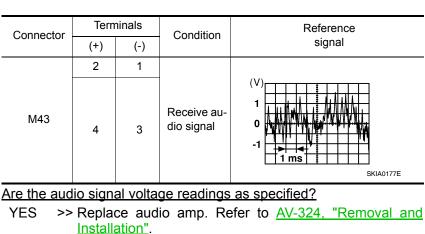
FRONT TWEETER

< 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-315, "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 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).

А		В		Continuity
Connector	Terminal	Connector Terminal		Continuity
M113	10	M110	1	Yes
WITTS	26	WITTO	2	165

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

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

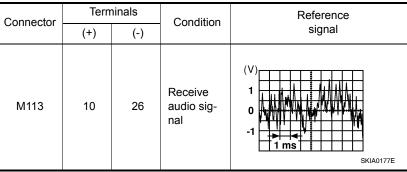
Are continuity test results as specified?

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 "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 AV-318. "Removal and Installation".

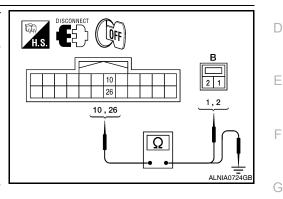
NO >> GO TO 3.

3. PRE-AMP HARNESS CHECK



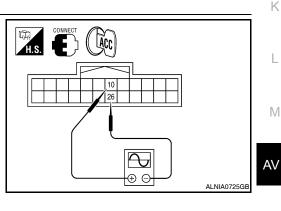
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CENTER SPEAKER

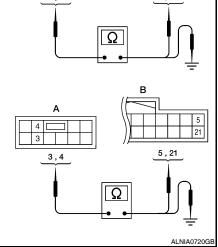
< COMPONENT DIAGNOSIS >

- 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).

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



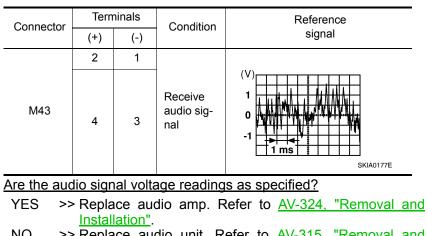
Are continuity test results as specified?

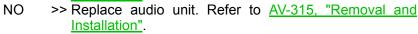
YES >> GO TO 4. NO >> • Check c

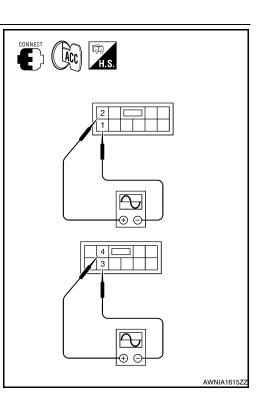
- >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

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.







[PREMIUM WITH NAVIGATION]

< 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

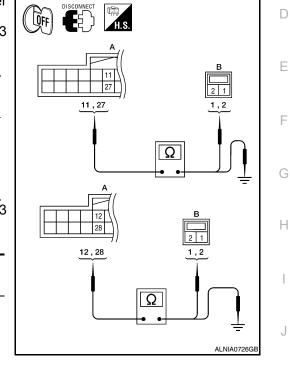
1.SPEAKER HARNESS CHECK

- 1. Disconnect audio amp. connector M113 and suspect speaker connector.
- Check continuity between audio amp. harness connector 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
WITTS	12	D307 (crew cab)	1	165
	28	B159 (king cab)	2	

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

	A		Continuity
Connector	Terminal		Continuity
	11		
M113	27	Ground	No
MITTS	12	Giouria	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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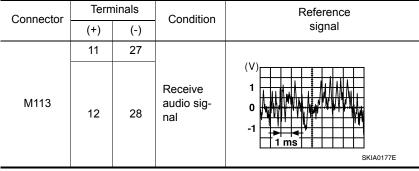
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REAR DOOR SPEAKER

< COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connector 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.



Are audio signal voltage readings as specified?

YES >> Replace suspect speaker. Refer to <u>AV-320</u>, "Removal and Installation". NO >> GO TO 3.

3.PRE-AMP HARNESS CHECK

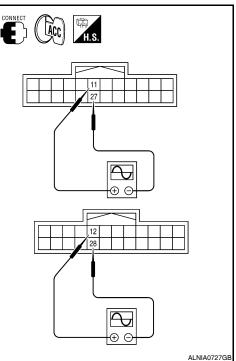
- Disconnect audio unit connector M44 and audio amp. connector M113.
- 2. Check continuity between audio unit harness connector M44 (A) and audio amp. harness connector M113 (B).

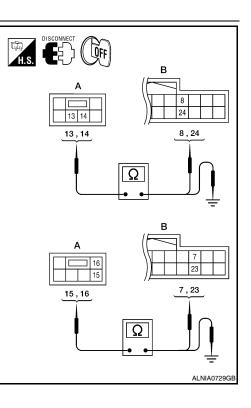
	A		В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	13		8	
M44	14	M440	24	Yes
10144	15	M113	7	fes
	16		23	

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

	А		Continuity
Connector	Terminal		Continuity
	13		
M44	14	Ground	No
10144	15	Ground	NO
	16		

[PREMIUM WITH NAVIGATION]





Are the continuity test results as specified?

- YES >> GO TO 4. NO >> • Check co
 - >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

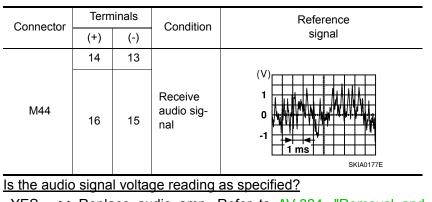
4.PRE-AMP SIGNAL CHECK

REAR DOOR SPEAKER

AV-239

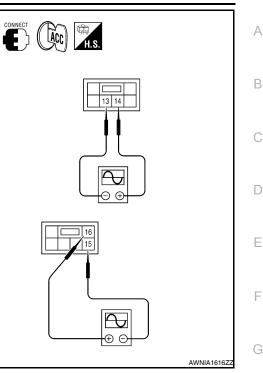
< COMPONENT DIAGNOSIS >

- 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-324</u>, "<u>Removal and</u> <u>Installation</u>".
- NO >> Replace audio unit. Refer to <u>AV-315</u>, "<u>Removal and</u> <u>Installation</u>".

[PREMIUM WITH NAVIGATION]



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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

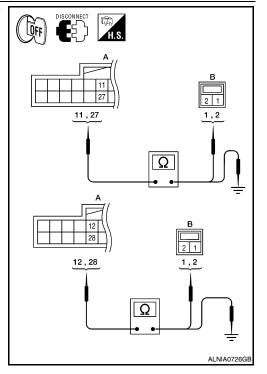
1.TWEETER HARNESS CHECK

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

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	11	D208	1	
M113	27	0200	2	Yes
101113	12	D308	1	165
	28	0306	2	

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

	A		Continuity
Connector	Terminal		Continuity
	11		
M113	27	Ground	No
WITTS	12	Ground	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.

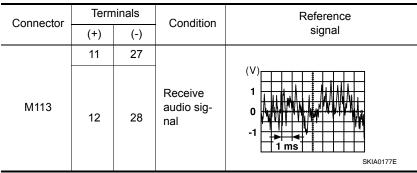
2.TWEETER SIGNAL CHECK

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REAR DOOR TWEETER

< COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connectors and suspect tweeter 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 tweeter. Refer to <u>AV-320, "Removal</u> and Installation". NO >> GO TO 3.

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		В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	13		8	
M44	14	M113	24	Yes
10144	15	IVI I I S	7	fes
	16	+	23	

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

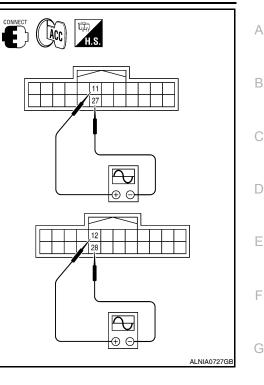
	A			Continuity
-	Connector	Terminal		Continuity
-		13		
	M44	14	Ground	No
	10144	15	Ground	NO
		16		

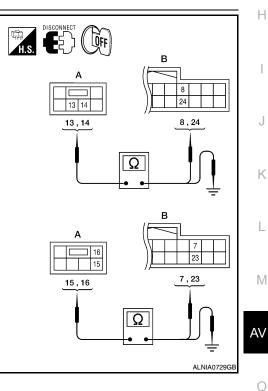
Are the continuity test results as specified?

- YES >> GO TO 4.
- NO >> Check connector housings for disconnected or loose terminals.
 - Repair harness or connector.

4.PRE-AMP SIGNAL CHECK

[PREMIUM WITH NAVIGATION]





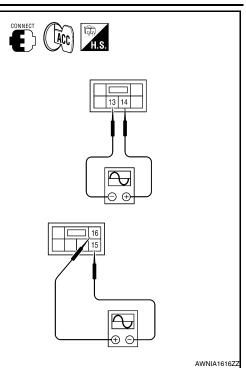
Р

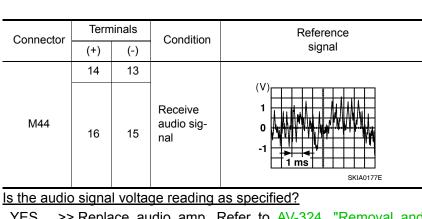
REAR DOOR TWEETER

< 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.

[PREMIUM WITH NAVIGATION]





- YES >> Replace audio amp. Refer to <u>AV-324, "Removal and</u> <u>Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-315</u>, "<u>Removal and</u> <u>Installation</u>".

SUBWOOFER

< COMPONENT DIAGNOSIS >

SUBWOOFER

Description

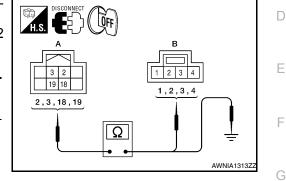
The audio unit sends audio signals to the audio amp. The audio amp. amplifies the audio signals before sending them to the subwoofer using the audio signal circuits.

Diagnosis Procedure

1.SUBWOOFER 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
101112	18	DIZ	2	165
	19	•	4	



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

	A		Continuity
Connector	Terminal		Continuity
	2		
M112	3	Cround	No
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.SUBWOOFER SIGNAL CHECK

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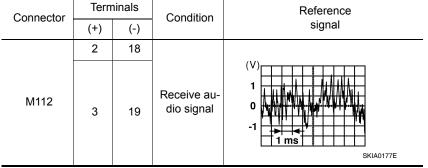
0

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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.
- Check the signal between audio amp. harness connector M112 4. terminals with CONSULT-III or oscilloscope.



Is the audio signal voltage as specified?

YES >> Replace subwoofer. Refer to AV-321, "Removal and Installation".

3.PRE-AMP HARNESS CHECK

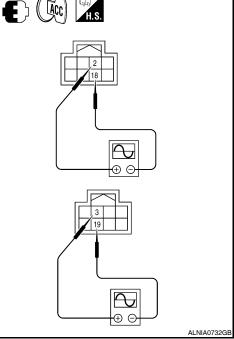
- 1. Disconnect audio unit connector M44 and audio amp. connector M113.
- 2. Check continuity between audio unit harness connector M44 (A) and audio amp. harness connector M113 (B).

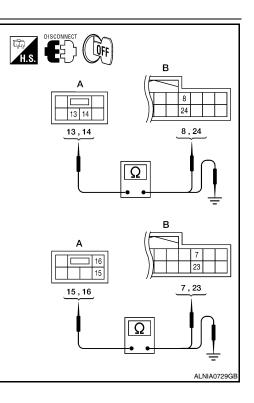
	A	I	В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	13		8	
M44	14		24	Yes
10144	15	M113	7	res
	16		23	

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

		А		Continuity
-	Connector	Terminal		Continuity
-		13		
	M44	14	Ground	No
	10144	15	Ground	NO
		16		

[PREMIUM WITH NAVIGATION] ACC





Are the continuity test results as specified?

- YES >> GO TO 4.
- NO >> • Check connector housings for disconnected or loose terminals.
 - · Repair harness or connector.

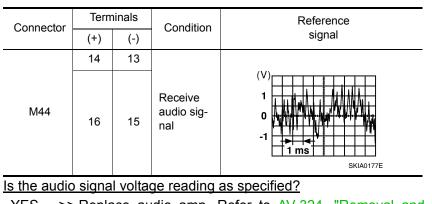
4.PRE-AMP SIGNAL CHECK

SUBWOOFER

AV-245

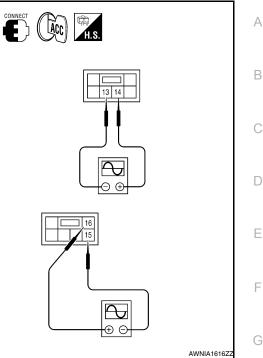
< COMPONENT DIAGNOSIS >

- 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-324</u>, "<u>Removal and</u> <u>Installation</u>".
- NO >> Replace audio unit. Refer to <u>AV-315, "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.

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.

(+)		(-)	Voltage (approx.)	
Connector	Terminal	(-)	voltage (approx.)	
M113	9	Ground	More than 6.5V	

Is inspection result normal?

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.

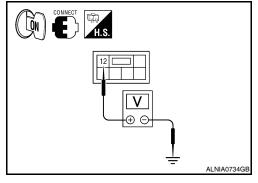
(+)		(-)	Voltage (approx.)	
Connector	Terminal	(-)	voltage (approx.)	
M44	12	Ground	More than 6.5V	

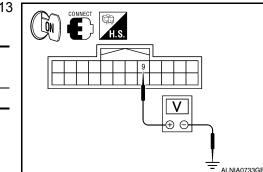
Is inspection result normal?

- YES >> Repair harness or connector.
- NO >> Replace audio unit. Refer to <u>AV-315. "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

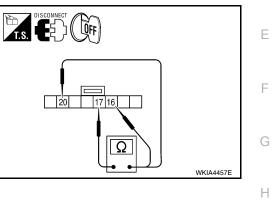
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1. CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

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

Terr	Terminal Signal name		Condition	Resistance (Ω) (Approx.)
		Seek (down)	Depress $ abla$ switch.	165
16	17	Volume (down)	Depress VOL down switch.	487
		Phone/Send	Depress MODE switch.	0
		Seek (up)	Depress Δ switch.	165
20	17	Volume (up)	Depress VOL up switch.	487
		Mode/End (with Bluetooth)	Depress 🌈 📢 switch.	0



YES >> GO TO 2.

NO >> Replace steering wheel audio control switch. Refer to AV-322, "Removal and Installation".

AV-247

2. CHECK HARNESS

Disconnect Bluetooth control unit connector B142 and spiral 1 cable connector M30.

Do the steering wheel audio control switches check OK?

Check continuity between Bluetooth control unit harness con-2. nector B142 (A) and spiral cable harness connector M30 (B).

-	A			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.

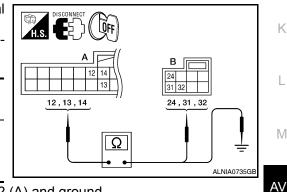
	A		Continuity
Connector	Terminal		Continuity
	12		
B142	13	Ground	No
	14		

Are the continuity results as specified?

YES >> GO TO 3.

NO >> Repair harness.

 ${f 3}.$ SPIRAL CABLE CHECK



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STEERING SWITCH

< COMPONENT DIAGNOSIS >

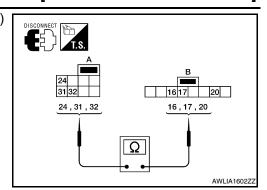
Check continuity between spiral cable harness connector M30 (A) and M102 (B).

	4	В		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>.



[PREMIUM WITH NAVIGATION]

< 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		В	
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.

	4		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.

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

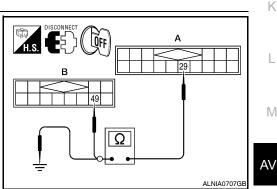
2. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 29 and ground.

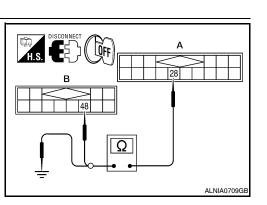
А			Continuity
Connector	Terminal		Continuity
M41	29	Ground	No

Are continuity results as specified?

YES >> GO TO 3.

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





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COMMUNICATION SIGNAL CIRCUIT

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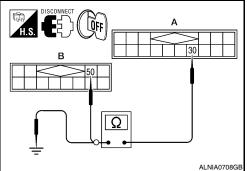
1. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 30 and audio unit harness connector M42 (B) terminal 50.

	Α		В		
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.

Α			Continuity	
Connector	Terminal		Continuity	
M41	30	Ground	No	





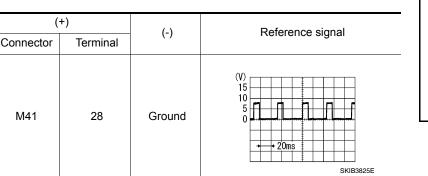
Are continuity results as specified?

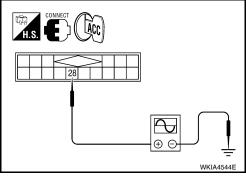
YES >> GO TO 4.

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.





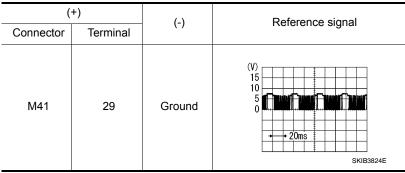
Are voltage readings as specified?

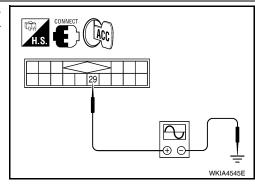
YES >> GO TO 5.

NO >> Replace audio unit. Refer to <u>AV-315, "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?

COMMUNICATION SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

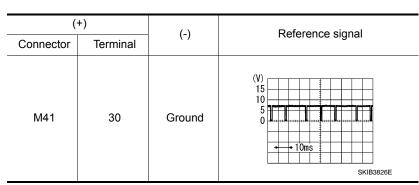
[PREMIUM WITH NAVIGATION]

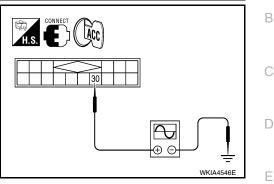
YES >> GO TO 6.

NO >> Replace satellite radio tuner. Refer to <u>AV-327</u>, "Removal and Installation".

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. Refer to AV-327, "Removal and Installation".

NO >> Replace audio unit. Refer to <u>AV-315</u>, "<u>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.
- Check continuity between satellite radio tuner (factory installed) connector M41 (A) and audio unit connector M42 (B).

A	N	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M41	21	M42	41	Yes
10141	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		

Are continuity results as specified?

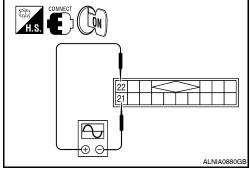
YES >> GO TO 2.

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.

Connector -	(+)	(-)	Reference signal	
	Terminal	Terminal		
M41	22	21	(V) 1 -1 -1 SKIB3609E	



Are voltage readings as specified?

YES >> Replace audio unit. Refer to <u>AV-315, "Removal and Installation"</u>.

NO >> Replace satellite radio tuner. Refer to <u>AV-327. "Removal and Installation"</u>.

RIGHT CHANNEL

42 41 R

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SOUND SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

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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.
- Check continuity between satellite radio tuner (factory installed) M41 (A) and audio unit M42 (B).

Α	١	E	3	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M41	23	M42	43	Yes
1714 1	24	10142	44	ies

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

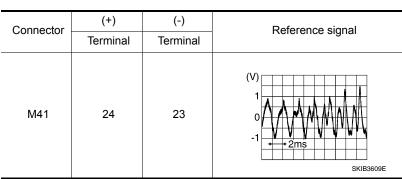
	А		Continuity
Connector	Terminal		Continuity
M41	23	Ground	No
1014 1	24	Gibullu	NO

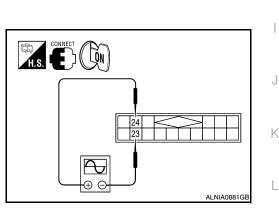
Are continuity results as specified?

- 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-315</u>, "Removal and Installation".
- NO >> Replace satellite radio tuner. Refer to <u>AV-327. "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

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

1. Turn ignition switch OFF.

А

Terminal

7

8

29

Connector

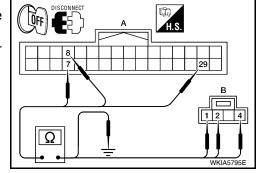
B142

- 2. Disconnect Bluetooth control unit connector and microphone connector.
- Check continuity between Bluetooth control unit harness connector B142 (A) and microphone harness connector R109 (B).

Connector

R109

В



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

Terminal

1

2

4

	А		Continuity
Connector	Terminal		Continuity
	7		
B142	8	Ground	No
	29		

Are the continuity test results as specified?

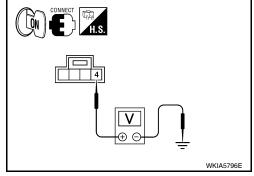
YES >> GO TO 2.

NO >> Repair harness or connector.

2.CHECK MICROPHONE POWER SUPPLY

- Connect Bluetooth control unit connector and microphone connector.
- 2. Turn ignition switch ON.
- 3. Check voltage between microphone harness connector R109 terminal 4 and ground.

(+)	(-)	Voltage (approx.)
Connector	Terminal	(-)	voltage (approx.)
R109	4	Ground	5V



Is voltage reading approx. 5 volts?

YES >> GO TO 3.

NO >> Replace Bluetooth control unit. Refer to <u>AV-180, "Removal and Installation"</u>.

3.CHECK MICROPHONE SIGNAL

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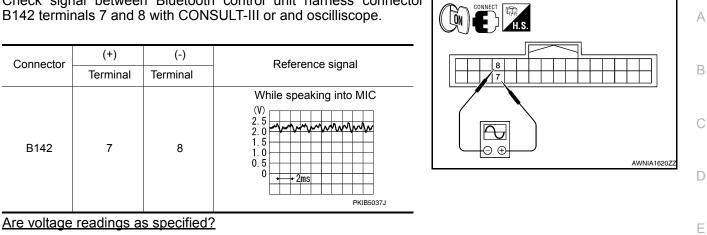
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MICROPHONE SIGNAL CIRCUIT

< COMPONENT DIAGNOSIS >

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

[PREMIUM WITH NAVIGATION]



YES	>> Replace Bluetooth control unit. Refer to <u>AV-180, "Removal and Installation"</u> .
NO	>> Replace microphone. Refer to <u>AV-178, "Removal and Installation"</u> .

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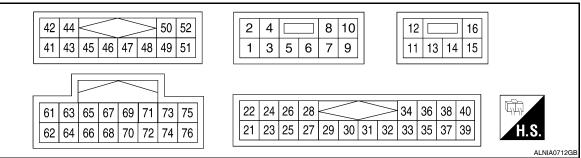
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AUDIO UNIT

Reference Value

INFOID:000000003789893

TERMINAL LAYOUT



PHYSICAL VALUES

(Wire	minal e color)	Item	Signal input/ output		Condition	Reference value (Approx.)
+	-		ουιρυι		I	
2 (W)	1 (B)	Audio sound signal front 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
4 (Y)	3 (BR)	Audio sound signal front 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
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	illumination signal	Input	UFF	Lighting switch is OFF.	0V
9	-	Shield	-	-	-	0V
10 (V)	Ground	ACC signal	Input	lgnition switch ON	-	Battery voltage
12 (G/W)	Ground	Amp ON	Input	Ignition switch ON	Audio unit ON	More than 6.5V



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	minal e color)	Item	Signal input/		Condition	Reference value (Approx.)	A
+	-]	output		1	(αμμισχ.)	
14 (BR)	13 (B/R)	Audio sound signal rear 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	B
16 (L)	15 (B/W)	Audio sound signal rear 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	E
21 (V)	Ground	Remote control A	Output	Ignition switch ON	Audio unit ON	5V	G
22 (P)	Ground	Remote control B	Output	Ignition switch ON	Audio unit ON	5V	F
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	J
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 5 5 5 5 5 5 5 5 5 5 5 5 5	K
29 (W)	28 (W/L)	Audio sound signal RH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 ms 5KIA0177E	A
30	_	Shield	_	_	-	0V	
31 (O)	Ground	Remote control en- able signal	Output	Ignition switch ON	Audio unit ON	5V	F
32 (V)	Ground	Remote control switch power sup- ply	Output	Ignition switch ON	Audio unit ON	12V	

< ECU DIAGNOSIS >

(Wire	ninal color)	Item	Signal input/		Condition	Reference value (Approx.)
+	_		output		1	
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	lgnition switch ON	DVD operating	(V) 1 0 -1 • • 2ms SKIB3609E
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	lgnition 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	-	_

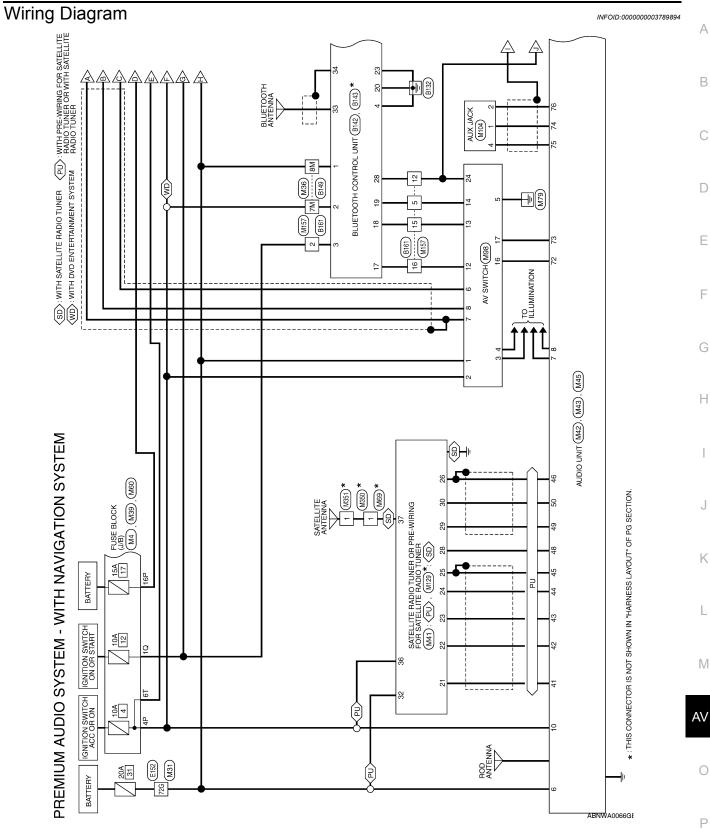
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	minal e color)	Item	Signal input/		Condition	Reference value (Approx.)
+	_		output			(Αμμισχ.)
62 (G)	61 (Y)	Tel audio sig	Input	lgnition switch ON	Bluetooth control unit sends audio signal	(V) 1 -1 -1 -1 -1 -1 -1 -1 -1 -1
63 (R)	_	Mute control	_	_	_	-
64	-	Shield	_	Ignition switch ON	_	0V
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	Ignition switch ON	Operate audio vol- ume	(V) 4 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	NAVI system oper- ating	(V) 0 0 0 0 0 0 0 0 0 0 0 0 0
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	$0V \rightarrow 5V$

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	ninal color)	Item	Signal input/		Condition	Reference value (Approx.)
+	-		output			()
74 (W)	Ground	Auxiliary audio in- put RH (+)	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
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

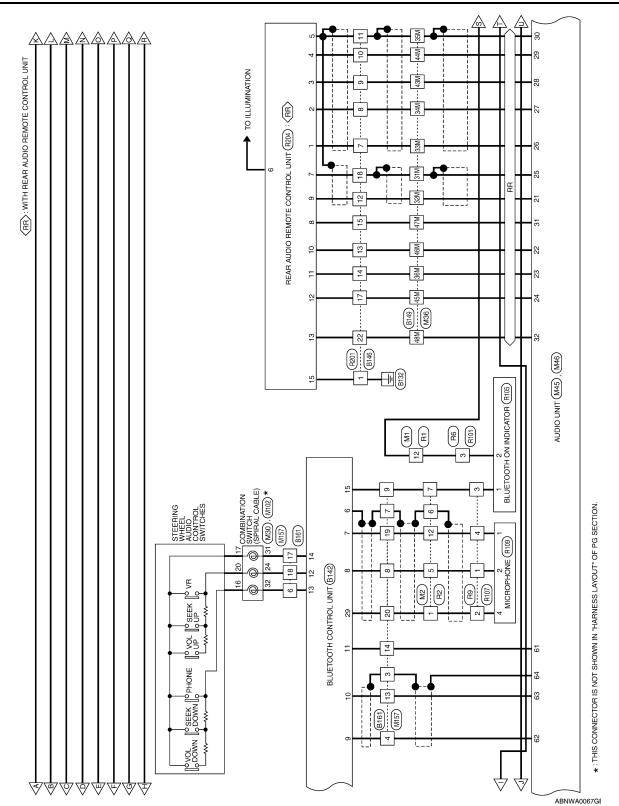
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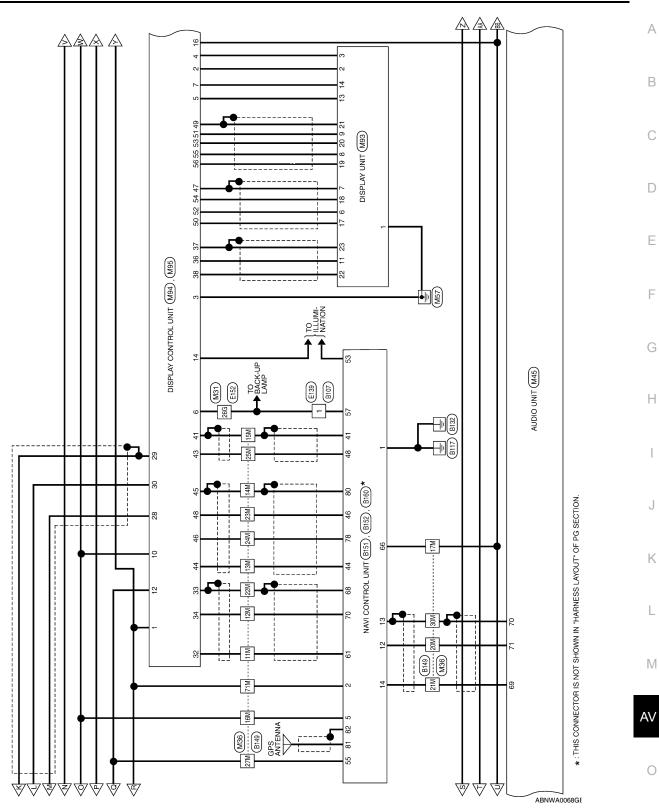


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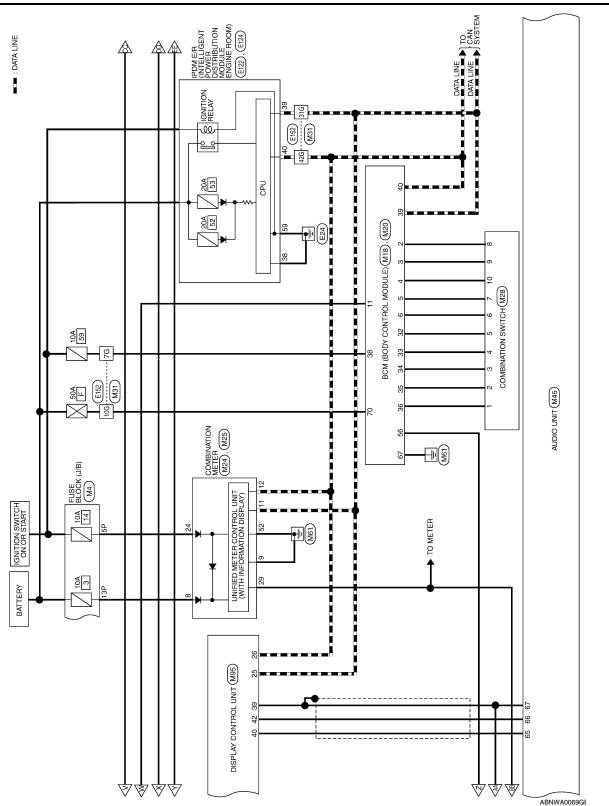
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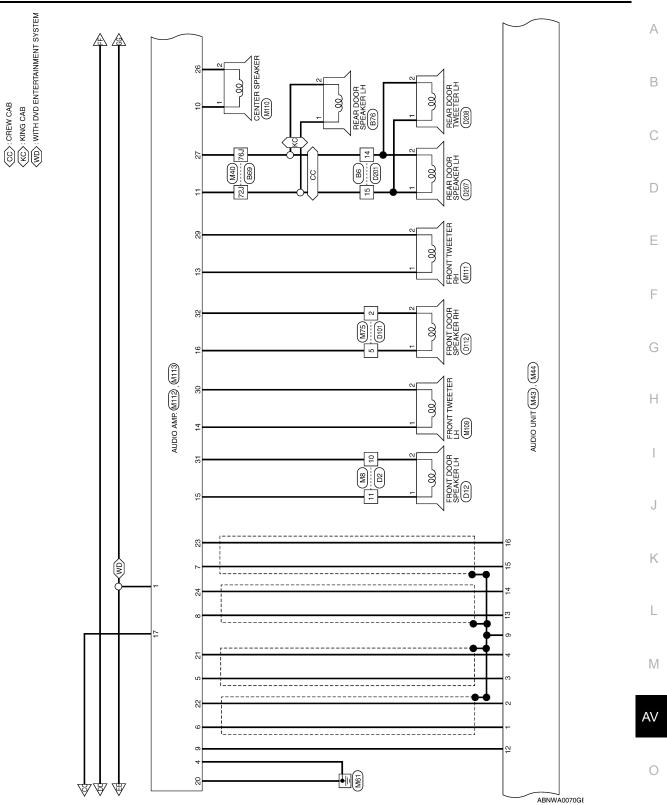


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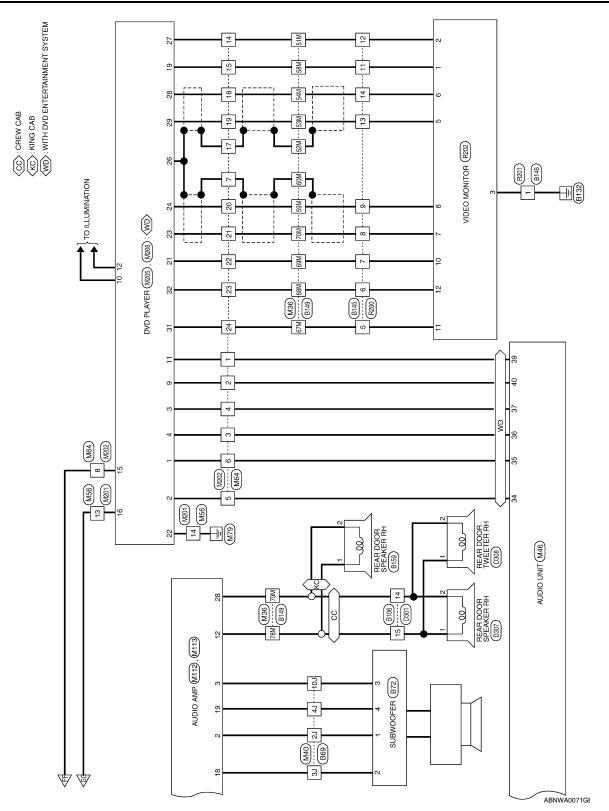
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	Connector No.	. M2		Con	Connector No.	M4	
Connector Name WIRE TO WIRE Connector Color WHITE	Connector Name WIRE TO WIRE Connector Color WHITE	Ine WIRE T	0 WIRE	Con	Connector Name Connector Color	ne FUSE B or WHITE	Connector Name FUSE BLOCK (J/B) Connector Color WHITE
	际 日 日 日	5 4 3 2 1 12 11 10 9 8 7 6	8 7 6	E -	ن.	7P 6P 5P 4P	7P (6P (5P (4P (3P (2P (1P (0P (9P (0P (0P (0P (0P (0P (0P (0P (0P (0P (0
Terminal No. Color of Signal Name	Terminal No.	Color of Wire	Signal Name	Ten	Terminal No.	Color of Wire	Signal Name
12 R/G –	1	R/W	1		4P	>	1
		R/L	I		5Р	0/L	I
		SHIELD	I		13P	۹.	I
	12	ну в	1 1		101	5//4	1
	Connector No	M1R				Color of	
e	Connector Name		BCM (BODY CONTROL	Ter	No.	Wire	Signal Name
Connector Color WHITE			E)		1	0	ACC SW
	Connector Color	ION WHILE			35	אַק אַר	
7 6 5 4 3 2 1 16 15 14 13 12 11 10 a 8					34 8	2 -	OUTPUT 4
2					35	O/B	OUTPUT 2
		\square	\square		36	R/W	OUTPUT 1
	1 2 3 4 5	6 7 8 9 10	5 6 7 8 9 10 11 12 13 14 15 16 17 18 1	19 20	38	W/L	IGN SW
	21 22 23 24 25	26 27 28 29 30	37 38	9 40	39	_	CAN-H
					40	٩	CAN-L
Terminal No. Color of Signal Name	Terminal No.	Color of Wire	Signal Name				
10 L/R –	N	SB	INPUT 5				
11 L/W –	3	G/Y	INPUT 4				
-	4	7	INPUT 3				
	5	G/B	INPUT 2				
	9	>	INPUT 1				

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[PREMIUM WITH NAVIGATION]

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Signal Name	BATTERY (TYPE A [*])	BATTERY (TYPE B [*])	GND (POWER)	CAN-H	CAN-L	RUN/START SPEED OI IT			COMBINATION SWITCH (SPIRAL CABLE) (WITH BLUETOOTH)		24 25 26 27 31 32 33 34		Signal Name	STRG SW A (LIP)	STRG SW C (GND)	STRG SW B (DOWN)			
Color of Wire	Y/R	٩	В	_	٩	0/L		M30			24 25 31 32		Color of Wire	2 U	Y/R	+	_		
Terminal No.	8	80	6	11	12	24	B.	Connector No.	Connector Name	Connector Color	中国 H.S.		Terminal No.		31	32			
Connector No. M24 Connector Name COMBINIATION METER				SH		20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 40 39 38 37 36 38 32 31 30 29 28 27 26 25 24 23 22 21		Connector No. M28	Connector Name COMBINATION SWITCH Connector Color WHITE	[1] [1] [1] [1] [1] [1] [1] [1] [1] [1]	al No. Wire Signal N	RW	4 R/Y INPUT4	5 R/G INPUT5	6 V INPUT1	7 G/B OUTPUT2	SB	9 G/Y OUTPUT4	10 Y OUTPUT3
		Connector Color BLACK		56 57 58 59 60 61 62 63 64 1 65 66 67 68 63 70	H.S.		Terminal No. Color of Wire Signal Name 56 R/G BATTERY SAVER 67 B GND (POWER)	Connector No. M25	e r		H.S. 52 51 50 40 48 47 52 51 50 40 48 47 52 51 50 40 51 50 50 50 50 50 50 50 50 50 50 50 50 50		Terminal No. Color of Signal Name	52 B ILL GND	-				10

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Connector No.	lo. M39		Connector No.	o. M40		Connector No.). M41	
Connector Name Connector Color		FUSE BLOCK (J/B) WHITE	Connector Name Connector Color		WIRE TO WIRE WHITE	Connector Name		SATELLITE RADIO TUNER OR PRE-WIRING FOR SATELLITE RADIO TUNER
				-		Connector Color	olor WHITE	ITE
E		20 10 20 10 20 10 20 10 20 10 20 10 20 10 20 10 20 10 20 10 20 10 20 20 10 20 20 20 20 20 20 20 20 20 20 20 20 20	E			4		
H.S.	200		HS		5J 4J 3J 2J 1J 10J 9J 8J 7J 6J	 H.S.H	22 24 26 21 23 25 1	27 28 29 30 31 33 35
Terminal No.	. Color of Wire	Signal Name		21J 20J 19J 1 30J 29J 2	200 190 18J 17J 16J 15J 14J 13J 12J 11J 300 29J 28J 27J 26J 25J 24J 23J 22J	 Terminal No.	Color of Wire	Signal Name
ā	G/R	1		41J 40J 39J 3	411 401 391 381 371 361 351 341 331 321 311	21	IJ	SAT LCH(-)
				50J 49J 4	500 490 48J 47J 46J 45J 44J 43J 42J	52	щ	SAT LCH(+)
				61 60 59 5	<u>601 591 581 573 563 553 543 533 523 513</u>	23	В	SAT RCH(-)
				9 169 102	70J 69J 68J 67J 66J 65J 64J 63J 62J	 24	M	SAT RCH(+)
						 25	SHIELD	EARTH SIG
					75J 74J 73J 72J 71J	 26	SHIELD	DATA EARTH
					801 791 781 77J 76J	 27	I	1
						28	_	REQ1 (SAT-COMBI)
				Color of		29	0/L	TXD (SAT-COMBI)
			Terminal No.	Wire	Signal Name	30	W/L	RXD (COMBI-SAT)
			2J	Ν	I	31	I	1
			3J	В	1	32	≻	BACKUP
			4J	BR	I	33	I	1
			10J	BR/W	I	34	I	1
			72J	SB	I	35	I	1
			76J	B∕	I	36	>	ACC
Connector No. Connector Nar	lo. M42 lame AUD	Connector No. M42 Connector Name AUDIO UNIT (WITH PREMIUM	Terminal No.	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name
	AUD	IO SYSTEM)	41	J	(-)	47	I	1
Connector Color WHILE	color WHI		42	œ	(+)	48	_	REQ (CD-COMBI)
			43	в	R(-)	49	O/L	RX (CD-COMBI)
A HIM	42 44 44 44 44 45 46	45 46 47 48 49 51	44	M	R(+)	50	M/L	TX (COMBI-CD)
H.S.			45	SHIELD	EARTH	51	I	I
			46	SHIELD	DATA EARTH	52	Ι	I

AUDIO UNIT

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[PREMIUM WITH NAVIGATION]

				1				1	1		1	1		1	1	1		1		7	A
	Connector Name AUDIO UNIT (WITH PREMIUN Connector Color WHITE	71 73 75	Signal Name	TEL SIG INPUT (-)	TEL SIG INPUT (+)	TEL SIG ON TRIG	TEL SIG GND	RX (DCU-H/U)	TX (H/U-DCU)	SHIELD	I	NAVI VOICE-	NAVI VOICE GND	NAVI VOICE+	EJECT	LOAD	AUX R+	AUX L+	AUX EARTH		В
M45	AUDIO UN AUDIO SY WHITE	61 65 65 67 69 71 73 75 62 64 66 68 70 72 74 76	or of re							ELD					ø	в	_	~		-	C
	Name Color	61	Vo. Color of Wire	>	σ	œ	SHIELD	OL	M/L	SHIELD	1	3	SHIELD	B	W/B	Y/B	3	Œ	8	-	D
Connector No	Connector Name Connector Color	品.S.H	Terminal No.	61	62	63	64	65	99	67	68	69	20	71	72	73	74	75	76		E
																					F
	Connector Name AUDIO UNIT (WITH PREMIUM AUDIO SYSTEM Connector Color WHITE		Signal Name	1	AMP ON	RR SP LH-	RR SP LH+	RR SP RH-	RR SP RH+												G
	O UNIT O SYST E	11 13 14 15	Sig		4	В	R	Ē	R												Н
0 M44	ame AUDI AUDI olor WHIT	112	Color of Wire	I	G/W	B/R	BR	B/W	_												1
Connector No	Connector Name AUDIO Connector Color WHITE	मिन H.S.	Terminal No.	5	12	13	14	15	16												J
										1											0
_	Σ			1							1			1							K
	Connector Name AUDIO UNIT (WITH PREMIUM Connector Color WHITE	6	Signal Name	FR SP LH-	FR SP LH+	FR SP RH-	FR SP RH+	I	BACK UP	ILL CONT	LIGHT SW	CASE GND	ACC								L
	DIO UNITE	5 6 7					_														N
0 M43	lame AUC olor WHI	2 4	Color of Wire	B	N	BR	۲	I	~	BR	B/L	SHIELD	>								AV
Connector No	Connector Name AUDIO Connector Color WHITE	子 H.S.	Terminal No.	-	2	e	4	5	9	7	8	6	10								C
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[PREMIUM WITH NAVIGATION]

AV-271

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Terminal No. Wire Signal Name	30 SHIELD SHIELD	31 O ENABLE	32 V SWITCH B(+)	33 – –	34 W FES L CH IP (-)	35 B FES L CH IP (+)	36 G FES R CH IP (-)	37 R FESRCHIP (+)	38			40 L/W AUDIO ON					
Termir	°.	°.	e E	°.	°.	e E	e	e	(n		ν Γ	4					
INIT (WITH PREMILIM	AUDIO SYSTEM)	E		24 20 28	•	Signal Name		HEMULEA	REMOTE B	REMOTE C	DEMOTE D		REMOTE GND	L CH OUTPUT (-)	L CH OUTPUT (+)	R CH OUTPUT (-)	R CH OUTPUT (+)
M46 MAID	AUD	lor WHI	00 00 00 00	23 25 27 2		Color of		>	۵.	BR/Υ	-	-	ГG	0	O/L	W/L	×
Connector No.		Connector Color WHITE	R. Contraction of the second s	21 21	o C	Terminal No Wire		12	22	23	10	۲ 4	25	26	27	28	29

al No. Color Color .	ľ	e r	0 0	Color of Wire	- -	4 B
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I	I	1	I	I	I	I	I	I	I	I	I
SHIELD	>	B/Υ	B/W	SHIELD	≻	BR		B/W	G/Y	BR	SB

15 17 17 18 19 20 21 22 23 23 23

Connector No.	<u>.</u>	M64	4									
Connector Name WIRE TO WIRE	lame	Ň	띭	IΥ	1	Ē	ш					
Connector Color		BROWN	ð	Ś								
												Ι.
	1 2	3 4	5	9	∎ונ	╘╢╸	~	œ	თ	8 9 10 11	Ξ	
H.S.	12 13 14 15 16 17 18 19 20 21 22 23 24	4 15	16	17	18	19	20	21	23	23	24	
Terminal No	Color of	or of			<u>.</u>	6		5	Signal Name			

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AUDIO UNIT

Signal Name

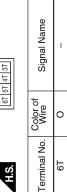
Terminal No. Wire

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	-	-	-	-		-
Signal Name	1	I	I	I	-	-
Color of Wire	۲/۲	۲W	თ	щ	Μ	В
Terminal No. Wire	-	2	З	4	5	9



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Connector No.	°.		2	M93	_								
Connector Name DISPLAY UNIT	Nan	e		S S	님	¥		Ξ					
Connector Color WHITE	Col	2	5	F	E								
		1											
E				-	$ \rangle$	IN .	V	17					
	12	Ŧ	11 10 9	6	80	4	9	ŝ	4	Э	~≀	-	
0 L	24	23	22	21	24 23 22 21 20 19 18 17 16 15 14 13	19	18	17	16	15	14	13	
		l				1		1		1	1	l	

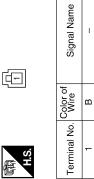
Signal Name	GND	INV VCC	SIGN VCC	I	I	U	RGB GND	ЧH	ΥS	I	DCU-DSP	I	INV GND	SIGN GND	Ι	I	н	В	RGB SYNC	٨P	SYNC GND	DSP-DCU	BUS GND	I
Color of Wire	ш	۲W	L/R	T	I	R/W	SHIELD	œ	m	I	B/W	ı	٩	P/L	I	I	R/L	ш	U	M	SHIELD	_	SHIELD	I
Terminal No.	-	2	e	4	5	9	7	8	6	10	÷	12	13	14	15	16	17	18	19	20	21	22	23	24

AUDIO UNIT

Connector No	M76
Connector Name WIRE TO WIRE	WIRE TO WIRE
Connector Color WHITE	WHITE
日 H.S.	4 3 2 1 10 9 8 7 6 5

Signal Name	-	H	
Color of Wire	L/B	W/B	
Terminal No.	2	5	

Connector No.	M69
Connector Name WIRE TO WIRE	WIRE TO WIRE
Connector Color VIOLET	VIOLET
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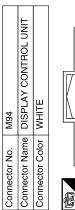
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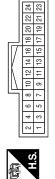
Signal Name	I	ILL	I	SPEED-8P	I	I	-	-	Т	-	-	-
Color of Wire	I	R/L	I	W/R	I	I	I	I	I	I	I	I
Terminal No.	13	14	15	16	17	18	19	20	21	22	23	24

Signal Name	SHIELD	AUDIO-DCU	RGB SYNC	æ	SHIELD	J	SHIELD	В	SHIELD	В	λS	ŋ	VP	В	НР	RGB SYNC
Color of Wire	SHIELD	W/L	×	R/L	SHIELD	R/W	SHIELD	В	SHIELD	R/L	В	R/W	M	В	В	g
Terminal No.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56

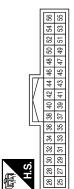
Signal Name	в	INV VCC	GND	SIGN VCC	INV GND	RV	SIGN GND	I	I	ACC	I	IGN
Color of Wire	Y	L/W	В	L/R	Ч	GR	P/L	I	I	0	Ι	G/R
Terminal No.	-	2	3	4	5	9	2	8	6	10	11	12

Signal Name	CAN-H	CAN-L	I	BUS+	SHIELD	BUS-	I	BUS+	SHIELD	Ч	T	DCU DSP	BUS GND	DSP-DCU	SHIELD	DCU-AUDIO
Color of Wire		۹.	I	>	SHIELD	ГG	I	L	SHIELD	Ь	I	B/W	SHIELD	Γ	SHIELD	O/L
Terminal No.	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40









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Connector No. M102 Connector Name COMBINATION SWITCH (SPIRAL CABLE)	- 비린비	Terminal No. Color of Wire Signal Name 16 R - 17 BR - 20 W -	Connector No. M110 Connector Name CENTER SPEAKER Connector Color BROWN Terminal No. Color of Wire Signal Name 2 UB -
Signal Name GND M-CANT I BUS (4)	SHIELD-1 BUS (-) -	REMOTE CONT A REMOTE CONT B REMOTE CONT B - LOAD - 8 PULSE 8 PULSE	Connector No. M109 Connector Name FRONT TWEETER LH Connector Name FRONT TWEETER LH Connector Color BROWN Terminal No. Color of Wire Signal Name 1 L/W - 2 L/R -
Color of Wire B			Color of LWN
Terminal No. 5		12 13 15 15 16 16 16 17 17 23 23 23 23	Connector No. Connector Name Connector Color 1 1 2 2
M98 AV SWITCH WHITE	8 10 12 14 16 18 22 24 7 9 11 13 15 17 19 21 23	Signal Name +B ACC ILL+ ILL CONTROL	M104 AUX JACK WHITE rof Signal Name rof Signal Name r AUX AUDIO RH + AUX AUDIO LH +
Connector No. M98 Connector Name AV SWI Connector Color WHITE	HS.	Terminal No. Color of Wire 1 Y 2 V 3 R/L 4 BR	Connector No. M104 Connector Name AUX JA Connector Color WHITE Terminal No. Color of 1 W A 3 - B 4 R A
			ABNIA0196GB

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Connector Color WHITE	olor WH	ITE
际 H.S.	-14	20 19 18 17
Terminal No. Wire	Color of Wire	Signal Name
-	≻	BAT
2	×	WOOFER+1

H.S.

WOOFER+2 GND BAT

γ/G

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BR/W

ო 4 1

WOOFER-2 WOOFER-1

ВВ m

18 20

B

GND

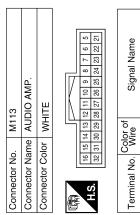
Connector Name FRONT TWEETER RH Connector Color BROWN	Connector No.	M111
Connector Color BROWN	Connector Name	FRONT TWEETER RH
	Connector Color	BROWN
	đ	[
		2 1

Connector Name AUDIO AMP.

Connector No. M112

Signal Name	I	I
Color of Wire	W/B	L/B
Terminal No.	-	2

	Signal Name	AMP ON	CTR OUT+	RR LH OUT+	RR RH OUT+	FR RH TW+	FR LH TW+	FR LH OUT+	FR RH OUT+
	Color of Wire	G/W	۲M	SB	0/L	W/B	L/W	L/W	W/B
	Terminal No.	ი	10	1	12	13	14	15	16



Signal Name	FR RH IN-	FR LH IN-	FR RH IN-	RR LH IN-	
Color of Wire	ВВ	ш	BW	B/R	
Terminal No. Color of	5	9	7	8	

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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-			
_	BR	I	L/B	B/Υ	R/L	L/B	L/R	L/B	Г/B			

32 33 39 29 28 37

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	۲W	SB	0/L	W/B	۲	۲Ŵ	W/B	≻	N
Terminal No.	6	10	1	12	13	14	15	16	21	22

Signal Name

Color of Wire

Terminal No. 23

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1	1								Ĩ	[1	1	1	1	1				1		1	7							А
I										Signal Name	I	1	1	I	I	I	I	1	I	1	1								В
R/W	-									Color of Wire	>	B/Y	B/W	SHIELD	7	BR	_	B/W	G/Y	BR	SB								С
20	-									Terminal No.	8	14	15	17 S	18	19	20	21	22	23	24								D
	L								1			1	1	1	1			1			1								F
I	I	I	I	I	1	1	1	I					5 4 3 2 1	24 23 22 21 20 19 18 17 16 15 14 13 12		Signal Name	5	1	1	I	1	I	I	1					G
G/R	SHIELD	ۍ ص	R/B	G/W	SHIELD	R/L	GR	W/R		M202	BROWN	_	9876	3 22 21 20 19 18 1				Y/L		ופ	r	N	в	SHIELD					Η
0 N	3 SHI	4	5	6 G	7 SHI	8	6	12		Connector No.	Connector Color		1111 1111	ď		Terminal No. Wire	, ,			m .	4	5	9	7 SH	-				
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																	<u>e</u>												L
I													3 2 1				olgrial Name	I	I										M
в	-									. M201	lor WHTE	_	7 6 5 4 7	4		Color of	WIre	~	В										AV
37										Connector No. M201	Connector Color		Æ					13	14										0

Signal Name L T L L T I T Color of Wire R/G G/O Y/R œ > m **≻** Terminal No. 17 13 4 16 100 19 15

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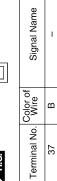
A No.	2013[13][17] Color of G/R G/R G/W G/W SHIELD G/W SHIELD	Soligitality Signal Name Color of Wire Signal Name G/R - G - R/B - G/W - SHIELD - SHIELD -
6	GR	I
12	M/R	1

Connector No.	M129
Connector Name	Connector Name SATELLITE RADIO TUNER
Connector Color VIOLET	VIOLET
S.H.	

Connector No. M157 Connector Name WIRE TO WIRE

Connector Color WHITE

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Connector No.	o. M205	10	Connector No.	o. M206		Connector No. M350	
Connector Name		DVD PLAYER	Connector Name		DVD PLAYER	Connector Name WIRE TO WIRE	ш
Connector Color	olor GRAY	×	Connector Color	olor BLUE		Connector Color VIOLET	
					Γ		
H.S.	2 4 6 1 3 5	8 10 12 14 16 7 9 11 13 15	H.S.	18 20 22 17 19 21	24 26 28 30 32 23 25 27 29 31	H.S.	
Terminal No.	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name		
-	в	FES L+ OUTPUT	17	1	1	Terminal No. Wire Signa	Signal Name
2	×	FES L- OUTPUT	18	I	1	-	
e	æ	FES R+ OUTPUT	19	B/W	GND	-	
4	σ	FES R OUTPUT	20	I	I		
5	I	1	21	G/Y	SW POWER +5V		
9	I	1	22	в	GND		
7	ı	1	23	B/W	VTR+		
8	ı	1	24	_	VTR-		
6	LW	AUDIO ON	25	1	1		
10	BR	ILL-	26	SHIELD	SHIELD		
1	٨٦	FES ENABLE	27	B/Y	GND		
12	B/L	LIGHTING SW	28	≻	DATA RX		
13	1	1	29	BR	DATA TX		
14	I	I	30	I	I		
15	>	ACC	31	SB	+B		
16	~	B+	32	BB	+B		
Connector No.	o. M351		Connector No.	o. E122		Transian Mc Color of	
Connector Name		SATELLITE RADIO	Connector Name		IPDM E/R (INTELLIGENT		
	-	ENNA		MOM		۰.	
Connector Color	olor BROWN	MN	Connector Color		μ		CAN-H
	Ľ	ſ		-		40 P C	CAN-L
国 H.S.			SH E	42 41 40 39	39 38 37		
Terminal No.	Color of Wire	Signal Name		48 47 46	48 47 46 45 44 43		
	-	-					

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Connector No.E139Connector NameWIRE TO WIREConnector ColorWHITE

IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)

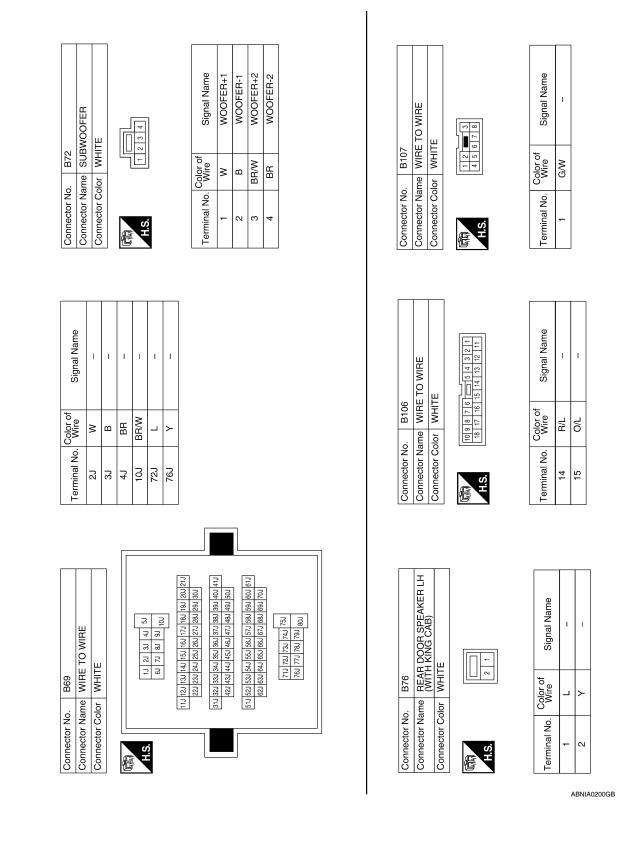
Connector No. E124 Connector Name IPDM

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			B6 MIDE TO MIDE			5432	18 17 16 15 14 13 12 11			Signal Name	1					С
					_		18 17 16 1		Color of	Wire		3				D
			Connector No.	Connector Color		Ē	H.S.			ġ	4 7	2				E
			Ŭ Ŭ	3 0		E			L	<u> </u>						F
	ame		Signal Name				-	-	1							G
8 7 6 5 4	Signal Name	T														Н
8376	Color of Wire	G/W	o. Color of Wire	L V	W/B	GR	Г	Ч	7							I
园 H.S.	Terminal No.	-	Terminal No.	7G	10G	26G	31G	42G	72G							J
						Γ										K
	Signal Name	GND (POWER)		Щ				50 DC	2 100	11G 12G 13G 14G 15G 16G 17G 18G 19G 20G 21G	27G 28G 29G 30G	316 326 336 356 376 386 406 416 426 436 456 466 476 486 496 506	51G 53G 54G 53G 54G 53G 60G 61G 62C 63G 64G 65G 66G 67G 88G 70G	74G 75G 79G 80G		L
BLACK 50 58 57 52 61 60		GND	52	WIRE TO WIRE	WHITE			1G 2G 3G 4G 6G 7G 8G 4G	p) p/ p)	G 14G 15G 16G	G 24G 25G 26G	G 34G 35G 36G G 44G 45G 46G	G 54G 55G 56G G 64G 65G 66G	71G 72G 73G 74G 75G 76G 77G 78G 79G 80G		Μ
	o. Color of Wire	m	No. E152		-					11G 12G 13	226 23	31G 32G 33 42G 43	51G 52G 530 62G 630			AV
Connector Color	Terminal No.	59	Connector No.	Connector Name	Connector Color	l d	اطط ا	H.S.							<u></u>	0
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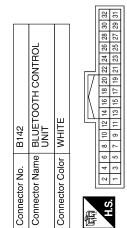
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Terminal No.	21	22	23	24	25	26	27	28	29	30	31	32	
			1	1									
Signal Name	MIC IN-	AUDIO OUT+	AUDIO OUT-	MUTE CONTROL	LADDER IN 1	LADDER IN 2	LADDER IN GND	LED IND 1	I	LADDER OUT 1	LADDER OUT 2	LADDER OUT GND	CONT1
Color of Wire	R/L	g	н	۲	R/G	G/W	Y/R	GR	I	>	G/O	R/B	В
Terminal No.	8	6	10	11	12	13	14	15	16	17	18	19	20



Signal Name	BATT	ACC	IGN	GND	I	MIC SHIELD	MIC IN+	
Color of Wire	Y	>	G/R	B/W	I	SHIELD	в	
Terminal No. Color of	F	2	e	4	ъ	9	2	

B143	Connector Name BLUETOOTH ANTENNA	BLACK	E S
Connector No.	Connector Name	Connector Color BLACK	同 H.S.

Connector Name WIRE TO WIRE

Connector No. B145

Connector Color WHITE

5	Signal Name	BT ANTENNA	SHIELD BT ANTENNA SHIELD
<u>_</u>]	inal No. Color of Wire	в	SHIELD
I	nal No.	33	34

Signal Name	BT ANTENNA	SHIELD BT ANTENNA SHIELD	
Color of Wire	В	SHIELD	
Terminal No.	33	34	

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Signal Name	I	I	CONT4	I	I	I	I	SPEED SIGNAL	MIC POWER	I	I	I
Color of Wire	ļ	I	в	I	I	I	I	W/R	R/W	I	I	I
Terminal No. Color of	21	22	23	24	25	26	27	28	29	30	31	32

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Signal Name

Color of Wire

Terminal No.

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B/W

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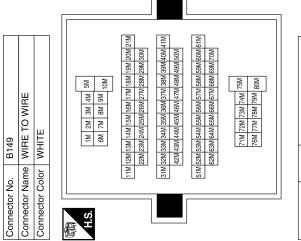
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Signal Name	I	I	Ι	1	I	I	I	I	I	I	I	1	1	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	T
Color of Wire	מ	R/M	BR	G/R	SHIELD	ГG	>	ш	σ	SHIELD	BR/Y	æ	×	Ļ	٩.	0	>	B/Y	SHIELD	g	L	B/W	L	SHIELD	SB	BR	G/Y	W	۲	_	R/L
Terminal No.	23M	24M	25M	27M	30M	31M	32M	33M	34M	35M	36M	43M	44M	45M	46M	47M	48M	51M	52M	53M	54M	58M	59M	60M	67M	68M	W69	70M	71M	78M	M67



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Signal Name	1	1	1	I	1	1	1	1	1	1	I	I
Color of Wire	>	≻	_	Ч	æ	SHIELD	SHIELD	0	W/R	в	Μ	SHIELD
Terminal No.	λM	8M	11M	12M	13M	14M	15M	16M	17M	20M	21M	22M

9	WIRE TO WIRE	BROWN			Signal Name	1	1	1	I	I	I	I	I	I	I	I	I	I
. B146			5 3	12 13 14 13	Color of Wire	В	в	σ	н	×	SHIELD	^	Р	BR/Y	0	Ļ	ГG	>
Connector No.	Connector Name	Connector Color		H.S.	Terminal No.	-	7	8	6	10	1	12	13	14	15	17	18	22

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Connector No.	B151
Connector Name	Connector Name NAVI CONTROL UNIT
Connector Color WHITE	WHITE

Signal Name

Terminal No. Wire

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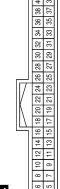
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	40	39	
	38	37	
	36	35	
	34	33	
	32	31	
	30	29	
	28	27	
	26	25	
Π	24	23	
IV	22	21	
IN	20	19	
	18	17	
5	16	15	
	14	13	
	12	11	
	10	9	
	8	7	
	9	5	
	4	3	
	2	1	
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Signal Name	GND	BATT	1	1	ACC	1	I	1	I	1	1	GUIDE VOICE+	SHIELD	GUIDE VOICE-	I	I	I	I	I	I
Color of Wire	m	≻	ı	I	0	I	I	I	I	ı	ı	ш	SHIELD	Μ	Ι	Ι	I	Ι	Ι	ı
Terminal No.	-	2	e	4	5	9	2	8	თ	10	11	12	13	14	15	16	17	18	19	20

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	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

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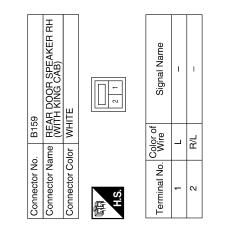
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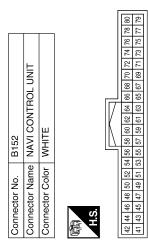
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Signal Name	I	I	I	ILL	I	IGN	I	RV	I	I	I	BUS+	I	I	I	I	SPEED 8P	Ι	SHIELD	I	BUS-	Ι	I	Η	Ι	Ι	-	I	G	I	RGB GND
Color of Wire	I	I	I	R/L	I	G/R	ı	G/W	I	I	1	L	I	I	I	I	W/R	I	SHIELD	1	Р	I	I	Ι	I	I	Ι	I	R/W	Ι	SHIELD
Terminal No.	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	99	67		69	02	71	72	23	74	75	92	77	78	62	80



Signal Name	SYNC GND	I	I	Я	I	в	I	RGB SYNC	I
Color of Wire	SHIELD	I	I	æ	I	в	I	BR	I
Terminal No. Color of	41	42	43	44	45	46	47	48	49

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Name								,								Name							
r of Signal Name	~		-	۱ ۳	I EE	1	1	0	1	I I	1			R6 WIRE TO WIRE WHITE	7 6 5 4 - 3 2 1 16 15 14 13 12 11 10 9 8	r of Signal Name	U U U						
Terminal No. Wire	6 G/W	7 SHIELD	8 R/L		>	13 R	14 Y	15 G/O	16 V	17 Y/R	18 R/G	19 B	20 R/W	Connector No. R6 Connector Name WIRE T Connector Color WHITE		Terminal No. Color of	3 R/G						
Term														Conr	同司 H.S.	Tern							
		7				Γ]	
B161		J	5 6 7 8 9	10 11 12 13 14 15 16 17 18 19 20			Signal Name		1	1		I		TO WIRE E	1 2 3 4 5 6 7 8 9 10 11 12	Signal Name	1	T	I	1	I		
			1 2 3 4 5	10 11 12 13			o. Wire	G/B	SHIFLD					Connector No. R2 Connector Name WIRE TO WIRE Connector Color WHITE	1 2 3 6 7 8	o. Color of Wire	R/W	R/L	SHIELD	GR	B	-	
Connector No.	Connector Color		E	HS			Terminal No.	2			r u	ר		Connector No. Connector Nam Connector Cold	低同 H.S.	Terminal No.	-	2	9	2	12		
		_				Г				7							T	1					
							Signal Name	1						IRE	5 6 7 14 15 16	Signal Name	1						
B160	GRAY			81	70					1				R1 WIRE TO W WHITE	1 2 3 4 5 8 9 10 11 12 13 14	Color of Si Wire Si	R/G						ĺ
Connector No.		_		16		1	Terminal No. Wire	81 B	<u>,</u>					Connector No. R1 Connector Name WIRE TO WIRE Connector Color WHITE		Terminal No. Cold	12 R/						
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ame WIRE TO olor WHITE 0lor WHITE 89 101112 80 0lor 8109 123 8 123 123 123 123	Connector Name BLUETOOTH ON INDICATOR Connector Color WHITE	研 H.S.	of	GR	2 PVL DAT/NIGHT ILL SIG 4	Connector No R200	e e		(武) 16 15 14 13 12 11 10 9 8 H.S.	Terminal No. Color of Signal Name	5 SB	6 BR –	7 G/Y –	– W –	9 L –	+	i o	14 L –
Connector Name	RE TO WIRE	11/12/13/14/15/16	Signal Name	I		60	CROPHONE	IITE			MIC OUT (+)	MIC OUT (-)	1	MIC POWER				
OWRE Signal Name Signal Name Signal Name		<u>ب</u>		_					LINE STREET									

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REAR AUDIO REMOTE CONTROL UNIT WHITE	5 6 7 13 14 15 16	Signal Name	L CH INPUT-	L CH INPUT+	R CH INPUT-	R CH INPUT+	SHIELD		REMOTE GND	ENABLE	REMOTE A	REMOTE B	REMOTEB C	REMOTE D	SWITCH +B	Ι	GND	I				
		Color of Wire	В	σ	æ	N	SHIELD	R/L	LG	0	>	٩	BR/Υ		>	-	в	1				
Connector Name Connector Color	子 王 王 王	Terminal No.	-	2	ю	4	5		7	œ	ი	10	1	12	13	14	15	16				
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												۲ د	F	L								
VIDEO MONITOR WHITE	8 9 11	Signal Name	GND	GND	Q	I	DATA RX	DATA TX	VIDEO IN+	VIDEO IN-	I	SW POWER +5V	FILTERED BAT	FILTERED BAT								
	2 4 6 1 3 5 7 8 9	Color of Wire	B/W	B/Y	в	I	U	_	N		1	G/Y	SB	BR								
Connector Name Connector Color	园 H.S.	Terminal No.	-	2	e	4	£	9	7	∞	6	10	11	12								
			1			1	1	1	1	1			L		I							
WIRE TO WIRE BROWN	2423221201918171615141312	Signal Name	1	1	1	I	1	I	I	1	I	1	1	1	I							
Connector Name WIRE TC Connector Color BROWN	24 23 22 21 20 1	Color of Wire	В	в	IJ	œ	8	SHIELD	>	٩	BR/Y	0		ГG	>							
		Terminal No.	+								14	15	17	18	22							

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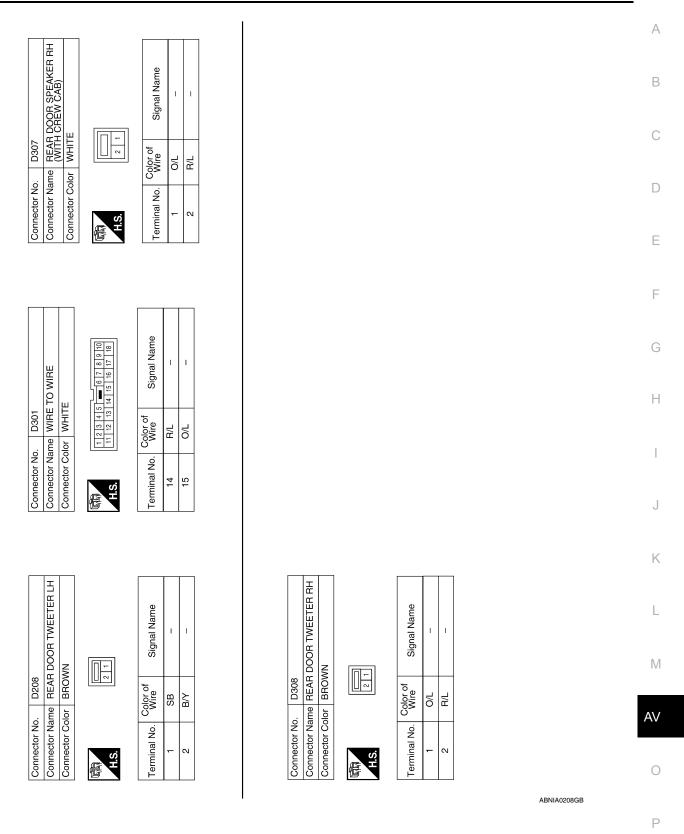
AUDIO UNIT

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< ECU DIAGNOSIS >		[PREMIUM WITH NAVIGATION]
Connector No. D101 Connector Name WIRE TO WIRE Connector Color WHITE Connector Color WHITE Terminal No. Color of Signal Name Z UB Z UB	Connector No. D207 Connector Name REAR DOOR SPEAKER LH Connector Name (WITH CREW CAB) Connector Color WHITE	Terminal No. Color of Signal Name
Connector No. D12 Connector Name FRONT DOOR SPEAKER LH Connector Color WHITE Connector Color WHITE Terminal No. Color of Image: Terminal No. <td>Connector No. D201 Connector Name WIRE TO WIRE Connector Color WHITE</td> <td>Terminal No. Color of Nite Signal Name 14 B/Y - 15 SB -</td>	Connector No. D201 Connector Name WIRE TO WIRE Connector Color WHITE	Terminal No. Color of Nite Signal Name 14 B/Y - 15 SB -
Connector No. D2 Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE Connector Solor WHITE Main Image: Solor Main Signal Name Terminal No. Color Image: No. Image: No.	Connector No. D112 Connector Name FRONT DOOR SPEAKER RH Connector Color WHITE	

AV-288

AUDIO UNIT



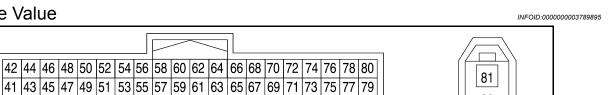
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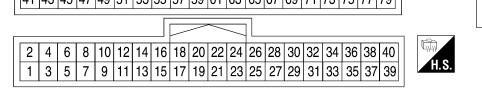
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NAVI CONTROL UNIT

Reference Value





	nal No. e color)	literer	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	_	_	_	_
41	-	Shield ground	_	_	_	_
44 (R)	Ground	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
46 (B)	Ground	RGB signal (B: blue)	Output	ON	Select "Display Diagno- sis (NAVI)" of CONFIR- MATION/ ADJUSTMENT func- tion.	(V) 1.5 1.5 0.5 0 1.5 0.5 0 0 0 0 0 0 0 0 0 0 0 0 0
48 (BR)	Ground	RGB synchro- nizing signal	Output	ON	Press the "MAP" but- ton.	(V) 6 4 2 0

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AWNIA1630ZZ

AV-290

NAVI CONTROL UNIT

< ECU DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

Termin (Wire		ltom	Signal		Condition	Voltage
+	-	Item	input/ output	lgnition switch	Operation	(Approx.)
53	Ground	Illumination sig-	Input	ON	Lighting switch in 1st position	Battery voltage
(R/L)		nal			Lighting switch is OFF	3V or less
55 (G/R)	Ground	Ignition signal	Input	ON	-	Battery voltage
					A/T selector lever in R position	Battery voltage
57 (G/W)	Ground	Reverse signal	Input	ON	_	(V) 6 2 0 2 0 2 0 2 0 2 0 4 5 2 0 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
					A/T selector lever not in R position	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 PKiA1935E
68	-	Shield ground	_	_	-	_
70 (P)	Ground	Communica- tion signal (–)	Input/ output	ON	-	(V) 6 2 0 20 // 1 20 // 1 5 5 5 5 5 5 5 5 5 7 5 7 5 7 7 7 7 7 7
78 (R/W)	Ground	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 0 0 0 0 0 0
80	-	Shield ground	_	_	-	_
81 (B)	82	GPS signal	Input	ON	Connector is not con- nected.	5V

AV-291

DISPLAY UNIT

[PREMIUM WITH NAVIGATION]

< ECU DIAGNOSIS > DISPLAY UNIT

Reference Value

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H.S.													٦				
	12	11	10	9	8	7	6	5	4	3	2	1					
	24	23	22	21	20	19	18	17	16	15	14	13					
														A	WNIA1627Z	z	

Terminal No 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)	Ground	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)	Ground	Horizontal syn- chronizing (HP) signal	Output	ON	_	(V)	
9 (B)	Ground	RGB area (YS) signal	Input	ON	Press the "TRIP" button.	(V) 4 2 0 	
11 (B/W)	Ground	Display com- munication sig- nal (DCU-DSP)	Input	ON	_	(V) 6 4 2 0 + 0.2ms SKIA4364E	

DISPLAY UNIT

< ECU DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

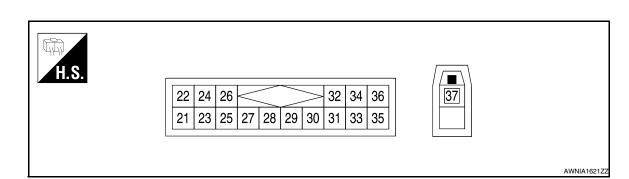
Ferminal No. (Wire col- or)		ltom	Signal		Condition	Voltage
+	-	Item	input/ output	Ignition switch	Operation	(Approx.)
13 (P)	Ground	(Inverter) Ground	-	ON	_	0V
14 (P/L)	Ground	(Signal) Ground	_	ON	_	0V
17 (R/L)	Ground	RGB signal (R: red)	Input	ON	Select "Display Diag- nosis (DCU)" of CON- FIRMATION/ ADJUSTMENT func- tion.	(V) 1.5 0.5 0 • • 20µs SKIA4980E
18 (B)	Ground	RGB signal (B: blue)	Input	ON	Select "Display Diag- nosis (DCU)" of CON- FIRMATION/ ADJUSTMENT func- tion.	(V) 1.5 0.5 0 • • • 20µs SKIA4982E
19 (G)	Ground	RGB synchro- nizing signal	Input	ON	Press the "TRIP" but- ton.	(V) 6 4 2 0 20 µs 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
20 (W)	Ground	Vertical syn- chronizing (VP) signal	Output	ON	_	(V) 6 2 0 • • • 20µs SKIA4983E
21	-	Shield ground	-	-	_	-
22 (L)	Ground	Display com- munication sig- nal (DSP-DCU)	Output	ON	_	(V) 6 4 0 • • 0.2ms SKIA4363E
23	_	Shield ground	_			

SATELLITE RADIO TUNER

Reference Value

INFOID:000000003789897

[PREMIUM WITH NAVIGATION]



PHYSICAL VALUES

Terr	minal	Description				Reference value
+	_	Signal name	Input/ Output		Condition	(Approx.)
22 (R)	21 (G)	Satellite radio sound signal LH	Output	lgnition 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 -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 SKIA8299J
29 (O/L)	Ground	Communication signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 • + 1ms SKIA9300J

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	lgnition switch ON	When satellite radio mode is selected	(V) 10 0 -10 • • 1ms SKIA9301J	
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	_	_	-	

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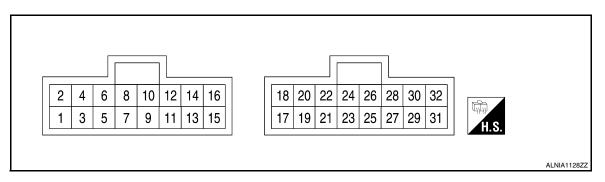
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< ECU DIAGNOSIS >

DVD PLAYER

Reference Value

INFOID:000000003789898



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	lgnition switch ON	With DVD player operation	Battery voltage
10 (BR)	Ground	Illumination control	Input	lgnition 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	lgnition switch ON	With DVD player operation	Battery voltage
12 (R/L)	Ground	Illumination power	Input	lgnition 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-296

DVD PLAYER

< ECU DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

	ninal color)	Description			Condition	Reference value	А
+	_	Signal name	Input/ Output		Condition	(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	_	0V	G
28 (Y)		Data receive	Input	_	_	_	Н
29 (BR)		Data transmit	Output			_	I
31 (SB)	Ground	Battery power	Output		_	Battery voltage	J
32 (BR)	Ground	Battery power	Output	_	_	Battery voltage	0

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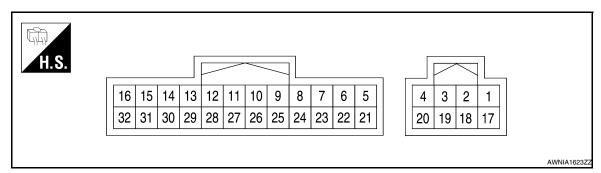
< ECU DIAGNOSIS >

AUDIO AMP

Reference Value

INFOID:000000003789899

TERMINAL LAYOUT



PHYSICAL VALUES

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

AUDIO AMP

< ECU DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

Terminal (wire color) + –		Item	Signal input/ output		Condition	Reference value (Approx.)
+ 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 -1 -1 -1 -1 -1 -1 -1 -1 -1
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 1 1 1 1
14 (L/W)	30 (L/R)	Front tweeter LH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
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	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	-	Ignition switch ON	_	_

AUDIO AMP

< ECU DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

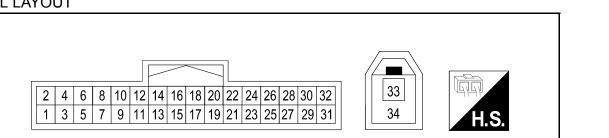
(wire	ninal color)	Item	Signal input/ output		Condition	Reference value (Approx.)
+ 21 (Y)	5 (BR)	Audio sound sig- nal front RH	Input	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
22 (W)	6 (B)	Audio sound sig- nal front LH	Input	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
23 (L)	7 (B/W)	Audio sound sig- nal rear RH	Input	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
24 (BR)	8 (B/R)	Audio sound sig- nal rear LH	Input	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 KIA0177E

BLUETOOTH CONTROL UNIT

Reference Value

INFOID:000000003789900

AWNIA1628ZZ



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	-	lgnition 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 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -	
11 (Y)	-	Mute control	_	-	_	_	
					Pressing 🌈 🏑 switch	0V	
12	14	Steering switch	Input	Ignition switch	Pressing Δ switch	0.75	
(R/G)	(Y/R)	signal A	mput	ON	Pressing VOL up switch	2V	
					Except for above	5V	

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BLUETOOTH CONTROL UNIT

< ECU DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

	ninal color)	Descriptio	n	Condition		Reference value													
+	_	Signal name	Input/ output			(Approx.)													
					Pressing MODE switch	0V													
13	14	Steering switch	Input	Ignition switch	Pressing $ abla$ switch	0.75V													
(G/W)	(Y/R)	signal B	pat	ON	Pressing VOL down switch	2V													
					Except for above	5 V													
15 (GR)	Ground	LED power	Output	lgnition switch ON	_	Battery voltage													
					Pressing 🌈 📢 switch	0V													
17	19	Steering switch	Output	Ignition switch	Pressing Δ switch	0.75													
(V)	(R/B)	signal A	signal A	signal A	signal A	signal A	Output	output	Output	Carput	ON	Pressing VOL up switch	2V						
					Except for above	5V													
	19					Pressing	0V												
18							Steering switch		Output	Output	Output	Output	Output	Output	Output	Output	Output	Ignition switch	Pressing $ abla$ switch
(G/O)	(R/B)	signal B	Calpar					·										ON	Pressing VOL down switch
					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 													
29 (R/W)	Ground	Microphone power	Output	lgnition switch ON	-	5V													

SYMPTOM DIAGNOSIS

AUDIO SYSTEM

Symptom Table

INFOID:000000003789901 В

[PREMIUM WITH NAVIGATION]

AUDIO SYSTEM

Symptom	Possible cause	Reference page
Inoperative	Audio unit power and ground circuitAudio unit	• <u>AV-212</u>
Steering switch does not operate	Steering switchAudio unit	• <u>AV-247</u> • <u>AV-212</u>
All speakers do not sound	 Audio unit power and ground circuit Audio amp. ON signal Audio amp. power and ground circuit 	• <u>AV-212</u> • <u>AV-246</u> • <u>AV-218</u>
One or several speakers do not sound	 Front door speaker Front tweeter Center speaker Rear door tweeter (crew cab) 	 <u>AV-229</u> <u>AV-232</u> <u>AV-235</u> AV-240
	 Rear door speaker Subwoofer	• <u>AV-237</u> • <u>AV-243</u>

NAVIGATION SYSTEM

			Н
Symptom	Possible cause	Reference page	
Inoperative	Audio unit power and ground circuitAudio unit	• <u>AV-212</u> • <u>AV-212</u>	
Steering switch does not operate	Steering switchAudio unit	• <u>AV-247</u> • <u>AV-256</u>	
Voice activated control does not operate	MicrophoneSteering switchAudio unit	 <u>AV-220</u> <u>AV-247</u> <u>AV-212</u> 	J

HANDS-FREE PHONE SYSTEM

Symptom	Possible cause	Reference page	
Inoperative	Audio unit power and ground circuitAudio unit	• <u>AV-212</u> • <u>AV-256</u>	L
Steering switch does not operate	Steering switch Audio unit	• <u>AV-247</u> • <u>AV-256</u>	M
Voice activated control does not operate	MicrophoneSteering switchAudio unit	AV-254 AV-247 AV-256	AV

DVD PLAYER

Symptom	Possible cause	Reference page	
DVD player inoperative	Power supply and ground circuitsDVD player	• <u>AV-217</u> • <u>AV-296</u>	
No sound when playing a DVD	Audio signal circuitsAudio unitDVD player	 AV-256 AV-256 AV-296 	
Video monitor is inoperative/does not display properly	 Power supply and ground circuits Video out circuit DVD player Display monitor 	 <u>AV-217</u> <u>AV-296</u> <u>AV-296</u> <u>AV-296</u> <u>AV-296</u> 	

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AUDIO SYSTEM

< SYMPTOM DIAGNOSIS >

[PREMIUM WITH NAVIGATION]

Symptom	Possible cause	Reference page
DVD remote control is inoperative/does not operate properly	DVD playerRear audio remote control unit	• <u>AV-296</u> • <u>AV-296</u>
Headphones inoperative	 Headphone batteries Headphone audio signal circuits from Audio unit Audio unit Rear audio remote control unit 	• <u>AV-296</u> • <u>AV-256</u> • <u>AV-296</u>

< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

Description

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	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	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.	Motor case ground Motor
The noise occurs constantly, not just under certain conditions.		 Rear defogger coil malfunction (if equipped) Open circuit in printed heater Poor ground of antenna feeder line
A cracking or snapping sound occ it is vibrating excessively.	urs while the vehicle is being driven, especially when	 Ground wire of body parts Ground due to improper part installation Wiring connections or a short circuit

NAVIGATION SYSTEM

Basic Operation

Symptom	Cause	Remedy	M
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.	AV
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.	0
Small black or bright spots appear on the screen.	Symptom peculiar to a liquid crystal display (display unit).	System is not malfunction.	Ρ

Vehicle Mark

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AV-305

< 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 correctly.	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	GPS satellite signal is intercepted because the vehicle is in or behind a building.	Move the vehicle out to an open space.
gray.	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

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.
Route information will not be displayed.	Route searching has not been done.	Set the destination and perform route searching.
	Vehicle mark is not on the recommended route.	Drive on the recommended route.
	Route guide is turned OFF.	Turn route guide ON.
	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-306

< 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	Cause	Remedy
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 ^(Note) Therefore, the route to the current location or the passing points may be intermittent.	System is not malfunctioning.	ŀ
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]

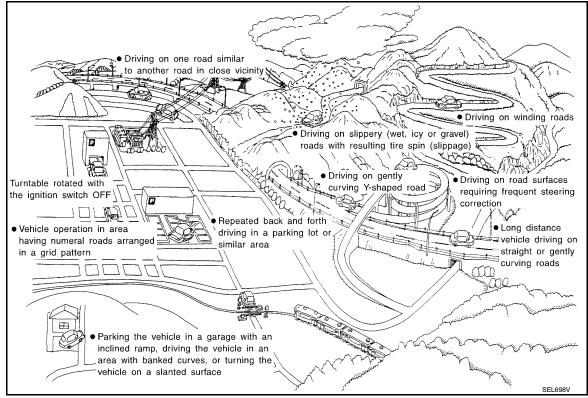
Symptom	Cause	Remedy
Detouring route is recommended.	In some areas, highways (gray routes) are not used for the search. (Note). Therefore, detour route may be recommended.	Set the route closer to the basic route (gray route).
	A detour route may be shown when some traffic regulation (one-way traffic, 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.



< SYMPTOM DIAGNOSIS >

NORMAL OPERATING CONDITION

[PREMIUM WITH NAVIGATION]

Cause (con	dition) –: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
Y-intersections ELK0192D Spiral roads	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.		
	When driving on a large, continuous spiral road (such as loop bridge), turning angle error is accumulated and the vehicle mark		
	ELK0193D Straight roads	may deviate from the correct location. When driving on a long, straight road and slow curve without stopping, map-matching	
Road configuration Zigzag roads Ek0194D Zigzag roads Ek0195D Roads laid out in a grid pattern Image: Control of the second	ELK0194D	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- cation correction and, if neces- sary, direction correction.
		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.	
		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.	
		When two roads are running in parallel (such as highway and sideway), the map	
	ELK0197D	may be matched to the other road by mis- take and the vehicle mark may deviate from the correct location.	

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< 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. 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 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 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 (con	dition) –: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
Precautions for driving	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.
	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 necessary, 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[™] and the (Flat) Map Screen

Difference of the BIRDVIEW[™] 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

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< 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 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 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 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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PRECAUTIONS

Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSION-FR" INFOID:000000003789903

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. D 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.

Precaution for Trouble Diagnosis

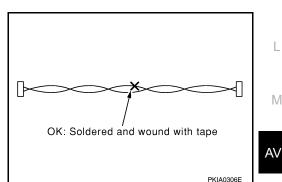
AV COMMUNICATION SYSTEM

- 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.

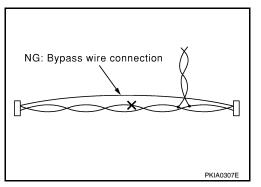
Precaution for Harness Repair

AV COMMUNICATION SYSTEM

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



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



< PREPARATION >

PREPARATION

PREPARATION

Commercial Service Tools

Tool name		Description
		Loosening bolts and nuts
Power tool	PBIC0191E	

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-14, "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-14, "Removal and Installation".
- 3. Remove the AV switch screws.
- 4. Carefully remove the AV switch.

Screws Screws KIA1798E

Installation Installation is in the reverse order of removal.

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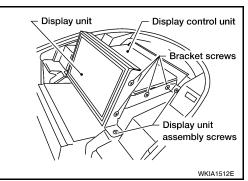
DISPLAY UNIT

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 <u>IP-13</u>, "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.

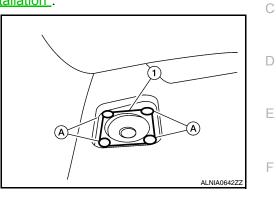
FRONT TWEETER

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.

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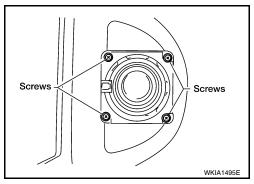
CENTER SPEAKER

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-13, "Removal and Installation".
- 3. Remove the center speaker screws and remove the center speaker.



Installation Installation is in the reverse order of removal.

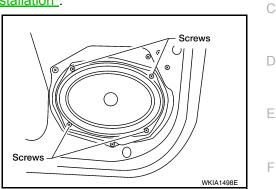
FRONT DOOR SPEAKER

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.



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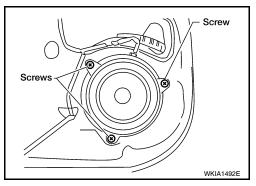
REAR DOOR SPEAKER

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.

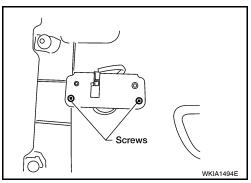


Installation Installation is in the reverse order of removal.

REAR DOOR TWEETER

Removal

- 1. Remove the rear door finisher. Refer to <u>INT-10, "Removal and Installation"</u> Crew 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.

WOOFER

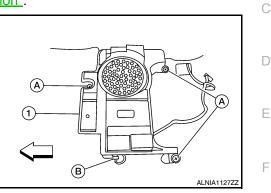
Removal and Installation

SUBWOOFER

Removal

- 1. Remove the front seat LH. Refer to SE-31, "Removal and Installation".
- 2. Disconnect the subwoofer connector (B).

 <□: Vehicle front
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- 3. Remove the subwoofer bolts (A).
- 4. Remove the subwoofer (1).



Installation Installation is in the reverse order of removal.



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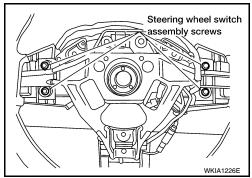
STEERING SWITCH

Removal and Installation

STEERING WHEEL AUDIO CONTROL SWITCHES

Removal

- 1. Remove the steering wheel. Refer to ST-11. "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.

REAR AUDIO REMOTE CONTROL UNIT

Removal and Installation

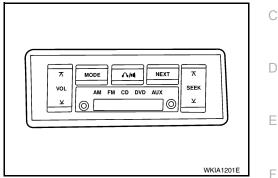
REAR AUDIO REMOTE CONTROL UNIT

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.

[PREMIUM WITH NAVIGATION]

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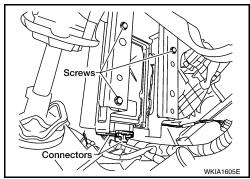
AUDIO AMP.

Removal and Installation

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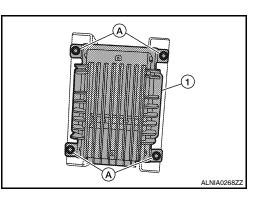
REMOVAL

- 1. Remove the BCM. Refer to BCS-53, "Removal and Installation".
- 2. Remove the accelerator pedal. Refer to ACC-3, "Removal and Installation".
- 3. Disconnect the audio amp. speaker amp. connectors.
- 4. Remove the audio amp. speaker amp. and bracket assembly screws and slide the audio amp. speaker amp. bracket assembly down.



[PREMIUM WITH NAVIGATION]

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



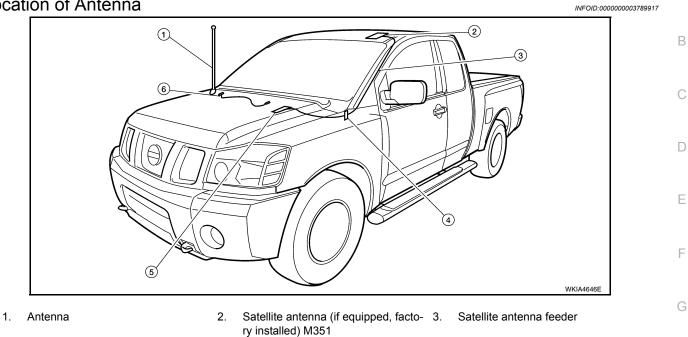
INSTALLATION Installation is in the reverse order of removal.

AUDIO ANTENNA

[PREMIUM WITH NAVIGATION]

< ON-VEHICLE REPAIR > AUDIO ANTENNA

Location of Antenna



4. M69, M350

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

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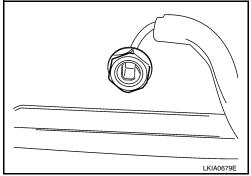
SATELLITE RADIO ANTENNA

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.

SATELLITE RADIO TUNER

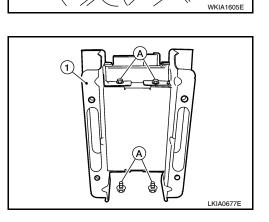
Removal and Installation

SATELLITE RADIO TUNER

Removal

- 1. Remove the accelerator pedal assembly. Refer to ACC-3. "Removal and Installation".
- 2. Remove the BCM. Refer to BCS-53, "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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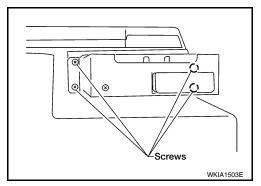
DVD ENTERTAINMENT SYSTEM

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.



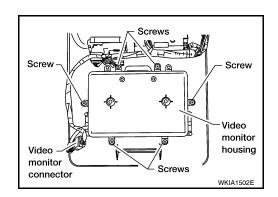
4. Remove the DVD player.

Installation Installation is in reverse order of removal.

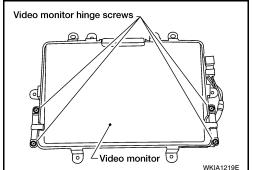
VIDEO MONITOR

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.



- 4. Remove the video monitor and housing.
- 5. Remove the video monitor hinge screws and remove the video monitor.

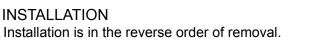


MICROPHONE

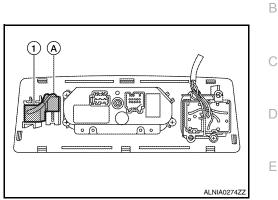
Removal and Installation

REMOVAL

- 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).







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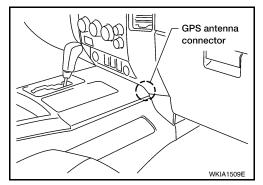
GPS ANTENNA

Removal and Installation

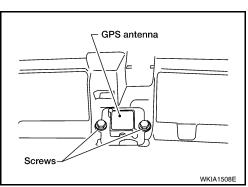
GPS ANTENNA

Removal

- 1. Remove the center console. Refer to IP-18, "Removal and Installation".
- 2. Remove the cluster lid D. Refer to IP-13, "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.

NAVI CONTROL UNIT

Removal and Installation

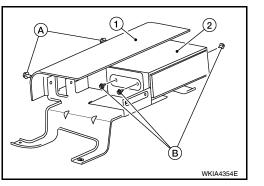
NAVI CONTROL UNIT

Removal

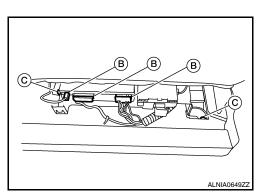
CAUTION:

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-180, "Removal and Installation".
- 3. Remove the front passenger seat. Refer to SE-31, "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.

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