# SECTION AV В AUDIO, VISUAL & NAVIGATION SYSTEM С

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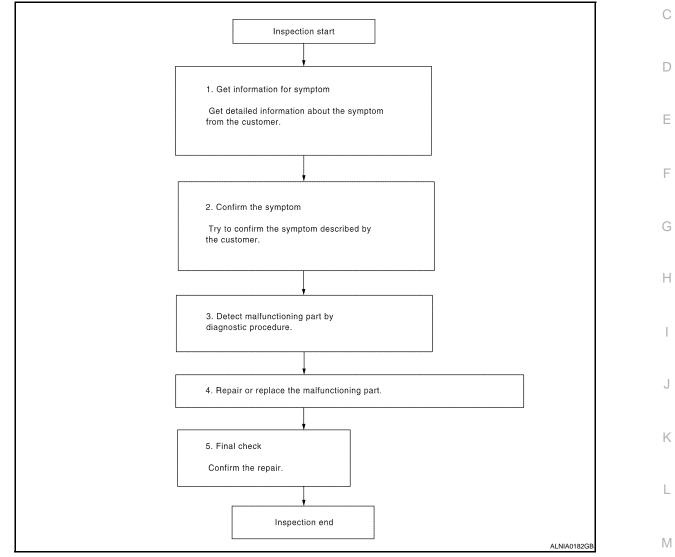
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# BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

# 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).

# >> GO TO 2

**2.**CONFIRM THE SYMPTOM

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

# >> GO TO 3

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

Inspect according to Diagnostic Procedure of the system.

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# DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[BASE AUDIO]

Is malfunctioning part detected?

YES >> GO TO 4

NO >> GO TO 2

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

1. Repair or replace the malfunctioning part.

2. Reconnect parts or connectors disconnected during Diagnostic Procedure.

### >> GO TO 5

5.FINAL CHECK

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

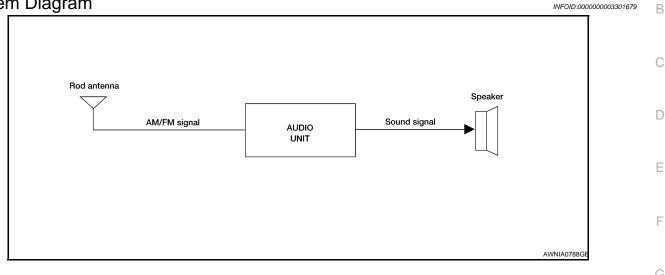
YES >> Inspection End.

NO >> GO TO 2

# AUDIO SYSTEM

#### < FUNCTION DIAGNOSIS >

# FUNCTION DIAGNOSIS AUDIO SYSTEM



# System Description

#### AUDIO SYSTEM

The audio system consists of the following components

- Audio unit
- Rod antenna
- Front door speakers
- Front tweeters
- Rear door speakers

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 and rear door speakers. Refer to Owner's Manual for audio system operating instructions.

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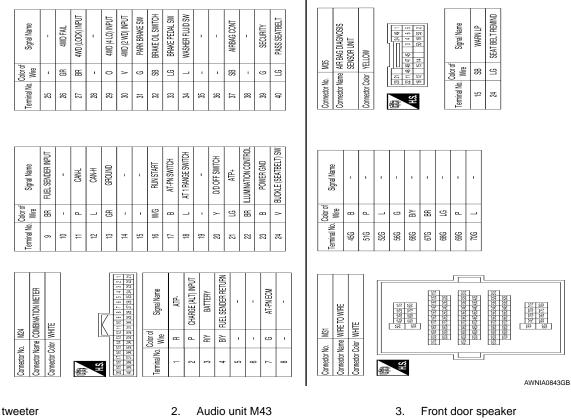
# AUDIO SYSTEM

# < FUNCTION DIAGNOSIS >

# **Component Parts Location**

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[BASE AUDIO]



1. Front tweeter LH M109 RH M111  Front door speake LH D12 RH D112

- 4. Rear door speaker (crew cab) LH D207 RH D307
- 5. Rear door speaker (king cab) LH B76 RH B160

# **Component Description**

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

# 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	19	Battery power	29	
	7	Ignition switch ACC or ON	4	Е

#### Are the fuses OK?

YES >> GO TO 2

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

# 2. POWER SUPPLY CIRCUIT CHECK

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

(	+)	(-)	OFF	ACC	ON
Connector	Terminal	()	OIT	7.00	
M43	7	Ground	0V	Battery voltage	Battery voltage
1143	19	Ground	Battery voltage	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.

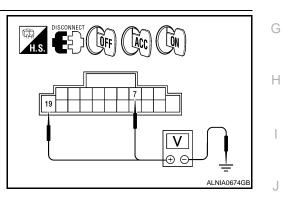
# **3.**GROUND CIRCUIT CHECK

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 front door speaker circuits.

# **Diagnosis** Procedure

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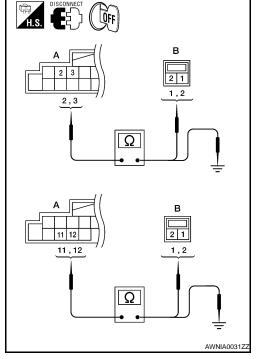
# **1.**HARNESS CHECK

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

A		В		Continuity
Connector	Terminal	Connector Terminal		Continuity
	2	D12	1	
M43	3	D12	2	Yes
	11	D110	1	Tes
		12	D112	2

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

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

# **AV-10**

# FRONT DOOR SPEAKER

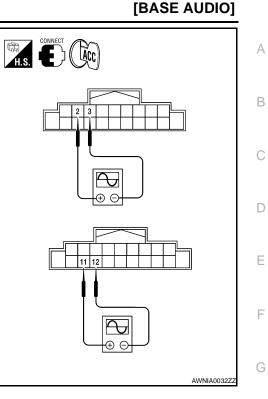
### < COMPONENT DIAGNOSIS >

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

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

Is the audio signal voltage as specified?

- YES >> Replace speaker. Refer to <u>AV-30, "Removal and Instal-</u> lation".
- NO >> Replace audio unit. Refer to <u>AV-28, "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 front tweeter circuits.

# **Diagnosis Procedure**

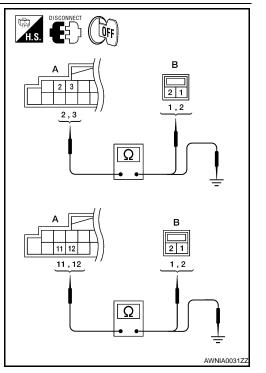
# **1.**HARNESS CHECK

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

1		A		В	
-	Connector	Terminal	Connector	Terminal	Continuity
		2	N400	1	
	MAD	3	M109	2	Vac
	M43	11	M111	1	Yes
		12	IVITI	2	

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

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



Are the continuity results as specified?

YES >> GO TO 2

NO

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

2.FRONT TWEETER SIGNAL CHECK

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# FRONT TWEETER

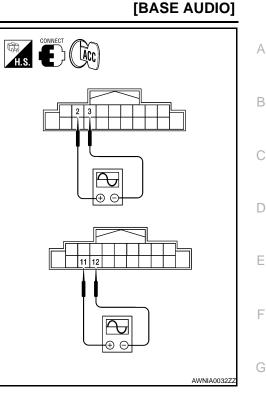
## < COMPONENT DIAGNOSIS >

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

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

### Is the audio signal voltage as specified?

- YES >> Replace the suspect front tweeter. Refer to <u>AV-29</u>, <u>"Removal and Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-28, "Removal and</u> <u>Installation"</u>.



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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 rear door speaker circuits.

# **Diagnosis Procedure**

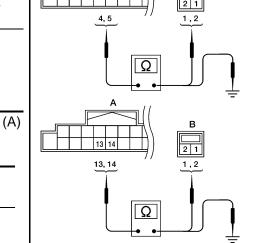
# **1.**HARNESS CHECK

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

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	4	D207	1	
M43	5	0207	2	Yes
10143	13	D307	1	165
	14	0307	2	

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

	А		Continuity
Connector	Terminal		Continuity
	4		
M43	5	Ground	No
10143	13	Giouna	INO
	14		



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Are the continuity results as specified?

YES >> GO TO 2

NO

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

2.REAR DOOR SPEAKER SIGNAL CHECK

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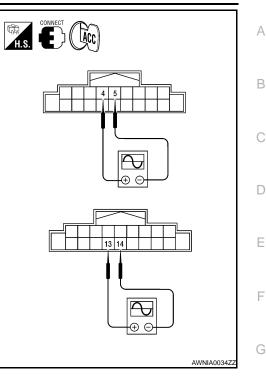
# **REAR DOOR SPEAKER**

## < COMPONENT DIAGNOSIS >

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

Connector	(+)	(-)	Condition	Reference signal
Connocion	Terminal	Terminal	Condition	reference eignaf
	4	5		
M43	13	14	Receive audio sig- nal	(V) 1 0 -1 SKIA0177E

- Is the audio signal voltage as specified?
- YES >> Replace the suspect rear door speaker. Refer to <u>AV-31</u>, <u>"Removal and Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-28, "Removal and</u> <u>Installation"</u>.



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# AUDIO UNIT

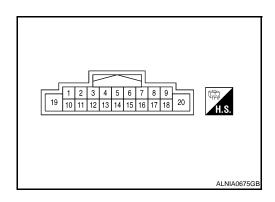
# < ECU DIAGNOSIS >

# **ECU DIAGNOSIS**

# AUDIO UNIT

Reference Value

**TERMINAL LAYOUT** 



# PHYSICAL VALUES

	minal e color)	Description			Condition	Reference value
+	_	Signal name	Input/ Output		Condition	(Approx.)
2 (BR)	3 (L)	Sound signal front door speaker and front tweeter LH	Output	Ignition switch ON	Audio output	(V) 1 0 -1 • 2ms SKIB3609E
4 (G)	5 (B)	Sound signal rear door speaker LH	Output	Ignition switch ON	Audio output	(V) 1 0 -1 * 2ms SKIB3609E
7 (G/B)	Ground	ACC power supply	Input	Ignition switch ACC or ON	_	Battery voltage
8 (GR)	Ground	ILL control	Input	Ignition switch ACC or ON		0V
9 (R)	Ground	Light switch	Input	Ignition switch ACC or ON	_	Battery voltage

# **AUDIO UNIT**

# < ECU DIAGNOSIS >

# [BASE AUDIO]

	minal e color)	Description			Condition	Reference value	А
+	_	Signal name	Input/ Output		Condition	(Approx.)	
11 (LG)	12 (R)	Sound signal front door speaker and front tweeter RH	Output	Ignition switch ON	Voice output	(V) 1 0 -1 ••2ms SKIB3609E	B C D
13 (GR)	14 (O)	Sound signal rear door speaker RH	Output	Ignition switch ON	Voice output	(V) 1 0 -1 * 2ms SKIB3609E	E
19 (Y)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage	G

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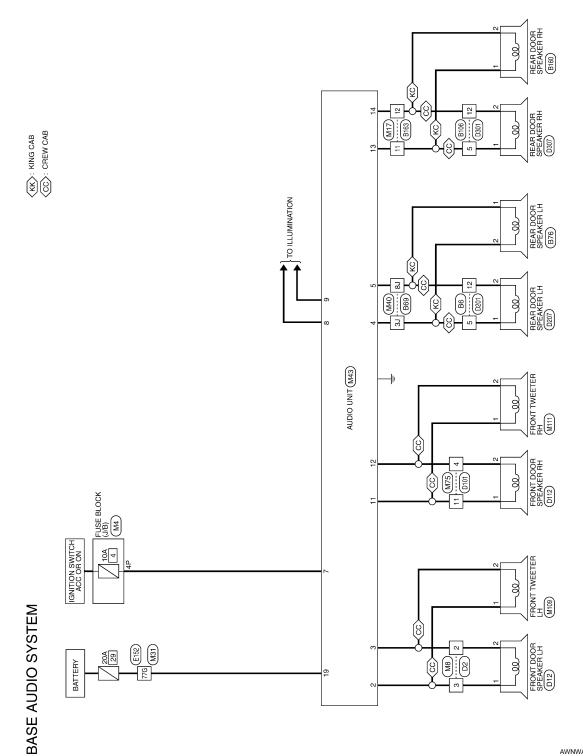
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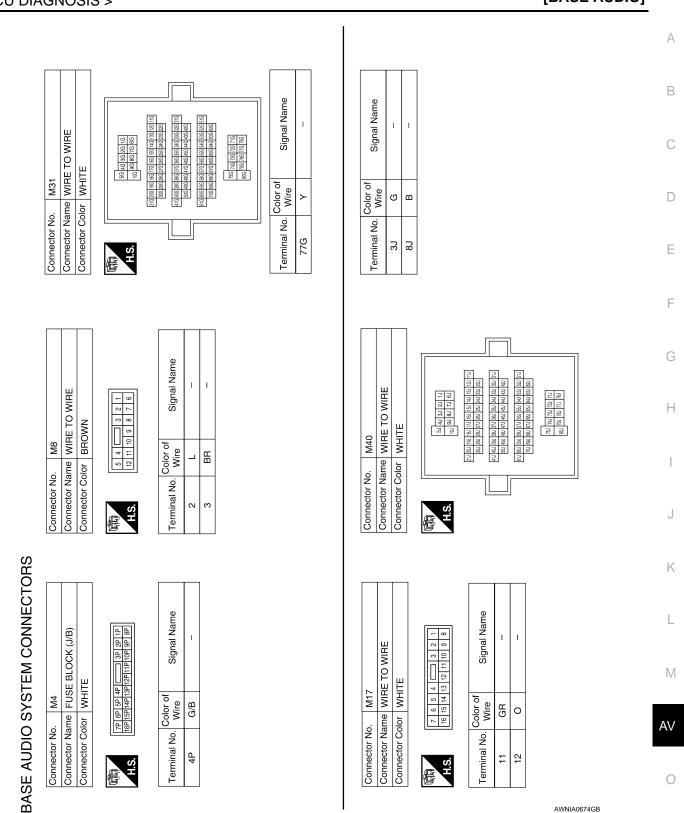
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# Wiring Diagram

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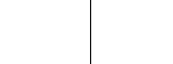
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# AUDIO UNIT

# < ECU DIAGNOSIS >

Connector No. M75 Connector Name WIRE TO WIRE

Connector Color WHITE



Signal Name	LIGHT SW	1	FR SP RH (+)	FR SP RH (-)	RR SP RH (+)	RR SP RH (-)	1	I	I	1	BAT	I
Color of Wire	æ	I	ГG	æ	GR	0	I	-	-	ı	¥	I
Terminal No.	6	10	11	12	13	14	15	16	47	18	19	20

Signal Name I. T

Terminal No. Wire

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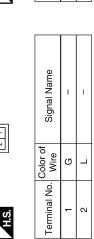
Connector No.	M43
Connector Name AUDIO UNIT	AUDIO UNIT
Connector Color WHITE	WHITE
明 H.S	2 3 4 5 6 7 8 9 11 12 13 14 15 16 17 18 20
(	

Signal Name	I	FR SP LH (+)	FR SP LH (-)	RR SP LH (+)	RR SP LH (-)	1	ACC	ILL_CONT
Color of Wire	I	ВВ	L	თ	В	I	G/B	GR
Terminal No.	-	2	З	4	5	9	7	8

Connector No.	M109	Connector No.	M111
Connector Name	Connector Name FRONT TWEETER LH	Connector Name FRONT TW	FRONT TW
Connector Color BROWN	BROWN	Connector Color BROWN	BROWN
		[	
E	2 1		5

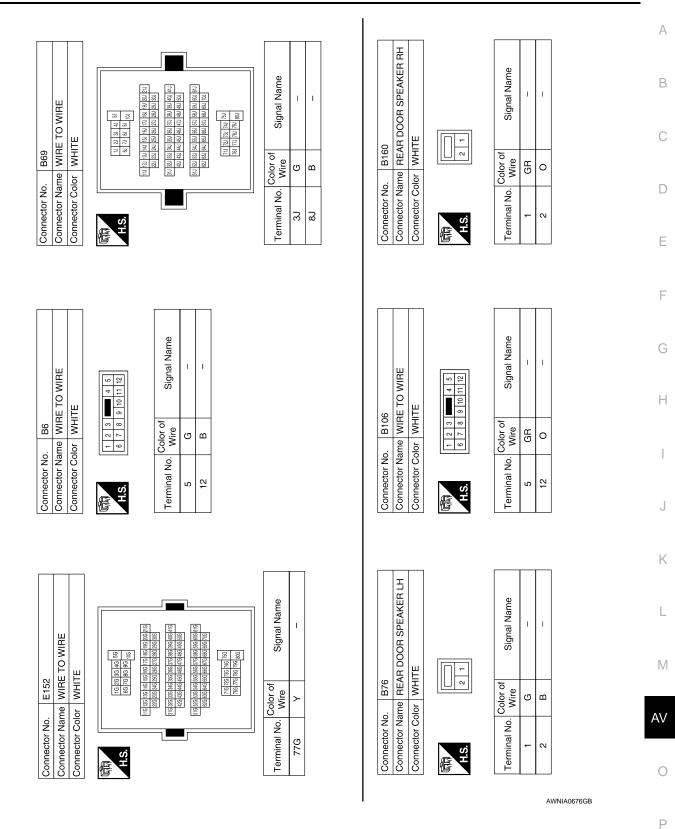
Connector Name FRONT TWEETER RH	BROWN	
Connector Name	Connector Color	बित्रि H.S.

Signal Name	I	I
Color of Wire	M	Γ
Terminal No.	1	2



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AVVINIAU675G	

**AUDIO UNIT** 



# **AUDIO UNIT**

#### < ECU DIAGNOSIS >

[BASE AUDIO]

AV-21

<u> </u>	1		Г						Г
Connector No. D12 Connector Name FRONT DOOR SPEAKER LH Connector Color WHITE		Signal Name		TO WIRE	ш	3         2         1           8         7         6	Signal Name	I	
Vo. D12 Vame FRONT Color WHITE		o. Color of Wire L/W L/R		Connector No. D201 Connector Name WIRE TO WIRE	Color WHITE	5 4 12 11 10 9	Color of Wire		,
Connector No. Connector Name Connector Color	品. H.S.	Terminal No. 1 2		Connector No. Connector Nan	Connector Color	日 H.S.	Terminal No.	ъ	
	]		[	3 LH					T
E TO WIRE WN	9 10 11 12	Signal Name -		Connector No. D112 Connector Name FRONT DOOR SPEAKER LH	Щ		Signal Name	I	
D2 Ame WIRE TC Dior BROWN	1         2         3           6         7         8	Color of Wire L/R L/W		o. D112 ame FRON	olor WHITE		Color of Wire	W/B	
Connector No. D2 Connector Name WIRE TO WIRE Connector Color BROWN	际可 H.S.	Terminal No. 2 3		Connector No. Connector Nar	Connector Color	तित्र H.S.	Terminal No.	-	
	]		ſ						T
TO WIRE	■ 4 5 6 7 12 13 14 15 16	Signal Name -		E TO WIRE	ш	9 10 11 12	Signal Name	I	
0. B163 time WIRE T blor WHITE		Color of Wire GR O		. D101 me WIRE	lor WHITE	1     2     3       6     7     8     9	Color of Wire	L/B	
Connector No. B163 Connector Name WIRE TO WIRE Connector Color WHITE	印 王 王 王 王	Terminal No. 11 12		Connector No. D101 Connector Name WIRE TO WIRE	Connector Color	国 H.S.	Terminal No.	4	

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Connector Name HEAH DUOH SPEAKEH HH Connector Color WHITE		Signal Name	1 1
me REAF		Color of Wire	- 0
Connector Name REAR Connector Color WHITE	围 H.S.	al No.	- N
0 WIRE	8 7 6	Signal Name	1 1
e WIRE TO	5 4 12 11 10 9	Color of Wire	0
Connector Name WIRE TO WIRE Connector Color WHITE	际 H.S.	No.	12
Connector Name REAR DOOR SPEAKER LH Connector Color WHITE		Signal Name	1 1
e REAR DO	5	Color of Wire	0
Connector Name Connector Color	H.S.	Terminal No. Co	- a
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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	<ul><li>Audio unit power circuit</li><li>Audio unit</li></ul>	• <u>AV-9</u>
All speakers do not sound	<ul><li>Audio unit</li><li>Audio unit power circuit</li></ul>	• <u>AV-9</u>
One or several speakers do not sound	<ul><li>Front door speaker</li><li>Front tweeter</li><li>Rear door speaker</li></ul>	• <u>AV-10</u> • <u>AV-12</u> • <u>AV-14</u>

CD

Symptom	Possible cause	Reference page		
CD cannot be inserted.				
CD cannot be ejected.	Audio unit	<u>AV-9</u>		
The CD cannot be played.		<u>AV-9</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, В etc.).

NOISE

The following noise results from variations in field strength, such as fading noise and multi-path noise, or С 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.
- D 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 opera-Е tion 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 F components, one by one.

Type of Noise and Possible Cause

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

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[BASE AUDIO]

# < PRECAUTION > PRECAUTION PRECAUTIONS

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

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

# [BASE AUDIO]

# < PREPARATION > PREPARATION

# PREPARATION

# **Commercial Service Tools**

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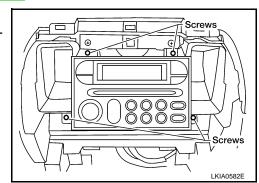
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# < ON-VEHICLE REPAIR > ON-VEHICLE REPAIR AUDIO UNIT

Removal and Installation

# REMOVAL

- 1. Remove the cluster lid C. Refer to IP-10, "Removal and Installation".
- 2. Remove the audio control unit screws, using power tool.
- 3. Pull out the audio control unit from the instrument panel and disconnect the audio control unit connectors.



INSTALLATION Installation is in the reverse order of removal.

# **FRONT TWEETER**

# < ON-VEHICLE REPAIR > FRONT TWEETER

# **Removal and Installation**

# REMOVAL

#### **CAUTION:**

### Use a suitable tool to prevent damage to the front tweeter speaker grille trim and the instrument panel.

- 1. Remove the front tweeter grille.
- 2. Remove the front tweeter screws (A).
- 3. Pull out the front tweeter speaker (1) and disconnect front tweeter connector, then remove the front tweeter speaker (1).

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

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# FRONT DOOR SPEAKER

Removal and Installation

# REMOVAL

- 1. Remove the front door finisher. Refer to INT-13, "Removal and Installation".
- 2. Remove the front door speaker screws (A).
- 3. Pull out the front door speaker (1), and disconnect the front door speaker connector and remove the front door speaker (1).

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INSTALLATION Installation is in the reverse order of removal.

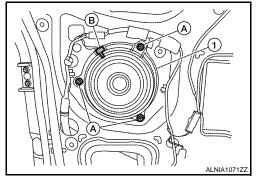
# REAR DOOR SPEAKER

Removal and Installation

# REMOVAL

- 1. Remove the rear door finisher. Refer to INT-13, "Removal and Installation".
- 2. Remove the rear door speaker screws (A).
- Remove rear door speaker (1), disconnect rear door speaker connector (B).
   NOTE:

King cab shown, crew cab similar.



INSTALLATION Installation is in the reverse order of removal.



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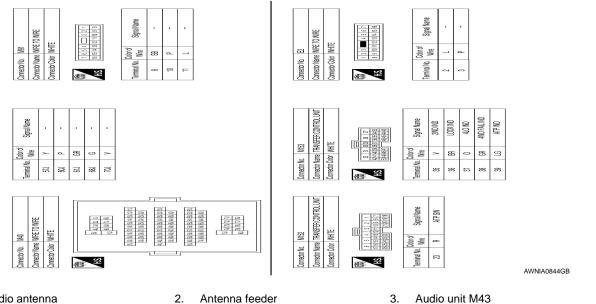
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# < ON-VEHICLE REPAIR > AUDIO ANTENNA

# Location of Audio Antenna System Component

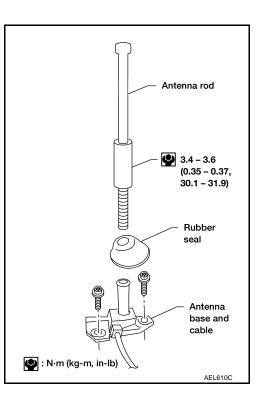


1. Audio antenna 2. Antenna feeder

# Removal and Installation

REMOVAL

- Remove lower glove box. Refer to IP-10, "Removal and Installation". 1.
- 2. Disconnect audio antenna cable from antenna feeder.
- 3. Remove antenna rod.
- 4. Remove rubber seal.
- Remove cowl top. Refer to EXT-19, "Removal and Installation". 5. Remove fender protector. Refer to EXT-22, "Removal and Instal-6.
- lation of Front Fender Protector". Remove antenna base bolts. 7.
- 8. Remove antenna base and cable.



**INSTALLATION** 

Installation is in the reverse order of removal.

#### **CAUTION:**

Always properly tighten the antenna rod during installation or the antenna rod may bend or break during vehicle operation.

# AV-32

# BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

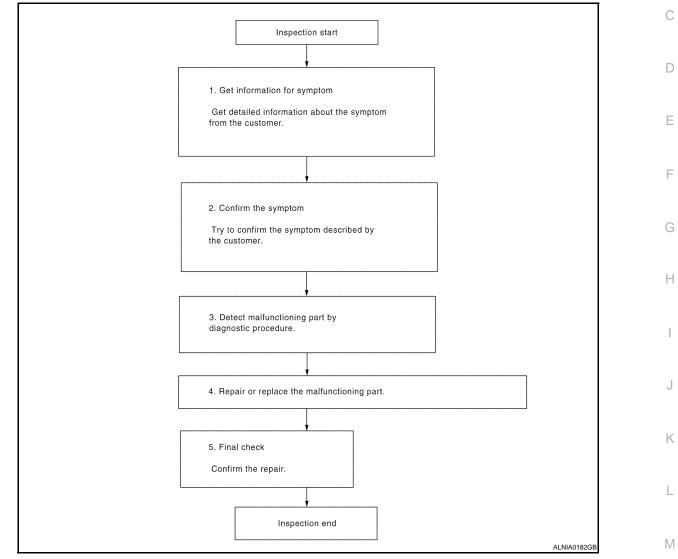
# Work Flow

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[PREMIUM AUDIO (KING CAB)]

OVERALL SEQUENCE



# DETAILED FLOW

# **1.**GET INFORMATION FOR SYMPTOM

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

# >> GO TO 2

**2.**CONFIRM THE SYMPTOM

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

# >> GO TO 3

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

Inspect according to Diagnostic Procedure of the system.

# AV-33

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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

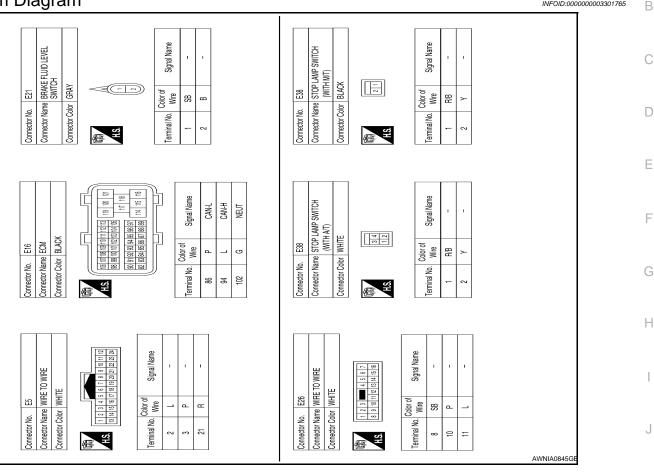
Refer to confirmed symptom in step 2, and make sure that the symptom is not detected. Was the repair confirmed?

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
- Audio amp.
- Rod antenna
- Steering wheel audio control switches
- Front door speakers
- · Front tweeters
- Rear door speakers

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 and rear door speakers.

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.

AV-35

# SPEED SENSITIVE VOLUME SYSTEM

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# **AUDIO SYSTEM**

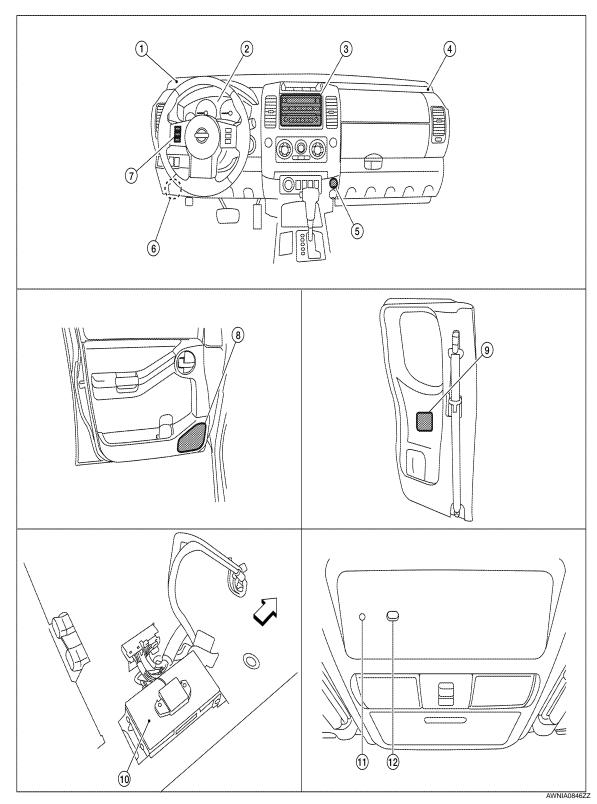
#### < FUNCTION DIAGNOSIS >

### [PREMIUM AUDIO (KING CAB)]

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.

# **Component Parts Location**

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#### C:FRONT

- 1. Front tweeter LH M109
- 4. Front tweeter RH M111
- 2. Combination meter M24
- 5. Aux jack M85

- 3. Audio unit M42, M43, M44, M45
- 6. Satellite radio tuner M41, M129



# **AUDIO SYSTEM**

Front door speaker

LH D12

RH D112

#### < FUNCTION DIAGNOSIS >

- 7. Steering wheel audio control switch- 8. es
- 10. Bluetooth control unit B141 (view with 11. Microphone R8 passenger front seat removed)

# Component Description

[PREMIUM AUDIO (KING CAB)]

- 9. Rear door speaker LH D207 RH D307
- 12. Bluetooth ON indicator R6

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Part name	Description		
Audio unit	Controls audio system and satellite radio system functions		
Audio amp.	Receives power (amp ON) and audio signals from Audio unit and outputs audio signals to each speaker.		
Steering wheel audio control switches	<ul><li>Start a voice recognition session</li><li>Answer and end telephone calls</li><li>Adjust the volume level</li></ul>		
Front door speakers	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high, mid and low range sounds</li></ul>		
Front tweeters	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high range sounds</li></ul>		
Rear door speakers	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high, mid and low range sounds</li></ul>		
Satellite radio tuner	<ul><li>Receives radio signals from satellite antenna</li><li>Sends audio signals to Audio unit</li></ul>		
Satellite antenna	Audio signal (satellite radio) is received and output to Audio unit.		

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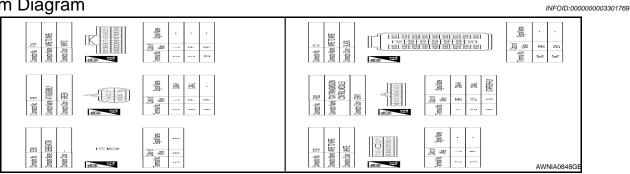
# HANDS-FREE PHONE SYSTEM

#### < FUNCTION DIAGNOSIS >

# [PREMIUM AUDIO (KING CAB)]

# HANDS-FREE PHONE SYSTEM

System Diagram



### System Description

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

#### NOTE:

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

Bluetooth telephone system allows users who have a Bluetooth equipped cellular telephone to make a wireless connection between their cellular telephone and the Bluetooth control unit. Hands-free cellular telephone calls can be sent and received. 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. During this time, the Bluetooth ON indicator will flash until initialization is complete. 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

#### 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 speakers.

#### **BLUETOOTH ON INDICATOR**

The Bluetooth ON indicator is located in the overhead console. The indicator will flash during power up whilethe Bluetooth control unit is initializing. This process may take up to 10 seconds. If a phone is present in thevehicle and paired with the Bluetooth control unit, the indicator will remain on to indicate that the system isready for voice commands. The indicator flashes during self-diagnosis.

# **HANDS-FREE PHONE SYSTEM**

#### < FUNCTION DIAGNOSIS >

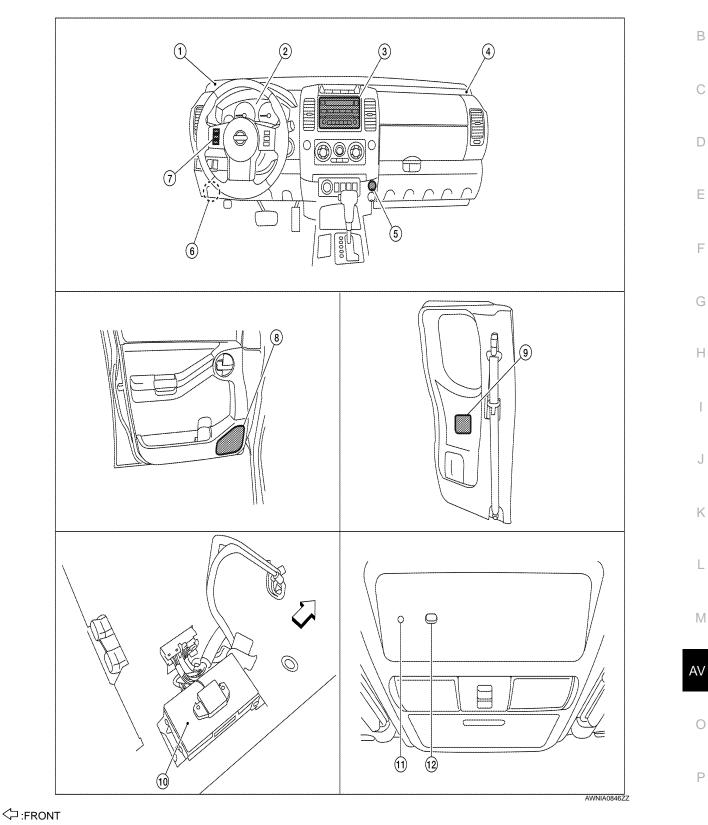
# **Component Parts Location**

[PREMIUM AUDIO (KING CAB)]

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- 1. Front tweeter LH M109
- 4. Front tweeter RH M111
- 2. Combination meter M24
- 5. Aux jack M85

- 3. Audio unit M42, M43, M44, M45
- Satellite radio tuner M41, M129 6.

# HANDS-FREE PHONE SYSTEM

Front door speaker

LH D12

RH D112

#### < FUNCTION DIAGNOSIS >

- 7. Steering wheel audio control switch- 8. es
- 10. Bluetooth control unit B141 (view with 11. Microphone R8 passenger front seat removed)

# Component Description

[PREMIUM AUDIO (KING CAB)]

- 9. Rear door speaker LH D207 RH D307
- 12. Bluetooth ON indicator R6

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

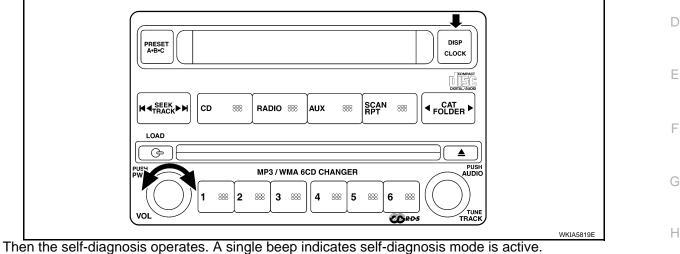
< FUNCTION DIAGNOSIS >

# **DIAGNOSIS SYSTEM (AUDIO UNIT) AV SWITCH**

AV SWITCH : Component Function Check

STARTING THE SELF-DIAGNOSIS MODE

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



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

**AV-41** 

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.

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# DIAGNOSIS SYSTEM (BLUETOOTH CONTROL UNIT)

#### < FUNCTION DIAGNOSIS >

# DIAGNOSIS SYSTEM (BLUETOOTH CONTROL UNIT)

### **Diagnosis Description**

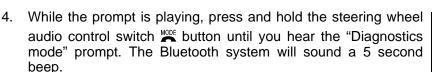
The Bluetooth control unit has two diagnostic checks. The first diagnostic check is performed automatically every ignition cycle during control unit initialization. The second diagnostic check is performed by the technician using the steering wheel audio control switches prior to trouble diagnosis.

#### BLUETOOTH CONTROL UNIT INITIALIZATION CHECKS

- Internal control unit failure
- Bluetooth antenna connection open or shorted
- Steering wheel audio control switches [SEND( ♥ √2)/END(MODE)] 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.



- 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 and the Bluetooth ON indicator will flash. Refer to <u>AV-42. "Work Flow"</u>.
- 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-42</u>, "Work Flow".
- 8. Self-diagnosis mode is complete when the voice prompt says "All diagnostic functions completed".

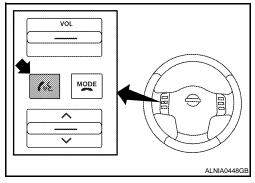
#### Work Flow

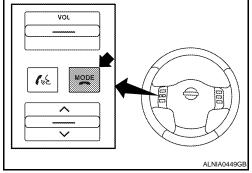
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Failure Message	Action		
"Internal failure"	Replace Bluetooth control unit. Refer to AV-89, "Removal and Installation".		
"Bluetooth antenna open"	1. Inspect harness connection.		
"Bluetooth antenna shorted"	2. Replace Bluetooth antenna. Refer to <u>AV-89, "Removal and Installation"</u> .		
"Phone/Send for Hands Free System is stuck"	Check stearing wheel cudic central quitches, Refer to AV/52, "Description"		
"Phone/End for the Hands Free System is stuck"	Check steering wheel audio control switches. Refer to <u>AV-53, "Description"</u> .		
"Microphone test" (failed interactive test)	<ol> <li>Inspect harness between Bluetooth control unit and microphone.</li> <li>Replace microphone. Refer to <u>AV-91, "Removal and Installation"</u>.</li> </ol>		

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[PREMIUM AUDIO (KING CAB)]





#### AV-42

#### POWER SUPPLY AND GROUND CIRCUIT [PREMIUM AUDIO (KING CAB)] < 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 Fuse No. Terminals Signal name 6 Battery power 29 Audio unit 10 Ignition switch ACC or ON Are the fuses OK? YES >> GO TO 2 NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. 2. POWER SUPPLY CIRCUIT CHECK Disconnect audio unit connector M43. 1 Check voltage between the audio unit connector M43 and 2. ΓÕΝ ACC ground. (+) OFF ACC ON (-) Connector Terminal Battery Battery 6 Ground 0V voltage voltage M43 Battery Batterv Batterv 10 Ground voltage voltage voltage Are the voltage results as specified? YES >> GO TO 3 >> • Check connector housing for disconnected or loose terminals. NO · 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 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	17	Ρ
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

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# POWER SUPPLY AND GROUND CIRCUIT

#### < COMPONENT DIAGNOSIS >

- 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	ACC	
M41	32 vo		Battery voltage	Battery voltage	Battery voltage
M41	36	Ground	0V	Battery voltage	Battery voltage

#### Are the voltage readings as specified?

#### YES >> GO TO 3

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

# **3.**GROUND CIRCUIT CHECK

Inspect satellite radio tuner (factory installed) case ground.

#### Does case ground pass inspection?

YES >> Inspection End.

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

### BLUETOOTH CONTROL UNIT

# 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	29
Bluetooth control unit	2	Ignition switch ACC or ON	4
-	3	Ignition switch ON or START	12

#### Is inspection result OK?

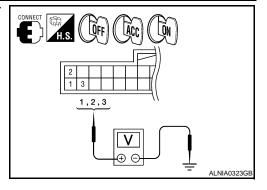
YES >> GO TO 2.

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

#### 2. CHECK POWER SUPPLY CIRCUIT

Check voltage between Bluetooth control unit harness connector B141 and ground.

(+)		(-)	OFF	ON	ACC
Connector	Terminal	()	011	ÖN	700
	1	Ground	Battery voltage	Battery voltage	Battery voltage
B141	2		0V	Battery voltage	Battery voltage
3		0V	Battery voltage	0V	

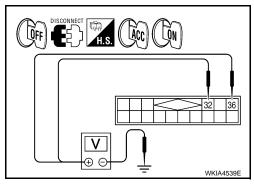


Is battery voltage present as specified?

YES >> GO TO 3.

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

**3.**CHECK GROUND CIRCUIT



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# POWER SUPPLY AND GROUND CIRCUIT

#### < COMPONENT DIAGNOSIS >

- 1. Turn ignition switch OFF.
- 2. Disconnect Bluetooth control unit connector.
- 3. Check continuity between Bluetooth control unit harness connector B141 and ground.

Connector	Terminal		Continuity
	4		
B141	20	Ground	Yes
	22		

Are continuity results as specified?

- YES >> Inspection End.
- NO >> Repair harness or connector. MICROPHONE

# **MICROPHONE : Diagnosis Procedure**

# 1.CHECK POWER SUPPLY CIRCUIT (MICROPHONE SIDE)

- Turn ignition switch ON. 1.
- 2. Check voltage between microphone harness connector R8 terminal 4 and ground.

(	(+)		Value (Approx.)
Connector	Terminal		
R8	4	Ground	5V

#### Is approximately 5V present?

YES >> GO TO 3

>> GO TO 2 NO

# 2. CHECK POWER SUPPLY CIRCUIT (CONTINUITY)

- 1. Turn ignition switch OFF.
- 2. Disconnect microphone and Bluetooth control unit harness connectors.
- 3. Check continuity between microphone harness connector R8 (A) terminal 4 and Bluetooth control unit harness connector B141 (B) terminal 29.

A		В		Continuity
Connector	Terminal	Connector Terminal		Continuity
R8	4	B141	29	Yes

Check continuity between microphone harness connector R8 4 (A) terminal 4 and ground.

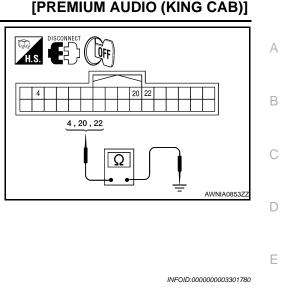
A			Continuity	
Connector	Terminal		Continuity	
R8	4	Ground	No	

#### Are the continuity test results as specified?

YES >> Replace the Bluetooth control unit. Refer to AV-89, "Removal and Installation".

AV-45

- NO >> Repair harness or connector.
- ${f 3.}$ CHECK GROUND CIRCUIT



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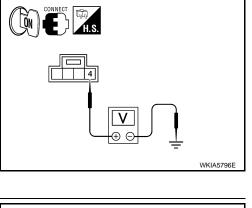
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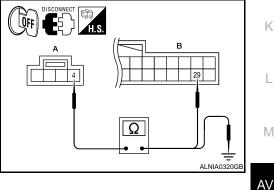
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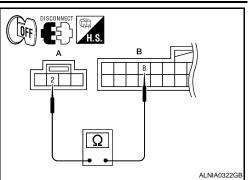


#### POWER SUPPLY AND GROUND CIRCUIT OSIS > [PREMIUM AUDIO (KING CAB)]

#### < COMPONENT DIAGNOSIS >

- 1. Turn ignition switch OFF.
- 2. Disconnect microphone harness connector R8 and Bluetooth control unit harness connector B141.
- Check continuity between microphone harness connector R8 (A) terminal 2 and Bluetooth control unit harness connector B141 (B) terminal 8.

A		В		Continuity
Connector	Terminal	Connector Terminal		Continuity
R8	2	B141	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 front door speakers using the audio signal circuits.

#### **Diagnosis Procedure**

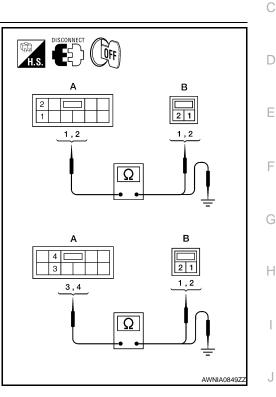
# 1.SPEAKER HARNESS CHECK

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

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	1	D12	2	
M43	2	DIZ	1	Yes
10143	3	D112	2	163
	4		1	

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

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



Are 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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INFOID:000000003301782

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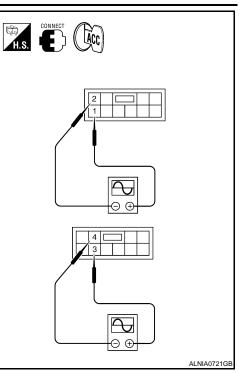
А

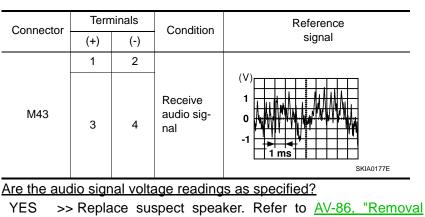
В

# 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.





- YES >> Replace suspect speaker. Refer to <u>AV-86, "Removal</u> and Installation".
- NO >> Replace audio unit. Refer to <u>AV-84, "Removal and</u> <u>Installation"</u>.

# FRONT TWEETER

# < COMPONENT DIAGNOSIS >

# FRONT TWEETER

# Description

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

# **Diagnosis Procedure**

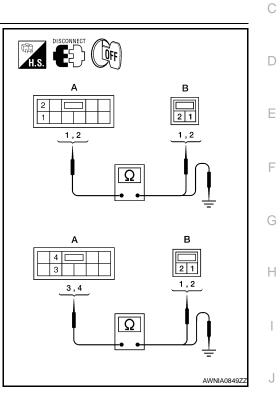
# 1.SPEAKER HARNESS CHECK

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

	A	E	3	Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
	1	M109	M400	2	
M43	2		1	Yes	
	3	M111	2	Tes	
	4		1		

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

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



Are continuity test results as specified?

YES >> GO TO 2

NO

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

2.SPEAKER SIGNAL CHECK

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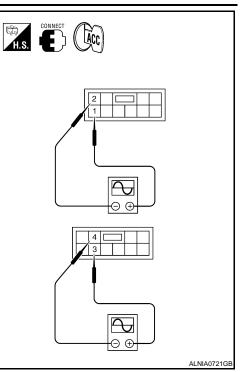
INFOID:000000003301783

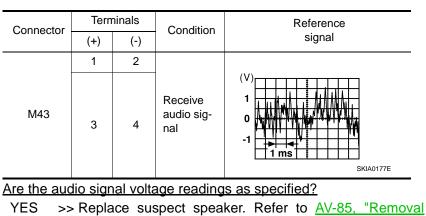
INFOID:000000003301784

# 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 suspect speaker. Refer to <u>AV-85, "Removal</u> and Installation".
- NO >> Replace audio unit. Refer to <u>AV-84, "Removal and</u> <u>Installation"</u>.

# REAR DOOR SPEAKER

#### < COMPONENT DIAGNOSIS >

# REAR DOOR SPEAKER

#### Description

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

#### **Diagnosis Procedure**

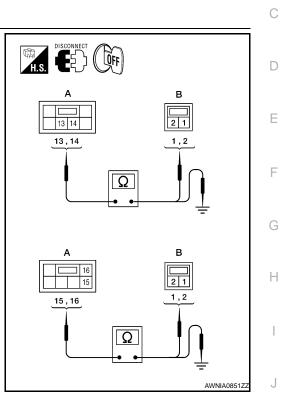
# 1.SPEAKER HARNESS CHECK

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

		A	В		Continuity
	Connector	Terminal	Connector	Terminal	Continuity
-		13	13 B76	2	
	M44	14		1	Yes
		15	B400	B160	2
		16	5100	1	

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

	A		Continuity	
Connector	Connector Terminal		Continuity	
	13			
M44	14	Crowned	No	
10144	15	Ground		
	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.SPEAKER SIGNAL CHECK

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INFOID:000000003301786

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# **REAR DOOR SPEAKER**

#### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector M44 and audio amp. connector B159.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M44 terminals with CONSULT-III or oscilloscope.

#### Terminals Reference Connector Condition signal (+) (-) 13 14 (V)Receive M44 audio sig-0 15 16 nal SKIA0177E Is the audio signal voltage reading as specified?

- YES >> Replace suspect speaker. Refer to <u>AV-87, "Removal</u>
- NO >> Replace audio unit. Refer to <u>AV-84, "Removal and</u> Installation".

# 

#### AV-52

## **STEERING SWITCH**

# < COMPONENT DIAGNOSIS >

# STEERING SWITCH

## Description

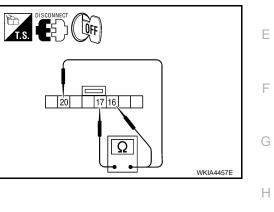
When one of the steering wheel audio control switches is pushed, the resistance in the steering wheel audio В control switch circuit changes depending on which button is pushed.

#### **Diagnosis** Procedure

# 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	minal	Signal name	Condition	Resistance (Ω) (Approx.)
		Seek (down)	Depress $ abla$ switch.	165
16	17	Volume (down)	Depress VOL down switch.	487
		Mode/end	Depress ADDE switch.	0
		Seek (up)	Depress $\Delta$ switch.	165
20	17	Volume (up)	Depress VOL up switch.	487
		Phone/send	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-88, "Removal and Installation".

AV-53

# 2. CHECK HARNESS

- Disconnect Bluetooth control unit harness connector B141 and 1 spiral cable harness connector M30.
- Check continuity between Bluetooth control unit harness con-2. nector B141 (A) and spiral cable harness connector M30 (B).

A	А		В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	12		24	
B141	13	M30	32	Yes
	14		31	

3. Check continuity between Bluetooth control unit connector B141 (A) and ground.

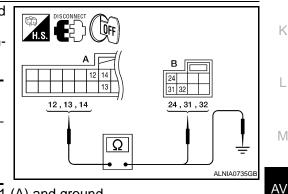
	А		Continuity
Connector	Terminal		Continuity
	12		No
B141	13	Ground	
	14		

Are the continuity results as specified?

YES >> GO TO 3

NO >> Repair harness.

 ${f 3.}$ SPIRAL CABLE CHECK



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INFOID:000000003301793

[PREMIUM AUDIO (KING CAB)]

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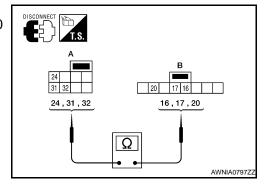
Ρ

# **STEERING SWITCH**

#### < COMPONENT DIAGNOSIS >

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

	٩	В		Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
	24		20		
M30	31	M102	17	Yes	
	32		16		



[PREMIUM AUDIO (KING CAB)]

Does the spiral cable check OK?

YES >> Inspection End.

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

#### < COMPONENT DIAGNOSIS >

# COMMUNICATION SIGNAL CIRCUIT SATELLITE RADIO TUNER

# SATELLITE RADIO TUNER : Description

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

# SATELLITE RADIO TUNER : Diagnosis Procedure

# **1.**CHECK HARNESS - REQ1

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

	A		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.

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

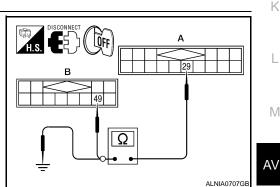
2. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 29 and ground.

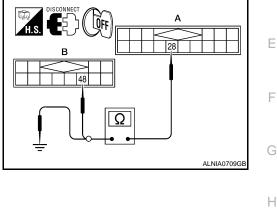
	A		Continuity	
Connector	Terminal		Continuity	
M41	29	Ground	No	

Are continuity results as specified?

YES >> GO TO 3

- NO >> Repair harness or connector.
- $\mathbf{3.}$ CHECK HARNESS RXD





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[PREMIUM AUDIO (KING CAB)]

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# **COMMUNICATION SIGNAL CIRCUIT**

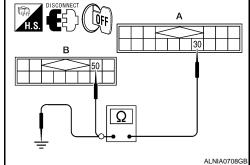
#### < COMPONENT DIAGNOSIS >

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

A			Continuity		
Connector	Terminal	Connector Terminal		Continuity	
M41	30	M42	50	Yes	

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

	٩		Continuity	
Connector	Terminal	—	Continuity	
M41	30	Ground	No	



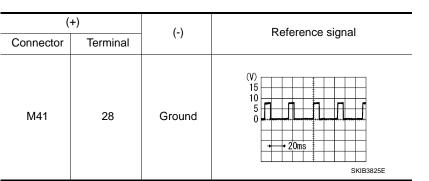
#### Are continuity results as specified?

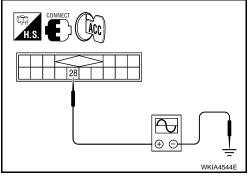
YES >> GO TO 4

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.





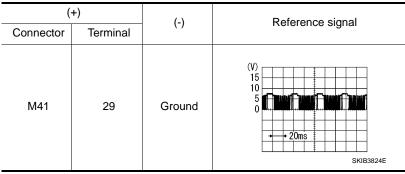
Are voltage readings as specified?

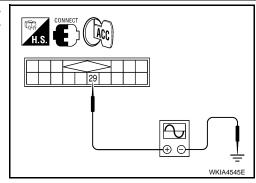
#### YES >> GO TO 5

NO >> Replace audio unit. Refer to <u>AV-84, "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**

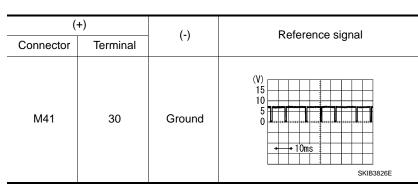
< COMPONENT DIAGNOSIS >

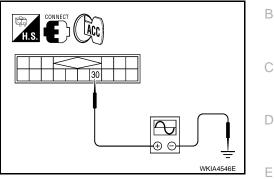
[PREMIUM AUDIO (KING CAB)]

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

6.CHECK RXD SIGNAL

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





Are the voltage readings as specified?

YES >> Replace satellite radio tuner. Refer to <u>AV-95, "Removal and Installation"</u>.

NO >> Replace audio unit. Refer to <u>AV-84, "Removal and Installation"</u>.

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< COMPONENT DIAGNOSIS >

#### SOUND SIGNAL CIRCUIT SATELLITE RADIO TUNER

#### SATELLITE RADIO TUNER : Description

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

# SATELLITE RADIO TUNER : Diagnosis Procedure

#### LEFT CHANNEL

# 1.CHECK HARNESS

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

A	A		В		
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 Ground		NO

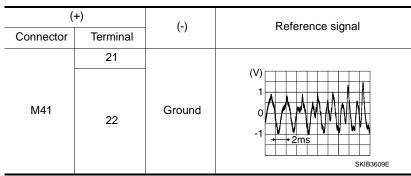
Are continuity results as specified?

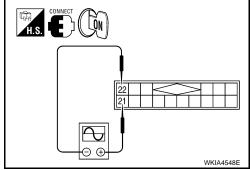
YES >> GO TO 2

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.
- 3. Check signal between satellite radio tuner (factory installed) connector M41 terminals 21 and 22 with CONSULT-III or oscillo-scope.





Are voltage readings as specified?

YES >> Replace audio unit. Refer to AV-84, "Removal and Installation".

NO >> Replace satellite radio tuner. Refer to <u>AV-95, "Removal and Installation"</u>.

RIGHT CHANNEL

42 41 B

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INFOID:000000003301797

# SOUND SIGNAL CIRCUIT

#### < COMPONENT DIAGNOSIS >

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43

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В

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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	Continuity	
Connector	Terminal	Connector	Terminal	Continuity
M41	23		43	Yes
10141	24	M42	44	Tes

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

	А		Continuity
Connector	Terminal		Continuity
M41	23	Ground	No
1014 1	24	- Ground	

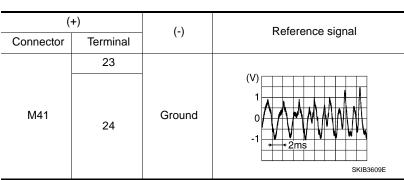
Are continuity results as specified?

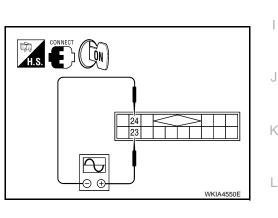
YES >> GO TO 2

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-84, "Removal and Installation"</u>.

NO >> Replace satellite radio tuner. Refer to <u>AV-95, "Removal and Installation"</u>.



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#### MICROPHONE SIGNAL CIRCUIT

#### < COMPONENT DIAGNOSIS >

# **MICROPHONE SIGNAL CIRCUIT**

#### Description

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

Continuity

Yes

# Diagnosis Procedure

# 1. CHECK HARNESS BETWEEN BLUETOOTH CONTROL UNIT AND MICROPHONE

1. Turn ignition switch OFF.

А

Terminal

7

8

29

Connector

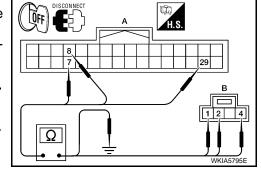
B141

- 2. Disconnect Bluetooth control unit connector and microphone connector.
- 3. Check continuity between Bluetooth control unit harness connector B141 (A) and microphone harness connector R8 (B).

Connector

R8

В



4. Check continuity between Bluetooth control unit harness connector B141 (A) and ground.

Terminal

1

2

4

	А		Continuity	
Connector	Terminal		Continuity	
	7			
B141	8	Ground	No	
	29			
Are the contin	nuity test results as speci	fied?		
	GO TO 2 Repair harness or connec	tor.		
2. СНЕСК М	ICROPHONE POWER S	SUPPLY		
nector.	Bluetooth control unit co	nnector and n	nicrophone con-	
	oltage between micropho nd ground.	ne harness co	onnector R8 ter-	
4 - Gr	ound	: Approx. 5V		
<u>Is voltage rea</u>	ding approx. 5 volts?			
	SO TO 3		( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	
	Replace Bluetooth con Removal and Installation		efer to <u>AV-89.</u>	WKIA5796E
$\sim$		•		

**3.**CHECK MICROPHONE SIGNAL

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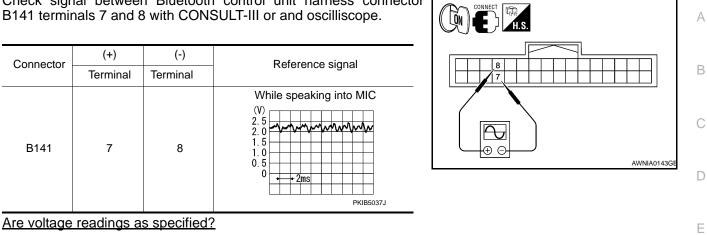
INFOID:000000003301800

# **MICROPHONE SIGNAL CIRCUIT**

#### < COMPONENT DIAGNOSIS >

Check signal between Bluetooth control unit harness connector B141 terminals 7 and 8 with CONSULT-III or and oscilliscope.

#### [PREMIUM AUDIO (KING CAB)]



YES	>> Replace Bluetooth control unit. Refer to AV-89, "Removal and Installation".
NO	>> Replace microphone. Refer to <u>AV-91, "Removal and Installation"</u> .

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# < ECU DIAGNOSIS >

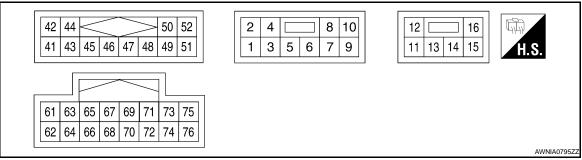
# ECU DIAGNOSIS

# AUDIO UNIT

**Reference Value** 

INFOID:000000003301801

#### **TERMINAL LAYOUT**



# PHYSICAL VALUES

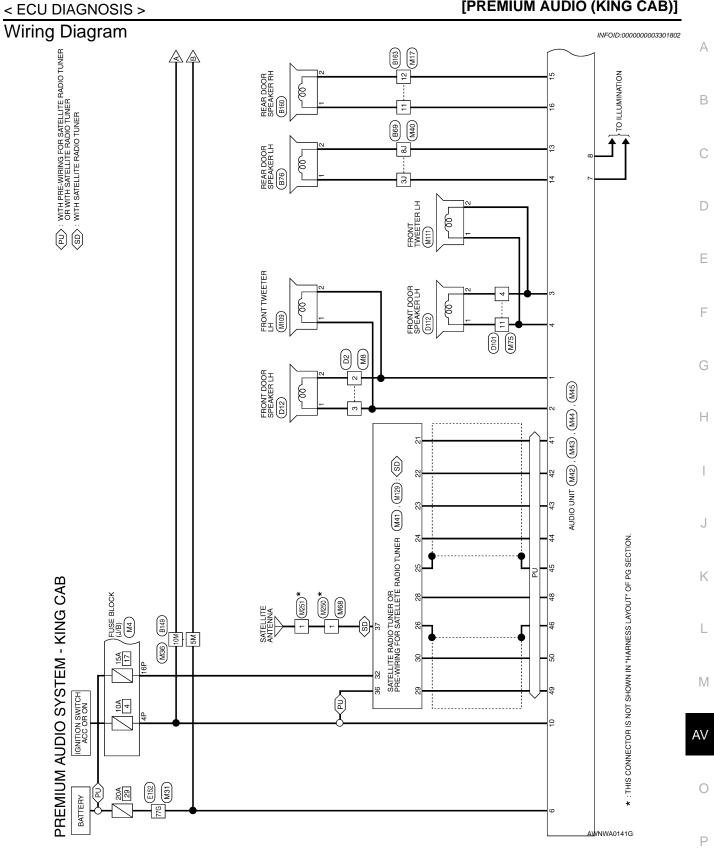
(Wire	minal e color)	ltem	Signal input/		Condition	Reference value (Approx.)
+	-		output			
2 (BR)	1 (L)	Audio sound signal front LH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1
4 (LG)	3 (R)	Audio sound signal front RH	Output	lgnition switch ON	Receive audio sig- 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 (GR)	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		lasid	055	Lighting switch is in 1st position.	Battery voltage
(R)	Ground	Illumination signal	Input	OFF	Lighting switch is OFF.	OV
9	-	Shield	_	_	_	0V
10 (G/B)	Ground	ACC signal	Input	Ignition switch ON	_	Battery voltage

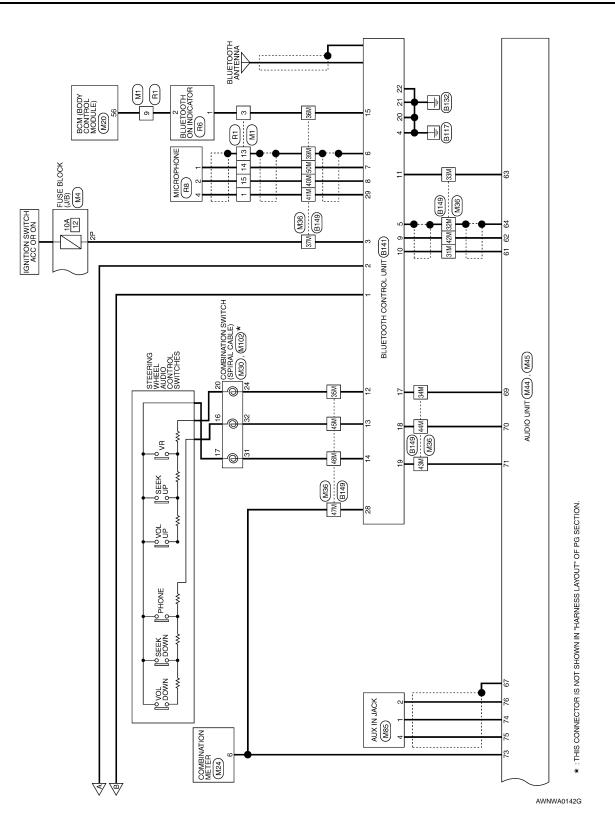
#### < ECU DIAGNOSIS >

	ninal color)	ltem	Signal input/		Condition	Reference value (Approx.)	A
+	_		output				В
14 (G)	13 (B)	Audio sound signal rear LH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 ms 5 KIA0177E	C
16 (G/R)	15 (O)	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	E
42 (R)	41 (G)	Satellite radio au- dio signal LH	Input	lgnition switch ON	Satellite radio tuner operating	(V) 1 0 -1 • • 2 ms SKIB3609E	G H
44 (B)	43 (W)	Satellite radio au- dio signal RH	Input	Ignition switch ON	Satellite radio tuner operating	(V) 1 0 -1 -1 -1 -1 SKIB3609E	J
45	-	Ground	_	_	-	0V	
46	-	Data ground	-	-	-	0V	
48 (O)	-	REQ (SAT→AV control unit)	Input	Ignition switch ON	-	_	L
49 (P)	-	RX (SAT→AV con- trol unit)	Input	Ignition switch ON	-	_	Μ
50 (L)	_	TX (AV control unit→SAT)	Input	Ignition switch ON	_	_	AV
62 (W)	61 (B)	Telephone signal input	Input	lgnition switch ACC/ON	Bluetooth control unit sends audio signal	(V) 1 0 -1 • • 2 ms SKIB3609E	O
63 (R)	_	Mute control	_	_	-	_	
64	-	Shield	-	-	-	0V	

#### < ECU DIAGNOSIS >

	minal e color)	Item	Signal input/		Condition	Reference value (Approx.)
+	-		output			(Αμριοχ.)
67	_	Shield	_	Ignition switch ON	-	0V
					Pressing 🗸 📢 switch	0V
69	71	Steering switch sig-	Input	Ignition switch	Pressing $\Delta$ switch	0.75
(R)	(L)	nal A	input	ON	Pressing VOL up switch	2V
					Except for above	5V
					Pressing MODE switch	0V
70	71	Steering switch sig-		Ignition	Pressing $ abla$ switch	0.75V
(GR)	(L)	nal B	Input	switch ON	Pressing VOL down switch	2V
					Except for above	5 V
73 (SB)	Ground	Vehicle speed sig- nal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	(V) 15 10 5 0 • • • 20ms PKIA1935E
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
75 (B)	Ground	Auxiliary audio in- put LH (+)	Input	Ignition switch ON	Receive audio sig- nal (AUX input)	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
76 (B)	-	Shield	_	-	_	0V





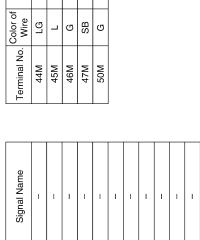
WIRE 0	Signal Name	ATION METER 8 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
nector No. M8 nector Name WIRE TO nector Color BROWN 12111098	Terminal No. Color of Wire 2 L 3 BR	M24           nector No.         M24           nector Name         COMBIN           nector Color         WHITE           ninal No.         Color of Vire           6         SB
Io.         M4           Itame         FUSE BLOCK (J/B)           Itame         FUSE BLOCK (J/B)           Color         WHITE           Color         WHITE           7         68         59           7         68         59           7         68         59	Color of Signal Name Wire Color of Name Wire UV/G W/R	Connector No.     M20       Connector Name     BCM       Connector Color     BLACK       Ising No.     Color of Signal Name       56     V     BATTERY SAVER
Connector No. M4 Connector Name FUSE Connector Color WHI Connector Color WHI	Terminal No. C 2P 16P	Connector No. Connector Name Connector Color Terminal No. Col
WIRE	Signal Name	Signal Name
Connector No.         M1           Connector Name         WIRE TO WIRE           Connector Name         WIRE TO WIRE           Connector Color         WHITE           Image: Image of the image	I No. Color of Wire Shift O	Connector No. M17 Connector Name WIRE TO WIRE Connector Color WHITE Connector Color WHITE Terminal No. Color of Signal 11 GR Signal
Connector Nan Connector Nan Connector Colo	Terminal No. 1 1 1 1 1 1 1 1 1 1 1 1 1	Connector No. Connector Nan Connector Nan Connector Nan 11 11 12 12

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# [PREMIUM AUDIO (KING CAB)]

AV-67

Signal Name -			Signal Name	I	I	I	I	I							
Color of Wire ≺		Color of	Wire	ГG	_	g	SB	g							
Terminal No. 77G			Terminal No.	44M	45M	46M	47M	50M							
Connector No. M31 Connector Name WIRE TO WIRE Connector Color WHITE	56         40         30         50         10           105         98         30         50         10           106         98         80         70         80           202         90         80         70         80           203         90         80         70         80           204         800         800         800         800         800         800           203         800 <t< td=""><td>Color of</td><td>Terminal No. Wire Signal Name</td><td>5M R/B –</td><td>10M G/Y –</td><td>31M B -</td><td>32M SHIELD -</td><td>33M R -</td><td>34M V –</td><td>35M BR -</td><td>36M GR -</td><td>37M W/G -</td><td>39M SHIELD –</td><td>40M L –</td><td>_</td></t<>	Color of	Terminal No. Wire Signal Name	5M R/B –	10M G/Y –	31M B -	32M SHIELD -	33M R -	34M V –	35M BR -	36M GR -	37M W/G -	39M SHIELD –	40M L –	_
	Connector Color     GRAY       Image: Second	Connector No M36	e	Connector Color WHITE						LINEALMI JAMI JAMI JAMI JAMI JAMI JAMI JAMI JA		50/M 49/M 46/M 46/M 46/M 46/M 46/M 46/M 46/M 46	61 VIEW ESVIESVIESVIESVIESVIESVIESVIESVIESVIESVI		=



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#### [PREMIUM AUDIO (KING CAB)]

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41M 42M 43M

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

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AV-68

Connector No.	M40		Connector No.	). M41		Connector No.	o. M42	0
Connector Name	Connector Name WIRE TO WIRE		Connector Na	ame SATE	Connector Name SATELLITE RADIO TUNER	Connector N	ame WIF	Connector Name WIRE TO WIRE
Connector Color	WHITE		Connector Color	olor WHITE	ш	Connector Color		BROWN
		Γ						
H.S.	5J 4J 3J 2J 1J 101 9J 8J 7J 6J		H.S.	22 24 26 <u>21 23 25 27 28 29 30</u>	3 29 30 31 33 35	मित्र H.S.	42 44 <	42 44 55 52 41 43 45 46 47 48 49 51
211 2	21.1 200 130 150 151 151 151 151 151 151 150						Color of	
	30. 29. 28. 27. 26. 25. 24. 23. 22.	[	Terminal No.	Wire	Signal Name	Terminal No.		Signal Narr
410 4	41J 40J 39J 38J 37J 36J 35J 34J 33J 32J 31J		21	σ	SAT LCH (-)	41	ß	(-) T
	00 491 481 471 461 451 441 431 421		22	œ	SAT LCH (+)	42	В	(+) T
611 6	61J 60J 59J 58J 57J 56J 55J 54J 53J 52J 51J		23	×	SAT RCH (-)	43	W	R (-)
	0.0 69.1 68.1 66.0 66.0 64.0 63.0 62.0		24	в	SAT RCH (+)	44	В	R(+)
	751 721 721 721 771		25	SHIELD	EARTH (SIG)	45	SHIELD	EARTH (SI
	801 750 750 750 750 760		26	SHIELD	DATA EARTH	46	SHIELD	DATA EAR <sup>-</sup>
			27	I	1	47	I	I
		7	28	0	REQ1	48	0	REQ
Torminal No Col			29	٩	TXD	49	Р	RX
	e oigila		30	_	RXD	50	L	TΧ
_	۱ Մ		31	I	1	51	I	I
8	В		32	R/B	BACKUP	52	I	T
			33	1	I			
			34	-	I			
			35	I	I			
			36	G/B	ACC			

												_
Signal Name	(-) T	(+) T	R (-)	R(+)	EARTH (SIG)	DATA EARTH	I	REQ	RX	ТX	-	1
Color of Wire	G	щ	N	в	SHIELD	SHIELD	Ι	0	٩	L	I	I
Terminal No.	41	42	43	44	45	46	47	48	49	50	51	52

**AUDIO UNIT** 

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M44	AUDIO UNIT	WHITE	12 16	11 13 14 15	Color of Signal Name Wire	1		B RRSP LH (-)	G RRSP LH (+)	O RRSP RH (-)
Connector No.	Connector Name AUDIO UNIT	Connector Color		Ś	Terminal No. Wire	++	- 12	13 E	14 (	15 0
					[					
	NO UNIT	TE	8 10	6 7 9	Signal Name	FRSP LH (-)	FRSP LH (+)	FRSP RH (-)	FRSP RH (+)	I
. M43		lor WHI	2 4 7	1 3 5	Color of Wire	_	BR	н	ГG	I
Connector No.	Connector Name AUDIO UNIT	Connector Color WHITE	昭	H.S.	Terminal No. Wire	-	2	3	4	5

9									
6 7 9	Signal Name	FRSP LH (-)	(+) HT dSBJ	(-) HH dSHH	FRSP RH (+)	Η	BAT (BACK UP)	ILL CONT	LIGHT SW
2 4 1 3 5	Color of Wire	_	BR	В	LG	I	¥	GR	æ
чана H.S.	Terminal No.	-	2	3	4	5	9	7	8

	H.S.	11
jnal Name	Terminal No.	Color Wire
(-) HJ 4SP LH	11	I
(+) HJ 4S	12	Т
(-) HH di	13	В
SP RH (+)	14	9
I	15	0
(BACK UP)	16	B/B
L CONT		
GHT SW		
I		
ACC		

品.S.H	Terminal I	1	12	13	14	15	( T
<u>6</u>	Signal Name	FRSP LH (-)	FRSP LH (+)	FRSP RH (-)	FRSP RH (+)	I	

TEL\_SIG\_GND

SHIELD

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TEL\_SIG\_INPUT (-) TEL\_SIG\_INPUT (+) TEL\_SIG\_ON\_TRIG

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Signal Name

Color of Wire

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H.S. 佢

74 73

Connector Name AUDIO UNIT

M45

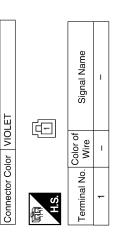
Connector No.

Connector Color WHITE



321	Signal Name	+H	COMMON	F+
4	Color of Wire	Μ	н	В
园 H.S.	Terminal No.	-	2	4

Connector Na	ame   WIF	Connector Name WIRE TO WIRE
Connector Color WHITE	olor WH	ITE
同 H.S.	5 4 <u>11 10</u>	3 2 1 9 8 7 6
Terminal No. Wire	Color of Wire	Signal Name
4	Я	-
11	ГG	I



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REMOTE\_GND\_SWC

SPEED SIGNAL

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AUX\_R+ AUX\_L+

AUX\_GND

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Connector No.

Connector Name WIRE TO WIRE

M68

Connector No.

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REMOTE\_A\_SWC REMOTE\_B\_SWC

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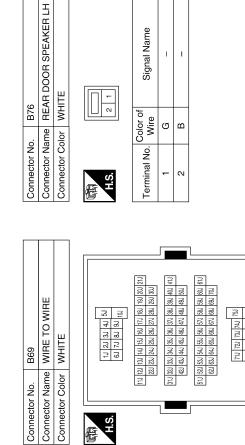
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< ECU DIAGNOSIS >	[PREMIUM AUDIO (KING CAB)]
	A
	В
M111 FRONT TWEETER RH BROWN 2 1 0 Signal Name v	M251 M251 SATELLITE ANTENNA BROWN e e signal Name
M111 BROWN P V Ifie	M251 Restriction M251 BROWN
ctor No. Color A V V	al No. Color Aŭin
Conne Conne LS H.S	L Termini Line Conne
VEETER LH Signal Name	G
Signa	Signal Name
Connector No.     M109       Connector Name     FRONT TWEETER LH       Connector Color     BROWN       Terminal No.     Color of Wire       2     GR	No. M250 Name WIRE TO WIRE Color of Signal
Connector No. Connector Name Connector Color A.S. Terminal No. Co Terminal No. Co	Connector No. Connector Name Connector Color
	К
TION SWITCH SABLE) 3021 Signal Name	M129 SATELLITE RADIO TUNER CR PRE-WIRING FOR SATELLITE RADIO RUNER VIOLET rof Signal Name
Si Si	Si S
Connector No.     M102       Connector Name     COMBINATION SWITCH       Connector Name     (SPIRAL CABLE)       Connector Color     GRAY       Image: Color of GRAY     (SPIRAL CABLE)       Image: Color of GRAY     (Spiral Name)       Image: Color of Write     L       Image: Color of Write     Color of Signal Name)       Image: Color of Write     L       Image: Color of Write     Color of	AV Color Name Ctor Name View View View View View View View Vie
Conne Conne Conne Larmir	Conne Termin Conne
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# AUDIO UNIT

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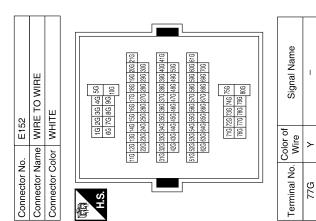
761 771 781 781 801	Signal Name	-	I	I	-	-
	Color of Wire	0	ВВ	ŋ	ŋ	Ν
	Terminal No. Wire	۲۱	2J	3J	6J	٢٢

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**AUDIO UNIT** 



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Connector N							erminal No.		Signal Name
-	lame BLU	Connector Name BLUETOOTH CONTROL UNIT	9	SHIELD	MIC SHIELD	21		wire -	
Connector Color	olor WHITE	LE L	2	σ	MIC_IN+	22	~	в	CONT_3
			∞	_	MIC_IN-	23		1	1
Æ			თ	>	AUDIO_OUT+	24	4	1	1
H.S.			10	۵	AUDIO_OUT	25	5	1	I
			11	щ	MUTE_CONTROL	26	9	1	I
9	10 12 2	18 20 22 24 26 28	12	BR	LADDER_IN_1	27	2	1	I
	1 81 11 6 /	15 82 72 82 82 82 81 71 91	13	L	LADDER_IN_2	28	8	I	I
	Color of		14	σ	LADDER_IN_GND	29	6	ı	I
Terminal No.		Signal Name	15	GR	LED_IND_1	30	0	1	T
-	R/B	BATT	16	I	I	31	-	1	Ι
2	G/Y	ACC	17	٨	LADDER_OUT_1	32	2	I	I
ო	W/G	IGN	18	ГG	LADDER_OUT_2				
4	в	GND	19	0	LADDER_OUT_GND				
5	SHIELD	AUDIO_OUT_SHIELD	20	В	CONT_1				
Connector No. B149	lo. B149	9 11 10 1010	Terminal No.	Color of Wire	Signal Name	Terminal No.		Color of Wire	Signal Name
Connector Color WHITE			10M	G∖Y	1	42M		N	I
			31M	в	1	43M	ž	0	1
L 低			32M	SHIELD	I	44M	Ň	LG	-
N H	1M	2M 3M 4M 5M	33M	Я	1	45M	W	L	-
	6M	6M 7M 8M 9M 10M	34M	٨	I	46M	W	Ð	-
	11M12M13M13M	1111 July 12 Miles interview in the second	35M	BR	I	47M	Σ	SB	I
	22M 23M 24h	22M 23M 24M 25M 26M 27M 28M 29M 30M	36M	GR	I	50M	Ą	ŋ	I
1	31M 32M 33M 34h	31M132M133M135M135M135M133M139M140M141M	37M	W/G	I				
	42M 43M 44h	42M 43M 44M 45M 45M 43M 43M 43M 50M	39M	SHIELD	1				
<u> </u>	51M 52M 53M 54N	51M 52M 53M 54M 55M 55M 57M 58M 59M 60M 61M	40M	Γ	1				
	62M 63M 64h	62M 63M 64M 65M 66M 67M 68M 69M 70M	41M	≻	I				
	71M 7 76M 7	71/01/2001/2001/2001/2001/2001/2001/2001							

**AUDIO UNIT** 

< ECU DIAGNOSIS >

Signal Name

Terminal No. Wire

Signal Name

Terminal No. Wire

Connector No. B141

# [PREMIUM AUDIO (KING CAB)]

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Connector No.

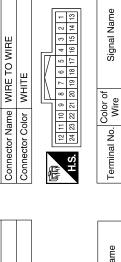
Connector Name WIRE TO WIRE

Connector No. B163

B160

Connector No.

Connector Color WHITE



11         12         13         14         15         6         7	Signal Name	I	I	
2 3 9 10	Color of Wire	GR	0	
日 H.S.	Terminal No.	11	12	

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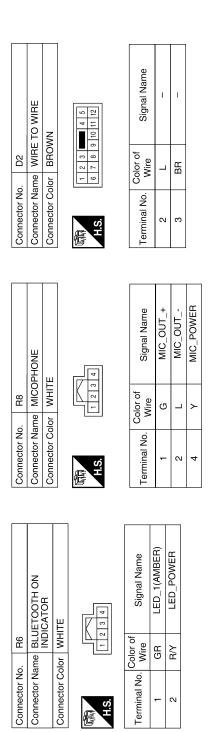
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Connector Name REAR DOOR SPEAKER RH	щ		Signal Name
me REAF	lor WHIT		Color of Wire
Connector Na	Connector Color WHITE	际可 H.S.	Terminal No.

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]	Signal Name	I	I
	Color of Wire	GR	0
	ninal No.	÷	2



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o. D112	Connector Name FRONT DOOR SPEAKER RH	olor WHITE		Color of Signal Name Wire	W/B –	L/B –
Connector No.	Connector Na	Connector Color WHITE	国 H.S.	Terminal No.	-	2
1	WIRE TO WIRE	E	9 10 11 12	Signal Name	-	-
lo. D101		color WHITE	1 2 3 6 7 8	Color of Wire	L/B	W/B
Connector No.	Connector Name	Connector Color	同词 H.S.	Terminal No.	4	11
	FRONT DOOR SPEAKER	ш		Signal Name	I	I
	Ime FRON			Color of Wire	L/W	L/R
Connector No.	Connector Name	Connector Color	围 H.S.	Terminal No.	-	N

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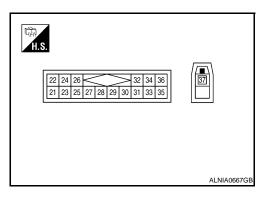
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# SATELLITE RADIO TUNER

# **Reference Value**

INFOID:000000003301803



#### PHYSICAL VALUES

Teri	minal	Description				Reference value
+	-	Signal name	Input/ Output		Condition	(Approx.)
22 (R)	21 (G)	Satellite radio sound signal LH	Output	Ignition switch ON	When satellite radio mode is selected	(V) 1 0 -1 • • 2ms SKiB3609E
24 (B)	23 (W)	Satellite radio sound signal RH	Output	Ignition switch ON	When satellite radio mode is selected	(V) 1 -1 • • 2ms SKIB3609E
25		Shield		_	—	_
26		Shield			_	_
28 (O)	Ground	Request signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 -10 -10 -10 -10 -10 -
29 (P)	Ground	Communication signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 -10 -10 -10 -10 -10 -

# SATELLITE RADIO TUNER

#### < ECU DIAGNOSIS >

# [PREMIUM AUDIO (KING CAB)]

Terr	minal	Description				Reference value	٨
+	_	Signal name	Input/ Output		Condition	(Approx.)	A
				Ignition		(V) 10	В
30 (L)	Ground	Communication signal (CONT→SAT)	Input	switch ON	When satellite radio mode is selected	0 -10 -10 SKIA9301J	C
32 (R/B)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage	
36 (G/B)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage	E
37		Satellite antenna	Input	—	—	—	F

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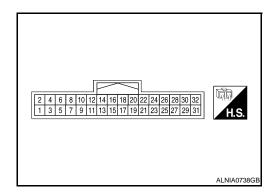
INFOID:000000003301805

# **BLUETOOTH CONTROL UNIT**

**Reference Value** 

TERMINAL LAYOUT

PHYSICAL VALUES



Term (wire)		Description	١		Condition	Reference value
+	_	Signal name	Input/ output		Condition	(Approx.)
1 (R/B)	Ground	Battery power	Input	_	_	Battery voltage
2 (G/Y)	Ground	ACC power	Input	Ignition switch ACC/ON	-	Battery voltage
3 (W/G)	Ground	IGN power	Input	Ignition switch ON/ START	_	Battery voltage
4 (B)	Ground	Ground	_	Ignition switch ON	_	0V
5	_	Shield	-	_	-	-
6	-	Shield	_	_	_	_
7 (G)	8 (L)	MIC in signal	Input	_	-	-
9 (W)	10 (B)	Audio out	Output	Ignition switch ACC/ON	Bluetooth control unit sends audio signal	(V) 1 0 -1 * 2ms SKIB3609E
11 (R)	_	Mute control	_	_	-	-
					Pressing 🌈 🏑 switch	0V
12	14	Steering switch sig-	Input	Ignition switch	Pressing $\Delta$ switch	0.75
(BR)	(G)	nal A	input	ON	Pressing VOL up switch	2V
					Except for above	5V

# **BLUETOOTH CONTROL UNIT**

#### < ECU DIAGNOSIS >

#### [PREMIUM AUDIO (KING CAB)]

Tern (wire	ninal color)	Description	ו		Condition	Reference value	A
+	_	Signal name	Input/ output		Condition	(Approx.)	
					Pressing	0V	В
13	14	Steering switch sig-		Ignition	Pressing $ abla$ switch	0.75V	
(L)	(G)	nal B	Input	switch ON	Pressing VOL down switch	2V	С
					Except for above	5 V	
15 (GR)	Ground	LED power	Output	Ignition switch ON	-	Battery voltage	D
					Pressing 🌈 📢 switch	0V	E
17	19	Steering switch sig-	Output	Ignition switch	Pressing $\Delta$ switch	0.75	_
(V)	(O)	nal A		ON	Pressing VOL up switch	2V	F
					Except for above	5V	G
					Pressing switch	0V	0
18	19	Steering switch sig-	Outrait	Ignition	Pressing $ abla$ switch	0.75V	
(LG)	(O)	nal B	Output	switch ON	Pressing VOL down switch	2V	Н
					Except for above	5V	I
22 (B)	Ground	Ground	_	-	_	0V	I
24 (B)	Ground	Ground	_	_	_	0V	J
28 (SB)	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	K
29 (Y)	Ground	Microphone power	Output	Ignition switch ON	_	5V	Μ

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# < SYMPTOM DIAGNOSIS >

# SYMPTOM DIAGNOSIS

# AUDIO SYSTEM

# Symptom Table

INFOID:000000003302418

#### AUDIO SYSTEM

Symptom	Possible cause	Reference page
Inoperative	<ul><li>Audio unit power circuit</li><li>Audio unit</li></ul>	• <u>AV-43</u> • <u>AV-41</u>
Steering wheel audio control switch does not operate	<ul><li>Steering wheel audio control switch</li><li>Audio unit</li></ul>	• <u>AV-53</u> • <u>AV-41</u>
All speakers do not sound	<ul><li>Audio unit</li><li>Audio unit power circuit</li></ul>	• <u>AV-41</u> • <u>AV-43</u>
One or several speakers do not sound	<ul><li>Front door speaker</li><li>Front tweeter</li><li>Rear door speaker</li></ul>	<ul> <li><u>AV-47</u></li> <li><u>AV-49</u></li> <li><u>AV-51</u></li> </ul>

#### CD

Symptom	Possible cause	Reference page
CD cannot be inserted.		
CD cannot be ejected.		01/ 44
The CD cannot be played.	Audio unit	<u>AV-41</u>
The sound skips, stops suddenly, or is distorted.		

#### SATELLITE RADIO

Symptom	Possible cause	Reference page
Inoperative	<ul> <li>Satellite radio tuner power or ground circuit</li> <li>Satellite radio tuner communication circuit</li> <li>Satellite radio tuner</li> </ul>	<ul> <li><u>AV-43</u></li> <li><u>AV-55</u></li> <li><u>AV-58</u></li> </ul>
Right or left channel does not sound	<ul> <li>Satellite radio tuner right channel audio signal circuit</li> <li>Satellite radio tuner left channel audio signal circuit</li> <li>Satellite radio tuner</li> </ul>	• <u>AV-58</u>

#### HANDS-FREE PHONE

Symptom	Possible cause	Reference page
Inoperative	<ul><li>Bluetooth control unit power circuit</li><li>Bluetooth control unit</li></ul>	• <u>AV-44</u> • <u>AV-42</u>
Steering wheel audio switch does not operate	<ul><li>Steering wheel audio control switch</li><li>Bluetooth control unit</li></ul>	<ul> <li><u>AV-53</u></li> <li><u>AV-42</u></li> </ul>
Voice activated control does not activate	<ul><li>Microphone</li><li>Steering wheel audio control switch</li><li>Bluetooth control unit</li></ul>	<ul> <li><u>AV-60</u></li> <li><u>AV-53</u></li> <li><u>AV-42</u></li> </ul>

#### NORMAL OPERATING CONDITION

#### < SYMPTOM DIAGNOSIS >

# NORMAL OPERATING CONDITION

#### Description

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

NOISE

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

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off mountains or buildings.

The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and determine the cause. **NOTE:** 

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

Type of Noise and Possible Cause

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

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# < PRECAUTION >

# PRECAUTION PRECAUTIONS

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

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 sections 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

# **Commercial Service Tools**

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Tool name		Description	
		Loosening bolts and nuts	
Power tool			I
	PBIC0191E		

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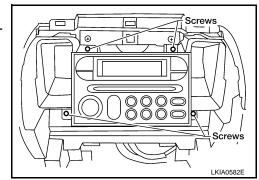
# < ON-VEHICLE REPAIR > ON-VEHICLE REPAIR AUDIO UNIT

Removal and Installation

INFOID:000000003301750

#### REMOVAL

- 1. Remove the cluster lid C. Refer to IP-10, "Removal and Installation".
- 2. Remove the audio control unit screws, using power tool.
- 3. Pull out the audio control unit from the instrument panel and disconnect the audio control unit connectors.



INSTALLATION Installation is in the reverse order of removal.

#### < ON-VEHICLE REPAIR > FRONT TWEETER

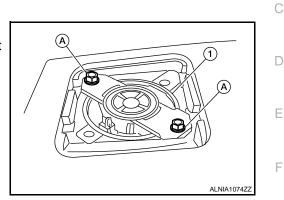
# Removal and Installation

#### REMOVAL

#### CAUTION:

#### Use a suitable tool to prevent damage to the front tweeter speaker grille trim and the instrument panel.

- 1. Remove the front tweeter grille.
- 2. Remove the front tweeter screws (A).
- 3. Pull out the front tweeter speaker (1) and disconnect front tweeter connector, then remove the front tweeter speaker (1).



INSTALLATION Installation is in the reverse order of removal.

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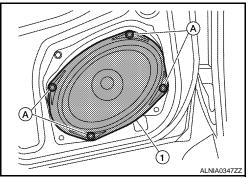
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# FRONT DOOR SPEAKER

Removal and Installation

#### REMOVAL

- 1. Remove the front door finisher. Refer to INT-13, "Removal and Installation".
- 2. Remove the front door speaker screws (A).
- 3. Pull out the front door speaker (1), and disconnect the front door speaker connector and remove the front door speaker (1).



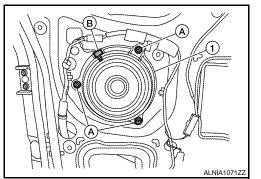
INSTALLATION Installation is in the reverse order of removal.

# REAR DOOR SPEAKER

Removal and Installation

#### REMOVAL

- 1. Remove the rear door finisher. Refer to INT-13, "Removal and Installation".
- 2. Remove the rear door speaker screws (A).
- 3. Remove the rear door speaker (1) and disconnect rear door speaker connector (B).



INSTALLATION Installation is in the reverse order of removal.

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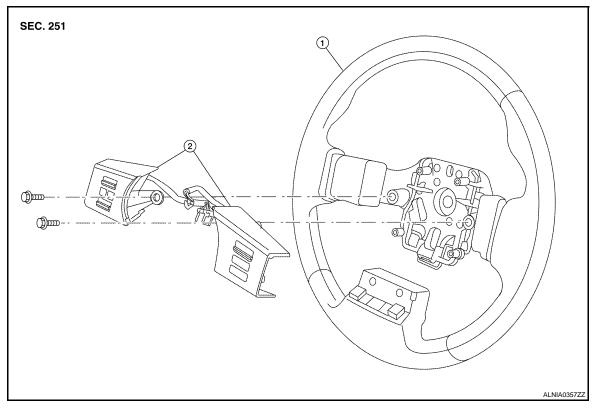
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#### < ON-VEHICLE REPAIR > STEERING SWITCH

# Removal and Installation

INFOID:000000003301756



1. Steering wheel 2. Steering wheel audio control switches

#### REMOVAL

- 1. Remove the driver air bag module. Refer to <u>SR-4, "Removal and Installation"</u>.
- 2. Remove the steering wheel. Refer to ST-8, "On-Vehicle Inspection and Service".
- 3. Remove the steering wheel rear cover.
- 4. Remove the steering wheel audio control switch assembly screws.
- 5. Disconnect the steering wheel audio control switches connector and remove the steering wheel audio control switches.

#### INSTALLATION

Installation is in the reverse order of removal.

# **BLUETOOTH CONTROL UNIT**

# Removal and Installation

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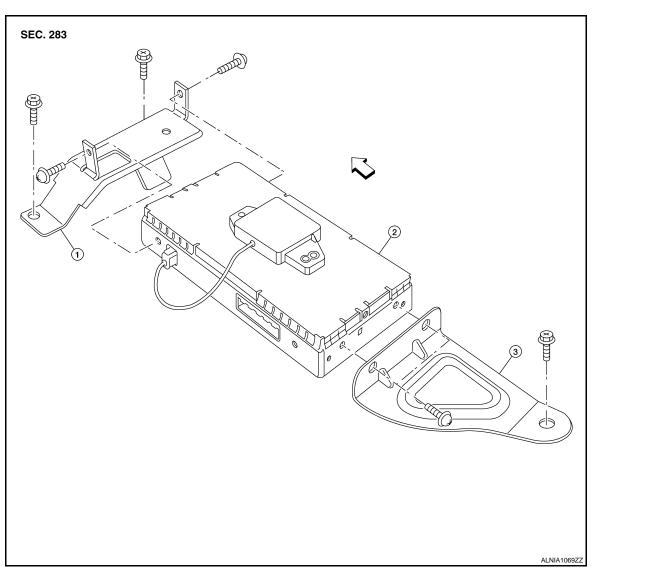
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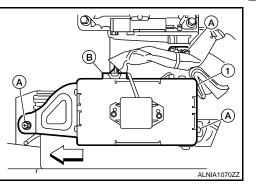
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Bluetooth control unit front bracket
 Bluetooth control unit/antenna
 Bluetooth control unit rear bracket
 < Vehicle front</li>

#### REMOVAL

- 1. Remove the RH front seat. Refer to SE-28, "Removal and Installation".
- Disconnect the Bluetooth control unit harness connector (B).
   <⊐:Vehicle front</li>
- 3. Remove the Bluetooth control unit screws (A), then remove the Bluetooth control unit assembly.
- 4. Remove the Bluetooth control unit bracket screws and remove the Bluetooth control unit (1) front and rear brackets.



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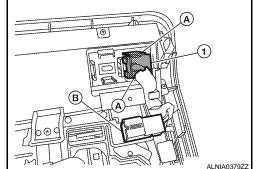
Installation is in the reverse order of removal.

# MICROPHONE

# Removal and Installation

#### REMOVAL

- 1. Remove the front roof console finisher. Refer to INT-23. "Removal and Installation".
- 2. Detach the Bluetooth microphone (1) from the front console finisher tabs (A).
- Detach the Bluetooth microphone connector (B) and remove the Bluetooth microphone (1).



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

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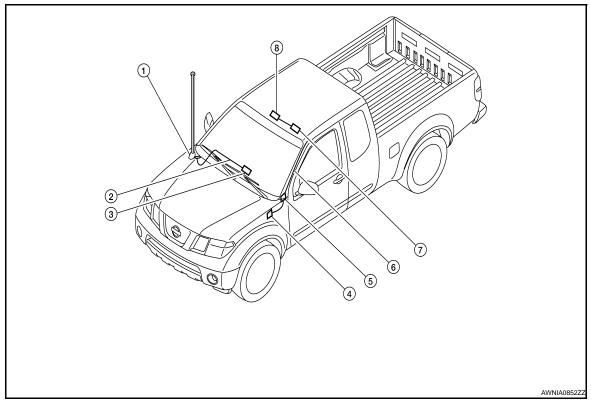
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# [PREMIUM AUDIO (KING CAB)]

# AUDIO ANTENNA

Location of Antenna

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- 1. Audio antenna
- 4. Satellite radio tuner M41, M129
- 7. Harness connector M251
- 2. Antenna feeder
- 5. Harness connector M250, M68
- 8. Satellite antenna

- 3. Audio unit M42, M43, M44, M45
- 6. Satellite antenna feeder

Removal and Installation

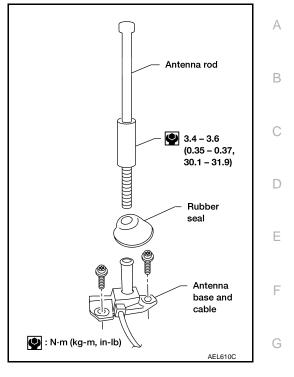
#### REMOVAL

- 1. Remove lower glove box. Refer to IP-10, "Removal and Installation".
- 2. Disconnect audio antenna cable from antenna feeder.

# **AUDIO ANTENNA**

#### < ON-VEHICLE REPAIR >

- 3. Remove antenna rod.
- 4. Remove rubber seal.
- 5. Remove cowl top. Refer to EXT-19, "Removal and Installation".
- 6. Remove fender protector. Refer to <u>EXT-22</u>, "Removal and Installation of Front Fender Protector".
- 7. Remove antenna base bolts.
- 8. Remove antenna base and cable.



INSTALLATION
Installation is in the reverse order of removal.
CAUTION:
Always properly tighten the antenna rod during installation or the antenna rod may bend or break dur-
ing vehicle operation.

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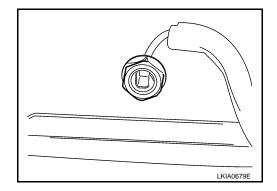
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# SATELLITE RADIO ANTENNA

Removal and Installation

#### REMOVAL

- 1. Remove the front cover. Refer to EXT-27, "Removal and Installation".
- 2. Lower the headlining. Refer to INT-23, "Removal and Installation".
- 3. Disconnect the satellite radio antenna connector.
- 4. Remove the satellite radio antenna nut.
- 5. Remove the satellite radio antenna.



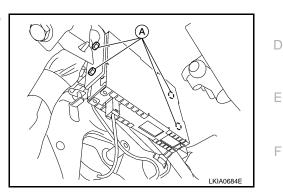
INSTALLATION Installation is in the reverse order of removal.

# SATELLITE RADIO TUNER

# Removal and Installation

#### REMOVAL

- 1. Disconnect the battery negative terminal.
- 2. Remove the lower instrument panel. Refer to IP-10, "Removal and Installation".
- 3. Disconnect the satellite radio tuner connectors.
- 4. Remove satellite radio tuner screws (A), and remove satellite radio tuner from above the parking brake pedal.



INSTALLATION Installation is in the reverse order of removal.



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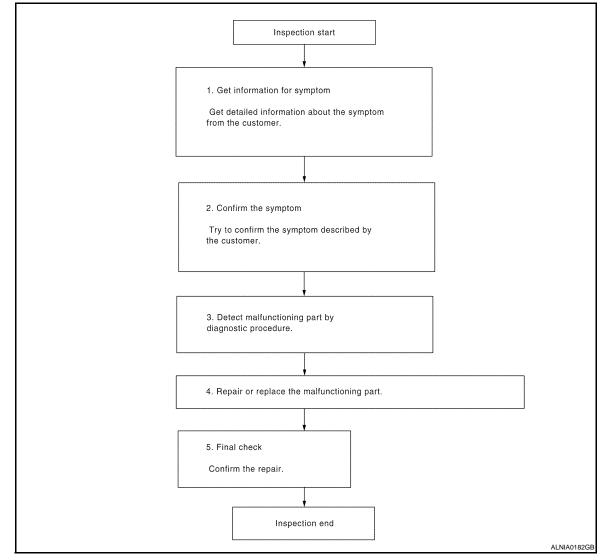
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# BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

#### Work Flow

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**OVERALL SEQUENCE** 



#### DETAILED FLOW

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

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

#### >> GO TO 2

# **2.**CONFIRM THE SYMPTOM

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

#### >> GO TO 3

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

Inspect according to Diagnostic Procedure of the system.

# AV-96

DIAGNOSIS AND REPAIR WORKFLOW				
< BASIC INSPECTION > [PREMIUM AUDIO (C	REW CAB)]			
Is malfunctioning part detected?				
YES >> GO TO 4	1			
NO $>>$ GO TO 2				
4.REPAIR OR REPLACE THE MALFUNCTIONING PART				
<ol> <li>Repair or replace the malfunctioning part.</li> <li>Reconnect parts or connectors disconnected during Diagnostic Procedure.</li> </ol>				
>> 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				
	(			
	1			

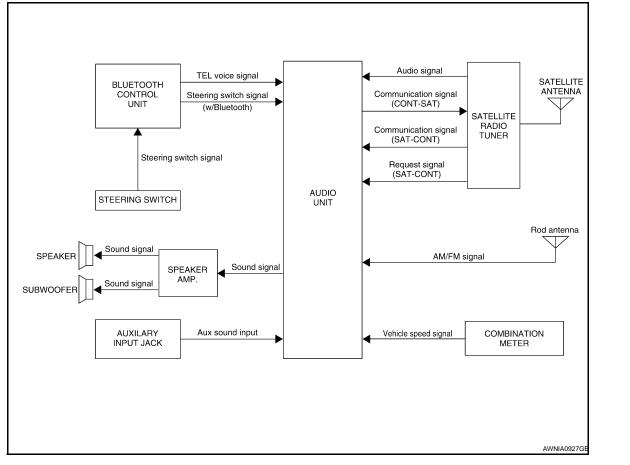
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# < FUNCTION DIAGNOSIS > FUNCTION DIAGNOSIS AUDIO SYSTEM

# System Diagram



# System Description

#### AUDIO SYSTEM

The audio system consists of the following components

- Audio unit
- Audio amp.
- Rod antenna
- Steering wheel audio control switches
- Front door speakers
- Front tweeters
- Rear door speakers
- Rear door tweeters
- 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, rear door speakers, rear door tweeters and the subwoofer. 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.

# AV-98

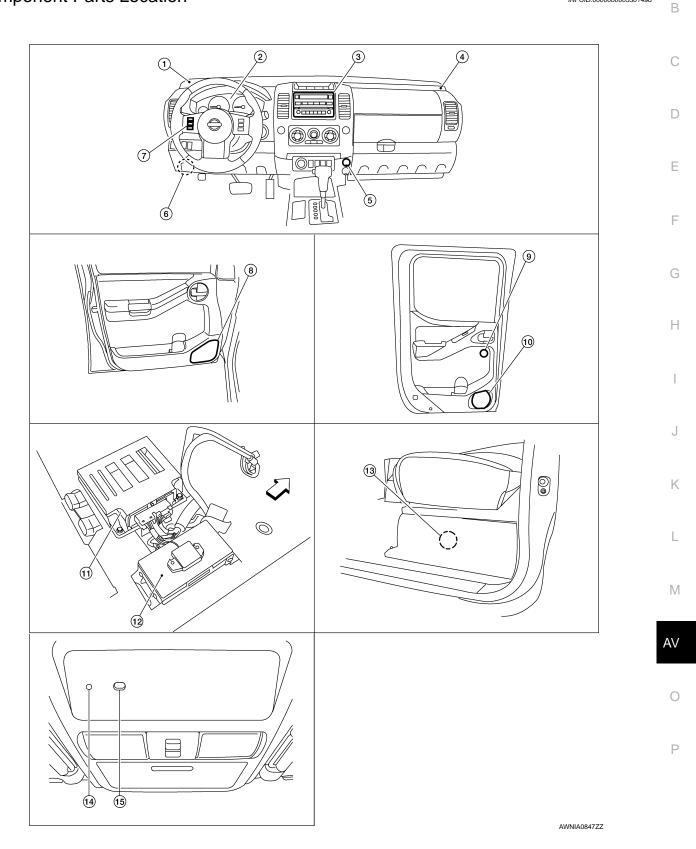
# **AUDIO SYSTEM**

#### < FUNCTION DIAGNOSIS >

# SPEED SENSITIVE VOLUME SYSTEM

Volume level of this system goes up and down automatically in proportion to the vehicle speed. The control A level can be selected by the customer. Refer to Owner's Manual for operating instructions.

# **Component Parts Location**



# AUDIO SYSTEM

# < FUNCTION DIAGNOSIS >

#### [PREMIUM AUDIO (CREW CAB)]

< □:FR	ONT				
1.	Front tweeter LH M109	2.	Combination meter M24	3.	Audio unit M42, M43, M44, M45
4.	Aux jack M85	5.	Front tweeter RH M111	6.	Satellite radio tuner M41, M129
7.	Steering wheel audio control switches	8.	Front door speaker LH D12 RH D112	9.	Rear door tweeter LH D208 RH D308
10.	Rear door speaker LH D207 RH D307	11.	Audio amp B158, B159 (view under passenger front seat)	12.	Bluetooth control unit B141
13.	Subwoofer B72 (under driver's seat)	14.	Microphone R8	15.	Bluetooth ON indicator R6

# **Component Description**

Part name	Description
Audio unit	Controls audio system and satellite radio system functions
Audio amp.	Receives power (amp ON) and audio signals from Audio unit and outputs audio signals to each speaker.
Steering wheel audio control switches	<ul><li>Start a voice recognition session</li><li>Answer and end telephone calls</li><li>Adjust the volume level</li></ul>
Front door speakers	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high, mid and low range sounds</li></ul>
Front tweeters	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high range sounds</li></ul>
Rear door speakers	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high, mid and low range sounds</li></ul>
Rear door tweeters	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs high range sounds</li></ul>
Subwoofer	<ul><li>Outputs audio signal from audio amp.</li><li>Outputs low range sounds</li></ul>
Satellite radio tuner	<ul><li>Receives radio signals from satellite antenna</li><li>Sends audio signals to Audio unit</li></ul>
Satellite antenna	Audio signal (satellite radio) is received and output to Audio unit.

# HANDS-FREE PHONE SYSTEM

#### < FUNCTION DIAGNOSIS >

# HANDS-FREE PHONE SYSTEM



#### When buttons on the steering wheel audio control switch are pushed, the resistance in steering wheel audio Κ 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:

telephone functions can be turned off using the Nissan Voice Recognition system.

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

- Initiate Self Diagnosis of the Bluetooth telephone system
- Start a voice recognition session

the cellular telephone operating manual.

BLUETOOTH CONTROL UNIT

- Answer and end telephone calls
- Adjust the volume of calls

#### MICROPHONE

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

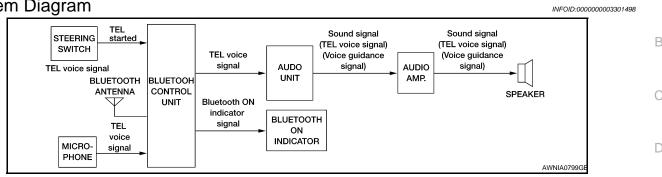
#### AUDIO UNIT

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

#### BLUETOOTH ON INDICATOR

The Bluetooth ON indicator is located in the overhead console. The indicator will flash during power up whilethe Bluetooth control unit is initializing. This process may take up to 10 seconds. If a phone is present in thevehicle and paired with the Bluetooth control unit, the indicator will remain on to indicate that the system isready for voice commands. The indicator flashes during self-diagnosis.

System Diagram



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

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. 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

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. During this time, the Bluetooth ON indicator will flash until initialization is complete. If a phone is present in the vehicle and paired with the Bluetooth control unit, Nissan Voice Recognition will then become active. Bluetooth

#### System Description

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system.

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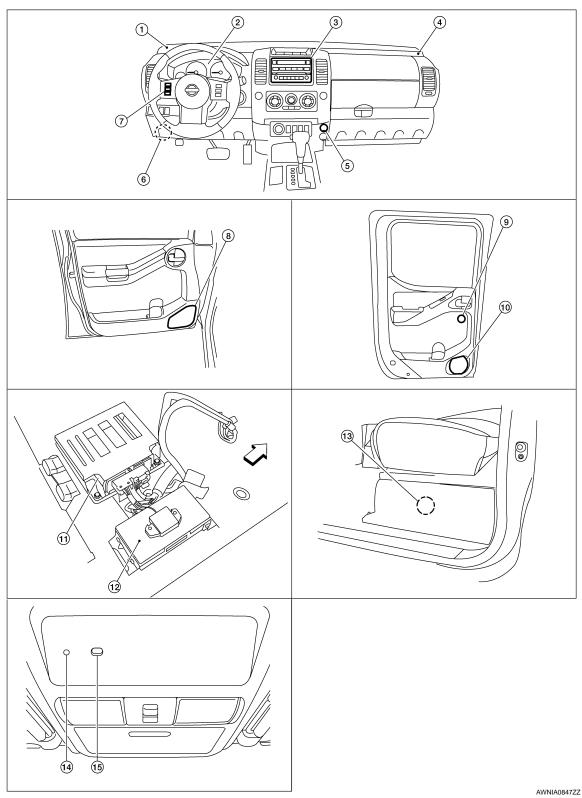
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#### **HANDS-FREE PHONE SYSTEM** [PREMIUM AUDIO (CREW CAB)]

#### < FUNCTION DIAGNOSIS >

# **Component Parts Location**

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#### <⊓:FRONT

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- 1. Front tweeter LH M109
- 4. Aux jack M85

- 2. Combination meter M24
- 5. Front tweeter RH M111
- Steering wheel audio control switch- 8. Front door speaker LH D12 **RH D112**

AV-102

- 3. Audio unit M42, M43, M44, M45
- 6. Satellite radio tuner M41, M129
- 9. Rear door tweeter LH D208 RH D308

# HANDS-FREE PHONE SYSTEM

#### < FUNCTION DIAGNOSIS >

- 10. Rear door speaker LH D207 RH D307
- 13. Subwoofer B72 (under driver's seat) 14. Microphone R8

# **Component Description**

11. Audio amp B158, B159 (view under 12. Bluetooth control unit B141 passenger front seat)

[PREMIUM AUDIO (CREW CAB)]

15. Bluetooth ON indicator R6

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

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< FUNCTION DIAGNOSIS >

# DIAGNOSIS SYSTEM (AUDIO UNIT) AV SWITCH

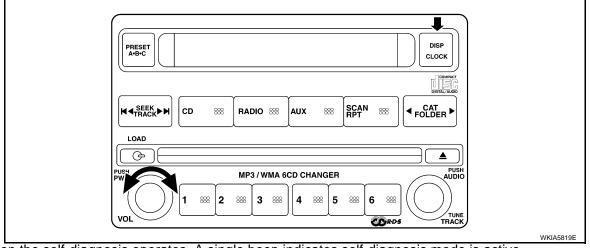
**AV SWITCH : Component Function Check** 

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[PREMIUM AUDIO (CREW CAB)]

#### 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.

# DIAGNOSIS SYSTEM (BLUETOOTH CONTROL UNIT)

#### < FUNCTION DIAGNOSIS >

# DIAGNOSIS SYSTEM (BLUETOOTH CONTROL UNIT)

#### **Diagnosis Description**

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

#### BLUETOOTH CONTROL UNIT INITIALIZATION CHECKS

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

#### **OPERATION PROCEDURE**

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

- 4. While the prompt is playing, press and hold the steering wheel audio control switch to button until you hear the "Diagnostics" mode" prompt. The Bluetooth system will sound a 5 second beep.
- 5. While the beep is sounding, press and hold the steering wheel audio control switch keep button again until you hear prompts.
- The Bluetooth system has now entered into the diagnostic 6. mode. Results of the diagnostic checks will be verbalized to the technician and the Bluetooth ON indicator will flash. Refer to AV-105, "Work Flow".
- 7. After the failure records are reported, an interactive microphone test will be performed. Follow the voice prompt. If the microphone test fails refer to AV-105, "Work Flow".
- Self-diagnosis mode is complete when the voice prompt says "All diagnostic functions completed".

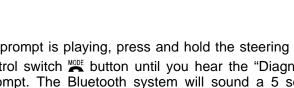
#### Work Flow

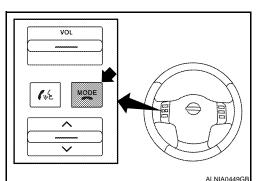
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Failure Message	Action		
"Internal failure"	Replace Bluetooth control unit. Refer to AV-172, "Removal and Installation".		
"Bluetooth antenna open"	1. Inspect harness connection.		
"Bluetooth antenna shorted"	2. Replace Bluetooth antenna. Refer to <u>AV-172, "Removal and Installation"</u> .		
"Phone/Send for Hands Free System is stuck"	Oberlander in such and such a sector law it share. Defeate AV (407, "Description"		
"Phone/End for the Hands Free System is stuck"	Check steering wheel audio control switches. Refer to <u>AV-127, "Description"</u> .		
"Microphone test" (failed interactive test)	<ol> <li>Inspect harness between Bluetooth control unit and microphone.</li> <li>Replace microphone. Refer to <u>AV-174, "Removal and Installation"</u>.</li> </ol>		

# AV-105

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[PREMIUM AUDIO (CREW CAB)]

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# 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	29
	10	Ignition switch ACC or ON	4

#### Are the fuses OK?

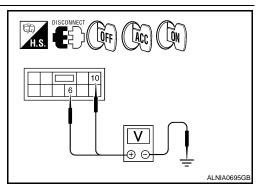
YES >> GO TO 2

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

# 2. POWER SUPPLY CIRCUIT CHECK

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

(+)		(-)	OFF	ACC	ON
Connector	Terminal	()	OTT	100	
M43	6	6 Ground OV	0V	Battery voltage	Battery voltage
M43	10	Ground	Battery voltage	Battery voltage	Battery voltage



#### Are the voltage results as specified?

YES >> GO TO 3 NO >> • Check c

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

Repair harness or connector.

# **3.**GROUND CIRCUIT CHECK

Inspect audio unit case ground.

Does case ground pass inspection?

YES >> Inspection End.

NO >> Repair audio unit case ground.

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	17
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

[PREMIUM AUDIO (CREW CAB)]

INFOID:000000003301506

# POWER SUPPLY AND GROUND CIRCUIT

#### < COMPONENT DIAGNOSIS >

[PREMIUM AUDIO (CREW CAB)]

- 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	()	OTT	100	ÖN
M41	32	Ground	Battery voltage	Battery voltage	Battery voltage
	36		0V	Battery voltage	Battery voltage

Are the voltage readings as specified?

#### YES >> GO TO 3

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

#### 3.GROUND CIRCUIT CHECK

Inspect satellite radio tuner (factory installed) case ground.

#### Does case ground pass inspection?

YES >> Inspection End.

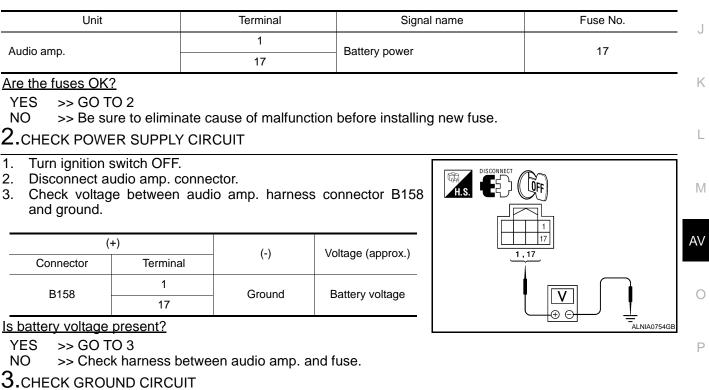
NO >> Repair satellite radio tuner (factory installed) case ground.

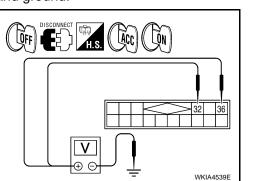
#### AUDIO AMP

# AUDIO AMP : Diagnosis Procedure

# 1.CHECK FUSE

Check that the audio amp. fuses are not blown.





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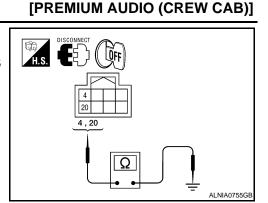
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# POWER SUPPLY AND GROUND CIRCUIT

#### < COMPONENT DIAGNOSIS >

- 1. Turn ignition switch OFF.
- 2. Disconnect audio amp. connector.
- 3. Check continuity between audio amp. harness connector B158 and ground.

(•	+)	(-)	Continuity	
Connector	Terminal	(-)		
B158	4	Ground	Yes	
B136	20	Ground	163	



Does continuity exist?

YES >> Inspection End.

NO >> Repair harness or connector.

# **BLUETOOTH CONTROL UNIT**

# **BLUETOOTH CONTROL UNIT : Diagnosis Procedure**

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# 1.CHECK FUSE

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

Unit	Terminal	Signal name	Fuse No.
Bluetooth control unit	1	Battery power	29
	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

Check voltage between Bluetooth control unit harness connector B141 and ground.

(+)		(-)	OFF	ON	ACC
Connector	Terminal	(-)	OIT	ON	ACC
B141	1	Ground	Battery voltage	Battery voltage	Battery voltage
	2		0V	Battery voltage	Battery voltage
	3		0V	Battery voltage	0V

Is battery voltage present as specified?

YES >> GO TO 3.

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

 $\mathbf{3.}$ CHECK GROUND CIRCUIT

# POWER SUPPLY AND GROUND CIRCUIT

# < COMPONENT DIAGNOSIS >

- 1. Turn ignition switch OFF.
- 2. Disconnect Bluetooth control unit connector.
- 3. Check continuity between Bluetooth control unit harness connector B141 and ground.

Connector	Terminal	_	Continuity
	4		
B141	20	Ground	Yes
	22		

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.
- Check voltage between microphone harness connector R8 terminal 4 and ground.

(	(+)		Value (Approx.)
Connector	Connector Terminal		
R8	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 R8 (A) terminal 4 and Bluetooth control unit harness connector B141 (B) terminal 29.

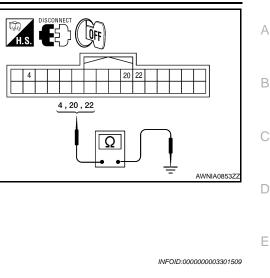
	A		В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
R8	4	B141	29	Yes

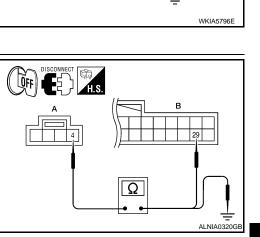
 Check continuity between microphone harness connector R8 (A) terminal 4 and ground.

	4		Continuity
Connector	Terminal		Continuity
R8	4	Ground	No

# Are the continuity test results as specified?

- YES >> Replace the Bluetooth control unit. Refer to <u>AV-172, "Removal and Installation"</u>.
- NO >> Repair harness or connector.
- **3.**CHECK GROUND CIRCUIT





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# AV-109

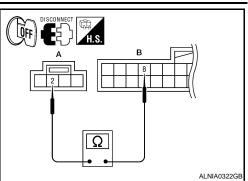
[PREMIUM AUDIO (CREW CAB)]

# POWER SUPPLY AND GROUND CIRCUIT OSIS > [PREMIUM AUDIO (CREW CAB)]

# < COMPONENT DIAGNOSIS >

- 1. Turn ignition switch OFF.
- 2. Disconnect microphone harness connector R8 and Bluetooth control unit harness connector B141.
- Check continuity between microphone harness connector R8 (A) terminal 2 and Bluetooth control unit harness connector B141 (B) terminal 8.

	A		В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
R8	2	B141	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 send-В ing them to the front door speakers using the audio signal circuits.

# **Diagnosis** Procedure

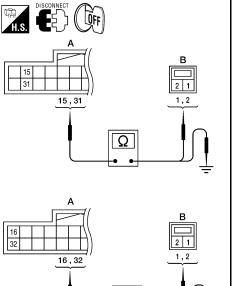
# **1.**SPEAKER HARNESS CHECK

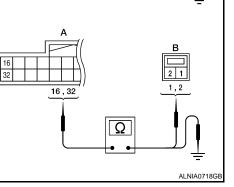
- 1. Disconnect audio amp. connector B159 and suspect speaker connector.
- 2. Check continuity between audio amp. harness connector B159 (A) and suspect speaker harness connector (B).

	A		В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	15	D12	1	
B159	31		2	Yes
D109	16	<b>D</b> 440	1	165
	32	D112	2	

3. Check continuity between audio amp. harness connector B159 (A) and ground.

	A		Continuity
Connector	Terminal		Continuity
	15		No
B159	31	Ground	
B139	16	Giouna	
	32		





Are continuity test results as specified?

YES >> GO TO 2

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

2.FRONT DOOR SPEAKER SIGNAL CHECK

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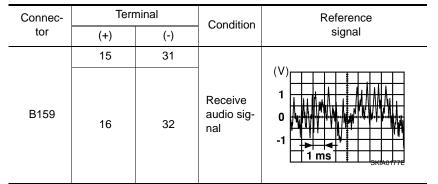
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# FRONT DOOR SPEAKER

# < COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connector B159 and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio amp. harness connector B159 terminals with CONSULT-III or oscilloscope.



# Is audio signal voltage as specified?

YES >> Replace suspect speaker. Refer to <u>AV-167. "Removal</u> and Installation".

NO >> GO TO 3

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

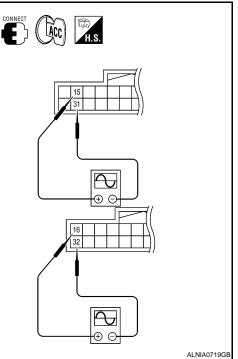
- Disconnect audio unit connector M43 and audio amp. connector B159.
- 2. Check continuity between audio unit harness connector M43 (A) and audio amp. harness connector B159 (B).

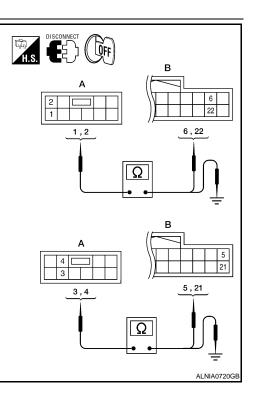
	A		В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	1		6	
M43	2	B159	22	Yes
	3		5	Tes
	4		21	

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

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

# [PREMIUM AUDIO (CREW CAB)]





Are continuity test results as specified?

YES >> GO TO 4

NO

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

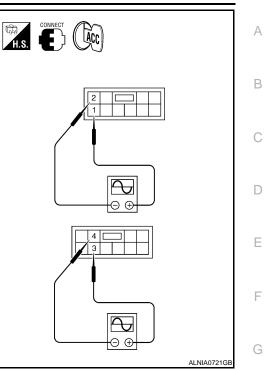
**4.**PRE-AMP SIGNAL CHECK

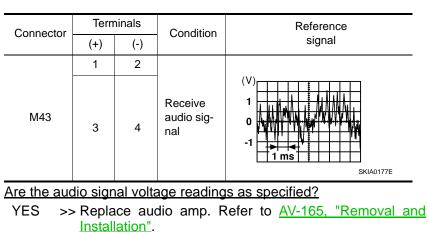
# FRONT DOOR SPEAKER

# < COMPONENT DIAGNOSIS >

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







NO >> Replace audio unit. Refer to <u>AV-164, "Removal and</u> <u>Installation"</u>.

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# < COMPONENT DIAGNOSIS >

# FRONT TWEETER

# Description

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

# **Diagnosis Procedure**

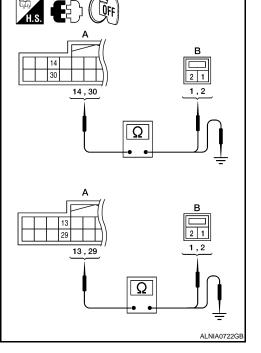
# **1.**HARNESS CHECK

- 1. Disconnect audio amp. connector B159 and suspect tweeter connector.
- Check continuity between audio amp. harness connector B159 (A) and suspect tweeter harness connector (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	14	M109	1	
B159	30	101103	2	Yes
	13	M111	1	Tes
	29		2	

 Check continuity between audio amp. harness connector B159 (A) and ground.

	A		Continuity
Connector	Terminal		Continuity
	14		No
B159	30	Ground	
B139	13	Ground	INO
	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 AUDIO (CREW CAB)]

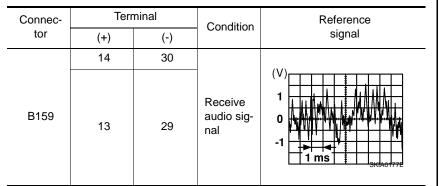
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# **FRONT TWEETER**

# < COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connector B159 and suspect tweeter connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio amp. harness connector B159 terminals with CONSULT-III or oscilloscope.



# Is audio signal voltage as specified?

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

NO >> GO TO 3

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

- 1. Disconnect audio unit connector M43 and audio amp. connector B159.
- 2. Check continuity between audio unit harness connector M43 (A) and audio amp. harness connector B159 (B).

	A		В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	1		6	
M43	2	B159	22	Yes
	3		5	Tes
	4	•	21	

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

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

# Are continuity test results as specified?

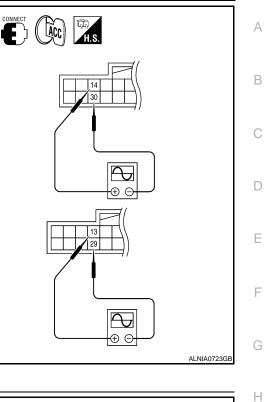
YES >> GO TO 4

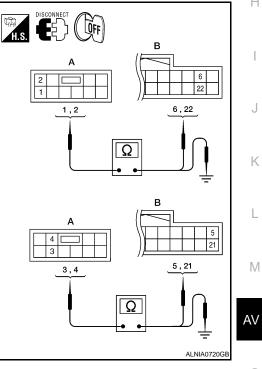
NO

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

**4.**PRE-AMP SIGNAL CHECK







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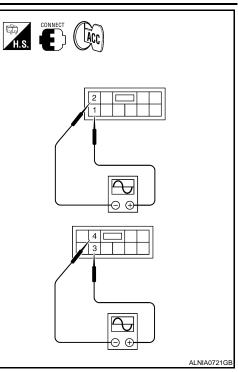
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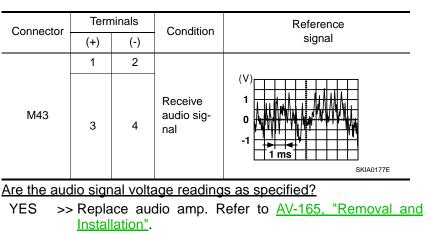
# **FRONT TWEETER**

# < 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 AUDIO (CREW CAB)]





NO >> Replace audio unit. Refer to <u>AV-164, "Removal and</u> <u>Installation"</u>.

# REAR DOOR SPEAKER

# < COMPONENT DIAGNOSIS >

# REAR DOOR SPEAKER

# Description

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

# **Diagnosis Procedure**

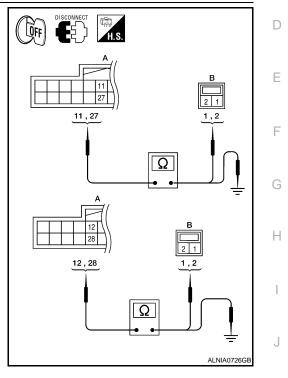
# **1.**SPEAKER HARNESS CHECK

- 1. Disconnect audio amp. connectors B159 and suspect speaker connector.
- Check continuity between audio amp. harness connectors B159 (A) and suspect speaker harness connector (B).

	-	-		
A		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	11	D207	1	
B159	27		2	Yes
D109	12	D307	1	165
	28	0307	2	

 Check continuity between audio amp. harness connectors B159 (A) and ground.

Connector	Terminal	-	Continuity
	11		No
B159	27	- Ground	
B139	12		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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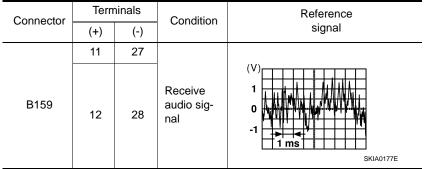
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# **REAR DOOR SPEAKER**

# < COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connectors and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio amp. harness connectors B159 terminals with CONSULT-III or oscilloscope.



# Are audio signal voltage readings as specified?

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

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

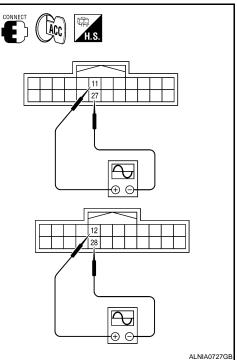
- 1. Disconnect audio unit connector M44 and audio amp. connector B159.
- 2. Check continuity between audio unit harness connector M44 (A) and audio amp. harness connector B159 (B).

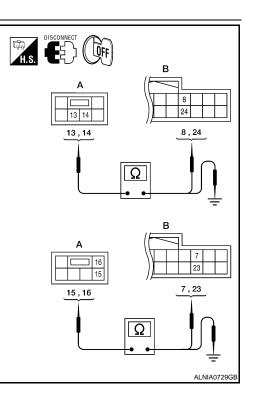
	A B		Continuity	
Connector	Terminal	Connector	Terminal	Continuity
	13		8	
M44	14	B159	24	Yes
10144	15		7	Tes
	16		23	

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

		А		Continuity	
-	Connector	Connector Terminal		Continuity	
-		13		No	
	M44	14	Ground		
	IVI <del>44</del>	15	Ground		
		16			

# [PREMIUM AUDIO (CREW CAB)]





Are the continuity test results as specified?

YES >> GO TO 4

NO

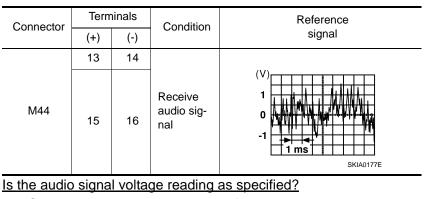
- >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

**4.**PRE-AMP SIGNAL CHECK

# **REAR DOOR SPEAKER**

# < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector M44 and audio amp. connector B159.
- 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-165</u>, "<u>Removal and</u> <u>Installation</u>".
- NO >> Replace audio unit. Refer to <u>AV-164</u>, "<u>Removal and</u> <u>Installation</u>".

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# [PREMIUM AUDIO (CREW CAB)]

# < COMPONENT DIAGNOSIS >

# REAR DOOR TWEETER

# Description

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

# **Diagnosis Procedure**

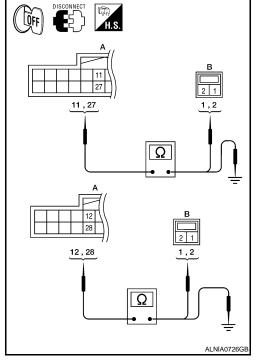
# **1.**SPEAKER HARNESS CHECK

- 1. Disconnect audio amp. connectors B159 and suspect speaker connector.
- Check continuity between audio amp. harness connectors B159 (A) and suspect speaker harness connector (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	11	D208	1	
B159	27	D200	2	Yes
D109	12	D308	1	165
	28	0306	2	

 Check continuity between audio amp. harness connectors B159 (A) and ground.

Connector	Terminal	-	Continuity	
	11			
B159	27	Ground	No	
B155	12			
	28			



Are the continuity test results as specified?

YES >> GO TO 2

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

• Repair harness or connector.

2.SPEAKER SIGNAL CHECK

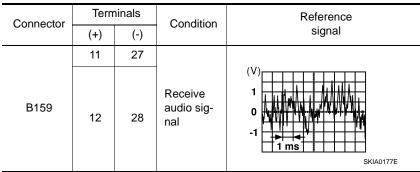
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# **REAR DOOR TWEETER**

# < COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connectors and suspect speaker connector.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio amp. harness connectors B159 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

- 1. Disconnect audio unit connector M44 and audio amp. connector B159.
- Check continuity between audio unit harness connector M44 (A) and audio amp. harness connector B159 (B).

	A		В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	13		8	
M44	14	B159	24	Yes
10144	15		7	Tes
	16		23	

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

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

# Are the continuity test results as specified?

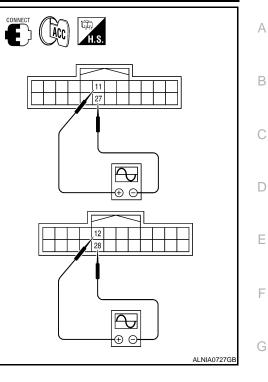
YES >> GO TO 4

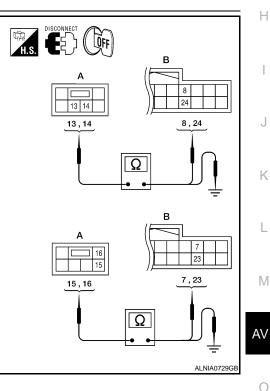
NO

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

**4.**PRE-AMP SIGNAL CHECK





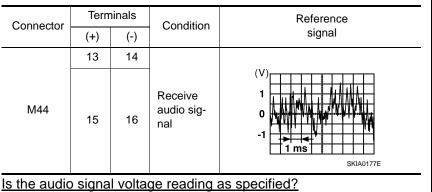


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# **REAR DOOR TWEETER**

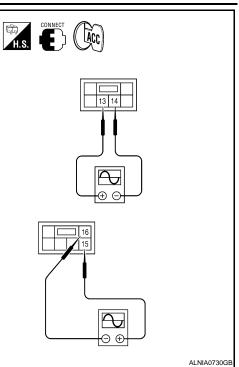
# < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector M44 and audio amp. connector B159.
- 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-165. "Removal and</u> <u>Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-164</u>, "<u>Removal and</u> <u>Installation</u>".

# [PREMIUM AUDIO (CREW CAB)]



# **SUBWOOFER**

# < COMPONENT DIAGNOSIS > **SUBWOOFER**

# Description

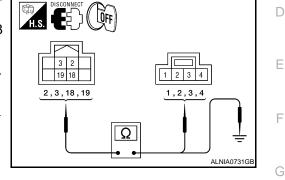
The audio unit sends audio signals to the audio amp. The audio amp. amplifies the audio signals before send-В ing them to the subwoofer using the audio signal circuits.

# **Diagnosis** Procedure

# **1.**SPEAKER HARNESS CHECK

- 1. Disconnect audio amp. connector B158 and subwoofer connector B72.
- 2. Check continuity between audio amp. harness connector B158 (A) and subwoofer harness connector B72 (B).

	A		В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	2		1	
B158	3	B72	3	Yes
	18		2	Tes
	19	*	4	



Check continuity between audio amp. harness connector B158 (A) and ground. 3.

	Α		Continuity	
Connector	Terminal		Continuity	
	2		No	
B158	3	Ground		
B130	18			
	19			

Are the continuity test results as specified?

YES >> GO TO 2

NO

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

2.SPEAKER SIGNAL CHECK

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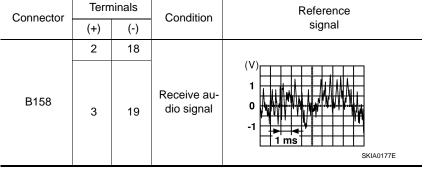
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# SUBWOOFER

# < COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connector B158 and subwoofer connector B72.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio amp. harness connector B158 terminals with CONSULT-III or oscilloscope.



# Is the audio signal voltage as specified?

YES >> Replace subwoofer. Refer to <u>AV-171, "Removal and</u> <u>Installation"</u>.

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

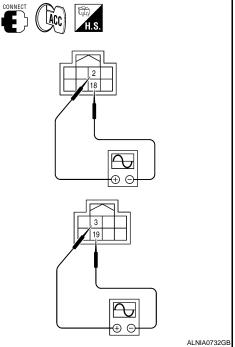
- 1. Disconnect audio unit connector M44 and audio amp. connector B159.
- 2. Check continuity between audio unit harness connector M44 (A) and audio amp. harness connector B159 (B).

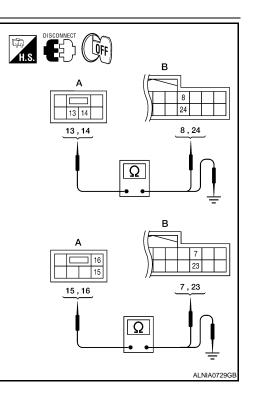
	٨		D	
	A		В	
Connector	Terminal	Connector	Terminal	Continuity
	13		8	
M44	14	B159	24	Yes
10144	15		7	res
	16		23	

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

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

# 





Are the continuity test results as specified?

YES >> GO TO 4

NO

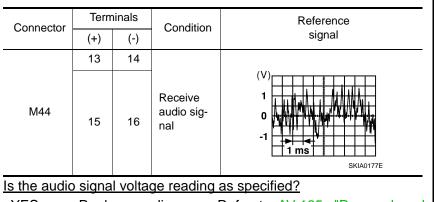
- >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

**4.**PRE-AMP SIGNAL CHECK

# SUBWOOFER

# < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector M44 and audio amp. connector B159.
- 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-165. "Removal and</u> <u>Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-164</u>, "<u>Removal and</u> <u>Installation</u>".

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# [PREMIUM AUDIO (CREW CAB)]

# AMP ON SIGNAL CIRCUIT

# Description

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

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# **Diagnosis Procedure**

# 1.CHECK AMP ON SIGNAL

- 1. Turn audio system ON.
- 2. Check voltage between audio amp. harness connector B159 terminal 9 and ground.

# 9 - Ground

: More than 6.5V

Is battery voltage present?

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



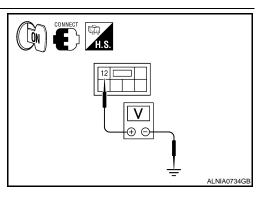
Check voltage between audio unit harness connector M44 terminal 12 and ground.

### 12 - Ground

: More than 6.5V

Is battery voltage present?

- YES >> Repair harness or connector.
- NO >> Replace audio unit. Refer to <u>AV-164, "Removal and</u> <u>Installation"</u>.



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# < COMPONENT DIAGNOSIS >

# STEERING SWITCH

# Description

When one of the steering wheel audio control switches is pushed, the resistance in the steering wheel audio on the steering wheel audio on the steering wheel audio of the

# **Diagnosis Procedure**

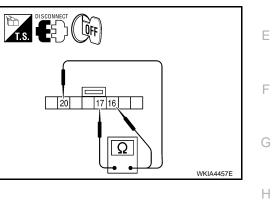
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# 1. CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

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

Terminal		Signal name	Condition	Resistance (Ω) (Approx.)
		Seek (down)	Depress $ abla$ switch.	165
16	17	Volume (down)	Depress VOL down switch.	487
		Mode/end	Depress ADDE switch.	0
		Seek (up)	Depress $\Delta$ switch.	165
20	17	Volume (up)	Depress VOL up switch.	487
		Phone/send	Depress 🌈 🏑 switch.	0



Do the steering wheel audio control switches check OK?

YES >> GO TO 2

NO >> Replace steering wheel audio control switch. Refer to <u>AV-170, "Removal and Installation"</u>.

# 2.CHECK HARNESS

- 1. Disconnect Bluetooth control unit harness connector B141 and spiral cable harness connector M30.
- Check continuity between Bluetooth control unit harness connector B141 (A) and spiral cable harness connector M30 (B).

A	А		В	
Connector	Terminal	Connector	Terminal	Continuity
	12		24	
B141	13	M30	32	Yes
	14		31	

3. Check continuity between Bluetooth control unit connector B141 (A) and ground.

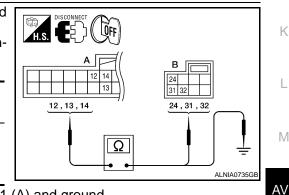
	A		Continuity
Connector	Terminal		Continuity
	12		
B141	13	Ground	No
	14		

Are the continuity results as specified?

YES >> GO TO 3

NO >> Repair harness.

**3.**SPIRAL CABLE CHECK



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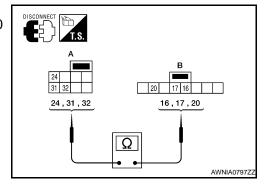
D

# **STEERING SWITCH**

# < COMPONENT DIAGNOSIS >

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

	Ą	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	24		20	
M30	31	M102	17	Yes
	32		16	



[PREMIUM AUDIO (CREW CAB)]

Does the spiral cable check OK?

YES >> Inspection End.

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

# < COMPONENT DIAGNOSIS >

# COMMUNICATION SIGNAL CIRCUIT SATELLITE RADIO TUNER

# SATELLITE RADIO TUNER : Description

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

# SATELLITE RADIO TUNER : Diagnosis Procedure

# **1.**CHECK HARNESS - REQ1

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

	А		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.

	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.

	А		В		
Conne	ctor	Terminal	Connector	Terminal	Continuity
M4	1	29	M42	49	Yes

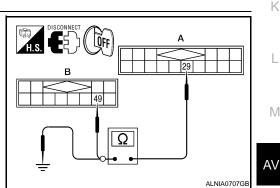
2. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 29 and ground.

	A		Continuity
Connector Terminal			Continuity
M41	29	Ground	No

Are continuity results as specified?

YES >> GO TO 3

- NO >> Repair harness or connector.
- $\mathbf{3.}$ CHECK HARNESS RXD



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# COMMUNICATION SIGNAL CIRCUIT S > [PREMIUM AUDIO (CREW CAB)]

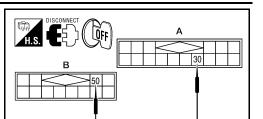
# < COMPONENT DIAGNOSIS >

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	
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	



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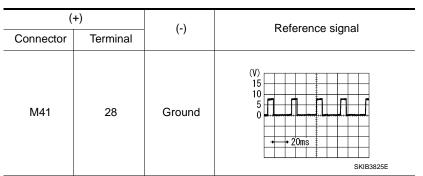
# Are continuity results as specified?

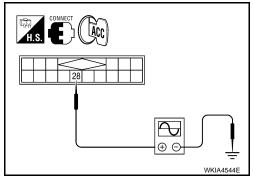
YES >> GO TO 4

NO >> Repair harness or connector.

**4.**CHECK REQ1 SIGNAL

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





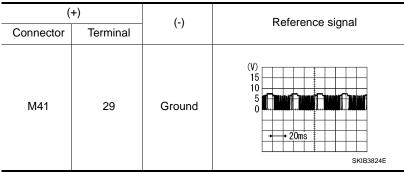
Are voltage readings as specified?

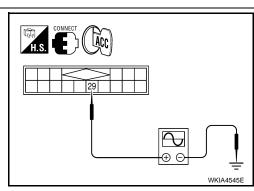
# YES >> GO TO 5

NO >> Replace audio unit. Refer to <u>AV-164, "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**

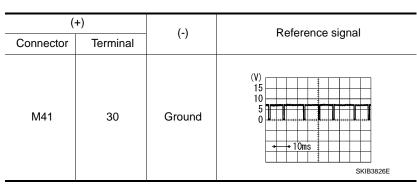
< COMPONENT DIAGNOSIS >

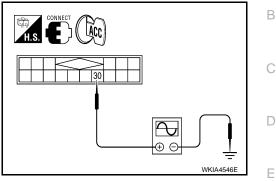
[PREMIUM AUDIO (CREW CAB)]

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

6.CHECK RXD SIGNAL

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





Are the voltage readings as specified?

YES >> Replace satellite radio tuner.

NO >> Replace audio unit. Refer to <u>AV-164, "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

- Turn ignition switch OFF. 1.
- Disconnect satellite radio tuner (factory installed) connector M41 2. and audio unit connector M42.
- Check continuity between satellite radio tuner (factory installed) 3. 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
101-4-1	22	Oround	NO

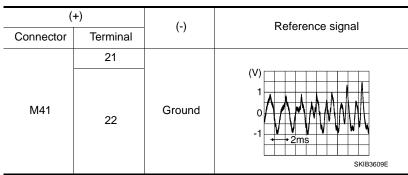
Are continuity results as specified?

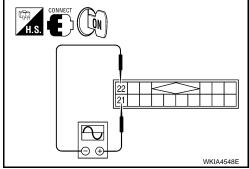
YES >> GO TO 2

NO >> Repair harness or connector.

2. CHECK LEFT CHANNEL AUDIO SIGNAL

- 1. Connect satellite radio tuner (factory installed) and audio unit.
- Turn ignition switch ON. 2.
- Check signal between satellite radio tuner (factory installed) 3. connector M41 terminals 21 and 22 with CONSULT-III or oscilloscope.





Are voltage readings as specified?

YES >> Replace audio unit. Refer to AV-164, "Removal and Installation".

NO >> Replace satellite radio tuner. Refer to AV-178, "Removal and Installation".

AV-132

**RIGHT CHANNEL** 

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# SOUND SIGNAL CIRCUIT

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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	l.	E	3	Continuity
Connector	Terminal	Connector	Terminal	Continuity
M41	23	M42	43	Yes
10141	24	10142	44	Tes

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

	А		Continuity
Connector	Terminal		Continuity
M41	23	Ground	No
10141	24	Giouna	INO

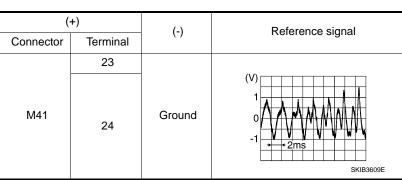
Are continuity results as specified?

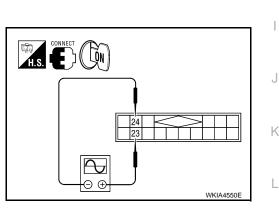
YES >> GO TO 2

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-164</u>, "Removal and Installation".

NO >> Replace satellite radio tuner. Refer to <u>AV-178. "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

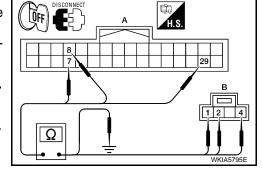
B141

- 2. Disconnect Bluetooth control unit connector and microphone connector.
- 3. Check continuity between Bluetooth control unit harness connector B141 (A) and microphone harness connector R8 (B).

Connector

R8

В



4. Check continuity between Bluetooth control unit harness connector B141 (A) and ground.

Terminal

1

2

4

	А		Continuity	
Connector	Terminal		Continuity	
	7			
B141	8	Ground	No	
	29	-		
Are the contin	nuity test results as speci	fied?		
NO >> F	GO TO 2 Repair harness or connec			
2.CHECK N	IICROPHONE POWER S	SUPPLY		
nector.	Bluetooth control unit co	nnector and m	nicrophone con-	
	bltage between microphc ind ground.	ne harness co	onnector R8 ter-	
4 - Gr	ound	: Approx. 5V		
ls voltage rea	ding approx. 5 volts?			
	GO TO 3			
	Replace Bluetooth cont Removal and Installation		er to <u>AV-172.</u>	WKIA5796E

 ${\it 3.}$  CHECK MICROPHONE SIGNAL

[PREMIUM AUDIO (CREW CAB)]

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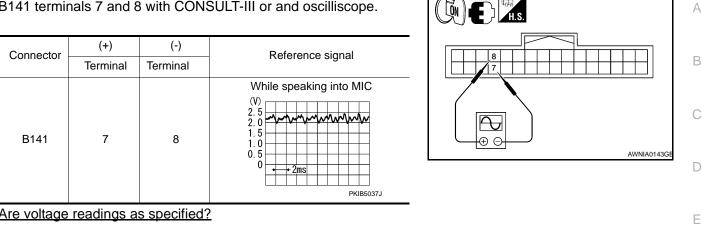
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# **MICROPHONE SIGNAL CIRCUIT**

# < COMPONENT DIAGNOSIS >

Check signal between Bluetooth control unit harness connector B141 terminals 7 and 8 with CONSULT-III or and oscilliscope.

# [PREMIUM AUDIO (CREW CAB)]



Are voltage readings as specified?

YES	>> Replace Bluetooth control unit. Refer to <u>AV-172, "Removal and Installation"</u> .
NO	>> Replace microphone. Refer to <u>AV-174. "Removal and Installation"</u> .

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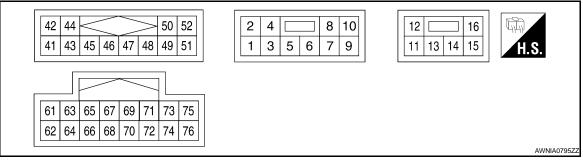
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# AUDIO UNIT

# Reference Value

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# TERMINAL LAYOUT



# PHYSICAL VALUES

	minal e color)	Item	Signal input/		Condition	Reference value (Approx.)
+	-		output		1	
2 (W)	1 (B)	Audio sound signal front LH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 KIA0177E
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
6 (Y)	Ground	Battery power	Input	-	_	Battery voltage
7 (GR)	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	lagut	OFF	Lighting switch is in 1st position.	Battery voltage
(R)	Ground	numination signal	Input	UFF	Lighting switch is OFF.	0V
9	-	Shield	-	_	_	0V
10 (G/B)	Ground	ACC signal	Input	Ignition switch ON	-	Battery voltage
12 (G/W)	Ground	Amp ON signal	Output	Ignition switch ON	-	Battery voltage

# < ECU DIAGNOSIS >

[PREMIUM AUDIO (CREW CAB)]

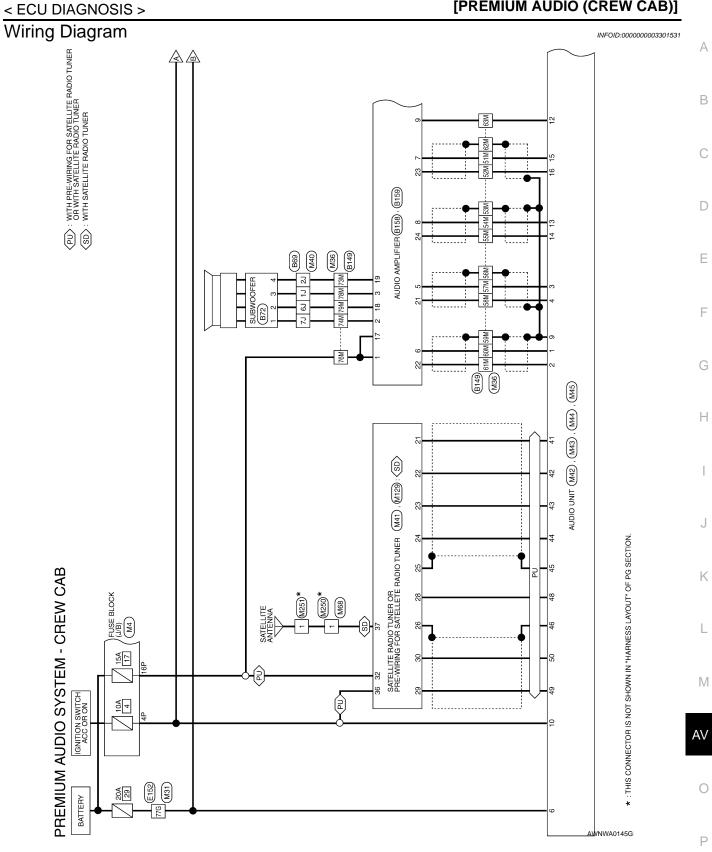
	ninal e color)	ltem	Signal input/		Condition	Reference value (Approx.)
+	-	-	output		1	(Appiox.)
14 (BR)	13 (B/R)	Audio sound signal rear LH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1
16 (L)	15 (B/W)	Audio sound signal rear RH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
42 (R)	41 (G)	Satellite radio au- dio signal LH	Input	Ignition switch ON	Satellite radio tuner operating	(V) 1 0 -1 • 2ms SKIB3609E
44 (B)	43 (W)	Satellite radio au- dio signal RH	Input	lgnition switch ON	Satellite radio tuner operating	(V) 1 0 -1 • • 2ms SKIB3609E
45	_	Ground	_	_	_	٥V
46	_	Data ground	_	_	_	٥V
48 (O)	-	REQ (SAT→AV control unit)	Input	Ignition switch ON	-	_
49 (P)	-	RX (SAT→AV con- trol unit)	Input	Ignition switch ON	-	_
50 (L)	_	TX (AV control unit→SAT)	Input	Ignition switch ON	-	_
62 (W)	61 (B)	Telephone signal input	Input	Ignition switch ACC/ON	Bluetooth control unit sends audio signal	(V) 1 0 -1 • 2ms SKIB3609E
63 (R)	_	Mute control	_	_	_	_
64	_	Shield	_	_	_	0V

# < ECU DIAGNOSIS >

# [PREMIUM AUDIO (CREW CAB)]

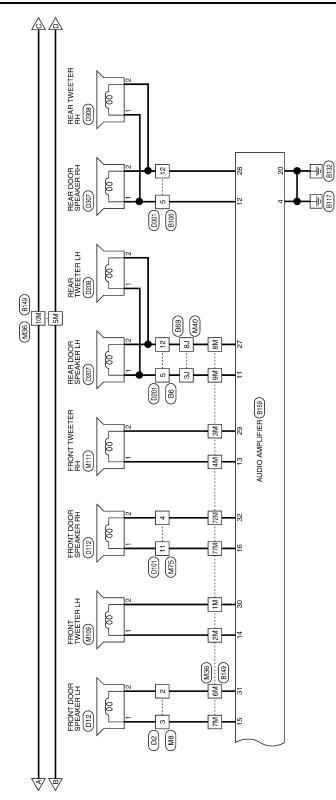
	minal e color)	Item	Signal input/		Condition	Reference value (Approx.)
+	-		output			(···FF·····)
67	-	Shield	-	Ignition switch ON	-	OV
					Pressing 🗸 📈 switch	0V
69	71	Steering switch sig-	Input	Ignition switch	Pressing $\Delta$ switch	0.75
(R)	(L)	nal A		ON	Pressing VOL up switch	2V
					Except for above	5V
					Pressing MODE switch	0V
70	71	Steering switch sig-		Ignition	Pressing $ abla$ switch	0.75V
(GR)	(L)	nal B	Input	switch ON	Pressing VOL down switch	2V
					Except for above	5 V
73 (SB)	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
74 (W)	Ground	Auxiliary audio in- put RH (+)	Input	lgnition switch ON	Receive audio sig- nal (AUX input)	(V) 1 -1 -1 -1 -1 -1 -1 -1 -1 -1
75 (B)	Ground	Auxiliary audio in- put LH (+)	Input	Ignition 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

# [PREMIUM AUDIO (CREW CAB)]

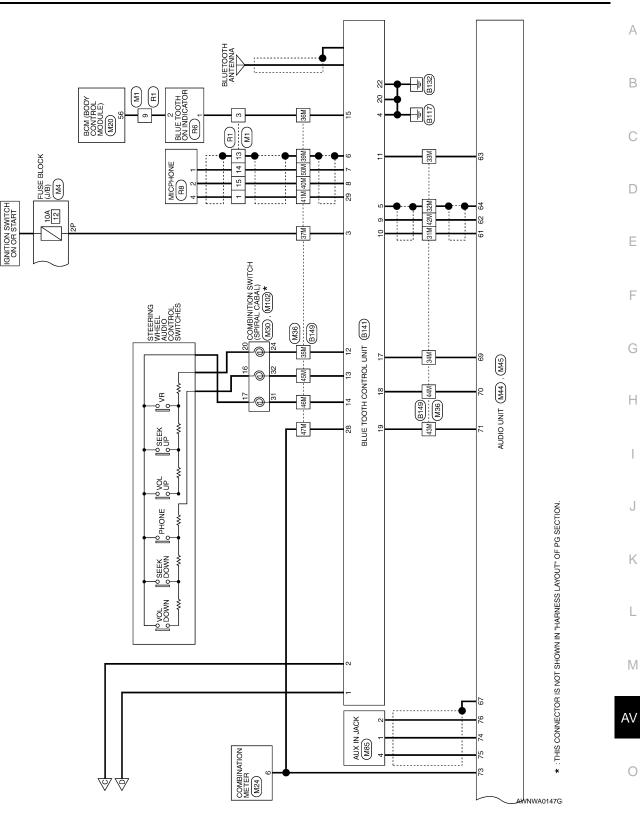


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# [PREMIUM AUDIO (CREW CAB)]

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Connector No.M8Connector NameWIRE TO WIREConnector ColorBROWN	H.S.	Terminal No.     Color of Wire     Signal Name       2     L     -       3     BR     -		Connector No.         M24           Connector Name         COMBINATION METER           Connector Color         WHITE           Main         Connector Color         M11E           Main         Connector Color         M11E	Terminal No.     Color of Wire     Signal Name       6     SB     SPEED OUT 8
Connector No. M4 Connector Name FUSE BLOCK (J/B) Connector Color WHITE	(成長) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	Terminal No.Color of WireSignal Name2PW/G-4PG/B-16PW/R-		Connector No.     M20       Connector Name     BCM       Connector Color     BLACK       Connector Color     BLACK	Terminal No. Color of Signal Name Wire BATTERY SAVER
M1 MIRE TO WIRE WHITE	2 3 4 5 6 7 8 9 10 11 12 14 15 16 17 18 19 20 21 22 23 24	Color of Wire Signal Name V		M17 ne WIRE TO WIRE or WHITE 6 5 4 3 2 1 15 14 13 12 11 10 9 8	Color of Signal Name Wire GR –
Connector No. M1 Connector Name WIRE TO WI Connector Color WHITE	H.S.	Terminal No. V V V V V V V V V V V V V V V V V V V	2	Connector Name Connector Name Connector Color	Terminal No. Co

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Connector Name COMBINATION SWITCH (SPIRAL CABLE) Connector Color GRAV	Connector Name Connector Color		M31 WIRE TO WIRE WHITE	Terminal No. 77G	. Wire	Signal Name -
H.S. 2333	ात्रोत्र H.S.	210 200 200 200 200 200 200 200 200 200				
Terminal No. Wire Signal Name		4115 405 365 375 395 395 395 395 395 395 395 395 395 39	860 560 344 558 356 316 3 100 444 444 558 356 316 3 100 444 544 445 558 316 316 3 100 444 544 545 545 545 545 545 545 545 5			
24 BR STRG SW A (UP) 31 C STRG SW GND		014 000 000 000 010 000 000 000 000 000	00 5500 HILD 550 B20 510 550 EXO B10 520 B20 Travitation 2 Trav			
		802 [396	Star for for the star for the s			
Connector No. M36	Terminal No.	Color of Wire	Signal Name	Terminal No.	Color of Wire	Signal Name
	8M	m	1	52M	_	I
Connector Color GRAY	W6	σ	1	53M	SHIELD	I
	10M	G/Y	I	54M	B/R	I
5M 4AM 3AM 2MM 1M	31M	в	I	55M	ВВ	I
H.S.	32M	SHIELD	1	56M	SHIELD	I
Z IM ZOW 15W (SW 17W 15W 15W 15W 15W 12W 17W 10W 15W 15W 15W 15W 15W 15W 15W 15W 15W 15	33M	æ	I	57M	ВВ	I
International and the provided water water and the provided of	34M	>	1	58M	≻	1
NC2	35M	BR	1	59M	SHIELD	I
6 ht 90h (Saw) Saw) Saw (Saw) Saw (Saw) Saw (Saw) Saw) Took (Saw) Gaw (Sarv) (Saw) (Saw) Saw (Saw) Saw)	36M	GR	I	60M	в	I
79417241711	37M	W/G	I	61M	×	T
V821 VV22 V822 V822 V828	39M	SHIELD	I	62M	SHIELD	I
	40M	Γ	ļ	63M	G/W	I
Torminol No Color of Signal Name	41M	۲	1	72M	н	I
Wire	42M	M	I	73M	BR	-
GR	43M	0	ļ	74M	Μ	I
2M × -	44M	Ъ	1	76M	R/B	I
	45M	_	1	M77	ГG	1
4M W -	46M	σ	1	78M	0	I
5M R/B –	47M	SB	1	79M	σ	Т
6M L –	50M	σ	1		-	
7M BR –	51M	B/W	1			

# [PREMIUM AUDIO (CREW CAB)]

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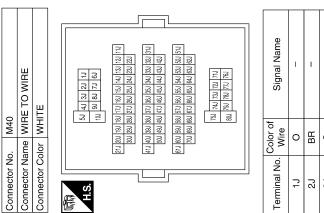
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AV-143

Connector No. M41 Connector Name SATELLITE RADIO TUNER Connector Color WHITE

	ſ	6		1
		98	35	
		34	33	
		R	31	
l		Τ	30	
l		$\langle \rangle$	29	
l		1/	28	
l		IV	27	
l		26	25	
1		24	21 23	
l		22	21	
l	L			
l				
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l		F	U I	
	Ľ	F		

Signal Name	SAT LCH (-)	SAT LCH (+)	SAT RCH (-)	SAT RCH (+)	EARTH (SIG)	DATA EARTH	I	REQ1	TXD	RXD	I	BACKUP	I	I	I	ACC
Color of Wire	σ	۳	×	ш	SHIELD	SHIELD	I	0	٩	_	I	R/B	I	-	I	G/B
Terminal No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36



Signal Name	I	I	I	I	I	I	
Color of Wire	0	BR	σ	σ	Ν	В	
Terminal No. Wire	Ļ	2J	3J	6J	۲2	8J	

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Connector No. M42	Connector Name AUDIO UNIT	Connector Color WHITE	HS. 43 45 46 47 48 49 51 41 43 45 46 47 48 49 51
Conr	Conr	Conr	旧 旧

Signal Name	(-) T	(+) T	R (-)	R(+)	EARTH (SIG)	DATA EARTH	I	REQ	RX	TX	I	Ι
Color of Wire	σ	œ	Μ	ш	SHIELD	SHIELD	I	0	٩	_	I	Ι
Terminal No.	41	42	43	44	45	46	47	48	49	50	51	52

**AUDIO UNIT** 

Φ	IT (-)	T (+)	rrig	Q					WC	WC	SWC		AL											
Signal Name	TEL_SIG_INPUT (-)	TEL_SIG_INPUT (+)	TEL_SIG_ON_TRIG	TEL_SIG_GND	Ι	I	I	I	REMOTE_A_SWC	REMOTE_B_SWC	REMOTE_GND_SWC	I	SPEED SIGNAL	AUX_R+	AUX_L+	AUX_GND		NO IN JACK	TE	5	Signal Name	R+	COMMON	Ļ
Color of Wire	В	Ν	В	SHIELD	-	-	SHIELD	I	В	GR	_	-	SB	8	в	æ	. M85	me AUD	lor WHI	4	Color of Wire	Μ	н	в
Terminal No.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	Connector No.	Connector Name AUDIO IN JACK	Connector Color WHITE	印.S.H	Terminal No.	Ļ	2	4
Signal Name	1	AMP ON/OFF SIG	RRSP LH (-)	RRSP LH (+)	RRSP RH (-)	RRSP RH (+)												E TO WIRE	TE	9 8 7 6	Signal Name	1	1	
Color of Wire	1	G/W	B/R	ВВ	B/W	_											M75	me WIR	or WHI	5 4 11 10	Color of Wire	œ	CG	
Terminal No.	7	12	13	14	15	16											Connector No.	Connector Name WIRE TO WIRE	Connector Color WHITE	雨 H.S.	Terminal No.	4	1	
											]												]	
Signal Name	FRSP LH (-)	FRSP LH (+)	FRSP RH (-)	FRSP RH (+)	I	BAT (BACK UP)	ILL CONT	LIGHT SW	GND	ACC								TO WIRE			Signal Name	I		
Color of Wire	в	×	BR	~	1	~	GR	æ	SHIELD	G/B							. M68	me WIRE	lor VIOLI	Ē	Color of Wire	1	1	
Terminal No.	-	2	e	4	ъ	9	7	ω	6	10							Connector No.	Connector Name WIRE TO WIRE	Connector Color VIOLET	品 H.S.	Terminal No.	-		

**AUDIO UNIT** 

Connector No. M45	Connector Name AUDIO UNIT	Connector Color WHITE	
M44	AUDIO UNIT	WHITE	12 11 16 11 13 14 15
Connector No. M44	Connector Name AUDIO UNIT	Connector Color WHITE	

2 - 13 14 15	Signal Name	I	AMP ON/OFF SIG	RRSP LH (-)
12 11 13	Color of Wire	I	G/W	B/R
雨 H.S.	Terminal No.	11	12	13

onnector No.	M43
onnector Name AUDIO UNIT	AUDIO UNIT
onnector Color WHITE	WHITE

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佢	N	4		Π	8	10	
E C	-	3	5	9	7	ი	
ð							
	Color of		5				

	AUDIO UNIT	TE	8 10 6 7 9	Signal Name	FRSP LH (-)	FRSP LH (+)	FRSP RH (-)	FRSP RH (+)	Ι	BAT (BACK UP)	ILL CONT	LIGHT SW	GND	ACC
. M43	-	lor WHITE	2 4 1 3 5	Color of Wire	m	×	ВВ	≻	I	۲	GR	щ	SHIELD	G/B
Connector No.	Connector Name	Connector Color	日 H.S.	Terminal No.	-	N	ო	4	5	9	7	ω	ი	10

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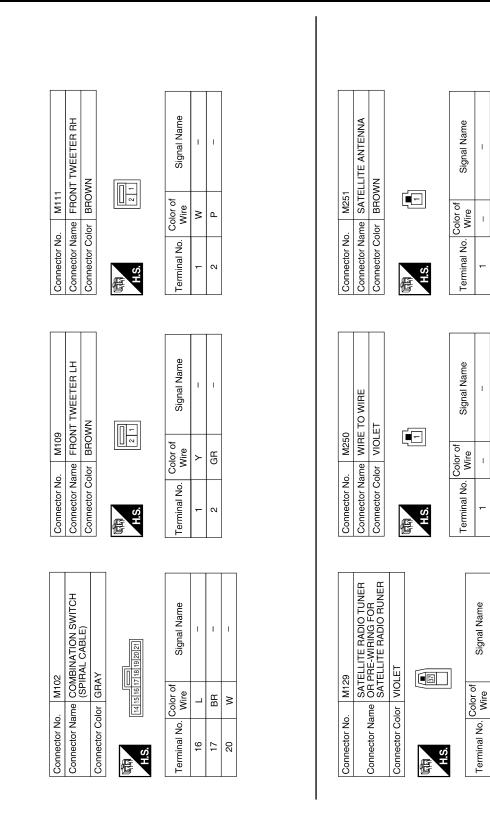
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TO WIRE	1 1
G G G G G G G G G G G G G G G G G G G	GR O
3J     G     -       3J     G     -       6J     G     -       7J     W     -       8J     B     -       8J     B106       Connector Name     WIRE TO WIRE       Terminal No.     Color of       Mire     Signa	19 Qu
Signal Name REAR LEFT (+) REAR LEFT (-) REAR RIGHT (+) REAR RIGHT (-)	
BR O G K K K K K K K K K K K K K K K K K K	
Terminal No. 1 3 3 4	
B72 SUBWOOFER GRAY	
Connector No. Connector Name Connector Color H.S.	
Connec Connec Connec H.S.	

#### [PREMIUM AUDIO (CREW CAB)]

< ECU DIAGNOSIS >

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Signal Name	MUTE_CONTROL	LADDER_IN_1	LADDER_IN_2	LADDER_IN_GND	LED_IND_1	I	LADDER_OUT_1	LADDER_OUT_2	LADDER_OUT_GND	CONT_1	I	CONT_3	I	I	I	I	I	I	I	I	I	I
Color of Wire	щ	BR	L	σ	GR	I	>	ГG	0	В	Ι	в	I	-	I	I	-	I	-	Ι	I	-
Terminal No.	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

ector No.		B141			
lector Name		JNIJ	BLUETOOTH CONTROL UNIT	ROL	
ector Color		WHITE	Щ		
-					_
(1)					
			[		
4 6 8	10 12	4	16 18 20 22 24 26 28	30 32	
3 5 7	9 11	33	15 17 19 21 23 25 27	29 31	
inal No.	Color of Wire	r of	Signal Name	ne	
_	R/B	m	BATT		
2	G/Y	~	ACC		
	W/G	0	IGN		
4	В		GND		
5	SHIELD	Г	AUDIO_OUT_SHIELD	HIELD	
9	SHIELD	ΓD	MIC_SHIELD	D	
	6				

	BLUETOOTH CONTROL UNIT	TE		16 18 20 22 24 26 28 30 3 15 17 19 21 23 25 27 29 3	Signal Name	BATT	ACC	IGN	GND	AUDIO_OUT_SHIEI	MIC_SHIELD	MIC_IN+	MIC_IN-	AUDIO_OUT+	AUDIO_OUT	
. B141		Color WHITE		10 12 14 1 9 11 13 1	Color of Wire	R/B	G/Y	W/G	в	SHIELD	SHIELD	σ	_	Μ	в	
Connector No.	Connector Name	Connector Co	ब्रिज H.S.	2 4 6 8 1 3 5 7	Terminal No.	-	2	3	4	5	9	7	8	6	10	

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AWNIA0697GB

Color of Wire	٦	SHIELD	B/R	BR	SHIELD	BR	Y	SHIELD	в	N	SHIELD	G/W	ш	BR	M	R/B	ГG	0	σ		
Terminal No.	52M	53M	54M	55M	56M	57M	58M	59M	60M	61M	62M	63M	72M	73M	74M	76M	M77	78M	79M		
Signal Name	Ι	I	I	I	I	I	I	I	I	1	I	I	I	I	I	I	I	I	I	I	I
Color of Wire	В	Ð	G/Y	в	SHIELD	щ	>	BR	GВ	M/G	SHIELD	_	۲	M	0	ГG	T	σ	SB	σ	B/W
Terminal No.	8M	9M	10M	31M	32M	33M	34M	35M	36M	37M	39M	40M	41M	42M	43M	44M	45M	46M	47M	50M	51M
		_																			
B149 WIRF TO WIRF	TE TE			1M 2M 3M 4M 5M 6M 7M 8M 9M 4M	atheritantismismi	22/4 23/4 24/4 25/4 26/4 25/4 26/4 20/4 20/4 20/4 20/4	31M SZM S3M SAM SSM SSM SSM SSM SSM SSM 40M 41M	ESMISSIMISSIMISSIMISSIMISSIMISSIMISSIMI	EZVI ESVI 64VI 65VI 66VI 67VI 66VI 66VI 70VI	711/ 120/ 730/ 740/ 750/	W 78M Pant Pant			Signal Name	Ι	I	I	I	I	I	L
o. B149 ame WIRF	olor WHITE	-		1M 2 8M 7	unduction in the	22M 23M 24M	31M 32M 33M 340	51M 52M 53M 54M	62M 63M 64M	7110 72	78M 77		Color of	Wire	GR	≻	Ч	N	R/B	_	BR
Connector No.	Connector Color		Ē		<u>p</u>							<u> </u>		Terminal No.	1M	2M	ЗМ	4M	5M	6M	ΜZ

Signal Name	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Color of Wire	Γ	SHIELD	B/R	BR	SHIELD	BR	۲	SHIELD	В	Ν	SHIELD	G/W	щ	BR	Μ	R/B	ЪJ	0	თ
inal No.	52M	53M	54M	55M	56M	57M	58M	9M	NOS	51M	52M	33M	72M	73M	74M	76M	MZ M	78M	M67

**AUDIO UNIT** 

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AV-150
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of Signal Name	FR TW (+)	FR TW (+)	FRSP LH OUT (+)	FRSP RH OUT (+)	FRSP RH (+) IN	FRSP LH (+) IN	RRSP RH (+) IN	RRSP LH (+) IN	I	I	RRSP LH OUT (-)	RRSP RH OUT (-)	FR TW (-)	FR TW (-)	FRSP LH OUT (-)	FRSP RH OUT (-)
Color of Wire	×	≻	BR	ГG	≻	≥	-	BR	T	Т	В	0	٩	GR	_	æ
Terminal No.	13	14	15	16	21	22	23	24	25	26	27	28	29	30	31	32

7 26 26 24 22 22 21	Signal Name	FRSP RH (-) IN	FRSP LH (-) IN	RRSP RH (-) IN	RRSP LH (-) IN	AMP ON/OFF SIGNAL	I	RRSP LH OUT (+)
15 14 13 12 31 30 29 28	Color of Wire	ВВ	ш	B/W	B/R	G/W	I	σ
H.S.	Terminal No.	5	9	7	8	6	10	11

B158	onnector Name AUDIO AMPLIFIER	r WHITE	4         3         2           20         19         18         1
onnector No.	onnector Nam	onnector Color	H.S.

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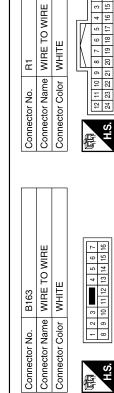
Connector Name AUDIO AMPLIFIER

Connector No. B159

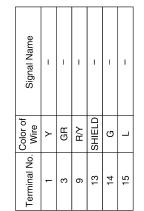
Connector Color WHITE

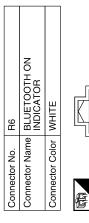
B158	AUDIO	WHITE	20 19 18
Connector No.	Connector Name	Connector Color	园 H.S.

Signal Name	BAT	WOOFER(+)1	WOOFER(+)2	GND	BAT	WOOFER(-)1	WOORER(-)2	GND	
Color of Wire	≻	M	0	в	R/B	ß	ВВ	в	
Terminal No.	-	2	3	4	17	18	19	20	



Signal Name	I	1	
Color of Wire	GR	0	
Terminal No.	11	12	





**AUDIO UNIT** 

RRSP RH OUT (+)

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234	Signal Name	LED_1(AMBER)
	Color of Wire	GR
H.S.H	Terminal No.	÷

LED\_POWER

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OR SPEAKER	Signal Name		Signal Name	
D12 ERONT DO MHITE	Vire Vire L/M	D201           ame         WIRE TO WIF           blor         WHITE           5         4           5         4           12         1	Color of Wire O	
Connector No. D12 Connector Name FRONT DOOR SPEAKER Connector Color WHITE	Terminal No. C	Connector No. D201 Connector Name WIRE TO WIRE Connector Color WHITE	Terminal No. C	
	a a a	AKER RH	ame	
D2 WIRE TO WIRE BROWN	Signal Name	Connector No. D112 Connector Name FRONT DOOR SPEAKER RH Connector Color WHITE	Signal Name	
	o. Color of Mire BR	Connector No. D112 Connector Name FRONT Connector Color WHITE	o. Color of Wire W/B L/B	
Connector No. Connector Name Connector Color	Terminal No.	Connector No. Connector Nam Connector Colc	Terminal No.	
	0 + . œ			
	Signal Name MIC_OUT_+ MIC_OUT MIC_POWER	0 WIRE	Signal Name	
In MICOPHONE	Color of Wire G G G	D101 WIRE TC WHITE	Color of Wire W/B	
Connector No. Connector Name Connector Color	Terminal No.	Connector No. Connector Name Connector Color	Terminal No. 0	
				40699GB

**AUDIO UNIT** 

< ECU DIAGNOSIS >

#### [PREMIUM AUDIO (CREW CAB)]

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Connector No.

D207

Connector No.

	Signal Name	I	I
2 1	Color of Wire	L	0
H.S.	Terminal No.	-	2

Signal Name I. L

Color of Wire \_ 0

> Terminal No. 5 42

Connector Na	ame REAI	Connector Name REAR DOOR SPEAKER LH
Connector Color	olor WHITE	E
国 H.S.		
Terminal No.	Color of Wire	Signal Name
-	-	

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	oigriai ivarrie	I	Ι
Color of	Wire	L	0
T oution NIC		1	2

	RH		
	R TWEETE		
D308	REAR DOO	BROWN	
Connector No.	Connector Name REAR DOOR TWEETER RH	Connector Color BROWN	臣
	ΗH		

D307

Connector No.

Connector Name REAR DOOR SPEAKER RH	WHITE	
Connector Name	Connector Color WHITE	同 H.S.

ו	Signal Name	I	1
	Color of Wire	L	0

Terminal No. -N

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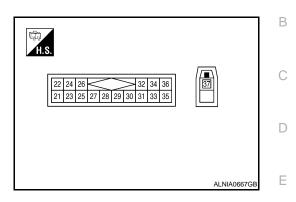
		_	
	Signal Name	I	I
2	Color of Wire	L	0
H.S.	Terminal No.	1	2

AUDIO UNIT
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## SATELLITE RADIO TUNER

#### **Reference Value**

INFOID:000000003301532



#### PHYSICAL VALUES

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

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## SATELLITE RADIO TUNER

#### < ECU DIAGNOSIS >

Terr	minal	Description				Reference value	
+	_	Signal name	Input/ Output		Condition	(Approx.)	
30 (L)	Ground	Communication signal (CONT→SAT)	Input	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 • • 1 ms SKIA9301J	
32 (R/B)	Ground	Battery power supply	Input	Ignition switch OFF	_	Battery voltage	
36 (G/B)	Ground	ACC power supply	Input	Ignition switch ACC	_	Battery voltage	
37	—	Satellite antenna	Input		—	_	

#### < ECU DIAGNOSIS >

## AUDIO AMP

**Reference Value** 

**TERMINAL LAYOUT** 

B TH.S. C 16 15 14 13 12 11 10 9 8 7 6 5 16 15 14 13 12 12 12 6 25 24 23 22 21 12 19 18 17 C ALNIA0737GB

#### PHYSICAL VALUES

(wire	minal color)	ltem	Signal input/ output		Condition	Reference value (Approx.)	G
+ 1 (Y)	Ground	Battery	Input	_	_	Battery voltage	Н
2 (W)	18 (G)	Subwoofer	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	J
3 (O)	19 (BR)	Subwoofer	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	K
4 (B)	Ground	Ground	_	Ignition switch ON	-	_	M
9 (G/W)	Ground	Amp. ON signal	Input	Ignition switch ON	_	More than 6.5V	AV
11 (G)	27 (B)	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	O

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#### AUDIO AMP

#### < ECU DIAGNOSIS >

#### [PREMIUM AUDIO (CREW CAB)]

	ninal color)	Item input/		Condition		Reference value	
+	-		output			(Approx.)	
12 (GR)	28 (O)	Rear door speak- er RH and rear door tweeter RH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5	
13 (W)	29 (P)	Front door tweet- er 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	
14 (Y)	30 (GR)	Front tweeter LH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 SKIA0177E	
15 (BR)	31 (L)	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 (LG)	32 (R)	Front door speak- er RH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	
17 (R/B)	Ground	Battery	Input	_	_	Battery voltage	
20 (B)	Ground	Ground	_	Ignition switch ON	-	-	
21 (Y)	5 (BR)	Audio sound sig- nal front RH	Input	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 KIA0177E	

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### AUDIO AMP

#### < ECU DIAGNOSIS >

#### [PREMIUM AUDIO (CREW CAB)]

Terminal (wire color)		ltem			put/ Condition (Approx.)	
+	_		output			
22 (W)	6 (B)	Audio sound sig- nal front LH	Input	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 1 1 1 1 1 1 1 1 1 1 1 1 1
						SKIA0177E
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	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 ms = 100000000000000000000000000000000000
						SKIA0177E

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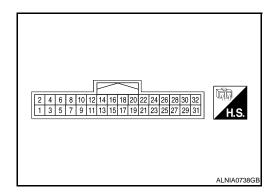
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## **BLUETOOTH CONTROL UNIT**

**Reference Value** 

TERMINAL LAYOUT

PHYSICAL VALUES



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

#### **BLUETOOTH CONTROL UNIT**

< ECU DIAGNOSIS >

#### [PREMIUM AUDIO (CREW CAB)]

Terminal (wire color)		Description	Description		Condition	Reference value	А							
+	-	Signal name	Input/ output	Condition		(Approx.)								
					Pressing MODE switch	0V	В							
13	14	Steering switch sig-		Ignition	Pressing $ abla$ switch	0.75V								
(L)	(G)	nal B	Input	t switch ON	Pressing VOL down switch	2V	С							
					Except for above	5 V								
15 (GR)	Ground	LED power	Output	Ignition switch ON	-	Battery voltage	D							
					Pressing 🌈 📢 switch	0V	E							
17	19	Steering switch sig-	Output	Ignition switch	Pressing $\Delta$ switch	0.75	_							
(V)	(O)	nal A	nal A	nal A	nal A	nal A	nal A	nal A	nal A		ON	Pressing VOL up switch	2V	F
					Except for above	5V	G							
					Pressing MODE switch	0V	0							
18	19	Steering switch sig-	0.1.1	Ignition	Pressing $ abla$ switch	0.75V								
(LG)	(O)	(O)	nal B	Output switch ON		Output	Pressing VOL down switch	2V	Н					
					Except for above	5V	I							
22 (B)	Ground	Ground	-	-	_	0V	I							
24 (B)	Ground	Ground	_	-	_	0V	J							
28 (SB)	Ground	Vehicle speed sig- nal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	(V) 15 10 5 0 + 20ms PKIA1935E	K							
29 (Y)	Ground	Microphone power	Output	Ignition switch ON	_	5V	M							

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## < SYMPTOM DIAGNOSIS >

## SYMPTOM DIAGNOSIS AUDIO SYSTEM

## Symptom Table

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#### AUDIO SYSTEM

Symptom	Possible cause	Reference page
Inoperative	<ul><li>Audio unit power circuit</li><li>Audio unit</li></ul>	• <u>AV-106</u> • <u>AV-106</u>
Steering wheel audio control switch does not operate	<ul><li>Steering wheel audio control switch</li><li>Audio unit</li></ul>	• <u>AV-127</u> • <u>AV-106</u>
All speakers do not sound	<ul> <li>Audio unit</li> <li>Audio unit power circuit</li> <li>Audio amp. ON signal</li> <li>Audio amp. power/ground circuit</li> <li>Audio amp.</li> </ul>	<ul> <li>AV-106</li> <li>AV-106</li> <li>AV-126</li> <li>AV-107</li> <li>AV-107</li> </ul>
One or several speakers do not sound	<ul> <li>Front door speaker</li> <li>Front tweeter</li> <li>Rear door speaker</li> <li>Rear door tweeter</li> <li>Subwoofer</li> </ul>	<ul> <li>AV-111</li> <li>AV-114</li> <li>AV-117</li> <li>AV-120</li> <li>AV-123</li> </ul>

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Symptom	Possible cause	Reference page
CD cannot be inserted.		
CD cannot be ejected.	- Audio unit	<u>AV-106</u>
The CD cannot be played.		
The sound skips, stops suddenly, or is distorted.		

#### SATELLITE RADIO

Symptom	Possible cause	Reference page
Inoperative	<ul> <li>Satellite radio tuner power or ground circuit</li> <li>Satellite radio tuner communication circuit</li> <li>Satellite radio tuner</li> </ul>	• <u>AV-106</u> • <u>AV-129</u> • <u>AV-178</u>
Right or left channel does not sound	<ul> <li>Satellite radio tuner right channel audio signal circuit</li> <li>Satellite radio tuner left channel audio signal circuit</li> <li>Satellite radio tuner</li> </ul>	• <u>AV-132</u>

#### HANDS-FREE PHONE

Symptom	Possible cause	Reference page
Inoperative	<ul><li>Bluetooth control unit power circuit</li><li>Bluetooth control unit</li></ul>	• <u>AV-108</u> • <u>AV-105</u>
Steering wheel audio switch does not operate	<ul><li>Steering wheel audio control switch</li><li>Bluetooth control unit</li></ul>	• <u>AV-127</u> • <u>AV-105</u>
Voice activated control does not activate	<ul><li>Microphone</li><li>Steering wheel audio control switch</li><li>Bluetooth control unit</li></ul>	AV-109     AV-127     AV-105

#### NORMAL OPERATING CONDITION

#### < SYMPTOM DIAGNOSIS >

#### NORMAL OPERATING CONDITION

#### Description

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

NOISE

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

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off mountains or buildings.

The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and determine the cause. **NOTE:** 

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

Type of Noise and Possible Cause

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

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[PREMIUM AUDIO (CREW CAB)]

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#### < PRECAUTION >

## PRECAUTION PRECAUTIONS

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

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 sections 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

#### **Commercial Service Tools**

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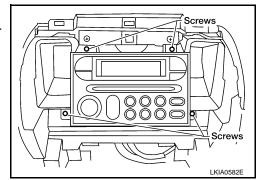
# < ON-VEHICLE REPAIR > ON-VEHICLE REPAIR AUDIO UNIT

Removal and Installation

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#### REMOVAL

- 1. Remove the cluster lid C. Refer to IP-10, "Removal and Installation".
- 2. Remove the audio control unit screws, using power tool.
- 3. Pull out the audio control unit from the instrument panel and disconnect the audio control unit connectors.



INSTALLATION Installation is in the reverse order of removal.

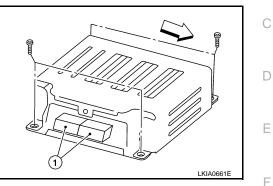
#### < ON-VEHICLE REPAIR >

## AUDIO AMP

#### Removal and Installation

#### REMOVAL

- 1. Remove the RH front seat. Refer to <u>SE-28, "Removal and Installation"</u>.
- 2. Remove the audio amp and kick shield screws.
- 3. Disconnect the audio amp connectors (1) and remove the audio amp.
  - < : Vehicle front



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

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[PREMIUM AUDIO (CREW CAB)]

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#### < ON-VEHICLE REPAIR > FRONT TWEETER

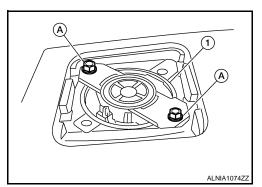
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Removal and Installation

REMOVAL

**CAUTION:** Use a suitable tool to prevent damage to the front tweeter speaker grille trim and the instrument panel.

- 1. Remove the front tweeter grille.
- 2. Remove the front tweeter screws (A).
- 3. Pull out the front tweeter speaker (1) and disconnect front tweeter connector, then remove the front tweeter speaker (1).



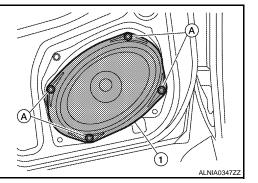
INSTALLATION Installation is in the reverse order of removal. INFOID:000000003302266

## FRONT DOOR SPEAKER

#### Removal and Installation

#### REMOVAL

- 1. Remove the front door finisher. Refer to INT-13, "Removal and Installation".
- 2. Remove the front door speaker screws (A).
- 3. Pull out the front door speaker (1), and disconnect the front door speaker connector and remove the front door speaker (1).



INSTALLATION Installation is in the reverse order of removal.

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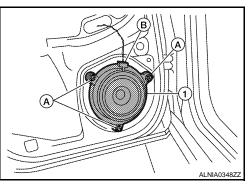
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## REAR DOOR SPEAKER

Removal and Installation

REMOVAL

- 1. Remove the rear door finisher. Refer to INT-13, "Removal and Installation".
- 2. Remove the rear door speaker screws (A).
- 3. Disconnect the rear door speaker connector (B) and remove rear door speaker (1).



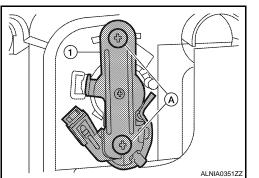
INSTALLATION Installation is in the reverse order of removal.

### REAR DOOR TWEETER

Removal and Installation

#### REMOVAL

- 1. Remove the rear door finisher. Refer to INT-13, "Removal and Installation".
- 2. Remove the rear door tweeter screws (A) and remove the rear door tweeter (1).



INSTALLATION Installation is in the reverse order of removal.

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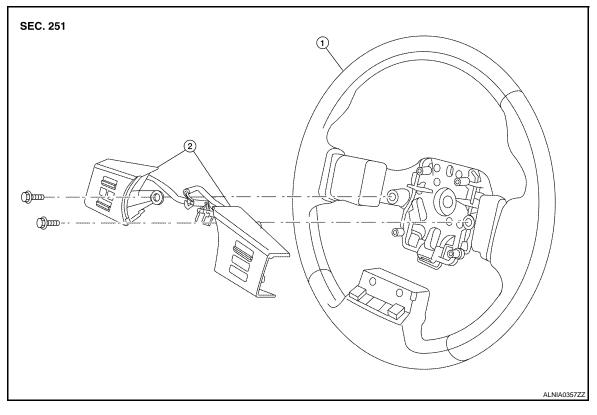
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#### < ON-VEHICLE REPAIR > STEERING SWITCH

## Removal and Installation

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1. Steering wheel 2. Steering wheel audio control switches

#### REMOVAL

- 1. Remove the driver air bag module. Refer to <u>SR-4, "Removal and Installation"</u>.
- 2. Remove the steering wheel. Refer to ST-8, "On-Vehicle Inspection and Service".
- 3. Remove the steering wheel rear cover.
- 4. Remove the steering wheel audio control switch assembly screws.
- 5. Disconnect the steering wheel audio control switches connector and remove the steering wheel audio control switches.

#### INSTALLATION

Installation is in the reverse order of removal.

#### [PREMIUM AUDIO (CREW CAB)]

# < ON-VEHICLE REPAIR > SUBWOOFER

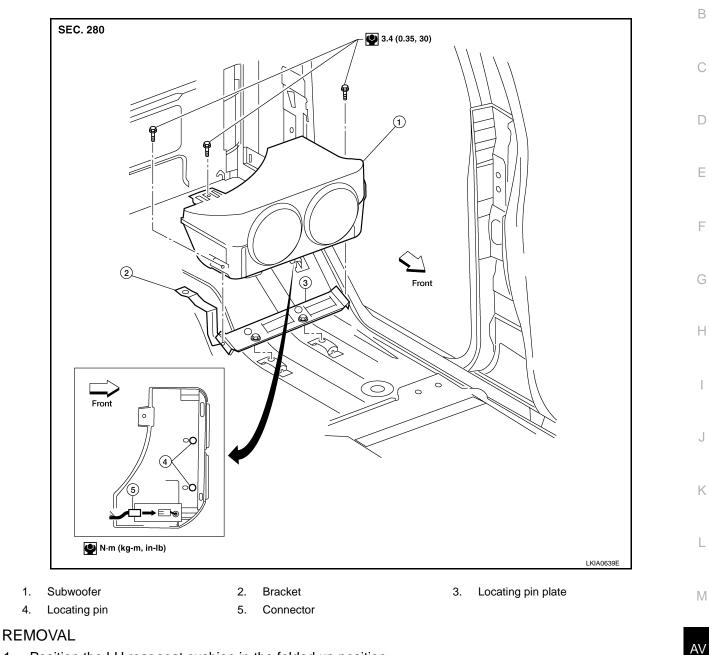
#### Removal and Installation

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- 1. Position the LH rear seat cushion in the folded up position.
- 2. Remove storage box RH (crew cab). Refer to INT-21, "Removal and Installation".
- 3. Remove the subwoofer screws.
- 4. Disconnect the connector and remove the subwoofer.

#### INSTALLATION

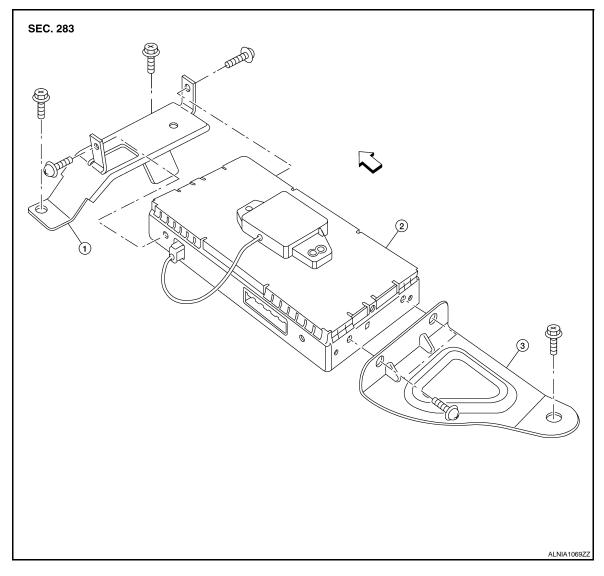
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## BLUETOOTH CONTROL UNIT

#### Removal and Installation

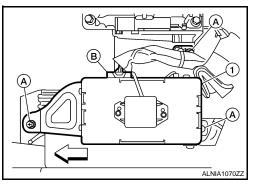
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1. Bluetooth control unit front bracket 2. Bluetooth control unit/antenna 3. Bluetooth control unit rear bracket

#### REMOVAL

- 1. Remove the RH front seat. Refer to <u>SE-28, "Removal and Installation"</u>.
- Disconnect the Bluetooth control unit harness connector (B).
   <⊐:Vehicle front</li>
- 3. Remove the Bluetooth control unit screws (A), then remove the Bluetooth control unit assembly.
- 4. Remove the Bluetooth control unit bracket screws and remove the Bluetooth control unit (1) front and rear brackets.



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Installation is in the reverse order of removal.

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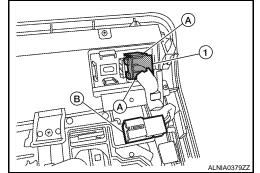
## **MICROPHONE**

#### **Removal and Installation**

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#### REMOVAL

- 1. Remove the front roof console finisher. Refer to INT-23, "Removal and Installation".
- 2. Detach the Bluetooth microphone (1) from the front console finisher tabs (A).
- Detach the Bluetooth microphone connector (B) and remove the 3. Bluetooth microphone (1).



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

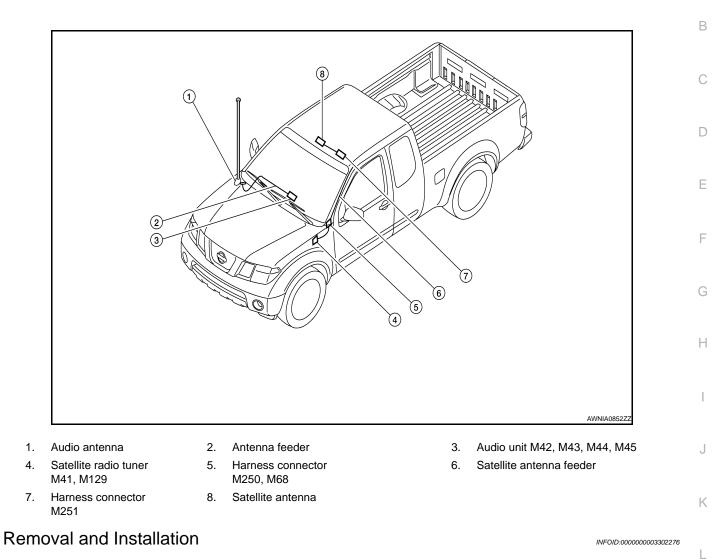
#### [PREMIUM AUDIO (CREW CAB)]

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

#### Location of Antenna

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#### REMOVAL

- 1. Remove lower glove box. Refer to IP-10, "Removal and Installation".
- 2. Disconnect audio antenna cable from antenna feeder.

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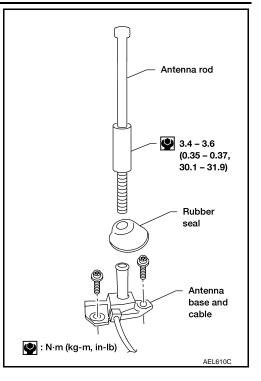
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#### **AUDIO ANTENNA**

#### < ON-VEHICLE REPAIR >

[PREMIUM AUDIO (CREW CAB)]

- 3. Remove antenna rod.
- 4. Remove rubber seal.
- 5. Remove cowl top. Refer to EXT-19, "Removal and Installation".
- 6. Remove fender protector. Refer to <u>EXT-22</u>, "Removal and Installation of Front Fender Protector".
- 7. Remove antenna base bolts.
- 8. Remove antenna base and cable.



#### INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

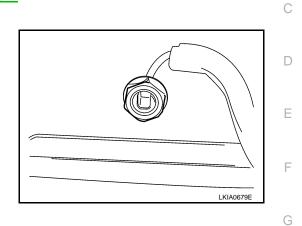
Always properly tighten the antenna rod during installation or the antenna rod may bend or break during vehicle operation.

## SATELLITE RADIO ANTENNA

**Removal and Installation** 

#### REMOVAL

- 1. Remove the front cover. Refer to EXT-27, "Removal and Installation".
- 2. Lower the headlining. Refer to INT-23, "Removal and Installation".
- 3. Disconnect the satellite radio antenna connector.
- 4. Remove the satellite radio antenna nut.
- 5. Remove the satellite radio antenna.



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

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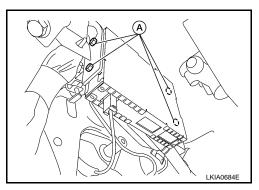
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## SATELLITE RADIO TUNER

Removal and Installation

#### REMOVAL

- 1. Disconnect the battery negative terminal.
- 2. Remove the lower instrument panel. Refer to IP-10, "Removal and Installation".
- 3. Disconnect the satellite radio tuner connectors.
- 4. Remove satellite radio tuner screws (A), and remove satellite radio tuner from above the parking brake pedal.



INSTALLATION Installation is in the reverse order of removal.