## SECTION AV В AUDIO, VISUAL & NAVIGATION SYSTEM С

## **CONTENTS**

## **BASE AUDIO**

BASIC INSPECTION5
DIAGNOSIS AND REPAIR WORKFLOW5 Work Flow
FUNCTION DIAGNOSIS7
AUDIO SYSTEM       7         System Diagram       7         System Description       7         Component Parts Location       8         Component Description       8
COMPONENT DIAGNOSIS9
POWER SUPPLY AND GROUND CIRCUIT 9
AUDIO UNIT9 AUDIO UNIT : Diagnosis Procedure
FRONT DOOR SPEAKER    10      Description    10      Diagnosis Procedure    10
FRONT TWEETER    12      Description    12      Diagnosis Procedure    12
REAR DOOR SPEAKER    14      Description    14      Diagnosis Procedure    14
ECU DIAGNOSIS16
AUDIO UNIT
SYMPTOM DIAGNOSIS24
AUDIO SYSTEM24

Symptom Table24	F
NORMAL OPERATING CONDITION25 Description	G
PRECAUTION26	
PRECAUTIONS	Н
PREPARATION27	1
PREPARATION	J
ON-VEHICLE REPAIR28	K
AUDIO UNIT	
FRONT TWEETER	L
FRONT DOOR SPEAKER	M
REAR DOOR SPEAKER	AV
AUDIO ANTENNA	0
BASIC INSPECTION33	Ρ
DIAGNOSIS AND REPAIR WORKFLOW33 Work Flow	
FUNCTION DIAGNOSIS35	
AUDIO SYSTEM	

А

D

Е

System Diagram System Description Component Parts Location Component Description	35 36
HANDS-FREE PHONE SYSTEM System Diagram System Description Component Parts Location Component Description	38 38 38 39 E
DIAGNOSIS SYSTEM (AUDIO UNIT) Component Function Check	41 41
DIAGNOSIS SYSTEM (BLUETOOTH CON- TROL UNIT) Diagnosis Description	<sup>42</sup> P
Work Flow COMPONENT DIAGNOSIS	
POWER SUPPLY AND GROUND CIRCUIT	3
AUDIO UNIT AUDIO UNIT : Diagnosis Procedure	43
SATELLITE RADIO TUNER SATELLITE RADIO TUNER : Diagnosis Proce- dure	43
BLUETOOTH CONTROL UNIT BLUETOOTH CONTROL UNIT : Diagnosis Pro- cedure	44 P
MICROPHONE MICROPHONE : Diagnosis Procedure	45
FRONT DOOR SPEAKER Description Diagnosis Procedure	<b>47 P</b> 47 47
FRONT TWEETER Description Diagnosis Procedure	49 <b>A</b>
REAR DOOR SPEAKER Description Diagnosis Procedure	51
STEERING SWITCH Description Diagnosis Procedure	53 53
COMMUNICATION SIGNAL CIRCUIT	<sup>55</sup> S
SATELLITE RADIO TUNER SATELLITE RADIO TUNER : Description SATELLITE RADIO TUNER : Diagnosis Proce- dure	55 <sup>55</sup> T
SOUND SIGNAL CIRCUIT	-
SATELLITE RADIO TUNER	58 N

SATELLITE RADIO TUNER : Description58 SATELLITE RADIO TUNER : Diagnosis Proce- dure58
MICROPHONE SIGNAL CIRCUIT
Description60
Diagnosis Procedure60
ECU DIAGNOSIS62
AUDIO UNIT62
Reference Value
Wiring Diagram65
SATELLITE RADIO TUNER
Reference Value76
BLUETOOTH CONTROL UNIT
SYMPTOM DIAGNOSIS 80
AUDIO SYSTEM 80
Symptom Table80
NORMAL OPERATING CONDITION 81
Description81
PRECAUTION 82
PRECAUTIONS
SIONER"
SIONER" 82
SIONER"       82         PREPARATION       83         PREPARATION       83
SIONER"82PREPARATION83PREPARATION83Commercial Service Tools83ON-VEHICLE REPAIR84
SIONER"       82         PREPARATION       83         PREPARATION       83         Commercial Service Tools       83
SIONER"    82      PREPARATION    83      PREPARATION    83      Commercial Service Tools    83      ON-VEHICLE REPAIR    84      AUDIO UNIT    84      Removal and Installation    84
SIONER"    82      PREPARATION    83      PREPARATION    83      Commercial Service Tools    83      ON-VEHICLE REPAIR    84      AUDIO UNIT    84
SIONER"    82      PREPARATION    83      PREPARATION    83      Commercial Service Tools    83      ON-VEHICLE REPAIR    84      AUDIO UNIT    84      Removal and Installation    84      FRONT TWEETER    85
SIONER"82PREPARATION83PREPARATION83Commercial Service Tools83ON-VEHICLE REPAIR84AUDIO UNIT84Removal and Installation84FRONT TWEETER85Removal and Installation85FRONT DOOR SPEAKER86
SIONER"82PREPARATION83PREPARATION83Commercial Service Tools83ON-VEHICLE REPAIR84AUDIO UNIT84Removal and Installation84FRONT TWEETER85Removal and Installation85FRONT DOOR SPEAKER86Removal and Installation86REAR DOOR SPEAKER87Removal and Installation87
SIONER"82PREPARATION83PREPARATION83Commercial Service Tools83ON-VEHICLE REPAIR84AUDIO UNIT84Removal and Installation84FRONT TWEETER85Removal and Installation85FRONT DOOR SPEAKER86Removal and Installation86REAR DOOR SPEAKER87
SIONER"82PREPARATION83PREPARATION83Commercial Service Tools83ON-VEHICLE REPAIR84AUDIO UNIT84Removal and Installation84FRONT TWEETER85Removal and Installation85FRONT DOOR SPEAKER86Removal and Installation86REAR DOOR SPEAKER87Removal and Installation87STEERING SWITCH88
SIONER"82PREPARATION83PREPARATION83Commercial Service Tools83ON-VEHICLE REPAIR84AUDIO UNIT84Removal and Installation84FRONT TWEETER85Removal and Installation85FRONT DOOR SPEAKER86Removal and Installation86REAR DOOR SPEAKER87Removal and Installation87STEERING SWITCH88Removal and Installation88
SIONER"82PREPARATION83PREPARATION83Commercial Service Tools83ON-VEHICLE REPAIR84AUDIO UNIT84Removal and Installation84FRONT TWEETER85Removal and Installation85FRONT DOOR SPEAKER86Removal and Installation86REAR DOOR SPEAKER87Removal and Installation87STEERING SWITCH88Removal and Installation88TEL ANTENNA89

Removal and Installation92
AUDIO ANTENNA93
Location of Antenna93 Removal and Installation
SATELLITE RADIO ANTENNA
Removal and Installation95
SATELLITE RADIO TUNER96
Removal and Installation96 PREMIUM AUDIO (CREW CAB)
BASIC INSPECTION97
DIAGNOSIS AND REPAIR WORKFLOW97 Work Flow97
FUNCTION DIAGNOSIS
AUDIO SYSTEM
System Diagram
System Description99
Component Parts Location
HANDS-FREE PHONE SYSTEM
System Diagram102 System Description102
Component Parts Location 103
Component Description 104
DIAGNOSIS SYSTEM (AUDIO UNIT)105
Component Function Check 105
DIAGNOSIS SYSTEM (BLUETOOTH CON-
TROL UNIT)
Diagnosis Description106 Work Flow
COMPONENT DIAGNOSIS 107
POWER SUPPLY AND GROUND CIRCUIT 107
AUDIO UNIT 107
AUDIO UNIT : Diagnosis Procedure
SATELLITE RADIO TUNER 107 SATELLITE RADIO TUNER : Diagnosis Proce-
dure
AUDIO AMP 108
AUDIO AMP : Diagnosis Procedure
BLUETOOTH CONTROL UNIT
MICROPHONE
FRONT DOOR SPEAKER

Diagnosis Procedure112	^
FRONT TWEETER 115	А
Description115 Diagnosis Procedure115	В
REAR DOOR SPEAKER118	
Description	С
REAR DOOR TWEETER 121	
Description	D
SUBWOOFER124	
Description124 Diagnosis Procedure124	E
AMP ON SIGNAL CIRCUIT 127	
Description	F
STEERING SWITCH	
Description	G
Diagnosis Procedure128	
COMMUNICATION SIGNAL CIRCUIT	Н
SATELLITE RADIO TUNER	
SATELLITE RADIO TUNER : Description	Ι
SOUND SIGNAL CIRCUIT	J
SATELLITE RADIO TUNER133	
SATELLITE RADIO TUNER : Description	K
SATELLITE RADIO TUNER : Diagnosis Proce- dure	
MICROPHONE SIGNAL CIRCUIT	I
Description	
Diagnosis Procedure	
ECU DIAGNOSIS 137	M
AUDIO UNIT	
Reference Value137 Wiring Diagram140	AV
AUDIO AMP	0
SATELLITE RADIO TUNER 157 Reference Value	P
BLUETOOTH CONTROL UNIT	Γ
SYMPTOM DIAGNOSIS161	
AUDIO SYSTEM161 Symptom Table	

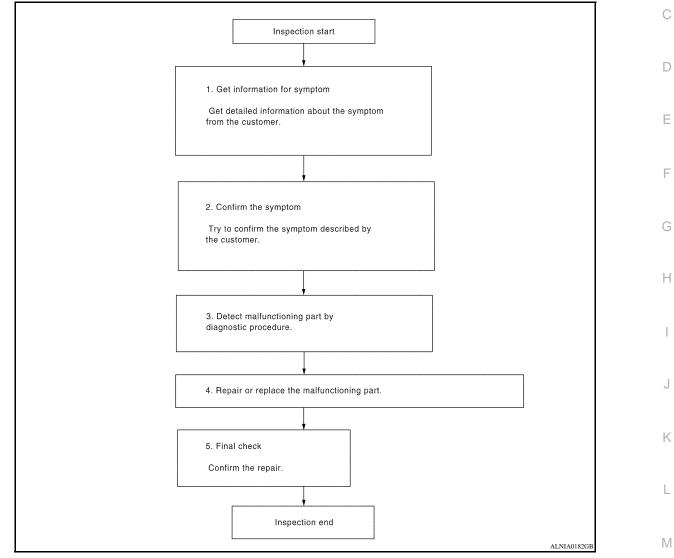
NORMAL OPERATING CONDITION 16 Description	
PRECAUTION16	63
PRECAUTIONS	
PREPARATION16	64
PREPARATION	
ON-VEHICLE REPAIR16	5
AUDIO UNIT	
AUDIO AMP	-
FRONT TWEETER       16         Removal and Installation       16	
FRONT DOOR SPEAKER         16           Removal and Installation         16	
REAR DOOR SPEAKER 16	9

Removal and Installation 169
REAR DOOR TWEETER170
Removal and Installation 170
STEERING SWITCH171
Removal and Installation 171
SUBWOOFER172
Removal and Installation 172
TEL ANTENNA173
Removal and Installation 173
BLUETOOTH CONTROL UNIT
Removal and Installation 174
MICROPHONE176
Removal and Installation
AUDIO ANTENNA
Location of Antenna 177
Removal and Installation 177
SATELLITE RADIO ANTENNA
Removal and Installation 179
SATELLITE RADIO TUNER
Removal and Installation 180

## BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

## Work Flow

**OVERALL SEQUENCE** 



## DETAILED FLOW

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

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

## >> GO TO 2

**2.**CONFIRM THE SYMPTOM

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

## >> GO TO 3

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

Inspect according to Diagnostic Procedure of the system.

## AV-5

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## DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[BASE AUDIO]

Is malfunctioning part detected?

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

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**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>

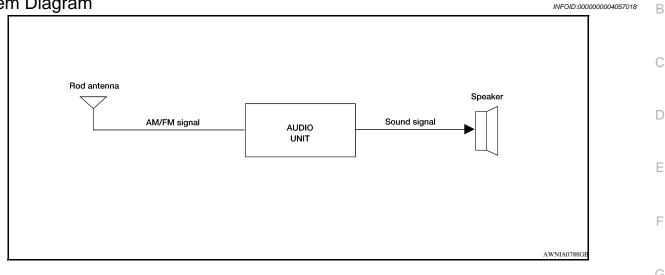
YES >> Inspection End.

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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[BASE AUDIO]

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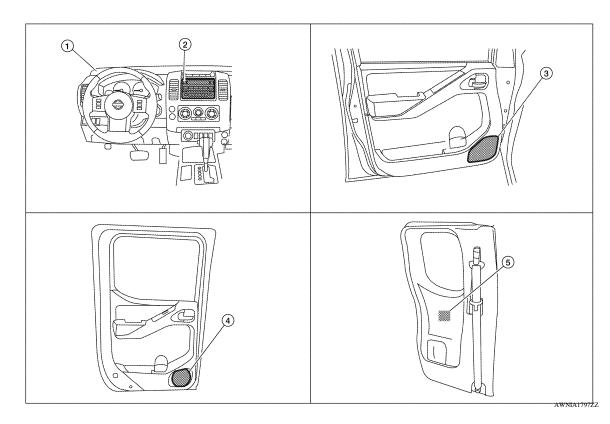
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< FUNCTION DIAGNOSIS >

## **Component Parts Location**

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[BASE AUDIO]



- Front tweeter (crew cab) 1. LH M109 RH M111
- 2.
  - Audio unit M43

3. Front door speaker LH D12 RH D112

4. Rear door speaker (crew cab) LH D207 RH D307

**Component Description** 

5. Rear door speaker (king cab) LH B76 RH B160

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

## POWER SUPPLY AND GROUND CIRCUIT

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

## AUDIO UNIT : Diagnosis Procedure

## **1.**CHECK FUSES

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

Unit	Terminals	Signal name	Fuse No.	D
Audio unit	19	Battery power	29	
	7	Ignition switch ACC or ON	4	Ε

## Are the fuses OK?

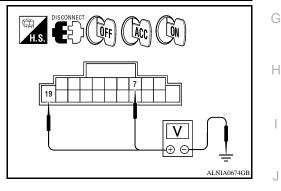
YES >> GO TO 2

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

## 2. POWER SUPPLY CIRCUIT CHECK

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

(+)		(-)	OFF	ACC	ON
Connector	Terminal	()	011	7,00	
M43	7	Ground	0V	Battery voltage	Battery voltage
10143	19	Ground	Battery voltage	Battery voltage	Battery voltage



Are the voltage results as specified?

YES >> GO TO 3 NO >> • Check of

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

• Repair harness or connector.

## **3.**GROUND CIRCUIT CHECK

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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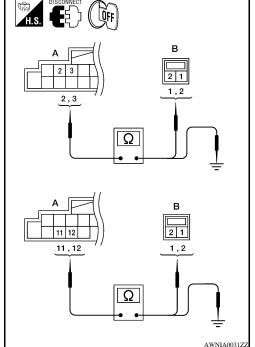
## **1.**HARNESS CHECK

- 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
M43	2	D12	1	
	3		2	Yes
	11		1	Tes
	12		2	

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

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



Are continuity results as specified?

YES >> GO TO 2

NO

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

2.FRONT SPEAKER SIGNAL CHECK

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[BASE AUDIO]

## FRONT DOOR SPEAKER

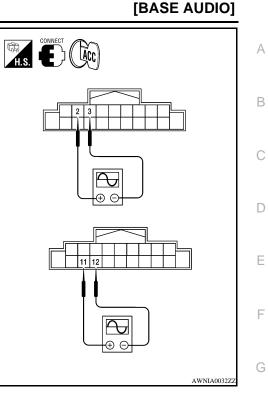
## < COMPONENT DIAGNOSIS >

- 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 1 1 1 1 1 1 1 1 1 1 1 1 1		

## Is the audio signal voltage as specified?

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

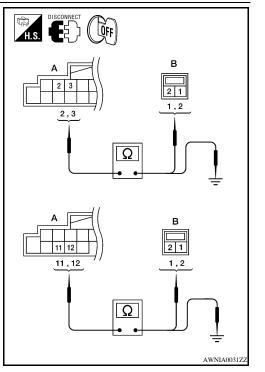
## **1.**HARNESS CHECK

- 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).

	A		В	Continuity
Connector	Terminal	Connector	Terminal	Continuity
	2	M109	1	
MAD	3	101109	2	Yes
M43	11	M111	1	Tes
	12		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

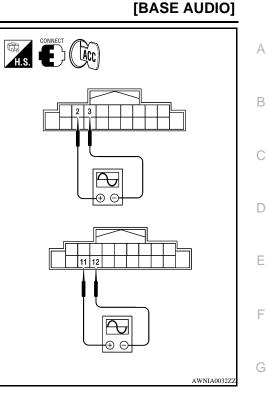
## < COMPONENT DIAGNOSIS >

- 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 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

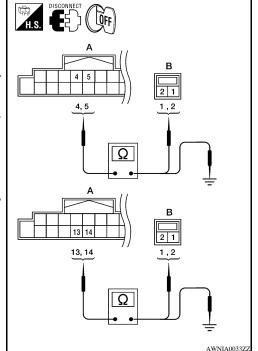
## **1.**HARNESS CHECK

- Disconnect audio unit connector M43 and suspect rear door 1. 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 (crew cab)	1	
M43	5	B76 (king cab)	2	Yes
WI43	13	D307 (crew cab)	1	Tes
	14	B160 (king cab)	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	NO	
	14			



Are the continuity results as specified?

YES >> GO TO 2

NO

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

2.REAR DOOR SPEAKER SIGNAL CHECK

[BASE AUDIO]

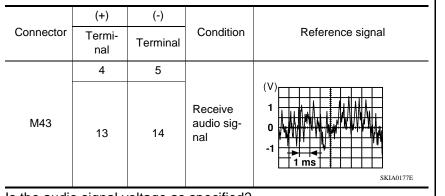
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## **REAR DOOR SPEAKER**

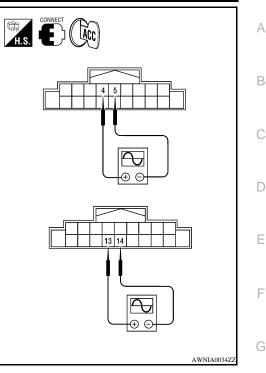
## < COMPONENT DIAGNOSIS >

- 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.



## 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>.



## [BASE AUDIO]

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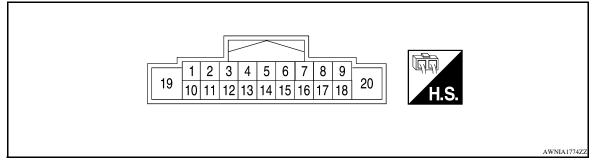
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## AUDIO UNIT

**Reference Value** 

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## **TERMINAL LAYOUT**



## PHYSICAL VALUES

Terminal (Wire 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]

Terminal 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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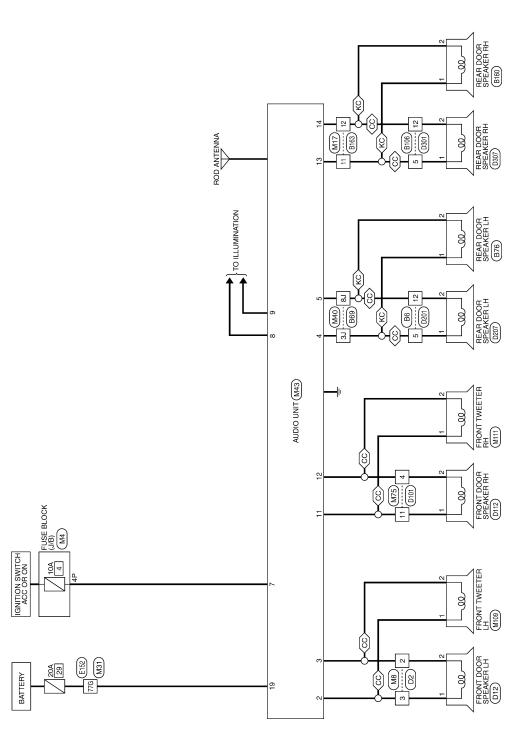
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## < ECU DIAGNOSIS >



CC): CREW CAB KC): KING CAB



ABNWA0165GE

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BASE AUDIO SYSTEM

	E E	12         11         10         9         8	Signal Name	Signal Name
	Connector No. M17 Connector Name WIRE TO WIRE Connector Color WHITE	7         6         5         4         3           16         15         14         13         12         11         10	No. Color of Wire GR O	No. Color of Miree
	Connector No. Connector Name Connector Color	品.S.H	Terminal No. 11 12	Terminal No.
	[]			
	or No. M8 or Name WIRE TO WIRE or Color BROWN	5         4         3         2         1           12         11         10         9         8         7         6	No. Color of Signal Name Wire L BR	Connector No.         M40           Connector Name Connector Name MIRE TO WIRE Connector Name Connector Name Connector Name Connector Name Connector Name Connector Name Sub 71 (18) [13] [14] [13] [14] [13] [14] [13] [14] [14] [14] [14] [14] [14] [14] [14
	Connector No. Connector Name Connector Color	品.S.H	Terminal No. 2 3	Connector No. Connector Name Connector Name (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
SF				
BASE AUDIO SYSTEM CONNECTORS	r No. M4 r Name FUSE BLOCK (J/B) r Color WHITE	TP         6P         6P         4P         2P         1P         4P         4P<	No. Wire Signal Name – – – – – – – – – – – – – – – – – – –	Connector No.         M31           Connector Name Connector Name Connector Name Connector Name Connector Name NIRE TO WIRE Connector Color WHITE         36 46         36 56         100           56         46         36         46         56         100           100         36         46         76         60           100         36         46         76         61           100         36         36         36         100         100           100         36         36         37         36         36         100           100         36         36         37         36
SE AUI	Connector No. Connector Name Connector Color	旧S.H	Terminal No. 4P	Connector No. Connector Name Connector Name Connector Name (16) 5162 5162 5162 5162 5162 5162 5162 5162
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## AUDIO UNIT

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Signal Name

Terminal No. Wire

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> G/B GR

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Connector No. M75 Connector Name WIRE TO WIRE

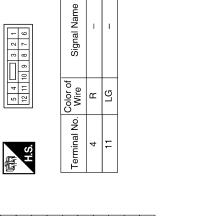
Connector Color WHITE

Connector Name AUDIO UNIT (BASE AUDIO SYSTEM)

M43

Connector No.

Connector Color WHITE



T. T

Signal Name	LIGHT SW	Ι	FR SP RH (+)	FR SP RH (-)	RR SP RH (+)	RR SP RH (-)	I	Ι	Ι	Ι	BAT	I
Color of Wire	æ	-	ŋ	œ	GR	0	I	-	-	-	≻	I
Terminal No.	6	10	÷	12	13	14	15	16	17	18	19	20

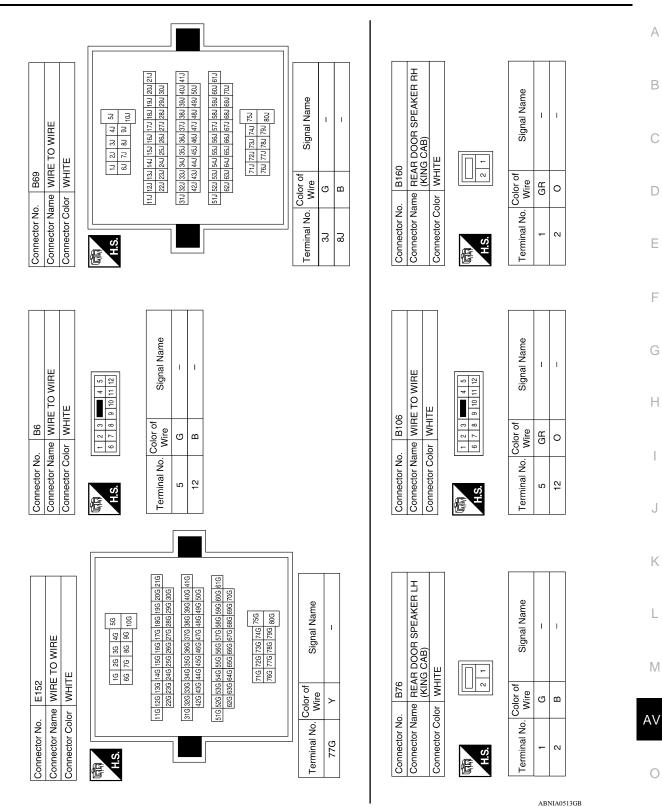
5 6 7 8 9 14 15 16 17 18 20	Signal Name	1	FR SP LH (+)	FR SP LH (-)	RR SP LH (+)	RR SP LH (-)
1 12 3 4	Color of Wire	1	BR		თ	в
H.S.	Terminal No.	F	2	ю	4	5

M111	Connector Name FRONT TWEETER RH (CREW CAB)	BROWN	
Connector No. M111	Connector Name	Connector Color BROWN	中国 H.S.
M109	Connector Name FRONT TWEETER LH (CREW CAB)	BROWN	5
Connector No. M109	Connector Name	Connector Color BROWN	国 H.S.

Signal Name	- (WITH BASE AUDIO SYSTEM)	- (WITH BASE AUDIO SYSTEM)	
Color of Wire	თ	_	
Terminal No. Wire	÷	N	

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Signal Name	- (WITH BASE AUDIO SYSTEM)	- (WITH BASE AUDIO SYSTEM)
Color of Wire	×	_
Terminal No. Wire	۲	N



## AUDIO UNIT

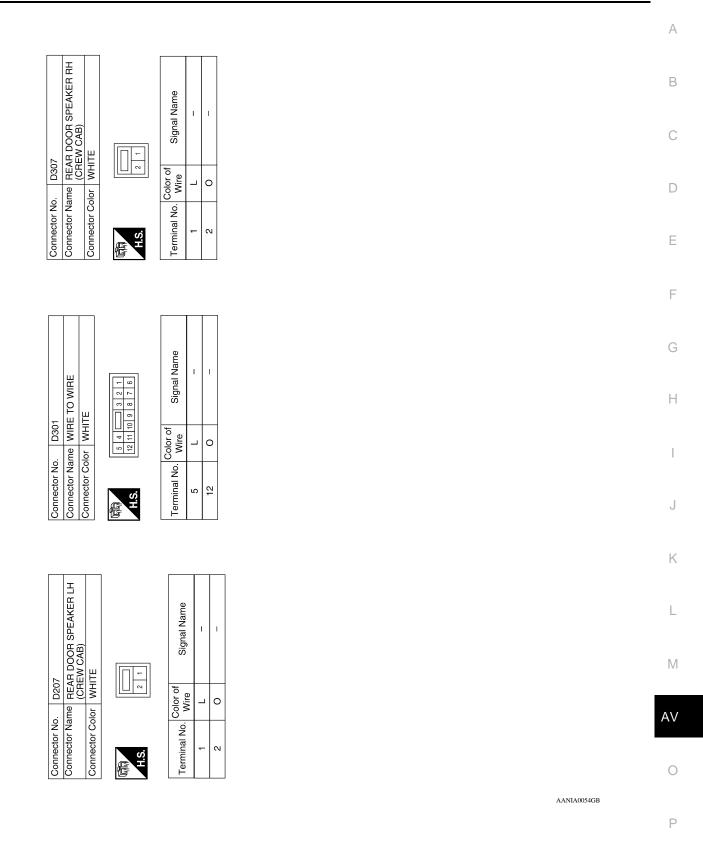
## < ECU DIAGNOSIS >

## [BASE AUDIO]

	JR SPEAKER LH		Signal Name -		RE		[@]	Signal Name	1	
Connector No. D12	Connector Name FRONT DOOR SPEAKER LH Connector Color WHITE	HS.	Terminal No. Color of Si Wire Si 2 L/R				(12 11 10 9 8 7 1 H.S.	Terminal No. Color of Sign	5	_
	WIRE TO WIRE BROWN	3 ■ 4 5 8 9 10 11 12	signal Name		Connector No. D112 Connector Name FRONT DOOR SPEAKER RH	WHILE		of Signal Name	1	-
Connector No. D2	Connector Name WIRE TO WIRE Connector Color BROWN	(1 2 H.S.	Terminal No.     Color of Wire       2     LR       3     LW		Connector No. U1 Connector Name FF		和 H.S.	Terminal No. Vire	1 W/B	
53	Connector Name WIRE TO WIRE Connector Color WHITE	4         5         6         7           11         12         13         14         15         16	Signal Name		WIRE TO WIRE		9 10 11 12 9 11 11 12	Signal Name	1	-
Vo. B163	Vame WIRE T Color WHITE		D. Color of Wire GR				1 2 3 6 7 8	o. Color of Wire	L/B	
Connector No.	Connector Name Connector Color	H.S.	Terminal No. 11 12		Connector No.		国 H.S.	Terminal No.	4	

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## SYMPTOM DIAGNOSIS AUDIO SYSTEM

## Symptom Table

INFOID:000000004057031

## 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	
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,  $_{\rm B}$  etc.).

NOISE

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

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

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

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

Type of Noise and Possible Cause

C	Possible cause	
Occurs only when engine is ON.	A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed.	Ignition components
The occurrence of the noise is lin	ked with the operation of the fuel pump.	Fuel pump condenser
Noise only occurs when various	A cracking or snapping sound occurs with the operation of various switches.	Relay malfunction, audio unit malfunction
electrical components are oper- ating.	The noise occurs when various motors are operat- ing.	<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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# < 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			
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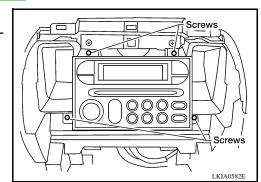
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# < ON-VEHICLE REPAIR > ON-VEHICLE REPAIR AUDIO UNIT

Removal and Installation

## REMOVAL

- 1. Remove the cluster lid C. Refer to IP-11, "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

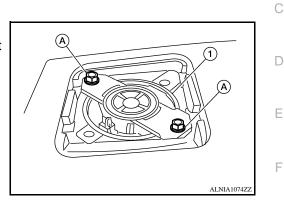
## Removal and Installation

## 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. A

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### INFOID:000000004057036

[BASE AUDIO]

## 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. INFOID:000000004057037

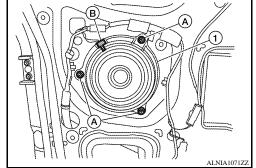
## REAR DOOR SPEAKER

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.



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## INSTALLATION

Installation is in the reverse order of removal.

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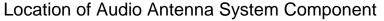
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## **AUDIO ANTENNA**

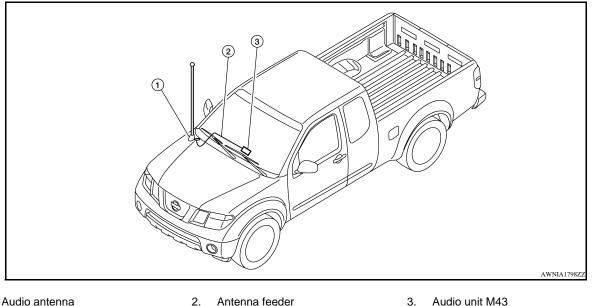
## < ON-VEHICLE REPAIR >

## AUDIO ANTENNA



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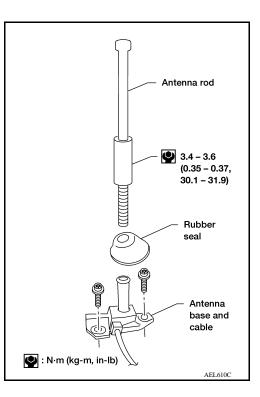


1. Audio antenna 2. Antenna feeder Audio unit M43

## Removal and Installation

## REMOVAL

- Remove lower glove box. Refer to IP-11, "Removal and Installation". 1.
- 2. Disconnect audio antenna cable from antenna feeder.
- 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 EXT-22, "Removal and Installation of Front Fender Protector".
- Remove antenna base bolts. 7.
- Remove antenna base and cable. 8.



**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

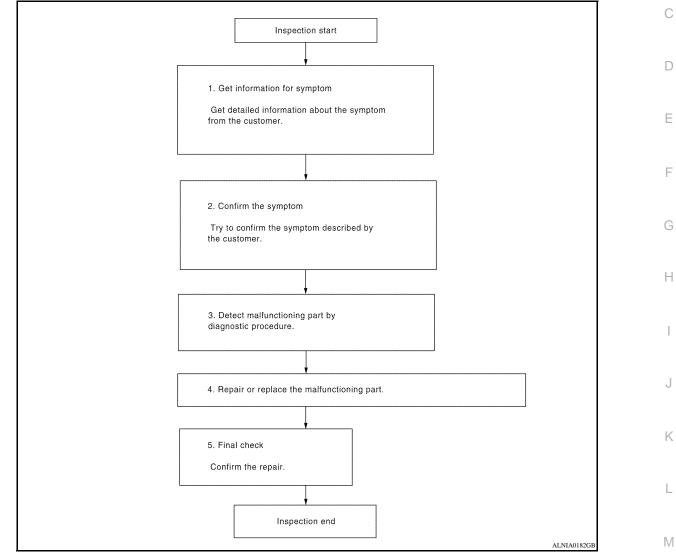
## Work Flow

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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.

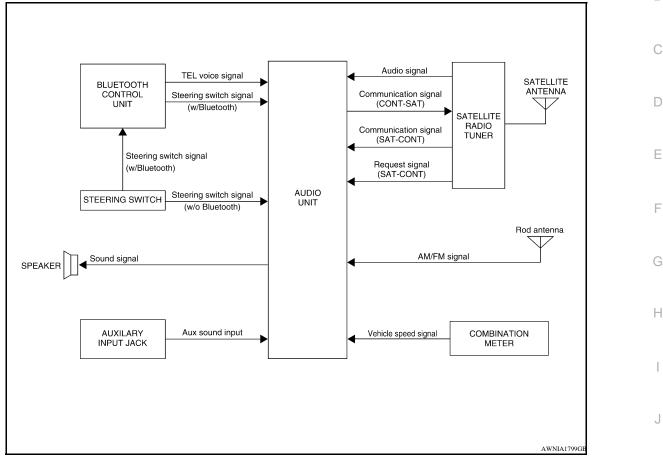
NO >> GO TO 2

## [PREMIUM AUDIO (KING CAB)]

## < 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

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.

## SPEED SENSITIVE VOLUME SYSTEM

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## **AUDIO SYSTEM**

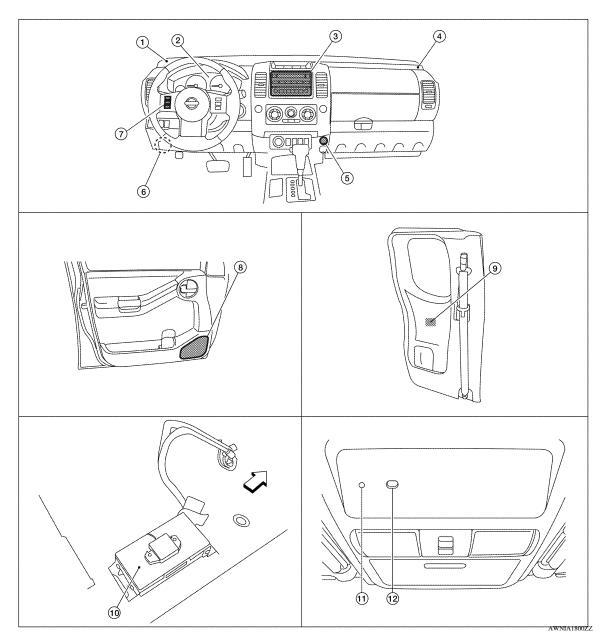
## < FUNCTION DIAGNOSIS >

## [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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### <⊓:FRONT

- 1. Front tweeter LH M110
- 4. Front tweeter RH M112
- 7. Steering wheel audio control switches
- Bluetooth control unit B141, B142 (view with passenger front seat removed)
- 2. Combination meter M24
- 5. Aux jack M85
- Front door speaker LH D12 RH D112
- 11. Microphone R8

- 3. Audio unit M42, M44, M45, M64
- 6. Satellite radio tuner M41, M129
- 9. Rear door speaker LH B76 RH B160
- 12. Bluetooth ON indicator R6

# **AUDIO SYSTEM**

# < FUNCTION DIAGNOSIS >

# **Component Description**

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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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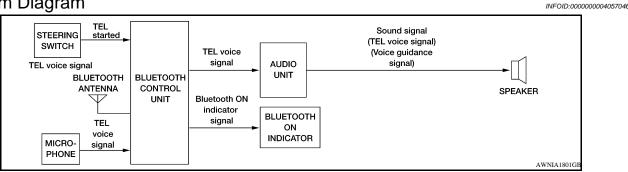
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# HANDS-FREE PHONE SYSTEM

#### < FUNCTION DIAGNOSIS >

# HANDS-FREE PHONE SYSTEM

System Diagram



#### System Description

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

#### NOTE:

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

Bluetooth telephone system allows users who have a Bluetooth equipped cellular telephone to make a wireless connection between their cellular telephone and the Bluetooth control unit. Hands-free cellular telephone calls can be sent and received. 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 >

# [PREMIUM AUDIO (KING CAB)]

# **Component Parts Location**

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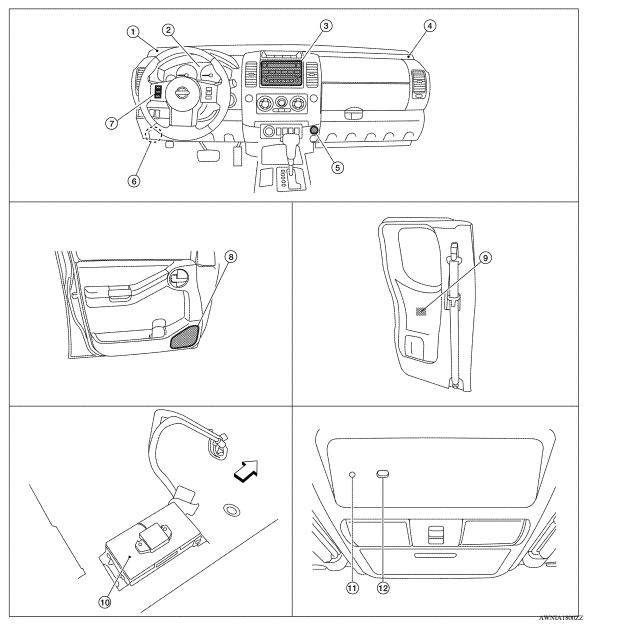
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#### C:FRONT

- 1. Front tweeter LH M110
- 4. Front tweeter RH M112
- 7. Steering wheel audio control switches
- Bluetooth control unit B141, B142 (view with passenger front seat removed)
- 2. Combination meter M24
- 5. Aux jack M85
- 8. Front door speaker LH D12 RH D112
- 11. Microphone R8

- 3. Audio unit M42, M44, M45, M64
- 6. Satellite radio tuner M41, M129
- 9. Rear door speaker LH B76

RH B160

- 12. Bluetooth ON indicator R6

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# < FUNCTION DIAGNOSIS >

# HANDS-FREE PHONE SYSTEM

[PREMIUM AUDIO (KING CAB)]

# **Component Description**

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Part name	Description
Audio unit	<ul> <li>Receives telephone voice signal from Bluetooth control unit</li> <li>Sends telephone voice and voice guidance signals to the speakers</li> </ul>
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

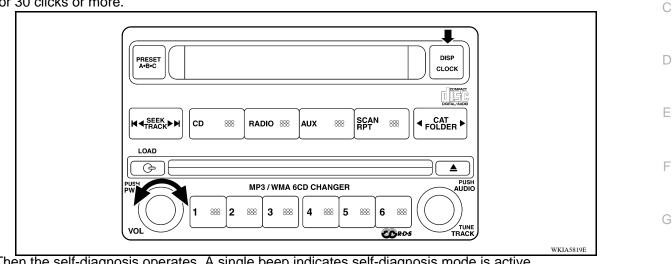
# < FUNCTION DIAGNOSIS >

# **DIAGNOSIS SYSTEM (AUDIO UNIT)**

# **Component Function Check**

# STARTING THE SELF-DIAGNOSIS MODE

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



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

- 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 1 pressed.

# DIAGNOSIS FUNCTION

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

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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( ♥ ↓ )/END( ▲)] stuck closed
- Vehicle speed pulse count
- Microphone connection test (with playback to operator)
- Bluetooth inquiry check

#### **OPERATION PROCEDURE**

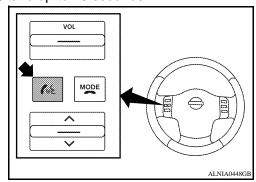
- 1. Turn ignition switch to ACC or ON.
- 2. Wait for the Bluetooth system to complete initialization. This may take up to 10 seconds.
- 3. Press and hold the steering wheel audio control switch  $\checkmark \checkmark$  button for at least 5 seconds. The Bluetooth system will begin to play a verbal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

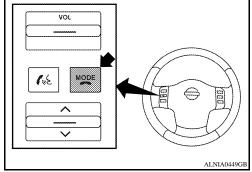
- While the prompt is playing, press and hold the steering wheel audio control switch <sup>MOE</sup> button until you hear the "Diagnostics mode" prompt. The Bluetooth system will sound a 5 second beep.
- 5. While the beep is sounding, press and hold the steering wheel audio control switch button again until you hear prompts.
- The Bluetooth system has now entered into the diagnostic mode. Results of the diagnostic checks will be verbalized to the technician and the Bluetooth ON indicator will flash. Refer to <u>AV-42</u>, "Work Flow".
- After the failure records are reported, an interactive microphone test will be performed. Follow the voice prompt. If the microphone test fails refer to <u>AV-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-90, "Removal and Installation".		
"Bluetooth antenna open"	1. Inspect harness connection.		
"Bluetooth antenna shorted"	2. Replace Bluetooth antenna. Refer to <u>AV-90, "Removal and Installation"</u> .		
"Phone/Send for Hands Free System is stuck"	Check steering wheel audie central quitches, Befer to AV 52 "Description"		
"Phone/End for the Hands Free System is stuck"	Check steering wheel audio control switches. Refer to <u>AV-53</u> , " <u>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-92</u>, "<u>Removal and Installation</u>".</li> </ol>		





AV-42

INFOID:000000004057051

# COMPONENT DIAGNOSIS > [ COMPONENT DIAGNOSIS POWER SUPPLY AND GROUND CIRCUIT AUDIO UNIT AUDIO UNIT : Diagnosis Procedure 1.CHECK FUSES Check that the following fuses of the audio unit are not are not blown.

Unit	Terminals	Signal name	Fuse No.	D
Audio unit	6	Battery power	29	
	10	Ignition switch ACC or ON	4	Е

#### Are the fuses OK?

YES >> GO TO 2

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

# 2. POWER SUPPLY CIRCUIT CHECK

- 1. Disconnect audio unit connector M64.
- Check voltage between the audio unit connector M64 and ground.

(	(+)		OFF	ACC	ON
Connector	Terminal	(-)	OTT	100	ÖN
M64	6	Ground	0V	Battery voltage	Battery voltage
1004	10	Ground	Battery voltage	Battery voltage	Battery voltage

#### Are the voltage results as specified?

YES >> GO TO 3 NO >> • Check of

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

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	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	()	011		
N41	32	Ground	Battery voltage	Battery voltage	Battery voltage
17141	M41 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.

#### 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.
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?

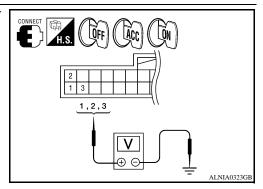
YES >> GO TO 2.

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	()	011	ON	700
	1	Ground	Battery voltage	Battery voltage	Battery voltage
B141	2		0V	Battery voltage	Battery voltage
	3		0V	Battery voltage	0V

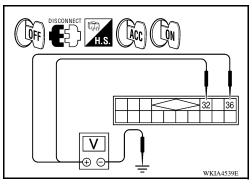


Is battery voltage present as specified?

YES >> GO TO 3.

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

**3.**CHECK GROUND CIRCUIT



INFOID:000000004057055

# 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	
B141 2	4			
	20	Ground	Yes	
	21	Giouna		
	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 ter-2. minal 4 and ground.

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

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

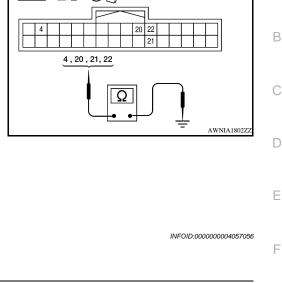
4. Check continuity between microphone harness connector R8 (A) terminal 4 and ground.

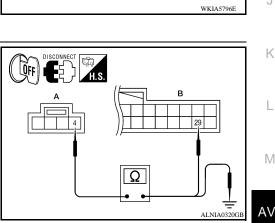
	A		Continuity
Connector	Terminal		Continuity
R8	4	Ground	No

Are the continuity test results as specified?

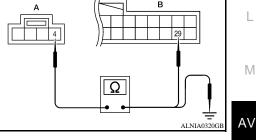
YES >> Replace the Bluetooth control unit. Refer to AV-90, "Removal and Installation".

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





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[PREMIUM AUDIO (KING CAB)]

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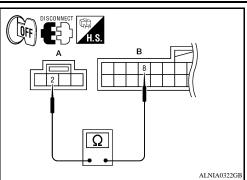
Н

#### 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**

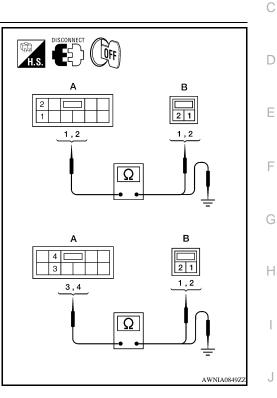
# 1.SPEAKER HARNESS CHECK

- 1. Disconnect audio unit connector M64 and suspect speaker connector.
- 2. Check continuity between audio unit harness connector M64 (A) and suspect speaker harness connector (B).

	A		В	Continuity		
Connector	Terminal	Connector	Terminal	Continuity		
	1	<b>D</b> 40	D12	D12	2	
M64 2 D12 A	DIZ	1	Yes			
	2	Tes				
	4		1			

 Check continuity between audio unit harness connector M64 (A) and ground.

	A		Continuity
Connector	Terminal		Continuity
	1		No
M64	2	Ground	
1004	3	Ground	
	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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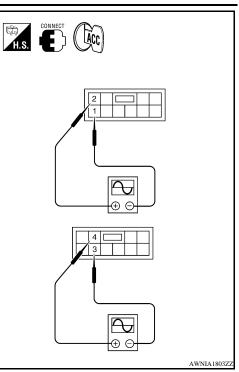
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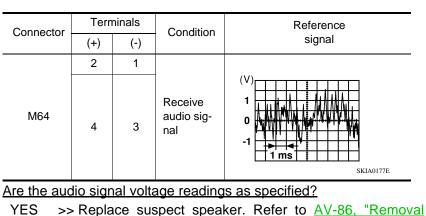
INFOID:000000004057058

# 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 M64 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**

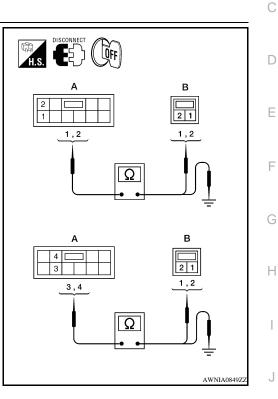
# 1.SPEAKER HARNESS CHECK

- 1. Disconnect audio unit connector M64 and suspect speaker connector.
- 2. Check continuity between audio unit harness connector M64 (A) and suspect speaker harness connector (B).

А		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	1	M110	2	
M64 2	IVIT TO	1	Yes	
10104	3 M112	2	Tes	
	4	IVI 1 2	1	

 Check continuity between audio unit harness connector M64 (A) and ground.

	A		Continuity	
Connector	Terminal		Continuity	
	1		No	
M64	2	Ground		
1004	3	Ground		
	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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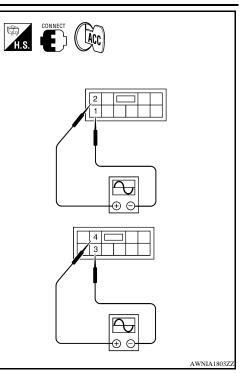
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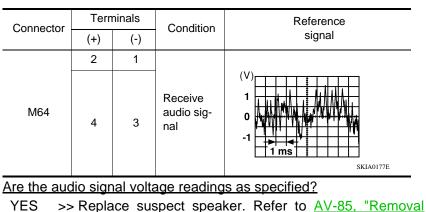
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# FRONT TWEETER

#### < 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 M64 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**

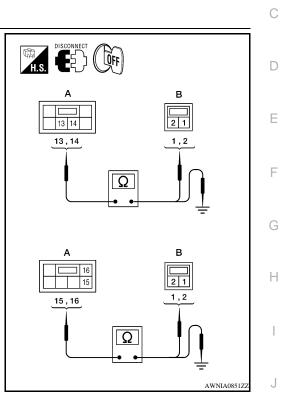
# 1.SPEAKER HARNESS CHECK

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

_						
		A		В	Continuity	
С	onnector	Terminal	Connector	Terminal	Continuity	
		13	B76 -	P76	2	
	M44	14		1	Yes	
	10144	15		2	165	
		16	5100	1		

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

	A		Continuity	
Connector	Terminal		Continuity	
	13		No	
M44	14	Ground		
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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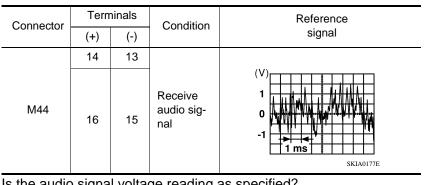
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# **REAR DOOR SPEAKER**

#### < COMPONENT DIAGNOSIS >

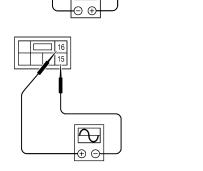
- 1. Connect audio unit connector M44 and audio amp. connector B159.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- Check the signal between audio unit harness connector M44 4. terminals with CONSULT-III or oscilloscope.



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

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

# [PREMIUM AUDIO (KING CAB)] H.S. CONNECT 13 14 Ð



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# **STEERING SWITCH**

# < COMPONENT DIAGNOSIS >

# STEERING SWITCH

# Description

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

#### **Diagnosis Procedure**

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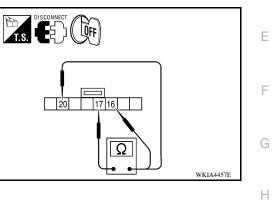
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### 1. CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

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

Terr	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 MODE 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".

# 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	A		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.

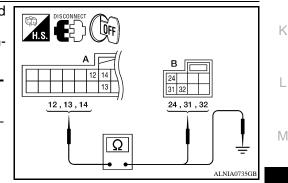
A			Continuity
Connector	Terminal		Continuity
	12		
B141	13	Ground	No
	14		

Are the continuity results as specified?

YES >> GO TO 3

NO >> Repair harness.

**3.**SPIRAL CABLE CHECK



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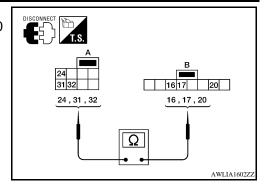
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# **STEERING SWITCH**

#### < COMPONENT DIAGNOSIS >

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

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



[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.

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

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

A			Continuity
Connector	Terminal		Continuity
M41	28	Ground	No

Are continuity results as specified?

YES >> GO TO 2

NO >> Repair harness or connector.

2.CHECK HARNESS - TXD

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

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

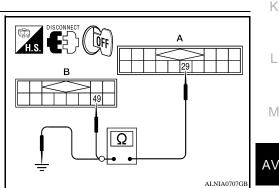
2. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 29 and ground.

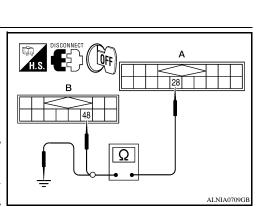
Α			Continuity
Connector	Terminal		Continuity
M41	29	Ground	No

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**

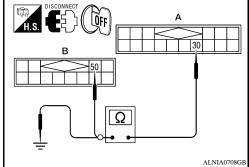
#### < COMPONENT DIAGNOSIS >

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

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

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

A			Continuity
Connector	Terminal		Continuity
M41	30	Ground	No



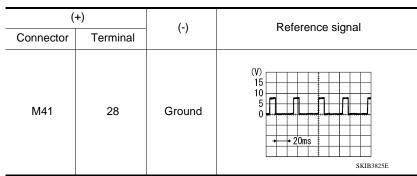
#### Are continuity results as specified?

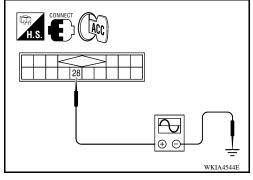
YES >> GO TO 4

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.





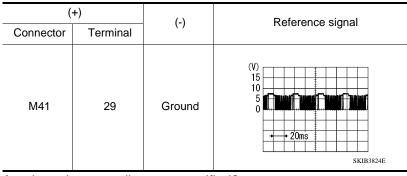
Are voltage readings as specified?

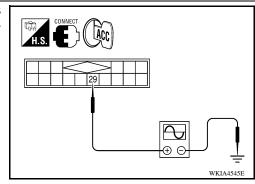
#### YES >> GO TO 5

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**

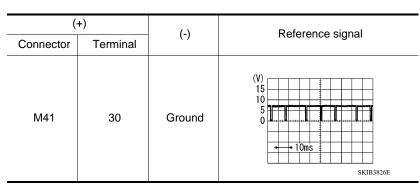
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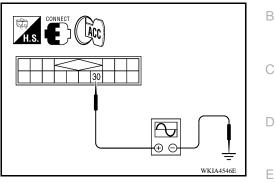
[PREMIUM AUDIO (KING CAB)]

YES >> GO TO 6

NO >> Replace satellite radio tuner.

**6.**CHECK RXD SIGNAL





Are the voltage readings as specified?

YES >> Replace satellite radio tuner. Refer to AV-96, "Removal and Installation".

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

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# SOUND SIGNAL CIRCUIT

#### < COMPONENT DIAGNOSIS >

#### SOUND SIGNAL CIRCUIT SATELLITE RADIO TUNER

#### SATELLITE RADIO TUNER : Description

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

# SATELLITE RADIO TUNER : Diagnosis Procedure

#### LEFT CHANNEL

# 1.CHECK HARNESS

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

А		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M41	21	M42	41	Yes
1014 1	22	IVI42	42	165

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

Connector         Terminal           M41         21         Ground         No	A			Continuity
M41 Ground No	Connector	Terminal		Continuity
	M41	21	Ground	No
22	1414	22	Oround	NO

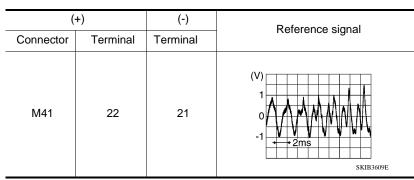
Are continuity results as specified?

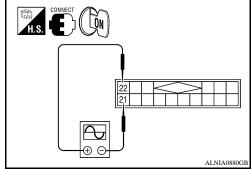
YES >> GO TO 2

NO >> Repair harness or connector.

2. CHECK LEFT CHANNEL AUDIO SIGNAL

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





Are voltage readings as specified?

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

NO >> Replace satellite radio tuner. Refer to AV-96. "Removal and Installation".

#### RIGHT CHANNEL

# [PREMIUM AUDIO (KING CAB)]

42 41 R

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# SOUND SIGNAL CIRCUIT

#### < COMPONENT DIAGNOSIS >

### [PREMIUM AUDIO (KING CAB)]

# **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).

А		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
M41	23	M42	43	Yes
1014 1	24	IVI42	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	NO

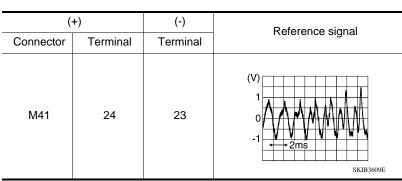
Are continuity results as specified?

YES >> GO TO 2

NO >> Repair harness or connector.

# 2. CHECK RIGHT CHANNEL AUDIO SIGNAL

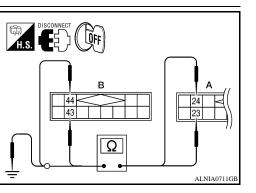
- 1. Connect satellite radio tuner (factory installed) and audio unit.
- 2. Turn ignition switch ON.
- Check signal between satellite radio tuner (factory installed) connector M41 terminals 23 and 24 with CONSULT-III or oscilloscope.



Are voltage readings as specified?

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

NO >> Replace satellite radio tuner. Refer to <u>AV-96, "Removal and Installation"</u>.







А

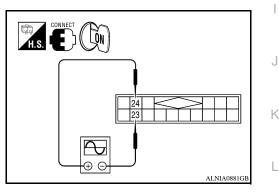
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#### MICROPHONE SIGNAL CIRCUIT

#### < COMPONENT DIAGNOSIS >

# **MICROPHONE SIGNAL CIRCUIT**

#### Description

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

Continuity

# **Diagnosis Procedure**

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

1. Turn ignition switch OFF.

А

Terminal

7

8

29

Connector

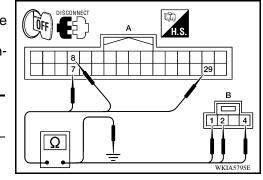
B141

- 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

A     Continuity       Connector     Terminal       7     Continuity       8     Ground					
Connector     Terminal       7     7		Continuity		А	
		Continuity		Terminal	Connector
B141 8 Ground No				7	
		No	Ground	8	B141
29				29	
Are the continuity test results as specified?			fied?	nuity test results as speci	Are the contir
YES >> GO TO 2 NO >> Repair harness or connector. 2.CHECK MICROPHONE POWER SUPPLY				Repair harness or connec	NO >> F
<ol> <li>Connect Bluetooth control unit connector and microphone connector.</li> <li>Turn ignition switch ON.</li> <li>Check voltage between microphone harness connector R8 ter-</li> </ol>				tion switch ON. bltage between micropho	nector. 2. Turn ignit 3. Check vo
minal 4 and ground. 4 - Ground : Approx. 5V	$\frown$		: Approx. 5V	C C	
<u>Is voltage reading approx. 5 volts?</u>					

NO >> Replace Bluetooth control unit. Refer to <u>AV-90</u> <u>"Removal and Installation"</u>.

**3.**CHECK MICROPHONE SIGNAL

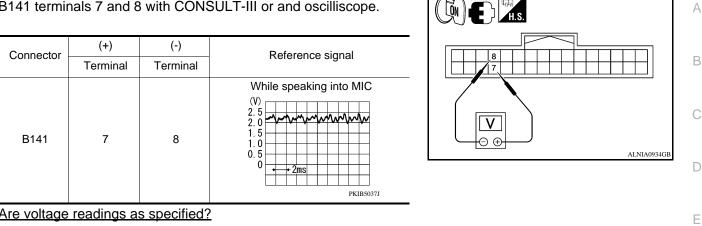
Yes

# **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)]



Are voltage readings as specified?

YES	>> Replace Bluetooth control unit. Refer to AV-90, "Removal and Installation".
NO	>> Replace microphone. Refer to <u>AV-92, "Removal and Installation"</u> .

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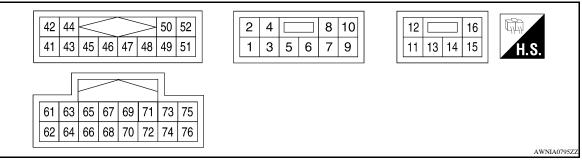
# < ECU DIAGNOSIS > ECU DIAGNOSIS

# AUDIO UNIT

# Reference Value

INFOID:000000004057071

# **TERMINAL LAYOUT**



# PHYSICAL VALUES

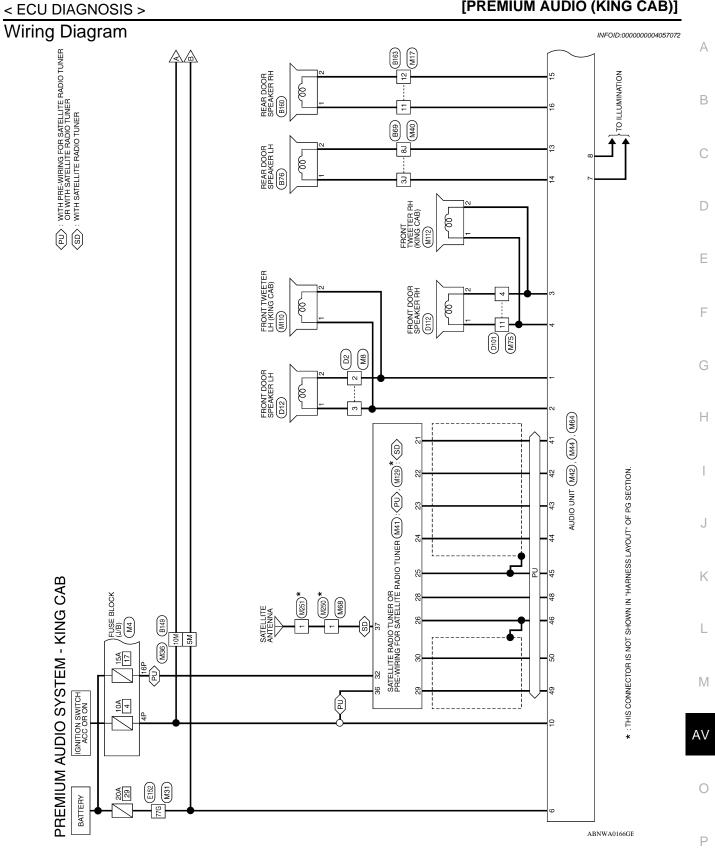
	minal e color)	Item	Signal input/		Condition	Reference value (Approx.)
+	-		output			
2 (BR)	1 (L)	Audio sound signal front LH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
4 (LG)	3 (R)	Audio sound signal front RH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5
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		lagut	OFF	Lighting switch is in 1st position.	Battery voltage
(R)	Ground	Illumination signal	Input	UFF	Lighting switch is OFF.	OV
9	_	Shield	_	_	_	OV
10 (G/B)	Ground	ACC signal	Input	Ignition switch ON	_	Battery voltage

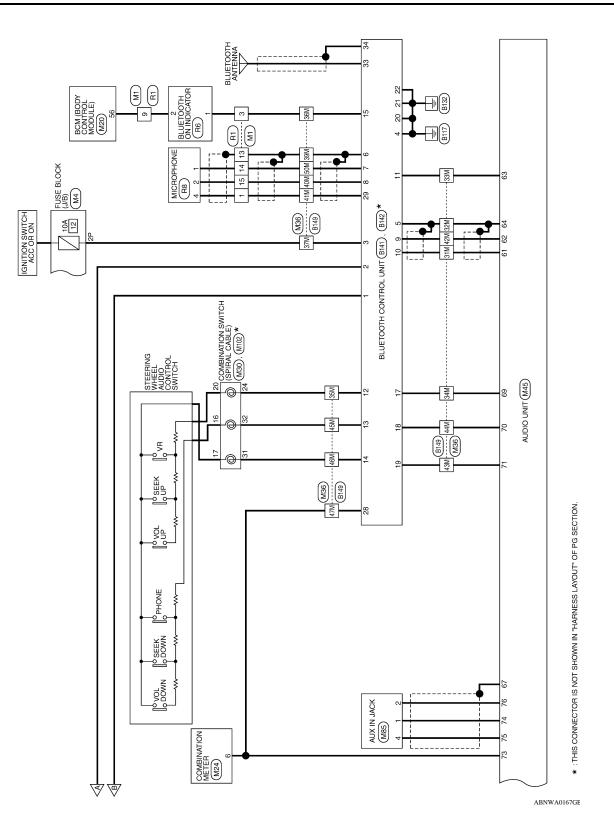
#### < ECU DIAGNOSIS >

	minal color)	ltem	Signal input/		Condition	Reference value (Approx.)	А
+	_		output				В
14 (G)	13 (B)	Audio sound signal rear LH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 ms 5 5 5 5 5 5 5 5 5 5 5 5 5	C
16 (GR)	15 (O)	Audio sound signal rear RH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5	E
42 (R)	41 (G)	Satellite radio au- dio signal LH	Input	Ignition switch ON	Satellite radio tuner operating	(V) 1 0 -1 •••2ms SKIB3609E	G
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 -1 -2ms 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	Ignition switch ACC/ON	Bluetooth control unit sends audio signal	(V) 1 0 -1 • 2ms SKIB3609E	O
63 (R)	_	Mute control	_	_	_	_	
64	_	Shield	_	_	-	0V	

#### < ECU DIAGNOSIS >

	minal e color)	Item	Signal input/		Condition	Reference value (Approx.)
+	-		output			(Αμριολ.)
67	-	Shield	_	Ignition switch ON	-	٥V
					Pressing 🌈 🏑 switch	OV
69	71	Steering switch sig-	Input	Ignition switch	Pressing $\Delta$ switch	0.75
(V)	(O)	nal A	inpat	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
(LG)	(O)	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 -1 -1 -1 -1 -1 -1 -1 -1 -1
76 (R)	_	Shield	_	_	-	OV





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AGONNECTORS - KING CAB       Connector Name       Econnector Name       Econnector Name       Econnector Name       Econnector Name       Econnector Name       Mame       Image: Signation of the point o	Connector No.     M8       Connector Name     WIRE TO WIRE       Connector Color     BROWN       Entertain     54	BR Color of BR	Connector No.         M24           Connector Name         COMBINATION METER           Connector Name         COMBINATION METER           Connector Color         WHITE           Connector Color         WHITE           Connector Color         WHITE           Connector Color         WHITE	Signal Name Terminal No. Color of Signal Name BATTERY SAVER 6 SB SPEED OUT 8 OUTPUT
MI     MI       WIRE TO WIRE     WIRE TO WIRE       WHTE     WIRE TO WIRE       WIRE TO WIRE     MI       Or of     Signal Name       MITE     -       MITE     -       MITE     -       MI       M	Connector No. M4 Connector Name FUSE BLOCK (J/B) Connector Color WHITE	Color of Wire W/G G/B R/B		Color of Wire <
	Connector No. M1 Connector Name WIRE TO WIRE Connector Color WHITE	14     15     16     17     18     19     20     21     22     23     24       Color of Wire     Y     Signal Name     -     -     -     -       R/Y     -     -     -     -     -     -       SHIELD     -     -     -     -     -       L     -     -     -     -     -	Connector No. M17 Connector Name WIRE TO WIRE Connector Color WHITE	Color of Signal Name Wire GR O

# < ECU DIAGNOSIS >

# [PREMIUM AUDIO (KING CAB)]

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Signal Name		Signal Name	I	I	1	1	1			
Wire Vire	Color of	Wire	ГG	_	σ	SB	σ			
Terminal No. 77G		l erminal No.	44M	45M	46M	47M	50M			
				1	T	1	1	1	I	
M31           M31           WIRE TO WIRE           Ior         WIRE TO WIRE           S6         46         36         100           100         96         86         76         63           100         96         86         76         63           100         96         86         76         63           100         96         86         76         63           216         96         86         76         63           216         96         86         76         83           216         96         86         76         84         83           756         76         76         76         776         76           766         786         776         776         776           800         776         776         776         776		Signal Name	I	I	I	I	I	I	I	T
M31           me         WIRE 1           or         WHITE           100         100           300         290           300         290           900         490           100         200           100         200           100         290           100         290           100         290           100         290           100         290           100         290           100         290           100         290	Color of	Wire	R/B	G∕Y	в	SHIELD	ч	>	BR	GR
Connector No. Connector Name Connector Color 4164 5 5 6166		l erminal No.	5M	10M	31M	32M 9	33M	34M	35M	36M
					_					
Connector No.     M30       Connector Name     COMBINATION SWITCH       Connector Color     GRAY       Connector Color     GRAY       Image: Signal Name     24       24     BR       24     BR       31     G       32     L	Connector No. M36	e e				5M AVE AVE AVE	M1 MZ MC M4 MC		21M 20M 19M 13M 17M 16M 15M 14M 13M 12M 11M	3UM129M128M127M126M125M124M123M122M
Connector Ne Connector Ne Connector Co Terminal No. 24 31 32	Connec	Connec			ť		<u>ю</u> п			

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# [PREMIUM AUDIO (KING CAB)]

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SHIELD GR W/G

36M 37M 39M 40M

41M 40M 39M 38M 37M 36M 35M 34M 3

46M 45M 44M

49M 48M

61M 60M 59M 58M 57M 56M 55M 54M; 70M 69M 68M 67M 66M 65M 64M 6

≻ ≥ 0

41M 42M 43M

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

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WIRE TO WIRE       SATELLITE RATE         WHITE       0         WHITE       SATELLITE RATE         SATELLITE RATE       Connector Name         SATELLITE RATE       Connector Name         SATELLITE RATE       Connector Color         Sub sub 71 (s)       Sub 71 (s)         Sub sub 71 (s)       Sub 82 (s)         Sub sub 71 (s)       Sub 82 (s)         Sub sub 82 (s)       Sub 82 (s)         Sub sub 82 (s)       Sub 82 (s)         Sub 80 (s)       Sub 80 (s)         Sub 80 (s)       Sub 80 (s)         Sub 80 (s)       Sub 80 (s)         Sub 91 (s)       Sub 91 (s)	nector Nar nector Col S Minal No. (	ADIO TUNER ANG FOR ADIO TUNER gnal Name AT LCH (-)		Connector Nam Connector Colo HS 2122 2122 2122 2122 2122 233		e         WIRE TO WIRE           n         WHITE           55         41         32           10         34         32         11           10         34         31         12           10         34         31         13           200         181         173         161         131           201         183         173         161         131         121           201         183         183         173         161         131         121         141           201         184         47.1         461         451         44.1         453         231         311           201         834         834         354         354         354         353         351
Connector Name       Connector Name       Connector Name       Connector Name       Connector Color         Image: Strength of the strength of th	nector Col ninal No. 0	ADIO TUNER ADIO TUNER assiss gnal Name AT LCH (-) AT LCH (+)		Connector Nam Connector Colo 1222 2122 2122 212 212 212 212 212 212		r WHTE 51 41 31 21 11 10 31 81 72 61 12 20 159 159 179 161 153 141 131 121 111 20 159 159 159 159 124 123 123 111 40 351 351 351 351 351 351 351 351 351 351
Connector Color         WHITE           21/2001/001         0         4         10         1	<b>S.</b> minal No. 0	2] 34 38 1] 33 35 gnal Name AT LCH (-) AT LCH (+)	WHITE	Connector Colo H.S. Terminal No. C 21 21 21 23		5.         4.         3.         2.1         1.1           200         10.         3.         8.         7.0         6.1           200         18.         17.1         16.1         17.1         16.1           200         18.1         17.1         16.1         13.1         12.1         11.1           200         18.1         17.1         16.1         15.1         14.1         13.3         12.2           300         280         281         28.1
Image: Second	S. ninal No. 0	13335 1335 gnal Name AT LCH (-) AT LCH (+)	× 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	21 No. 23		51         4         33         21         11           50         4         3         21         14           10         91         81         72         61           201         181         171         161         131         121           202         181         171         161         151         141         131         121           202         181         171         161         151         141         131         121         111           202         181         171         161         152         154         233         221         311           203         281         371         381         371         383         331         <
10. 3u ki. 7J ki       10. 3u ki. 7J ki       12.2 24 ki       22.2 ki ki       23.3 ki       24.4 ki		2 <u>34 38</u> gnal Name AT LCH (-) AT LCH (+)	23 23 23 23 23 23 23 23 23 23 23 23 24 24 24 24 24 24 24 24 24 24 24 24 24	S. 21 21 21 22 22 23		10.         9.         8.         7.0         6.1           200         150         151         151         151         151           200         150         171         161         151         121         121           200         150         151         151         151         151         151         151           200         150         151         151         151         151         151         151           500         450         451 <t< td=""></t<>
7N       201       301       301       301       301       301       301       311       10		gnal Name AT LCH (-) AT LCH (+)				200 169 168 177 169 159 144 153 121 171 300 280 281 271 269 254 254 254 253 221 400 381 381 371 361 254 254 254 253 221 311 500 481 481 471 481 451 441 433 421 31 500 681 581 581 554 554 554 531 521 511 700 681 681 671 681 654 641 631 621 511
11     101 <td>41</td> <td>at LCH (-) AT LCH (+)</td> <td></td> <td></td> <td></td> <td>400         3801         3871         3851         3841</td>	41	at LCH (-) AT LCH (+)				400         3801         3871         3851         3841
30. (a)		AT LCH (+)		53 5-		501 481 481 471 481 451 441 431 431 421 601 581 581 571 561 551 551 541 531 521 511 701 681 881 671 681 651 641 631 621
311     Rul Sul Sul Sul Sul Sul Sul Sul Sul Sul S				1 6		700         1564         1564         1564         1564         1564         1564         1514           700         1661         1664
7u     681     671     681     781 <td></td> <td></td> <td></td> <td></td> <td>_</td> <td>70. 69. 68.1 67.1 66.1 65.5 64.1 63.1 62.1</td>					_	70. 69. 68.1 67.1 66.1 65.5 64.1 63.1 62.1
7xl     7xl <td>44</td> <td></td> <td></td> <td></td> <td></td> <td></td>	44					
Table True         Table True         Table True         Table True         Early (1/2)         <						
80.     30.     30.     30.     30.     30.     30.     26     SHELD     DAIA EANIH     47       27     -     -     -     -     -     48     49       Color of Wire     Signal Name     29     P     TXD     50     49       6     -     30     L     RXD     51     50       8     -     31     -     -     51       33     -     -     -     52     52						75J 74J 73J 72J 71J
27         -         -         -         48           Color of Wire         Signal Name         28         O         REQ1         49           28         0         REQ1         49         49         49           6         -         30         L         RXD         50           8         -         31         -         51         50           33         -         33         -         52         52	47					80, 79, 78, 77, 76,
Color of Wire         Image: Signal Name         28         O         REQ1         49         4           Wire         Signal Name         29         P         TXD         50         4           G         -         30         L         RXD         51         4           B         -         -         31         -         5         5         5           33         -         33         -         -         52         5         5	48	1		27		
Older Wire         Signal Name         29         P         TXD         50           G         -         30         L         RXD         50         1           B         -         31         -         -         51         50         51           32         R/B         BACKUP         -         -         52         1         52	07	REQ1		28	]_	
30     L     RXD       8     -     -       8     -     -       32     R/B     BACKUP       33     -     -       33     -     -	2 9	TXD		29		Signal
B     -     -       32     R/B     BACKUP       33     -     -       33     -     -	8 2	RXD		30		۱ ا
32 R/B BACKUP 32 33	5	1	1	31	T	
1	20	BACKUP		32	<u> </u>	_
		1	1	33		
1		1	1	34		
35		1	1	35		
36 G/B ACC		ACC		36		

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	AUDIO UNIT (WITH PREMIUM AUDIO SYSTEM KING CAB)			8 10 7 9		Signal Name	FRSP LH (-)	FRSP LH (+)	FRSP RH (-)	FRSP RH (+)	I	BAT (BACK UP)	ILL CONT	LIGHT SW	I	ACC					
M64		or WHITE		2 4	-	Color of Wire	L	BR	н	ГG	1	7	GR	В	1	G/B					
Connector No.	Connector Name	Connector Color	é	回 H.S.		Terminal No.	1	2	3	4	5	9	2	8	6	10					
		_																			
	JNIT (WITH IM AUDIO SYSTEM)		[	71 73 75 72 74 76	Signal Name	EL SIG INPUT (-)	EL SIG INPUT (+)	EL SIG ON TRIG	TEL SIG GND	I	I	1	I	REMOTE A SWC	REMOTE B SWC	EMOTE GND SWC	I	SPEED SIGNAL	AUX R+	AUX L+	AUX GND

				-	-	-																r	
10	AUDIO UNIT (WITH PREMIUM AUDIO SYSTEM)	WHITE	67 69 71 73 75 68 70 72 74 76	Signal Name	TEL SIG INPUT (-)	TEL SIG INPUT (+)	TEL SIG ON TRIG	TEL SIG GND	I	I	1	I	REMOTE A SWC	REMOTE B SWC	REMOTE GND SWC	-	SPEED SIGNAL	AUX R+	AUX L+	AUX GND		IE TO WIRE	ΞL
M45			61 63 65 6 62 64 66 6	Color of Wire	в	≥	œ	SHIELD	T	ı	SHIELD	I	>	ГG	0	I	SB	M	m	æ	M75	ne WIRE	or WHITE
Connector No.	Connector Name	Connector Color	H.S.	Terminal No.	61	62	63	64	65	66	67 8	68	69	70	71	72	73	74	75	76	Connector No.	Connector Name	Connector Color

RRSP RH (+)

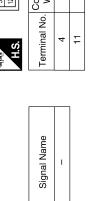
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4	AUDIO UNIT (KING CAB)	ITE	16	11 13 14 15	Signal Name	I	I	RRSP LH (-)	
M44		lor WHITE	12	11 13	Color of Wire	I	ı	в	0
Connector No.	Connector Name	Connector Color	悟	H.S.	Terminal No.	<del>.</del>	12	13	,

ALS. Color of	Color of	Simal Name
11	Wire -	
12	I	1
13	в	RRSP LH (-)
14	σ	RRSP LH (+)
15	0	RRSP RH (-)

Connector No.	M68
Connector Name WIRE TO WIRE	WIRE TO WIRE
Connector Color VIOLET	VIOLET
际间 H.S.	Ē



Color of Wire

Terminal No.

I

21	Signal Name	R+	COMMON	L+	
4	Color of Wire	Μ	щ	В	
研 H.S.	Terminal No. Color of Wire	Ļ	2	4	

9 8 7 6	Signal Name	I	I	
5 4 12 11 10	Color of Wire	œ	ГG	
国 H.S.	Terminal No. Wire	4	11	



Connector No. MB5 Connector Name AUX IN JACK Connector Color WHITE

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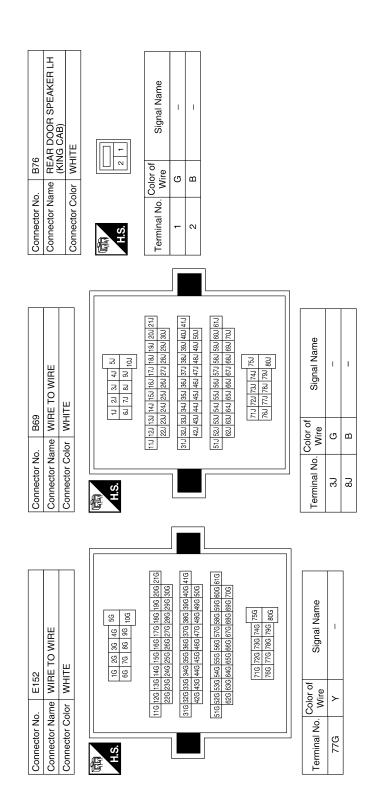
	MIUZ CONBINATION SWITCH     MIODE CONBINATION SWITCH     MIODE CONBINATION SWITCH     MIODE CONBINATION SWITCH       CONBINATION SWITCH     CONBINATION SWITCH     CONBINATION SWITCH     CONBINATION SWITCH       CONBINATION SWITCH     CONBINATION SWITCH     CONBINATION SWITCH     CONBINATION SWITCH       Constant     CONBINATION SWITCH     CONBINATION SWITCH     CONBINATION SWITCH       Constant     CONBINATION SWITCH     CONBINATION SWITCH     CONBINATION SWITCH       Constant     Constant     Constant     Constant       Constant     Constant     Constant     Constant       Constant     Constant     Constant     Constant       MIODE     MIODE     Constant     Constant       MIODE     MIODE     MIODE     Constant       MIODE     MIODE     Constant     Constant       MIODE     MIODE     MIODE     Constant       MIODE     MIODE     MIODE     Constant       MIODE     MIODE </th <th>DIAGNOSIS &gt;</th> <th colspan="3">[PREMIUM AUDIO (KING CAB)]</th>	DIAGNOSIS >	[PREMIUM AUDIO (KING CAB)]		
Mtcl       Connector Num       Mtcl         COMBINATION SWITCH       Connector Num       FRONT TWEETER LH         Connector Num       FRONT TWEETER LH       Connector Num         Canton       Connector Num       FRONT TWEETER LH         Canton       Connector Num       Connector Num         Canton       Connector Num       Connector Num         Canton       Canton       Connector Num         Canton       Canton       Canton         Canton       Canton	MICL       Ommeter Nu       MICL       Ommeter Nu       MICL       Ommeter Nu       Ommet	CAB) CAB) Signal Name	VN Signal Name		
MIO2 COMBINATION SWITCH     Connector No.     M10       COMBINATION SWITCH     Connector Name (KING CAT)     Connector Name (KING CAT)     M10       Image: Signal Name     Image: Signal Name     Image: Signal Name     Image: Signal Name       Image: Non-     Image: Signal Name     Image: Signal Name     Image: Signal Name       Image: Non-     Image: Signal Name     Image: Signal Name     Image: Signal Name       Image: Non-     Image: Signal Name     Image: Signal Name     Image: Signal Name       Image: Non-     Image: Signal Name     Image: Signal Name     Image: Signal Name       Image: Non-     Image: Signal Name     Image: Signal Name     Image: Signal Name       Image: Non-     Image: Signal Name     Image: Signal Name     Image: Signal Name       Image: Non-     Image: Signal Name     Image: Signal Name     Image: Signal Name       Image: Non-     Image: Signal Name     Image: Signal Name     Image: Signal Name	MIO2     Connector No.     M10       COMBINATION SWITCH     Connector Name FRONT VICATION SWITCH     Connector Name FRONT VICATION SWITCH       Image: Signal Name     Image: Signal Name     Image: Signal Name       Image: Signal Name     Image: Signal Name     Image: Signal Name       Image: Not of Signal Name     Image: Signal Name     Image: Signal Name       Image: Not of Signal Name     Image: Signal Name     Image: Signal Name       Image: Not of Signal Name     Image: Signal Name     Image: Signal Name       Image: Not of Signal Name     Image: Signal Name     Image: Signal Name       Image: Not of Signal Name     Image: Signal Name     Image: Signal Name       Image: Not of Signal Name     Image: Signal Name     Image: Signal Name       Image: Not of Signal Name     Image: Signal Name     Image: Signal Name       Image: Not of Signal Name     Image: Signal Name     Image: Signal Name       Image: Not of Signal Name     Image: Signal Name     Image: Signal Name       Image: Not of Signal Name     Image: Signal Name     Image: Signal Name				
		0. M110 ame FRONT TV (KING CAI KING CAI Color of G G Calor of L L L	M250 WINE TO VIOLET		
	Connector No. Connector Name Connector Name Connector No. Connector No.	Connector No.     M102       Connector Name     COMBINATION SWITCH       Connector Color     GRAY       Connector Color     GRAY       Mine     Signal Name       17     BR       20     W			

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# [PREMIUM AUDIO (KING CAB)]

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Signal Name

Terminal No. Wire

Signal Name	MIC SHIELD	MIC IN+	MIC IN-	AUDIO OUT+	AUDIO OUT-	MUTE CONTROL	LADDER IN 1	LADDER IN 2	LADDER IN GND	LED IND 1	Ι	LADDER OUT 1	LADDER OUT 2	LADDER OUT GND	CONT 1
Color of Wire	SHIELD	U	_	×	в	œ	BR	_	σ	GR	I	>	ГG	0	В
Terminal No.	9	7	8	6	10	11	12	13	14	15	16	17	18	19	20

SPEED SIGNAL MIC POWER

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	BLUETOOTH CONTROL UNIT				22 24 26 28 30 32 21 23 25 27 29 31	Signal Name	BATT	ACC	IGN	GND	AUDIO OUT SHIELD	
B141		WHITE		$\left[\right]$	16 18 20 2 15 17 19 2	of					-	
					10 12 14 1 9 11 13 1	Color of Wire	B/B	G∕	W/G	m	SHIELD	
Connector No.	Connector Name	Connector Color	雨 H.S.		2 4 6 8 10 1 3 5 7 9	Terminal No.		2	e	4	5	

Connector No.	B142
Connector Name	Connector Name BLUETOOTH CONTROL UNIT
Connector Color BLACK	BLACK
विति	

34 33

H.S.

Signal Name	<b>BT ANTENNA</b>	<b>BT ANTENNA SHIELD</b>
Color of Wire	В	SHIELD
Terminal No.	33	34

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**AUDIO UNIT** 



**AUDIO UNIT** 

		-						
-	13		Signal Name					
2	14		Na					
e	15		a			1		
5 4 3 2	16		ign					
	17		ഗ					
9	18							
2	19							
12 11 10 9 8	24 23 22 21 20 19 18 17 16 15 14 13		of ,				D.	
თ	21		Color c Wire	≻	GВ	R/Y	Ш	G
10	22		Color of Wire			ш	SHIELD	
÷	23		- i				0,	
12	24		ž					
ů T	0 I	_	Terminal No.	-	e	6	13	14

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

]	Signal Name	I	I	
	Color of Wire	GR	0	
	Terminal No.	ł	2	

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DIAGNOSIS >		[PREMIUM AUDIO (KING CAE	-/1
	Signal Name	Connector No.     D112       Connector Name     FRONT DOOR SPEAKER RH       Connector Name     FRONT DOOR SPEAKER RH       Connector Color     WHITE       Terminal No.     Color of       2     L/B	
D2 ne WIRE TO WIRE Dr BROWN	Color of Wire L/R L/N	Color of Vire Color of Vire Color of LB	
ctor Nan	Terminal No. Walter 2 L 3 L	Connector No. D112 Connector Name FRONT Connector Color WHITE 1 W/B 2 UB	
Conne Conne Conne H.S.	Term	Conne Conne Conne Termir 1	
	VER - T +	e e	
R8 MICROPHONE WHITE	Signal Name MIC OUT + MIC OUT - MIC POWER	1 E TO WIRE Signal Name	
	Miree Golor of G G G G	D101       me     WIRE TO       or     WHITE       Color of     3       Wile     Wile       WIB	
Connector No. Connector Name Connector Color	Terminal No. 1 4	Connector No. D101 Connector Name WIRE TO WIRE Connector Color WHITE Terminal No. Vire Signa 11 W/B Signa	
NOHEO	Signal Name LED 1 (AMBER) LED POWER	Connector No.     D12       Connector Name     FRONT DOOR SPEAKER       Connector Name     FRONT DOOR SPEAKER       Connector Color     WHITE       Terminal No.     Color of Signal Name       2     L/M	
BLUETOC INDICATO WHITE	Color of Write GR L R/Y	Color of WHITE Color of WHITE	
Connector No. R6 Connector Name BLUETOOTH ON INDICATOR Connector Color WHITE	Terminal No.         Col           1         1         0           2         1         0	Connector No. Connector Name Connector Name Connector Color 2 1 1 2 1 1	
Conne Conne H.S.	Term		

**AUDIO UNIT** 

# < ECU DIAGNOSIS >

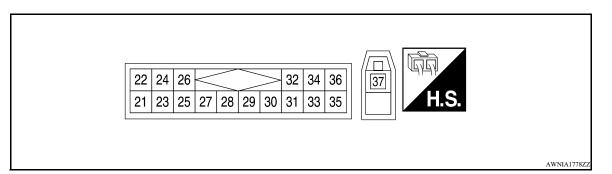
# [PREMIUM AUDIO (KING CAB)]

AV-75

# SATELLITE RADIO TUNER

# **Reference Value**

INFOID:000000004057073



# PHYSICAL VALUES

Ter	minal	Description				Reference value		
+	_	Signal name	Input/ Condition Output		Condition	(Approx.)		
22 (R)	21 (G)	Satellite radio sound signal LH	Output	Ignition switch ON	When satellite radio mode is selected	(V) 1 -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 -1 -1 -1 -1 -1 -1 -1 -1		
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 • • 10ms SKIA9299J		
29 (P)	Ground	Communication signal (SAT→CONT)	Output	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 • • • 1ms SKIA9300J		

# SATELLITE RADIO TUNER

### < ECU DIAGNOSIS >

# [PREMIUM 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	When satellite radio mode is selected	0 -10 -10 -10 -10 -10 -10 -10 -10 -10 -1	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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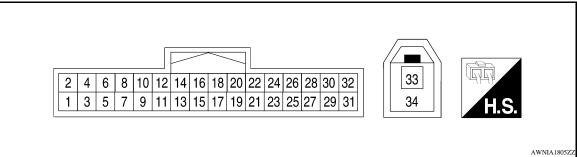
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# **BLUETOOTH CONTROL UNIT**

# **Reference Value**

INFOID:000000004057074



# PHYSICAL VALUES

	ninal 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	-	_	_	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	mput	ON	Pressing VOL up switch	2V
					Except for above	5V

# **BLUETOOTH CONTROL UNIT**

### < ECU DIAGNOSIS >

# [PREMIUM AUDIO (KING CAB)]

Terminal (wire color)		Description			Condition	Reference value
+	_	Signal name	Input/ output		Condition	(Approx.)
					Pressing MODE switch	0V
13	14	Steering switch sig-	_	Ignition	Pressing $ abla$ switch	0.75V
(L)	(G)	nal B	Input	switch ON	Pressing VOL down switch	2V
					Except for above	5 V
15 (GR)	Ground	LED power	Output	Ignition switch ON	-	Battery voltage
					Pressing 🌈 🏑 switch	OV
17	19	Steering switch sig-	Output	Ignition switch	Pressing $\Delta$ switch	0.75
(V)	(O)	nal A	ON	Pressing VOL up switch	2V	
					Except for above	5V
					Pressing ewitch	OV
18	19	Steering switch sig-		Ignition Output switch ON	Pressing $ abla$ switch	0.75V
(LG)	(O)	nal B	Output			Pressing VOL down switch
					Except for above	5V
20 (B)	Ground	Ground	-	-	-	0V
21 (B)	Ground	Ground	-	_	-	0V
22 (B)	Ground	Ground	-	_	-	0V
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 0 • • • • • • • • • • • • •
29 (Y)	Ground	Microphone power	Output	Ignition switch ON	-	5V
33 (B)	_	Bluetooth antenna	_	_	-	-
34	_	Shield	_	_	_	_

# < SYMPTOM DIAGNOSIS >

# SYMPTOM DIAGNOSIS

# AUDIO SYSTEM

# Symptom Table

INFOID:000000004057075

# 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>	• <u>AV-47</u> • <u>AV-49</u> • <u>AV-51</u>

### 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, 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	Poor ground of antenna feeder line	
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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Loosening bolts and nuts	Tool name	Description	(
		Loosening bolts and nuts	(
	Power tool		Ε
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    - K
    - L
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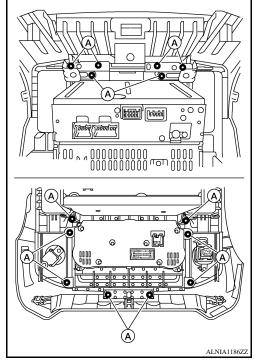
# < ON-VEHICLE REPAIR > ON-VEHICLE REPAIR AUDIO UNIT

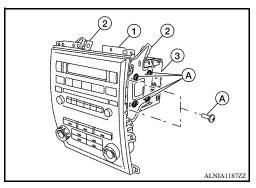
Removal and Installation

INFOID:000000004459446

# REMOVAL

- 1. Remove the cluster lid C. Refer to IP-11, "Removal and Installation".
- 2. Remove the center ventilator ducts. Refer to VTL-21. "Removal and Installation".
- 3. Remove the audio unit control screws (A), then remove the audio unit assembly, from cluster lid C.





4. Remove the audio unit (3) from the audio controls (1).

- 5. Remove the audio unit screws (A), using power tool, then remove the audio unit brackets (2).
- 6. Pull out the audio unit (3) from the audio controls (1).

INSTALLATION Installation is in the reverse order of removal.

# < ON-VEHICLE REPAIR > FRONT TWEETER

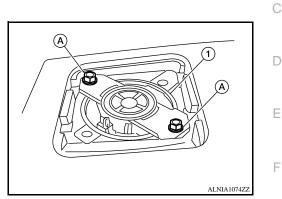
# Removal and Installation

# 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. G

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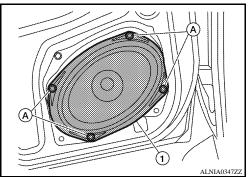
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# FRONT DOOR SPEAKER

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. [PREMIUM AUDIO (KING CAB)]

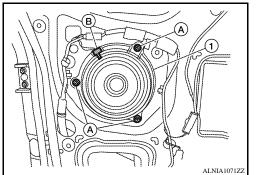
INFOID:000000004057081

# 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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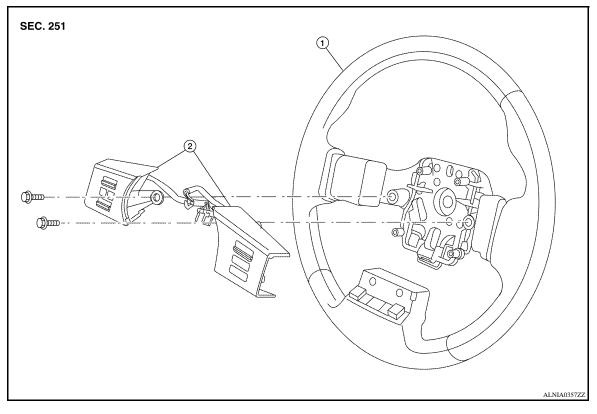
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# < ON-VEHICLE REPAIR > STEERING SWITCH

# **Removal and Installation**

INFOID:000000004057083



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.

# < ON-VEHICLE REPAIR >

# TEL ANTENNA

# Removal and Installation

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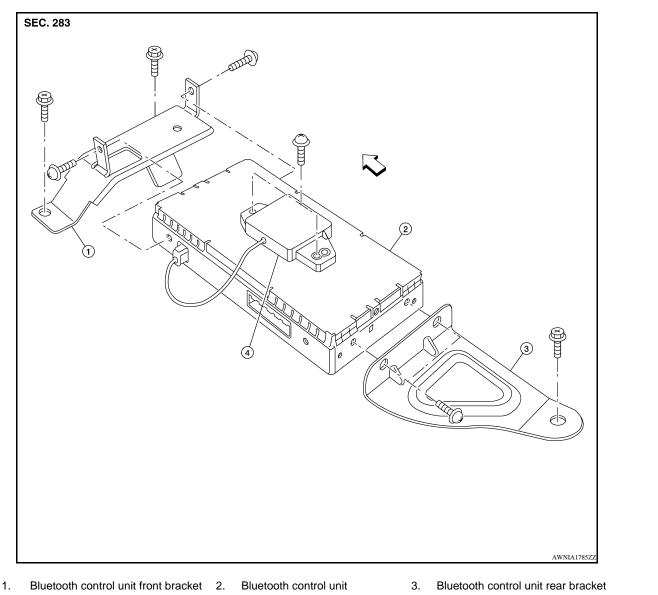
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4. Bluetooth antenna <>> Vehicle front

### REMOVAL

- 1. Remove the RH front seat. Refer to SE-28, "Removal and Installation".
- 2. Disconnect the Bluetooth antenna harness connector.
- 3. Remove the Bluetooth antenna screws, then remove the Bluetooth antenna.

# INSTALLATION

Installation is in the reverse order of removal.

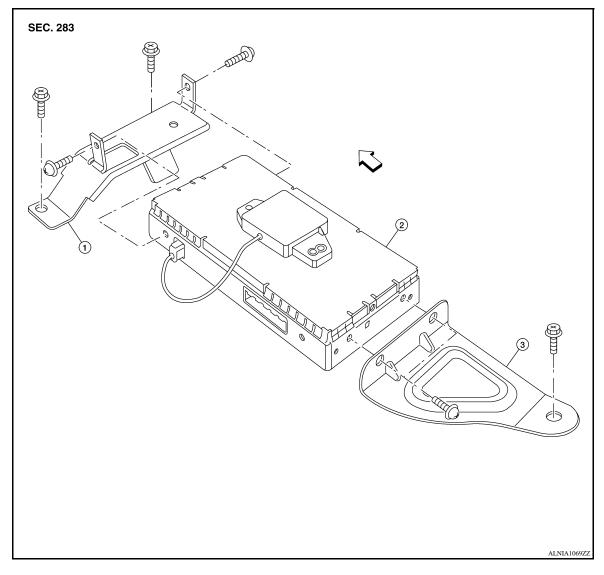
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# **BLUETOOTH CONTROL UNIT**

# Removal and Installation

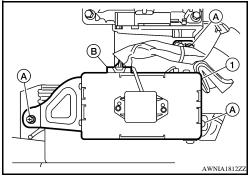
INFOID:000000004057084



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 SE-28, "Removal and Installation".
- 2. Disconnect the Bluetooth control unit harness connector (B).
- 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.



# **BLUETOOTH CONTROL UNIT**

# < ON-VEHICLE REPAIR >

Installation is in the reverse order of removal.

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# < ON-VEHICLE REPAIR >

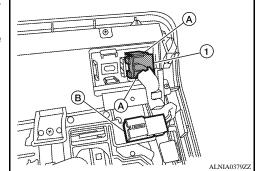
# MICROPHONE

# Removal and Installation

INFOID:000000004057085

# 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).
- 3. Detach the Bluetooth microphone connector (B) and remove the Bluetooth microphone (1).



# INSTALLATION

Installation is in the reverse order of removal.

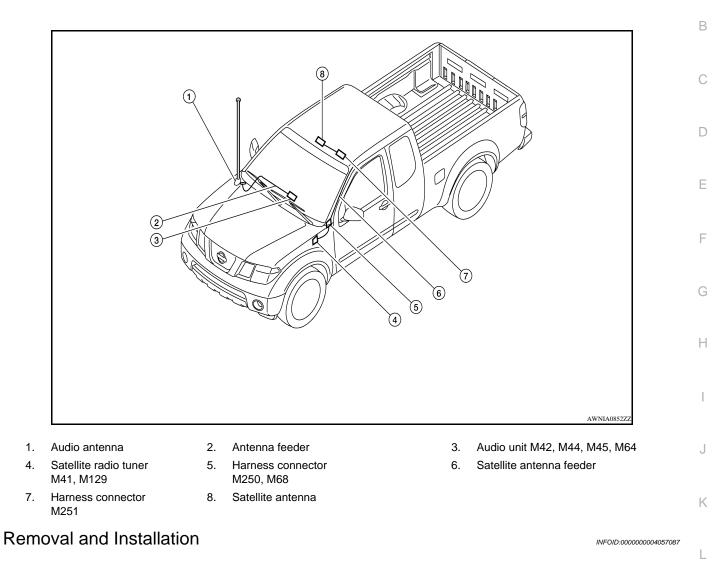
# [PREMIUM AUDIO (KING CAB)]

# < ON-VEHICLE REPAIR > AUDIO ANTENNA

# Location of Antenna

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### REMOVAL

- 1. Remove lower glove box. Refer to IP-11, "Removal and Installation".
- 2. Disconnect audio antenna cable from antenna feeder.

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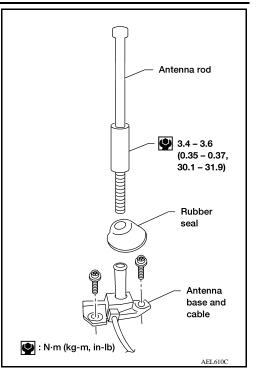
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# **AUDIO ANTENNA**

# < ON-VEHICLE REPAIR >

[PREMIUM AUDIO (KING 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 <u>Installation of Front Fender Protector"</u>.
- 7. Remove antenna base bolts.
- 8. Remove antenna base and cable.



### INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

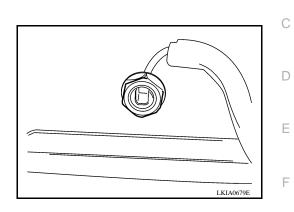
Always properly tighten the antenna rod during installation or the antenna rod may bend or break during vehicle operation.

# SATELLITE RADIO ANTENNA

Removal and Installation

# REMOVAL

- 1. Remove the roof console. Refer to INT-23, "Removal and Installation".
- 2. Disconnect the satellite radio antenna connector.
- 3. Remove the satellite radio antenna nut.
- 4. Remove the satellite radio antenna.



INSTALLATION Installation is in the reverse order of removal. А

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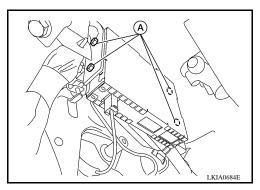
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# SATELLITE RADIO TUNER

Removal and Installation

# REMOVAL

- 1. Disconnect the battery negative terminal.
- 2. Remove the lower instrument panel. Refer to IP-11, "Removal and Installation".
- 3. Disconnect the satellite radio tuner connectors.
- 4. Remove satellite radio tuner screws (A), and remove satellite radio tuner.



INSTALLATION Installation is in the reverse order of removal. INFOID:000000004057089

# BASIC INSPECTION DIAGNOSIS AND REPAIR WORKFLOW

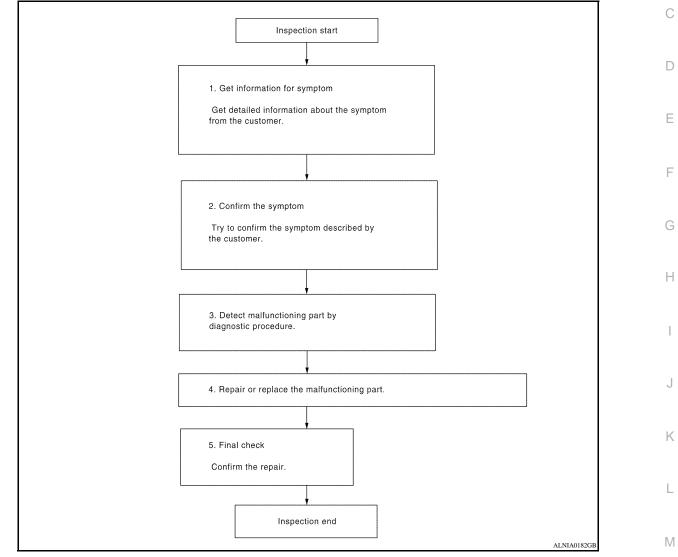
# Work Flow

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[PREMIUM AUDIO (CREW 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.

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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

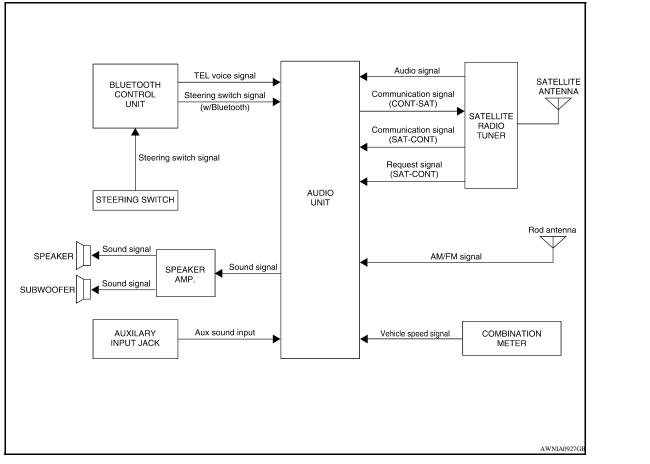
Refer to confirmed symptom in step 2, and make sure that the symptom is not detected. Was the repair confirmed?

YES >> Inspection End.

NO >> GO TO 2

# < FUNCTION DIAGNOSIS > 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.

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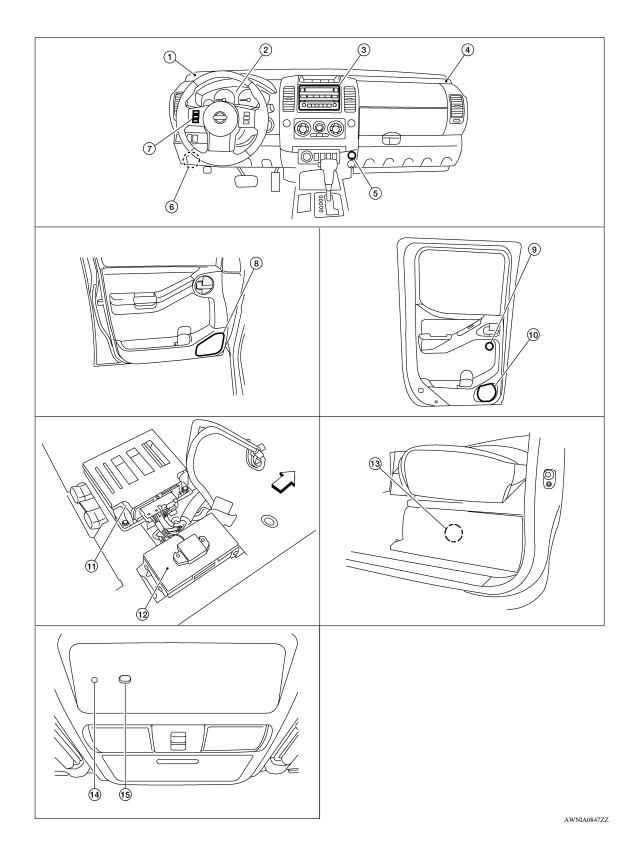
# < FUNCTION DIAGNOSIS >

# SPEED SENSITIVE VOLUME SYSTEM

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

# **Component Parts Location**

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# **AUDIO SYSTEM**

# < FUNCTION DIAGNOSIS >

# [PREMIUM AUDIO (CREW CAB)]

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1.	Front tweeter LH M109	2.	Combination meter M24	3.	Audio unit M42, M45, M65, M66	A	1
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 tweeter LH D208 RH D308	E	3
10.	Rear speaker LH D207 RH D307	11.	Audio amp B158, B159 (view under passenger front seat)	12.	Bluetooth control unit B141, B142	C	)
13.	Subwoofer B72 (under driver's seat)	14.	Microphone R8	15.	Bluetooth ON indicator R6		

# **Component Description**

INFOID:000000004057094

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.			

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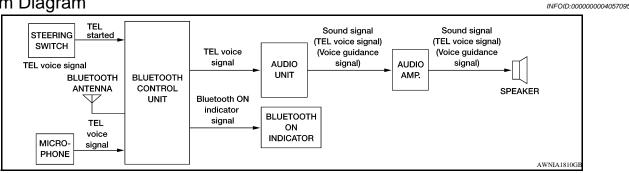
# HANDS-FREE PHONE SYSTEM

### < FUNCTION DIAGNOSIS >

# [PREMIUM AUDIO (CREW CAB)]

# HANDS-FREE PHONE SYSTEM

# System Diagram



# System Description

INFOID:000000004057096

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 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.

# AV-102

# **HANDS-FREE PHONE SYSTEM**

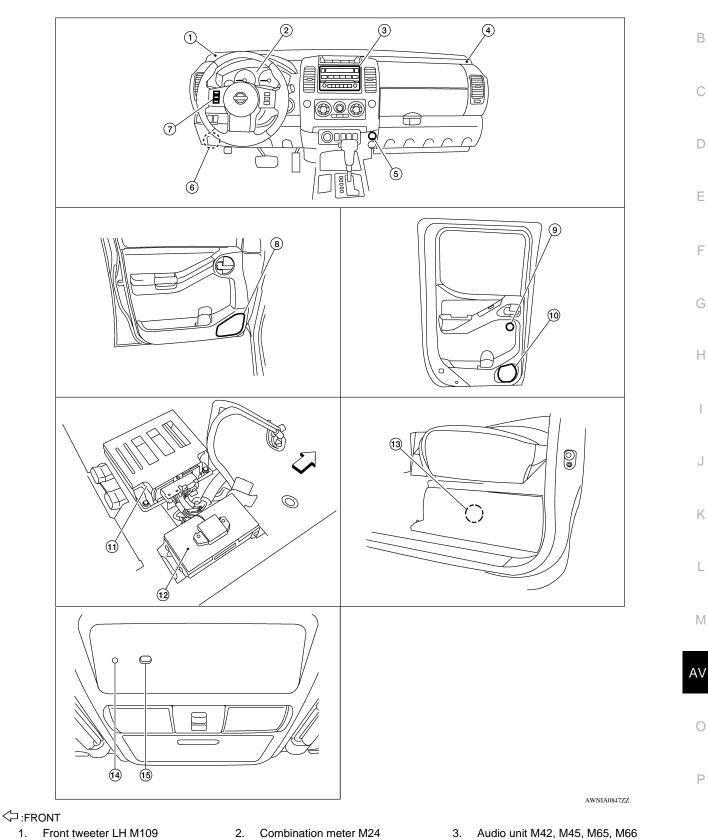
# < FUNCTION DIAGNOSIS >

# Component Parts Location

[PREMIUM AUDIO (CREW CAB)]

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4. Aux jack M85

**AV-103** 

- 5. Front tweeter RH M111 7. Steering wheel audio control switch- 8. Front door speaker LH D12 RH D112
- 6. Satellite radio tuner M41, M129
- 9. Rear tweeter LH D208 RH D308

# HANDS-FREE PHONE SYSTEM

### < FUNCTION DIAGNOSIS >

[PREMIUM AUDIO (CREW CAB)]

- 10. Rear speaker LH D207 RH D307
- 11. Audio amp B158, B159 (view under passenger front seat)

12. Bluetooth control unit B141, B142

15. Bluetooth ON indicator R6

**Component Description** 

13. Subwoofer B72 (under driver's seat) 14. Microphone R8

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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 telephone value and value quidence signals from the oudie and		
Front tweeter	Receives telephone voice and voice guidance signals from the audio amp.		
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		

# **DIAGNOSIS SYSTEM (AUDIO UNIT)**

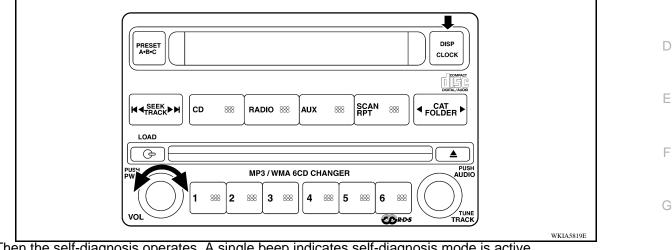
# **DIAGNOSIS SYSTEM (AUDIO UNIT)**

# **Component Function Check**

< FUNCTION DIAGNOSIS >

# STARTING THE SELF-DIAGNOSIS MODE

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



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

- 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 J 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.

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[PREMIUM AUDIO (CREW CAB)]

### DIAGNOSIS SYSTEM (BLUETOOTH CONTROL UNIT) AGNOSIS > [PREMIUM AUDIO (CREW CAB)]

### < FUNCTION DIAGNOSIS >

# DIAGNOSIS SYSTEM (BLUETOOTH CONTROL UNIT)

# **Diagnosis Description**

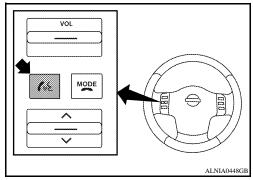
The Bluetooth control unit has two diagnostic checks. The first diagnostic check is performed automatically every ignition cycle during control unit initialization. The second diagnostic check is performed by the technician using the steering wheel audio control switches prior to trouble diagnosis.

### BLUETOOTH CONTROL UNIT INITIALIZATION CHECKS

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

### **OPERATION PROCEDURE**

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

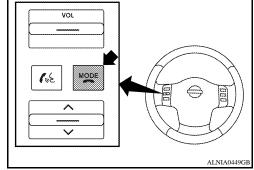


- While the prompt is playing, press and hold the steering wheel audio control switch <sup>MOE</sup> button until you hear the "Diagnostics mode" prompt. The Bluetooth system will sound a 5 second beep.
- 5. While the beep is sounding, press and hold the steering wheel audio control switch button again until you hear prompts.
- The Bluetooth system has now entered into the diagnostic mode. Results of the diagnostic checks will be verbalized to the technician and the Bluetooth ON indicator will flash. Refer to <u>AV-106. "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-106</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-174, "Removal and Installation".		
"Bluetooth antenna open"	1. Inspect harness connection.		
"Bluetooth antenna shorted"	2. Replace Bluetooth antenna. Refer to <u>AV-174, "Removal and Installation"</u> .		
"Phone/Send for Hands Free System is stuck"	Check steering wheel audio control switches. Refer to AV-53, "Diagnosis Proce-		
"Phone/End for the Hands Free System is stuck"	dure".		
"Microphone test" (failed interactive test)	<ol> <li>Inspect harness between Bluetooth control unit and microphone.</li> <li>Replace microphone. Refer to <u>AV-176, "Removal and Installation"</u>.</li> </ol>		



AV-106

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

# AUDIO UNIT : Diagnosis Procedure

# **1.**CHECK FUSES

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

Unit	Terminals	Signal name	Fuse No.	D
Audio unit	6	Battery power	29	
	10	Ignition switch ACC or ON	4	E

### 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 M65.
- Check voltage between the audio unit connector M65 and ground.

(+)		(-)	OFF	ACC	ON
Connector	Terminal	()	OTT	700	
M65	6	Ground	0V	Battery voltage	Battery voltage
WOS	10	Ground	Battery voltage	Battery voltage	Battery voltage

### Are the voltage results as specified?

YES >> GO TO 3 NO >> • Check of

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

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	P
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 >

[PREMIUM AUDIO (CREW CAB)]

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- 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	()	011	100	
M41	32	Ground	Battery voltage	Battery voltage	Battery voltage
10141	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.

# AUDIO AMP

# AUDIO AMP : Diagnosis Procedure

# **1.**CHECK FUSE

Check that the audio amp. fuses are not blown.

Unit	Terminal	Signal name	Fuse No.
Audio amp.	1	Battery power	17
Audio amp.	17	Dattery power	17

### Are the fuses OK?

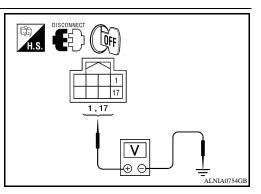
YES >> GO TO 2

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

# 2. CHECK POWER SUPPLY CIRCUIT

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

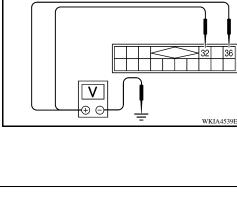
(+)		(-)	Voltage (approx.)
Connector	Terminal	(-)	voltage (approx.)
B158	1	Ground	Battery voltage
B130	17	Ground	Dattery voltage



### Is battery voltage present?

YES >> GO TO 3

NO >> Check harness between audio amp. and fuse.



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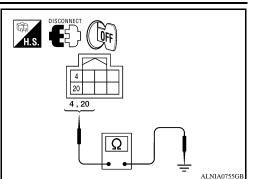
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## POWER SUPPLY AND GROUND CIRCUIT

### < 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	(-)	Continuity	
B158	4	Ground	Yes	
	20	Cround	165	



Does continuity exist?

YES >> Inspection End.

NO >> Repair harness or connector.

## 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.	G
	1	Battery power	29	
Bluetooth control unit	2	Ignition switch ACC or ON	4	Ц
	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.

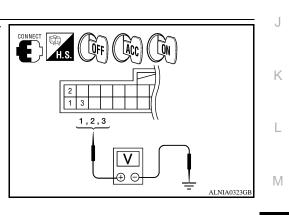
(+)		(-)	OFF	ON	ACC
Connector	Terminal	(-)	OIT	ON	700
	1		Battery voltage	Battery voltage	Battery voltage
B141	2	Ground	0V	Battery voltage	Battery voltage
	3		0V	Battery voltage	0V

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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[PREMIUM AUDIO (CREW CAB)]

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

(	+)	(-)	Value (Approx.)
Connector	Terminal		Value (Applox.)
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.

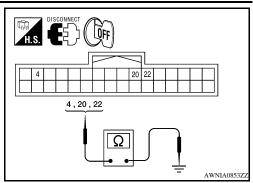
A		В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
R8	4	B141	29	Yes

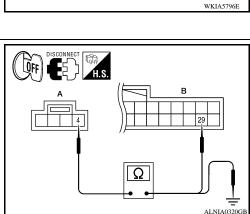
 Check continuity between microphone harness connector R8 (A) terminal 4 and ground.

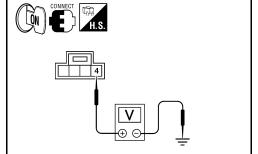
A			Continuity	
Connector	Terminal		Continuity	
R8	4	Ground	No	

### Are the continuity test results as specified?

- YES >> Replace the Bluetooth control unit. Refer to <u>AV-174, "Removal and Installation"</u>.
- NO >> Repair harness or connector.
- **3.**CHECK GROUND CIRCUIT







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### 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.

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### < COMPONENT DIAGNOSIS >

## FRONT DOOR SPEAKER

### Description

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

## **Diagnosis Procedure**

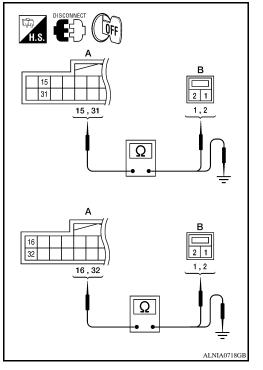
## **1.**SPEAKER HARNESS CHECK

- 1. Disconnect audio amp. connector B159 and suspect speaker connector.
- 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	DIZ	2	Yes
D109	16	D140	1	165
	32	D112	2	

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

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



Are continuity test results as specified?

YES >> GO TO 2

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

2.FRONT DOOR SPEAKER SIGNAL CHECK

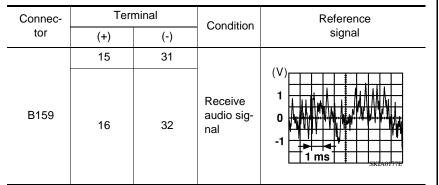
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## FRONT DOOR SPEAKER

### < COMPONENT DIAGNOSIS >

- 1. Connect audio amp. connector 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-168</u>, "Removal <u>and Installation"</u>.

NO >> GO TO 3

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

- Disconnect audio unit connector M65 and audio amp. connector B159.
- Check continuity between audio unit harness connector M65 (A) and audio amp. harness connector B159 (B).

	4	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	1		6	
M65	2	B159	22	Yes
COM	3		5	res
	4	*	21	

 Check continuity between audio unit harness connector M65 (A) and ground.

	A			Continuity
-	Connector	Terminal		Continuity
-		1		No
	M65	2	Ground	
		3	Ground	
		4		

#### Are continuity test results as specified?

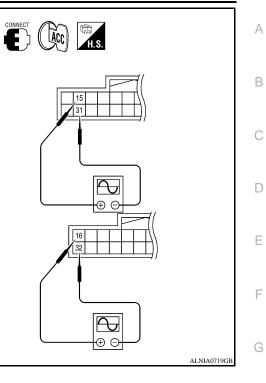
YES >> GO TO 4

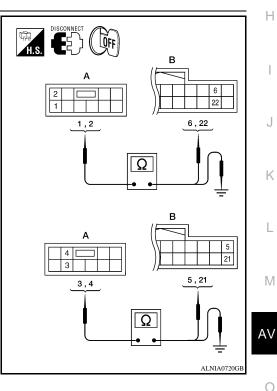
NO

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

**4.**PRE-AMP SIGNAL CHECK







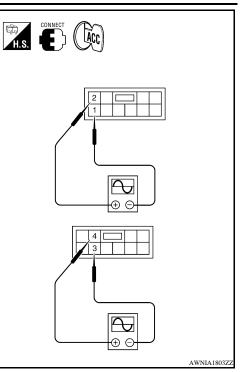


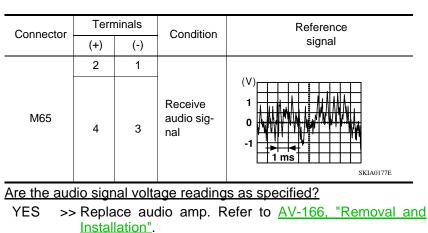
## FRONT DOOR SPEAKER

### < 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 M65 terminals with CONSULT-III or oscilloscope.

### [PREMIUM AUDIO (CREW CAB)]





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

## FRONT TWEETER

## < COMPONENT DIAGNOSIS >

## FRONT TWEETER

## Description

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

## **Diagnosis Procedure**

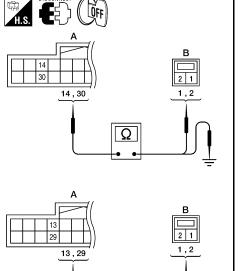
## **1.**HARNESS CHECK

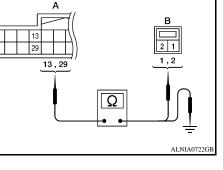
- 1. Disconnect audio amp. connector B159 and suspect tweeter connector.
- Check continuity between audio amp. harness connector B159 (A) and suspect tweeter harness connector (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	14	M109	1	
B159	30	WIT09	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		
B159	30		
B139	13	Ground	No
	29		





Are continuity test results as specified?

YES >> GO TO 2

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

**2.**FRONT TWEETER SIGNAL CHECK



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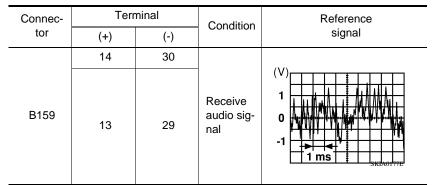
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## FRONT TWEETER

### < 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 <u>AV-167</u>, "<u>Removal</u> and Installation".

NO >> GO TO 3

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

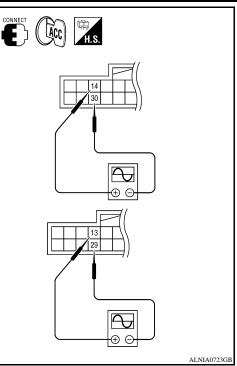
- Disconnect audio unit connector M65 and audio amp. connector B159.
- 2. Check continuity between audio unit harness connector M65 (A) and audio amp. harness connector B159 (B).

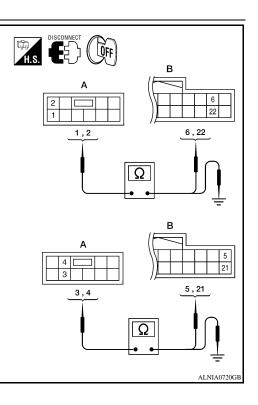
	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	1		6	
M65	2	B159	22	Yes
	3		5	Tes
	4		21	

3. Check continuity between audio unit harness connector M65 (A) and ground.

	A			Continuity	
_	Connector	Terminal		Continuity	
_		1		No	
	M65	2	Ground		
		3	Ground		
		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 TWEETER

AV-117

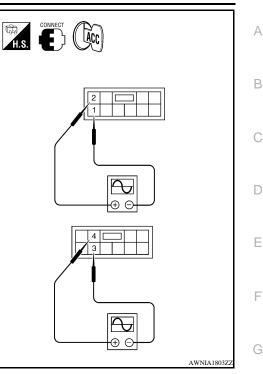
### < COMPONENT DIAGNOSIS >

- 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 M65 terminals with CONSULT-III or oscilloscope.

#### Terminals Reference Connector Condition signal (+)(-) 2 1 (V)Receive 1 M65 audio sig-0 4 3 nal SKIA0177E Are the audio signal voltage readings as specified?

- YES >> Replace audio amp. Refer to <u>AV-166, "Removal and</u> Installation".
- NO >> Replace audio unit. Refer to <u>AV-165. "Removal and</u> <u>Installation"</u>.

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### < COMPONENT DIAGNOSIS >

## REAR DOOR SPEAKER

### Description

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

## Diagnosis Procedure

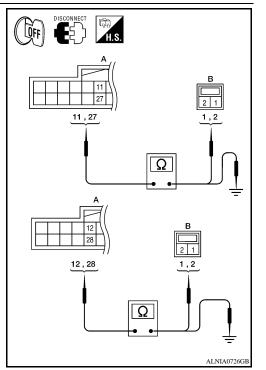
## **1.**SPEAKER HARNESS CHECK

- 1. Disconnect audio amp. connectors 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	0201	2	Yes
	12	D307	1	165
	28	0307	2	

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

Connector	Terminal	-	Continuity	
	11			
B159	27	Ground	No	
B139	12			
	28			



Are the continuity test results as specified?

YES >> GO TO 2

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

• Repair harness or connector.

2.SPEAKER SIGNAL CHECK

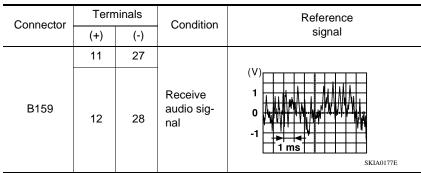
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## **REAR DOOR SPEAKER**

### < COMPONENT DIAGNOSIS >

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

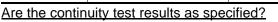
## **3.**PRE-AMP HARNESS CHECK

- 1. Disconnect audio unit connector M66 and audio amp. connector B159.
- Check continuity between audio unit harness connector M66 (A) and audio amp. harness connector B159 (B).

	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	13		8	
M66	14	B159	24	Yes
	15		7	Tes
	16		23	

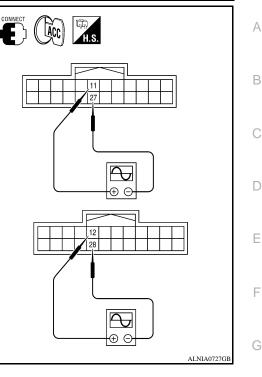
 Check continuity between audio unit harness connector M66 (A) and ground.

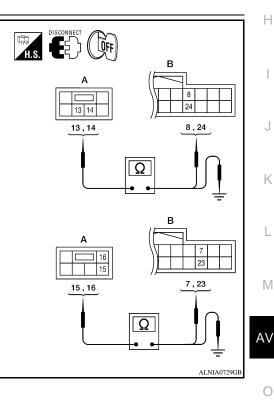
		А		Continuity
-	Connector	Terminal		Continuity
-		13		No
	M66	14	Ground	
		15	Ground	
		16		



- YES >> GO TO 4 NO >> • Check of
  - >> Check connector housings for disconnected or loose terminals.
    - Repair harness or connector.
- **4.**PRE-AMP SIGNAL CHECK





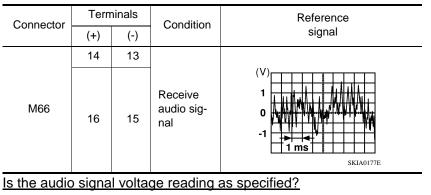


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## **REAR DOOR SPEAKER**

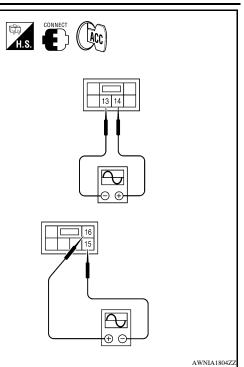
### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector M66 and audio amp. connector B159.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M66 terminals with CONSULT-III or oscilloscope.



- YES >> Replace audio amp. Refer to <u>AV-166. "Removal and</u> <u>Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-165</u>, "<u>Removal and</u> <u>Installation</u>".

## [PREMIUM AUDIO (CREW CAB)]



## **REAR DOOR TWEETER**

### < COMPONENT DIAGNOSIS >

## REAR DOOR TWEETER

### Description

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

### **Diagnosis Procedure**

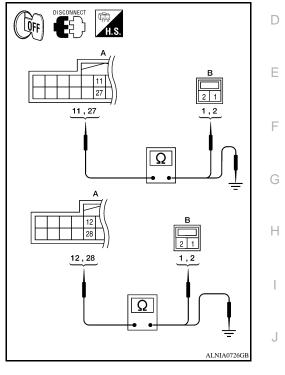
## **1.**SPEAKER HARNESS CHECK

- 1. Disconnect audio amp. connectors 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	D208	2	Yes
	12	D308	1	res
	28	D306	2	

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

Connector	Terminal	-	Continuity	
	11			
B159	27	Ground	No	
B139	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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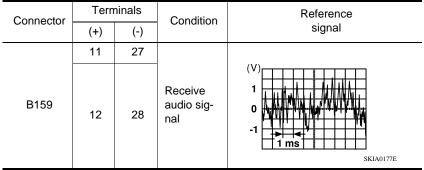
А

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

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

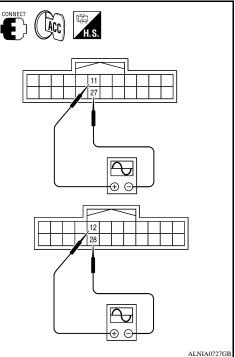
- Disconnect audio unit connector M66 and audio amp. connector B159.
- 2. Check continuity between audio unit harness connector M66 (A) and audio amp. harness connector B159 (B).

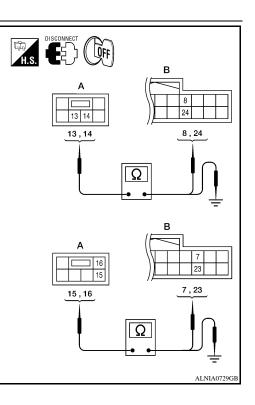
	A	В		Continuity
Connector	Terminal	Connector	Terminal	Continuity
	13		8	
M66	14	B159	24	Yes
	15		7	Tes
	16		23	

3. Check continuity between audio unit harness connector M66 (A) and ground.

	A			Continuity	
-	Connector	Terminal		Continuity	
-		13		No	
	M66	14	Ground		
		15	Ground		
		16		1	

## [PREMIUM AUDIO (CREW CAB)]





Are the continuity test results as specified?

YES >> GO TO 4

NO

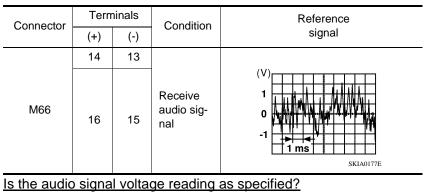
- >> Check connector housings for disconnected or loose terminals.
  - Repair harness or connector.

**4.**PRE-AMP SIGNAL CHECK

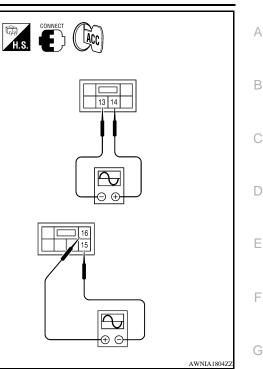
## **REAR DOOR TWEETER**

### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector M66 and audio amp. connector B159.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M66 terminals with CONSULT-III or oscilloscope.



- YES >> Replace audio amp. Refer to <u>AV-166</u>, "<u>Removal and</u> <u>Installation</u>".
- NO >> Replace audio unit. Refer to <u>AV-165</u>, "<u>Removal and</u> <u>Installation</u>".





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### [PREMIUM AUDIO (CREW CAB)]

## < COMPONENT DIAGNOSIS >

## SUBWOOFER

### Description

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

## Diagnosis Procedure

## **1.**SPEAKER HARNESS CHECK

- Disconnect audio amp. connector B158 and subwoofer connector B72.
- 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	18	B72	2	Yes
	3		3	Tes
	19		4	

Continuity 2,3,18,19 1,2,3,4 Yes

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

А		Continuity
Terminal		Continuity
2		
18	Cround	No
3	Ground	No
19		
	Terminal 2 18 3	Terminal

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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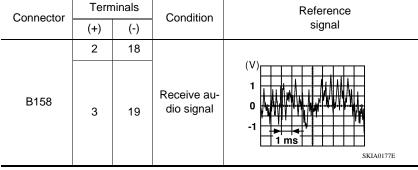
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## SUBWOOFER

### < 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-172, "Removal and</u> <u>Installation"</u>.

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

- 1. Disconnect audio unit connector M66 and audio amp. connector B159.
- Check continuity between audio unit harness connector M66 (A) and audio amp. harness connector B159 (B).

	L	A	В		Continuity
	Connector	Terminal	Connector	Terminal	Continuity
		13		8	
	M66	14	B159	24	Yes
		15		7	Tes
		16	+	23	

 Check continuity between audio unit harness connector M66 (A) and ground.

		А		Continuity
-	Connector	nnector Terminal		Continuity
-		13		No
	M66	14	Ground	
		15	Ground	NO
		16		



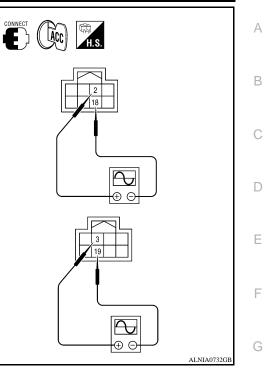
YES >> GO TO 4

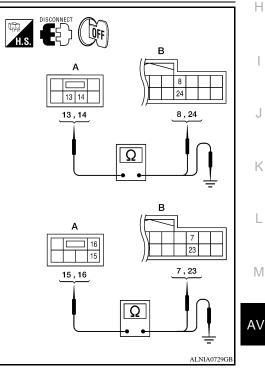
NO

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

**4.**PRE-AMP SIGNAL CHECK







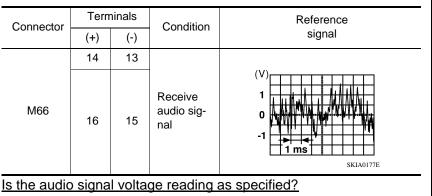
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### SUBWOOFER

### < COMPONENT DIAGNOSIS >

- 1. Connect audio unit connector M66 and audio amp. connector B159.
- 2. Turn ignition switch to ACC.
- 3. Push "POWER" switch.
- 4. Check the signal between audio unit harness connector M66 terminals with CONSULT-III or oscilloscope.



- YES >> Replace audio amp. Refer to <u>AV-166. "Removal and</u> <u>Installation"</u>.
- NO >> Replace audio unit. Refer to <u>AV-165, "Removal and</u> <u>Installation"</u>.

## 

## [PREMIUM AUDIO (CREW CAB)]

### < COMPONENT DIAGNOSIS >

## AMP ON SIGNAL CIRCUIT

## Description

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

### **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.

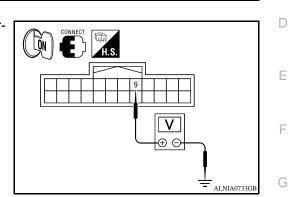
### 9 - Ground

Is battery voltage present?

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



: More than 6.5V



## 2. CHECK AMP ON SIGNAL (AUDIO UNIT)

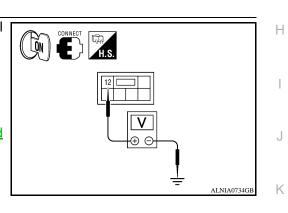
Check voltage between audio unit harness connector M66 terminal 12 and ground.

#### 12 - Ground

### : More than 6.5V

Is battery voltage present?

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



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### < COMPONENT DIAGNOSIS >

## STEERING SWITCH

### Description

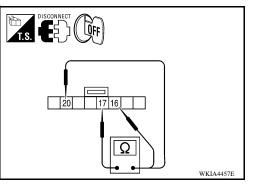
When one of the steering wheel audio control switches is pushed, the resistance in the steering wheel audio control switch circuit changes depending on which button is pushed.

## **Diagnosis Procedure**

1. CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

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

Terr	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 MODE 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?

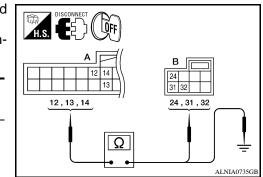
YES >> GO TO 2

NO >> Replace steering wheel audio control switch. Refer to <u>AV-88, "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		В		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		
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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## **STEERING SWITCH**

### < COMPONENT DIAGNOSIS >

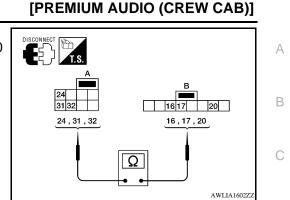
- 1. Disconnect spiral cable connector M102.
- Check continuity between spiral cable harness connector M30 (A) and M102 (B).

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

Does the spiral cable check OK?

YES >> Inspection End.

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



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## **COMMUNICATION SIGNAL CIRCUIT**

### < COMPONENT DIAGNOSIS >

## COMMUNICATION SIGNAL CIRCUIT SATELLITE RADIO TUNER

## SATELLITE RADIO TUNER : Description

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

## SATELLITE RADIO TUNER : Diagnosis Procedure

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

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

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

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

	Ą		Continuity	
Connector	Terminal		Continuity	
M41	28	Ground	No	

Are continuity results as specified?

YES >> GO TO 2

NO >> Repair harness or connector.

2. CHECK HARNESS - TXD

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

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

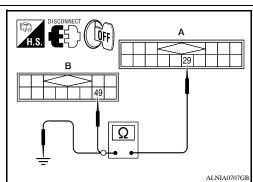
Check continuity between satellite radio tuner (factory installed) 2. harness connector M41 (A) terminal 29 and ground.

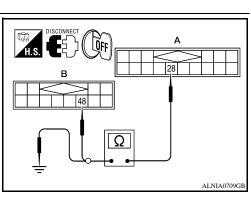
A			Continuity	
Connector	Terminal		Continuity	
M41	29	Ground	No	

Are continuity results as specified?

YES >> GO TO 3

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





[PREMIUM AUDIO (CREW CAB)]

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## **COMMUNICATION SIGNAL CIRCUIT**

### < COMPONENT DIAGNOSIS >

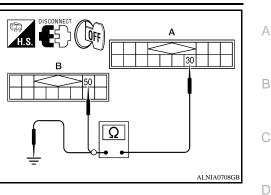
1. Check continuity between satellite radio tuner (factory installed) harness connector M41 (A) terminal 30 and audio unit harness connector M42 (B) terminal 50.

	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.

	A		Continuity	
Connector Terminal			Continuity	
M41	30	Ground	No	

## [PREMIUM AUDIO (CREW CAB)] 5 LOFF



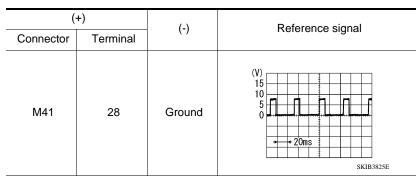
Are continuity results as specified?

YES >> GO TO 4

NO >> Repair harness or connector.

**4.**CHECK REQ1 SIGNAL

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



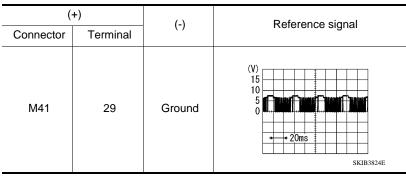
Are voltage readings as specified?

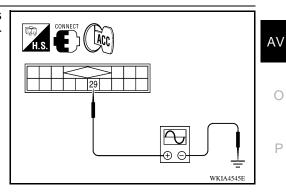
YES >> GO TO 5

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

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

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





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Are the voltage readings as specified?

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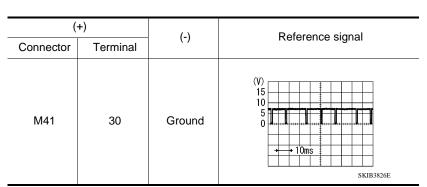
< COMPONENT DIAGNOSIS >

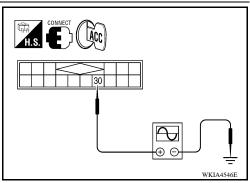
[PREMIUM AUDIO (CREW CAB)]

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. Refer to <u>AV-96, "Removal and Installation"</u>.

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

## SOUND SIGNAL CIRCUIT

### < COMPONENT DIAGNOSIS >

### SOUND SIGNAL CIRCUIT SATELLITE RADIO TUNER

### SATELLITE RADIO TUNER : Description

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

## SATELLITE RADIO TUNER : Diagnosis Procedure

### LEFT CHANNEL

### **1.**CHECK HARNESS

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

Α	۱.	E	Continuity		
Connector	Terminal	Connector	Terminal	Continuity	
M41	21	M42	41	Yes	
10141	22	IVI42	42		

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

	А		Continuity
Connector	Terminal		Continuity
M41	21	Ground	No
10141	22	Ground	NO

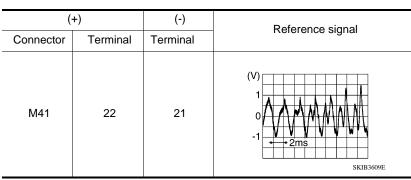
Are continuity results as specified?

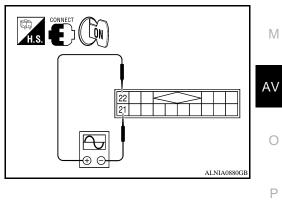
YES >> GO TO 2

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





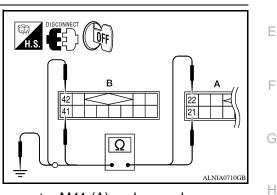
Are voltage readings as specified?

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

NO >> Replace satellite radio tuner. Refer to AV-96. "Removal and Installation".

### RIGHT CHANNEL

## AV-133



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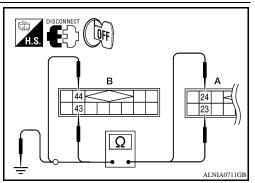
## SOUND SIGNAL CIRCUIT

### < COMPONENT DIAGNOSIS >

## 1.CHECK HARNESS

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

А		E	Continuity	
 Connector	Terminal	Connector	Terminal	Continuity
M41	23	M42	43	Yes
17141	24	10142	44	165



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	Ground	NO	

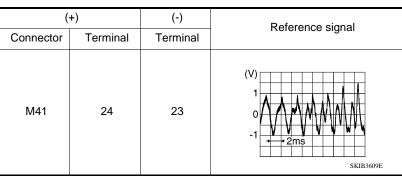
Are continuity results as specified?

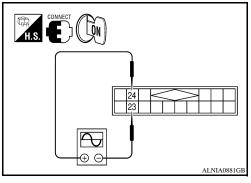
YES >> GO TO 2

NO >> Repair harness or connector.

2. CHECK RIGHT CHANNEL AUDIO SIGNAL

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





Are voltage readings as specified?

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

NO >> Replace satellite radio tuner. Refer to <u>AV-96, "Removal and Installation"</u>.

### MICROPHONE SIGNAL CIRCUIT

### < COMPONENT DIAGNOSIS >

## MICROPHONE SIGNAL CIRCUIT

### Description

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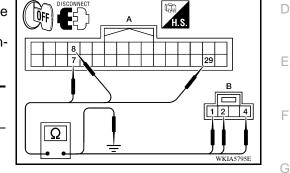
Voice signals are transmitted from the microphone to the Bluetooth control unit using the microphone signal circuits.

### **Diagnosis Procedure**

## 1. CHECK HARNESS BETWEEN BLUETOOTH CONTROL UNIT AND MICROPHONE

- 1. Turn ignition switch OFF.
- 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).

	A		Continuity	
Connector	Terminal	Connector	Terminal	Continuity
	7		1	
B141	8	R8	2	Yes
	29		4	



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

	А		Continuity		
Connector	Terminal		Continuity		
	7				
B141	8	Ground	No		
	29				J
Are the contin	nuity test results as specil	fied?			
	GO TO 2				
•	Repair harness or connec				K
2.CHECK M	ICROPHONE POWER S	UPPLY			
	Bluetooth control unit co	nnector and m	nicrophone con-		1
nector.	tion awitch ON				
	tion switch ON. bltage between micropho	ne harness co	nnector R8 ter-		
	nd ground.				M
4 - Gr	ound	: Approx. 5V			
Is voltage rea	iding approx. 5 volts?				AV
	SO TO 3				
	Replace Bluetooth cont Removal and Installation		fer to <u>AV-90.</u>	WKIA5796E	0
<u>^</u>	ICROPHONE SIGNAL				0
	ICROPHONE SIGNAL				-

[PREMIUM AUDIO (CREW CAB)]

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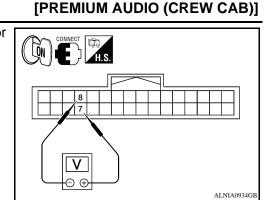
INFOID:000000004449410

## **MICROPHONE SIGNAL CIRCUIT**

### < COMPONENT DIAGNOSIS >

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

Connector	(+) Terminal	(-) Terminal	Reference signal			
B141	7	8	While speaking into MIC (V) 2.0 1.5 1.0 0.5 0 •••2ms			



Are voltage readings as specified?

YES >> Replace Bluetooth control unit. Refer to <u>AV-90, "Removal and Installation"</u>.

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

# < ECU DIAGNOSIS > ECU DIAGNOSIS >

## AUDIO UNIT

## Reference Value

INFOID:000000004057127 B

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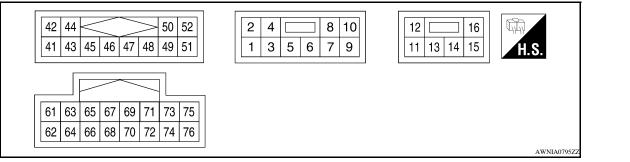
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### **TERMINAL LAYOUT**



## PHYSICAL VALUES

	minal e color)	ltem	Signal input/		Condition	Reference value (Approx.)
+	-		output			
2 (W)	1 (B)	Audio sound signal front LH	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5
4 (Y)	3 (BR)	Audio sound signal front RH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 1 1 1 1 1 1 1 1 1 1 1 1 1
6 (Y)	Ground	Battery power	Input	_	_	Battery voltage
7 (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	Cround		lasit	OFF	Lighting switch is in 1st position.	Battery voltage
(R)	Ground	Illumination 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)]

	minal e color)	ltem	Signal input/		Condition	Reference value
+	_		output		Condition	(Approx.)
14 (BR)	13 (B/R)	Audio sound signal rear LH	Output	lgnition switch ON	Receive audio sig- nal	(V) 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 5 5 5 5 5 5 5 5 5 5 5 5 5
42 (R)	41 (G)	Satellite radio au- dio signal LH	Input	lgnition switch ON	Satellite radio tuner operating	(V) 1 0 -1 • 2ms SKIB3609E
44 (B)	43 (W)	Satellite radio au- dio signal RH	Input	Ignition switch ON	Satellite radio tuner operating	(V) 1 0 -1 • 2ms SKIB3609E
45	-	Ground	_	-	-	0V
46	-	Data ground	_	-	_	0V
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 -1 -1 -1 -1 -1 -1 -1 -1 -1
63 (R)	-	Mute control	-	-	_	_
64	_	Shield	_	_	_	0V

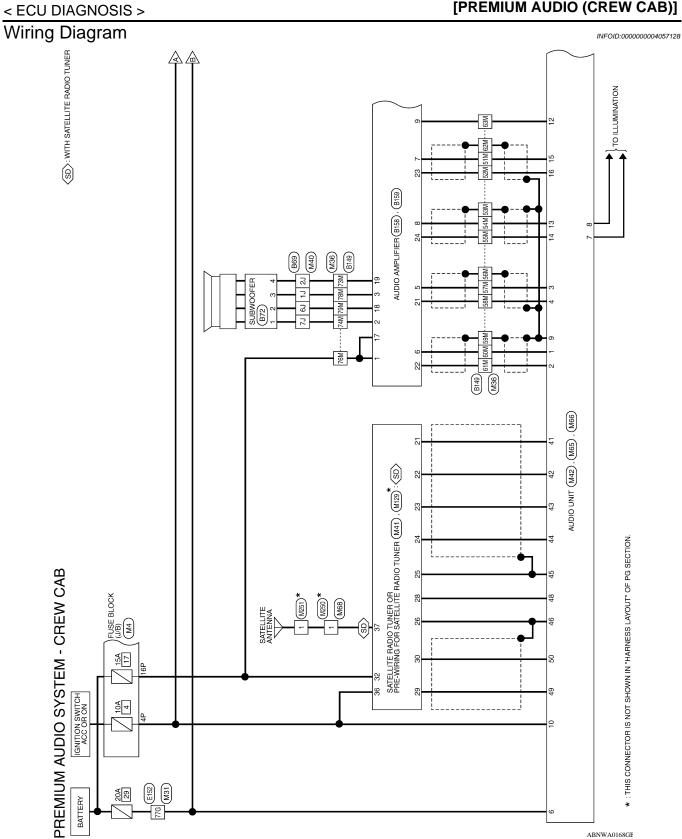
### < ECU DIAGNOSIS >

## [PREMIUM AUDIO (CREW CAB)]

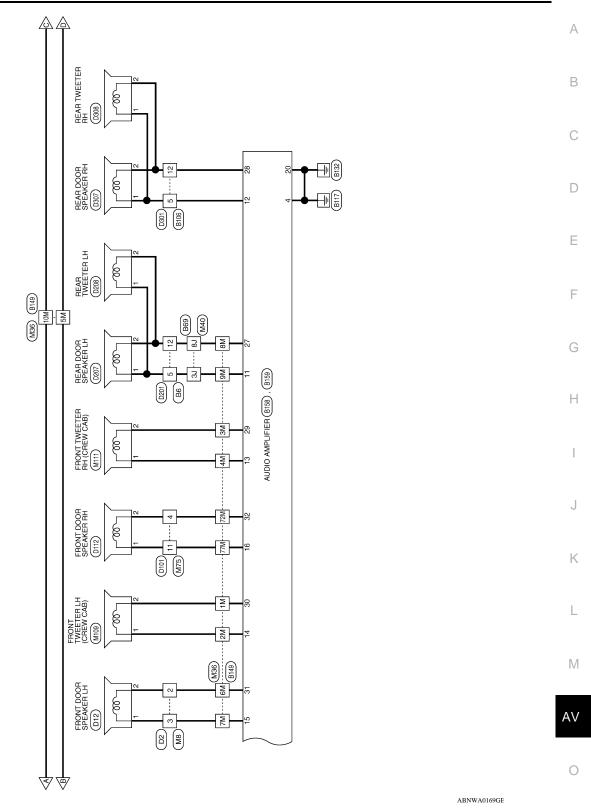
(Wire	minal e color)	Item	Signal input/ output		Condition	Reference value (Approx.)
+ 67	-	Shield	- -	Ignition switch ON	_	0V
					Pressing 🌈 🔬 switch	٥V
69	71	Steering switch sig-	Input	Ignition switch	Pressing $\Delta$ switch	0.75
(V)	(O)	nal A	input	ON	Pressing VOL up switch	2V
					Except for above	5V
					Pressing MODE switch	٥V
70	71	Steering switch sig-		Ignition	Pressing $ abla$ switch	0.75V
(LG)	(O)	nal B	Input switch ON	input swi	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 • • • 20ms • • • 20ms • • • 20ms
74 (W)	Ground	Auxiliary audio in- put RH (+)	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
75 (B)	Ground	Auxiliary audio in- put LH (+)	Input	lgnition switch ON	Receive audio sig- nal (AUX input)	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
76 (R)	_	Shield	_	_	-	0V

0

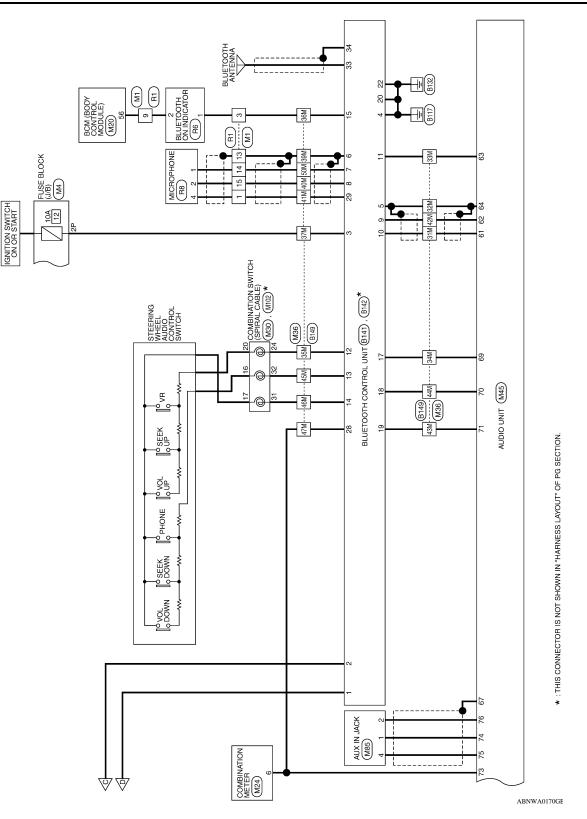
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M8 WIRE TO WIRE BROWN	of Signal Name	Connector No. M30 Connector Name COMBINATION SWITCH Connector Color GRAY	of Signal Name STRG SW A (UP) STRG SW GND STRG SW B (DOWN)
Connector No. M8 Connector Name WIF Connector Color BRR	Terminal No.Color of Wire2L3BR	Connector No. M30 Connector Name COMB Connector Color GRAY	Terminal No.Color of Wire24BR31G32L
	e E	METER 7 6 5 4 3 2 1 27 28 25 24 23 22 21	ame UT 8
CAB vo. M4 Aame FUSE BLOCK (J/B) Solor WHITE The B at the main of a B	Color of Signal Name Wire Signal Name W/G - G/B - R/B -	M24 COMBINATION WHITE	Color of Signal Name Wire SPEED OUT 8
Connector Name Connector Name Connector Color H.S.	Terminal No. Co 2P 16P	Connector No. M24 Connector Name COM Connector Color WHI1 Connector Color WHI1 d.S.	Terminal No. CC
Connector No. M1 Connector No. M1 Connector Name WIRE TO WIRE Connector Name WIRE TO WIRE Connector Name VIRE Connector Name F Connector Name F Connector Color VHITE		M20 BCM (BODY CONTROL MODULE) BLACK (13619100161162163[64] (13619100161162163[64] (13619100161162163[64])	Signal Name BATTERY SAVER OUTPUT
Connector No. M1 Connector Name WIRE TO WIRE Connector Color WHITE	Color of Wire Wire GR GR GR SHIELD G G	0. M20 ame BCM (BODY CONTF olor BLACK	Color of Wire <
Connector No. M1 Connector No. M1 Connector Name WIRE T Connector Color WHITE	Terminal No. 1 9 13 14 15	Connector No. Connector Name Connector Color	Terminal No. 56
±		1	ABNIA0524GB

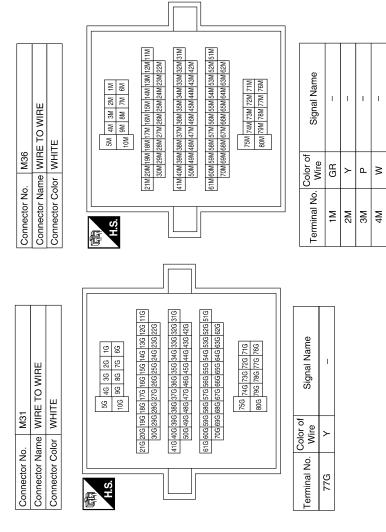
## < ECU DIAGNOSIS >

## [PREMIUM AUDIO (CREW CAB)]

AV-143



Terminal No.	Color of Wire	Signal Name
35M	BR	I
36M	GR	-
37M	D/M	-
39M	SHIELD	-
40M	L	-
41M	≻	
42M	Μ	-
43M	0	-
44M	ГG	-
45M	Γ	-
46M	ŋ	—
47M	SB	-
50M	9	-
51M	B/W	-
52M	L	I
53M	SHIELD	-
54M	B/R	-
55M	BR	-
56M	SHIELD	-
57M	BR	I
58M	≻	I
59M	SHIELD	I
60M	В	I
61M	×	I
62M	SHIELD	I
63M	G/W	I
72M	н	I
73M	BR	I
74M	×	I
76M	R/B	T
77M	ГG	I
78M	0	I
79M	σ	I



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SHIELD

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31M 32M 33M 34M

G∕

10M

I. Т I. Т T I I. L I.

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R/B

5M M 7M

ВВ

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ш G

8 M8 M6



UNIT			48 49 51			Signal Name	(-) T	L (+)	R (-)	R(+)	EARTH (SIG)	DATA EARTH	I	REQ	RX	ТX	I	I								
	lor WHITE	14	41 43 45 46 47 48 49 51	-	-	Color of Wire	U	æ	M	В	SHIELD	SHIELD	-	0	۵.	L	1	I								
Connector No. Connector Name	Connector Color			2 V	-	Terminal No.	41	42	43	44	45	46	47	48	49	50	51	52								
			<u> </u>	3	ſ			1						1	1											
M41 SATELLITE RADIO TUNER				29 30 31 33 35		Signal Name	SAT LCH (-)	SAT LCH (+)	SAT RCH (-)	SAT RCH (+)	EARTH (SIG)	DATA EARTH	I	REQ1	TXD	RXD	I	BACKUP	I	I	I	ACC				
0		or WHITE		22 24 26 32 34 21 23 25 27 28 29 30 31 33		Color of Wire	U	œ	8	в	SHIELD	SHIELD	1	0	٩.	_	1	R/B	I	1	T	G/B				
Connector No.	CONNECTOR INAMINE	Connector Color		国 H.S.		Terminal No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36				
		0	Ŀ						L	I		<u> </u>	1	I	1				1							
					12J 11J		32J 31J	L _ [	52J 51J							T		_								
) WIRE			-	4 3 2 1 1 9 8 7 6	21.1 20.1 19.1 18.1 17.1 16.1 15.1 14.1 13.1 12.1		41J 40J 39J 38J 37J 36J 35J 34J 33J 32J 501 401 481 471 481 461 471 471 471		61J 60J 59J 58J 57J 56J 55J 54J 53J 52J 701 691 681 67J 66J 661 641 691 691		4J 73J 72J 71J	101 781 781 761 761 108			Signal Name		I	I	I	1 1						
M40 WIRE TC	WHITE			101 101	20J 19J 18J 17	30J 29J 28J 27	501 391 381 37		30J 59J 58J 57 70J 69J 68J 67		121	2 108	]		Color of	Wire	5 i	Ha (	5 0	5 3	: 0					
Connector No. M40 Connector Name WIRE TO WIRE	Connector Color			Ń	211 2		411 4		611 1						Terminal No Co					ro Ir		-				
ပိုပို	ပိ	£													L L	-										

# **AUDIO UNIT**

### < ECU DIAGNOSIS >

[PREMIUM AUDIO (CREW CAB)]

AV-145

Connecto Con	M65 Connector No.	AUDIO UNIT (WITH PREMIUM AUDIO SYSTEM -CREW CAB)	WHITE	H.S.		Wire Signal Name Terminal No.	B FRSP LH (-) 11	W FRSP LH (+) 12	BR FRSP RH (-) 13	Y FRSP RH (+) 14	- 15	Y BAT (BACK UP) 16	GR ILL CONT	R LIGHT SW	SHIELD GND	G/B ACC					Connector No. M85	WIRE TO WIRE Connector Name AUX IN JACK	Connector Color WHITE	3 <u>2 1</u> 8 7 6 H.S.	Signal Name Terminal No. Color of Wire	-
Ite Ite Signal Name TELSIG INPUT (-) TEL SIG ON TRIG TEL SIG ON TRIG SIGNAL	Connector No.	Connector Name	Connector Color	日 日 日																				S.		4
		O UNIT (WITH AIUM AUDIO SYSTEM) E		69 71 73 70 72 74	Signal Name	TEL SIG INPUT (-)	TEL SIG INPUT (+)	TEL SIG ON TRIG	TEL SIG GND	1	1	1	1		REMOTE B SWC	REMOTE GND SWC	1	SPEED SIGNAL	AUX L+	AUX GND		E TO WIRE	ET		Signal Name	1

### < ECU DIAGNOSIS >

GIUOSIS >			
M111 FRONT TWEETER RH (CREW CAB) BROWN	of Signal Name – (WITH PREMIUM – (WITH PREMIUM – (WITH PREMIUM AUDIO SYSTEM)	M251 SATELLITE ANTENNA BROWN	Signal Name
0. M111 ame FRON CRED Dior BROV	Color of Wire Wire		Color of Wire
Connector No. Connector Name Connector Color	Terminal No.	Connector No. Connector Name Connector Color	Terminal No.
Connector No. M109 Connector Name FRONT TWEETER LH Connector Color BROWN	Signal Name – (WITH PREMIUM AUDIO SYSTEM) – (WITH PREMIUM AUDIO SYSTEM)	M250 WIRE TO WIRE VIOLET	Signal Name
M109 (CREW C 211	Color of Wite GR ≺	M250 WIRE TO VIOLET	
r No.		r No. r Color	No. Color of Wire
Connector No. Connector Name Connector Color	Terminal No.	Connector No. Connector Name Connector Color	Terminal No.
M102 me COMBINATION SWITCH or GRAY	Signal Name	M129 SATELITE RADIO TUNER (WITH SATELLITE RADIO TUNER) VIOLET	Signal Name
M102 COMBI GRAY	Color of Wire Wire W		Color of Alire
Connector No. Norme Connector Name Connector Color Connector Color H.S.	Terminal No.         Col           16         1           20         1	Connector No. Connector Name Connector Color	Terminal No. C 37

# < ECU DIAGNOSIS >

[PREMIUM AUDIO (CREW CAB)]

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AV-147

	Connector No. E152	Connector No.	o. B6		Connector No.	o. B69		
	Connector Name WIRE TO WIRE	Connector Name	ame WIRE	WIRE TO WIRE	Connector Name		WIRE TO WIRE	
	Connector Color WHITE	Connector Color	olor WHITE	ш	Connector Color	olor WHITE		
	研究 H.S. 66 76 86 96 16	品.S.H	1     2     3       6     7     8     9	9 10 11 12	H.S.H		10 22 33 44 5.1 60 73 80 91 100	
	11G 12G 13G 14G 15G 16G 17G 18G 20G 21G	Terminal No.	Color of Wire	Signal Name		11J 12J 13J 22J 23J	11.1 12.1 13.1 14.1 15.1 16.1 17.1 18.1 19.1 20.0 21.1 22.1 23.1 24.1 25.1 26.0 27.1 28.1 29.1 30.1	
	240 200 240 240 500 200 200 200 200 200 200 200 200	5	σ	1		31J 32J 33J	31.1 32.1 33.1 34.1 35.1 36.1 37.1 38.1 39.1 40.1 41.1	
	426 436 446 4456 466 476 486 496 506	12	в	I		42.1 43.1	42.] 43.] 44.] 45.] 46.] 47.] 48.] 49.] 50.]	
	51.G (22.G (33.G (34.G (35.G (36.G (37.G (38.G (39.G (30.G (31.G (37.G (38.G (39.G (39.G (31.G (31.G))))))))))))))))))))))))))))))))))))					51J 52J 53J 62J 63J	51.1 52.1 53.1 54.1 55.1 56.1 57.7 58.1 59.1 60.1 61.1 62.1 63.1 64.1 65.1 66.1 67.7 68.1 59.1 70.1	
	716 726 736 746 756 766 776 786 796 80G						71J 72J 73J 74J 75J 75J 75J 80	
								- -
	Colorad				Terminal No.	Color of Wire	Signal Name	
	Terminal No. Wire Signal Name				1J	0	I	
	77G Y –				2J	BR	I	
					3J	ъ	I	
					6J	Ð	I	
					۲2	8	I	
					8J	В	-	
	Connector No.   B72	Tounimed No	Color of		Connector No.	o. B106		
	Connector Name SUBWOOFER		Wire	olglial Nallie	Connector Name WIRE TO WIRE	ame WIRE	TO WIRE	
	Connector Color GRAY	-	8	REAR LEFT (+)	Connector Color	olor WHITE	ш	
		2	σ	REAR LEFT (-)				
		3	0	REAR RIGHT (+)	Æ	1 2 3	4 5	
	H.S.	4	BR	REAR RIGHT (-)	H.S.	6 7 8	9 10 11 12	
A					Terminal No.	Color of	Signal Name	
3NIA05					£	GR	I	
528GB					12	0	I	

# **AUDIO UNIT**

# < ECU DIAGNOSIS >

[PREMIUM AUDIO (CREW CAB)]

Connector No. B142			[		H.S.	*		Terminal No. Wire Signal Name	33 B BT ANTENNA	SHIELD BT /	-											
Signal Name	MUTE CONTROL	LADDER IN 1	LADDER IN 2	LADDER IN GND	LED IND 1	1	LADDER OUT 1	LADDER OUT 2	LADDER OUT GND	CONT 1	1	CONT 3	1	1	1	1	1	SPEED SIGNAL	MIC POWER	I	1	1
Color of	e e	BR	_	σ	GR	1	>	Ъ	0	в	1	в	1	1	1	1	1	SB	~	1	1	ı
Terminal No.	1	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
	lame BLUETOOTH CONTROL	color WHITE					2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32	9 111 13 15 17 19 21 23 25 27 29 31		Color of		R/B BATT	G/Y ACC	W/G IGN	BGND	SHIELD AUDIO OUT SHIELD	SHIELD MIC SHIELD	G MIC IN+	L MIC IN-	W AUDIO OUT +	B AUDIO OUT -	
Connector No.	Connector Name	Connector Color		悟	H.S.		2 4 6 8 10	1 3 5 7 9			Terminal No.	-	2	З	4	5	9	7	8	6	10	

**AUDIO UNIT** 

# [PREMIUM AUDIO (CREW CAB)]

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Color of Wire	_	SHIELD	B/R	BR	SHIELD	BB	≻	SHIELD	ш	8	SHIELD	G/W	œ	BR	×	R/B	LG	0	g					
Terminal No.	52M	53M	54M	55M	56M	57M	58M	M63	60M	61M	62M	63M	72M	73M	74M	76M	77M	78M	79M					
Signal Name	I	1	I	I	I	I	1	I	I	ļ	ļ	I	I	I	I	I	I	I	I	I	I			
Color of Wire	ш	σ	G/Y	в	SHIELD	æ	>	BR	GR	W/G	SHIELD	Γ	≻	N	0	ГG		ß	SB	g	B/W			
Terminal No.	8M	M6	10M	31M	32M	33M	34M	35M	36M	37M	39M	40M	41M	42M	43M	44M	45M	46M	47M	50M	51M			
							_				_													
19 11 10 10 10 10 10 10 10 10 10 10 10 10 1		L		1M 2M 3M 4M 5M	6M 7M 8M 9M 10M		1.1W 1.2M 1.3M 1.4M 1.5M 1.5M 1.5M 1.2M 2.9M 2.0M 2.1M 22M 23M 24M 25M 26M 27M 28M 29M 30M		31M 32M 33M 34M 35M 36M 37M 38M 39M 40M 41M 42M 43M 44M 45M 46M 47M 48M 49M 50M		51M 52M 53M 54M 55M 56M 57M 58M 59M 60M 61M E2M E2M E2M EAM EAM EAM EAM EAM EAM 70M		71M 72M 73M 74M 75M	76M 77M 78M 79M 80M	]		Signal Name	1	1	I	I	I	I	I
. B149	Ine WINE I						11M 12M 13E		31M 32M 33P. 42M 430		51M 52M 53h		2	- ~ ]		Color of	Wire	GR	≻	٩	×	R/B	Γ	BR
Connector No.	Connector Name WINE IO WINE Connector Color MHITE				ò												Terminal No.	Σ	ZM	ЭΜ	4M	5M	6M	Μζ

ABN	IA05	530G	B

Signal Name

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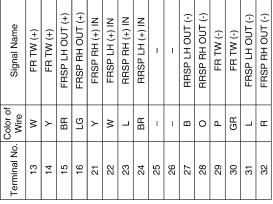
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1	RRSP LH OUT (-)	RRSP RH OUT (-)	FR TW (-)	FR TW (-)	FRSP LH OUT (-)	FRSP RH OUT (-)			HONE			Signal Name	MIC OUT +	MIC OUT -	MIC POWER						С
				æ			-	R8	MICROP	WHITE		Color of Wire	ں ت		~	-					D
1	В	0	₽	GR		æ		O	lame	Color											Е
26	27	28	29	30	31	32		Connector No.	Connector Name MICROPHONE	Connector Color	H.S.	Terminal No.	-	2	4						
							J		0				1		L	]					F
7	z	7	<b>NAL</b>		(+)	(+)							(F								G
FRSP LH (-) IN	RRSP RH (-) IN	RRSP LH (-) IN	AMP ON/OFF SIGNAL	I	RRSP LH OUT (+)	RRSP RH OUT (+)			BLUETOOTH ON	AI UH	3	Signal Name	LED 1 (AMBER)	LED POWER							Н
ш	B/W	B/R	G/W	1	ŋ	GR		R6		_		Color of Wire	GR	RY							I
9	7	8	6	10	11	12		Connector No.	Connector Name	Connector Color	品 H.S.	Terminal No.	-	2							J
							J														K
WOOFER (+)1	WOOFER (+)2	GND	BAT	WOOFER (-)1	WOOFER (-)2	GND			TO WIRE		12 11 10 9 8 7 6 5 4 3 2 1 24 23 22 21 20 19 18 17 16 15 14 13	Signal Name	I	I	I	I	I	-			L
×	0	В	R/B	ŋ	BR	в		E.	ne WIRE	or WHITE	22 21 20 19	Color of Wire	۲	GR	R/Y	SHIELD	J	L			A \ /-
N	3	4	17	18	19	20		Connector No.	Connector Name WIRE TO WIRE	Connector Color	H.S.	Terminal No.	+	e	6	13 S	14	15			AV O



**AUDIO UNIT** 

Connector Color WHITE	olor WH	ITE
101 H.S.	16 15 14 13 12 11 10 9 32 31 30 29 28 27 26 25	16 15 14 13 12 11 10 9 8 7 6 5 32 31 30 29 28 27 28 22 24 23 22 21
Terminal No.	Color of Wire	Signal Name
5	BR	FRSP RH (-) IN
9	6	FRSP I H (-) IN

19 18 17

20

H.S. fe

Connector Name AUDIO AMPLIFIER

Connector Name AUDIO AMPLIFIER

B158

Connector No.

Connector Color WHITE

B159

Connector No.

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

< ECU DIAGNOSIS >

# [PREMIUM AUDIO (CREW CAB)]

AV-151

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ABNIA0531GB

Connector No. D101 Connector Name WIRE TO WIRE Connector Color WHITE	1         2         3         4         5           6         7         8         9         10         11         12	al No. Color of Signal Name	L/B –	W/B	-	Connector No. D207	
Connec Connec	R.S.H	Terminal No.	4			Connec	
D12 FRONT DOOR SPEAKER LH WHITE		Signal Name	I	I			
		Color of Wire	L/W	L/R		D201	_
Connector No. Connector Name Connector Color	。 H.S.	Terminal No.	-	N	:	Connector No.	
TO WIRE VN	9 10 11 12	Signal Name	I	I			
D2 ne WIRE TC or BROWN	1     2       6     7       8       9	Color of Wire	L/R	۲Ŵ		D112	-
Connector No. D2 Connector Name WIRE TO WIRE Connector Color BROWN	R.S.H	Terminal No.	N	ო		Connector No.	

**AUDIO UNIT** 

Signal Name 2 Color of Wire Terminal No. H.S. E Γ Т

8 7 6	Signal Name	I	I
12 11 10 9 8 7 6	Color of Wire	Γ	0
HS	Terminal No.	5	12

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2 1 

H.S. F

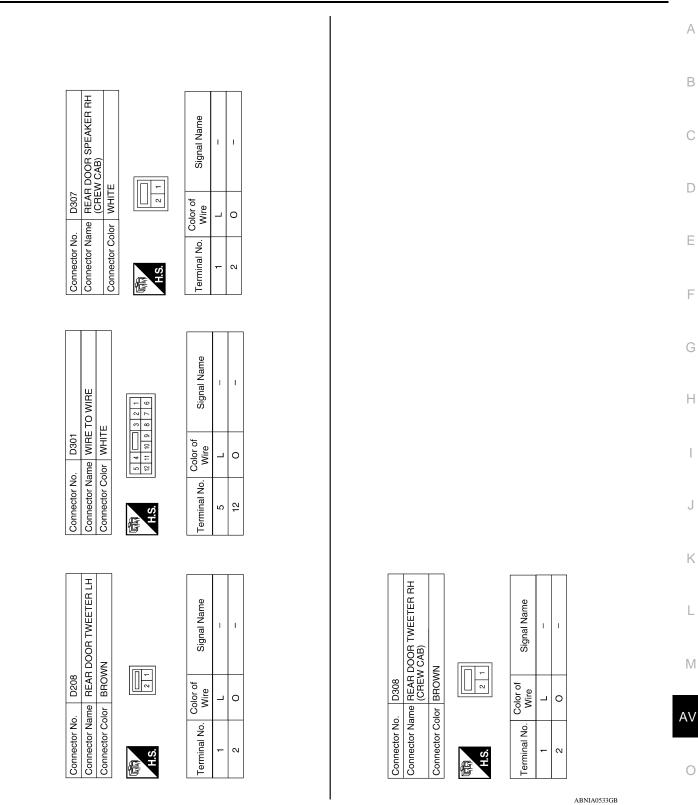
Signal Name	-	-
Color of Wire	W/B	L/B
Terminal No.	1	2

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# < ECU DIAGNOSIS >

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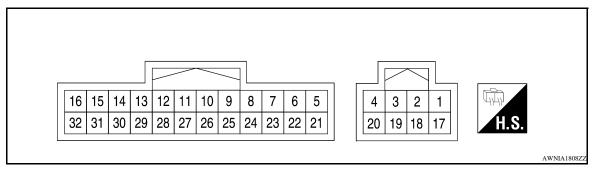
# < ECU DIAGNOSIS >

# AUDIO AMP

**Reference Value** 

INFOID:000000004057130

TERMINAL LAYOUT



# PHYSICAL VALUES

(wire	minal color)	Item	Signal input/		Condition	Reference value (Approx.)
+ 1	– Ground	Battery	output Input	_	_	Battery voltage
(Y)	Cround	Duttory	mpat			
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
3 (O)	19 (BR)	Subwoofer	Output	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5
4 (B)	Ground	Ground	_	Ignition switch ON	_	_
9 (G/W)	Ground	Amp. ON signal	Input	Ignition switch ON	-	More than 6.5V
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 1 1 1 1

# AUDIO AMP

#### < ECU DIAGNOSIS >

# [PREMIUM AUDIO (CREW CAB)]

(wire	ninal color)	ltem	Signal input/		Condition	Reference value (Approx.)	A
+ 12 (GR)	28 (O)	Rear door speak- er RH and rear door tweeter RH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	E
13 (W)	29 (P)	Front door tweet- er RH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5	E
14 (Y)	30 (GR)	Front tweeter LH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	C
15 (BR)	31 (L)	Front door speak- er LH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5	ł
16 (LG)	32 (R)	Front door speak- er RH	Output	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5	I
17 (R/B)	Ground	Battery	Input	-	_	Battery voltage	A١
20 (B)	Ground	Ground	_	Ignition switch ON	_	_	(
21 (Y)	5 (BR)	Audio sound sig- nal front RH	Input	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 5 5 5 5 5 5 5 5 5 5 5 5 5	F

# AUDIO AMP

#### < ECU DIAGNOSIS >

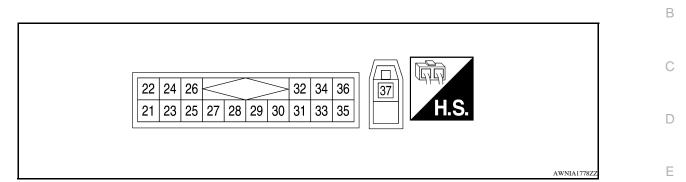
### [PREMIUM AUDIO (CREW CAB)]

	minal color) 	ltem	Signal input/ output		Condition	Reference value (Approx.)
22 (W)	6 (B)	Audio sound sig- nal front LH	Input	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
23 (L)	7 (B/W)	Audio sound sig- nal rear RH	Input	lgnition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1
24 (BR)	8 (B/R)	Audio sound sig- nal rear LH	Input	Ignition switch ON	Receive audio sig- nal	(V) 1 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1

# SATELLITE RADIO TUNER

# **Reference Value**

INFOID:000000004449411



# PHYSICAL VALUES

Ter	minal	Description				
+	-	Signal name	Input/ Output		Condition	Reference value (Approx.)
22 (R)	21 (G)	Satellite radio sound signal LH	Output	lgnition switch ON	When satellite radio mode is selected	(V) 1 -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 -1 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5
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 • • • 10ms SKIA9299J
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 -

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# SATELLITE RADIO TUNER

#### < ECU DIAGNOSIS >

Terr	minal	Description		Condition		Reference value
+	_	Signal name	Input/ Output			(Approx.)
30 (L)	Ground	Communication signal (CONT→SAT)	Input	Ignition switch ON	When satellite radio mode is selected	(V) 10 0 -10 • • 1 ms SKLA9301J
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		—	_

# **BLUETOOTH CONTROL UNIT**

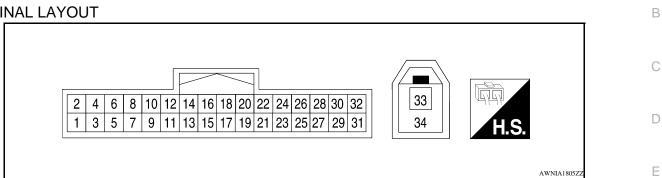
# **BLUETOOTH CONTROL UNIT**

# **Reference Value**

**TERMINAL LAYOUT** 

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# PHYSICAL VALUES

	ninal color)	Descriptior	ı		Condition	Reference value
+	_	Signal name	Input/ output		(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	-	_	_	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	mput	ut switch ON	Pressing VOL up switch	2V
					Except for above	5V

# **BLUETOOTH CONTROL UNIT**

< ECU DIAGNOSIS >

	ninal color)	Description	n		Condition	Reference value
+	-	Signal name	Input/ output	Condition		(Approx.)
					Pressing MODE switch	0V
13	14	Steering switch sig-		Ignition	Pressing $ abla$ switch	0.75V
(L)	(G)	nal B	Input	switch ON	Pressing VOL down switch	2V
					Except for above	5 V
15 (GR)	Ground	LED power	Output	Ignition switch ON	-	Battery voltage
					Pressing 🌈 🏑 switch	0V
17	19	Steering switch sig-	Output	Ignition switch	Pressing $\Delta$ switch	0.75
(V)	(O)	nal A	·	ON	Pressing VOL up switch	2V
					Except for above	5V
					Pressing MODE switch	0V
18	19	Steering switch sig-	Output	Ignition	Pressing $ abla$ switch	0.75V
(LG)	(O)	nal B	Output	switch ON	Pressing VOL down switch	2V
					Except for above	5V
20 (B)	Ground	Ground	_	_	_	0V
21 (B)	Ground	Ground	_	-	-	0V
22 (B)	Ground	Ground	-	-	-	0V
28 (SB)	Ground	Vehicle speed sig- nal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	(V) 10 5 0 • • 20ms PKIA1935E
29 (Y)	Ground	Microphone power	Output	Ignition switch ON	-	5V
33 (B)	-	Bluetooth antenna	_	-	-	_
34	-	Shield	_	_	_	_

# SYMPTOM DIAGNOSIS

# AUDIO SYSTEM

# Symptom Table

AUDIO SYSTEM

Symptom	Possible cause	Reference page
Inoperative	<ul><li>Audio unit power circuit</li><li>Audio unit</li></ul>	• <u>AV-107</u> • <u>AV-107</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-107</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><u>AV-107</u></li> <li><u>AV-107</u></li> <li><u>AV-127</u></li> <li><u>AV-108</u></li> <li><u>AV-108</u></li> </ul>
One or several speakers do not sound	<ul> <li>Front door speaker</li> <li>Front tweeter</li> <li>Rear door speaker</li> <li>Rear door tweeter</li> <li>Subwoofer</li> </ul>	<ul> <li><u>AV-112</u></li> <li><u>AV-115</u></li> <li><u>AV-118</u></li> <li><u>AV-121</u></li> <li>AV-124</li> </ul>

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Symptom	Possible cause	Reference page
CD cannot be inserted.		
CD cannot be ejected.	Audio unit	AV-107
The CD cannot be played.		<u>AV-107</u>
The sound skips, stops suddenly, or is distorted.		

### SATELLITE RADIO

Symptom	Possible cause	Reference page	K
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-107</u> • <u>AV-55</u> • <u>AV-180</u>	L
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>		M

# HANDS-FREE PHONE

			. AV
Symptom	Possible cause	Reference page	, ( v
Inoperative	<ul><li>Bluetooth control unit power circuit</li><li>Bluetooth control unit</li></ul>	• <u>AV-109</u> • <u>AV-106</u>	0
Steering wheel audio switch does not operate	<ul><li>Steering wheel audio control switch</li><li>Bluetooth control unit</li></ul>	• <u>AV-53</u> • <u>AV-106</u>	_
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-110</u></li> <li><u>AV-53</u></li> <li><u>AV-106</u></li> </ul>	Р

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### NORMAL OPERATING CONDITION

#### < SYMPTOM DIAGNOSIS >

# NORMAL OPERATING CONDITION

# Description

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[PREMIUM AUDIO (CREW CAB)]

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

#### NOISE

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

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

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

#### NOTE:

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

Type of Noise and Possible Cause

Occurrence condition		Possible cause
Occurs only when engine is ON.	A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed.	Ignition components
The occurrence of the noise is linked with the operation of the fuel pump.		Fuel pump condenser
Noise only occurs when various electrical components are oper- ating.	A cracking or snapping sound occurs with the operation of various switches.	Relay malfunction, audio unit malfunction
	The noise occurs when various motors are operat- ing.	<ul><li>Motor case ground</li><li>Motor</li></ul>
The noise occurs constantly, not just under certain conditions.		<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 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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# 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.

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# < PREPARATION >

# PREPARATION

# PREPARATION

# **Commercial Service Tools**

Tool name		Description
		Loosening bolts and nuts
Power tool	PBIC0191E	

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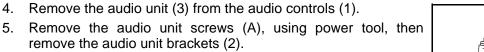
# < ON-VEHICLE REPAIR > ON-VEHICLE REPAIR

# AUDIO UNIT

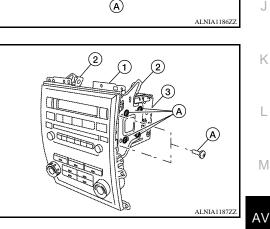
Removal and Installation

### REMOVAL

- 1. Remove the cluster lid C. Refer to IP-11, "Removal and Installation".
- 2. Remove the center ventilator ducts. Refer to VTL-21, "Removal and Installation".
- 3. Remove the audio unit control screws (A), then remove the audio unit assembly, from cluster lid C.



6. Pull out the audio unit (3) from the audio controls (1).



INSTALLATION Installation is in the reverse order of removal.

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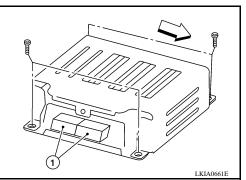
# < ON-VEHICLE REPAIR >

# 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



[PREMIUM AUDIO (CREW CAB)]

INSTALLATION

Installation is in the reverse order of removal.

### < ON-VEHICLE REPAIR > FRONT TWEETER

# **Removal and Installation**

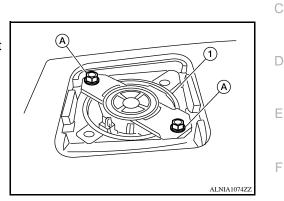
# REMOVAL

# **CAUTION:**

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

AV-167

- 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. В

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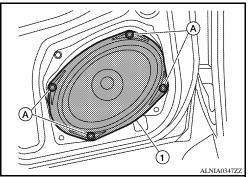
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# FRONT DOOR SPEAKER

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).



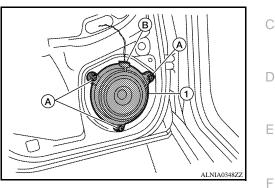
INSTALLATION Installation is in the reverse order of removal.

# 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. Disconnect the rear door speaker connector (B) and remove rear door speaker (1).



#### **INSTALLATION**

Installation is in the reverse order of removal.

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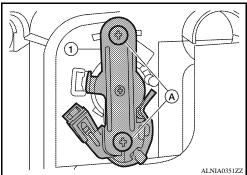
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# REAR DOOR TWEETER

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).



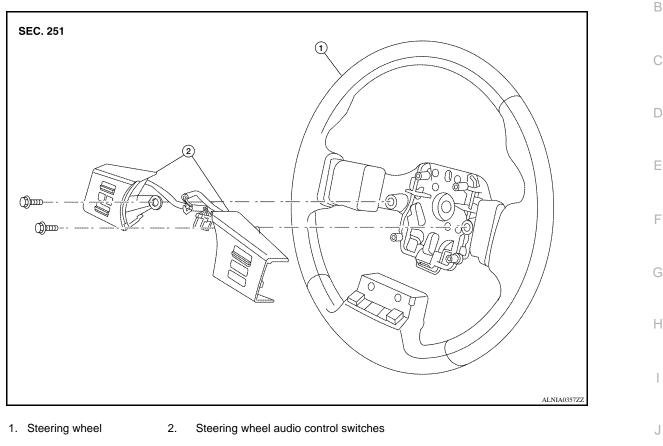
INSTALLATION Installation is in the reverse order of removal.

### < ON-VEHICLE REPAIR > STEERING SWITCH

# **Removal and Installation**

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#### 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.

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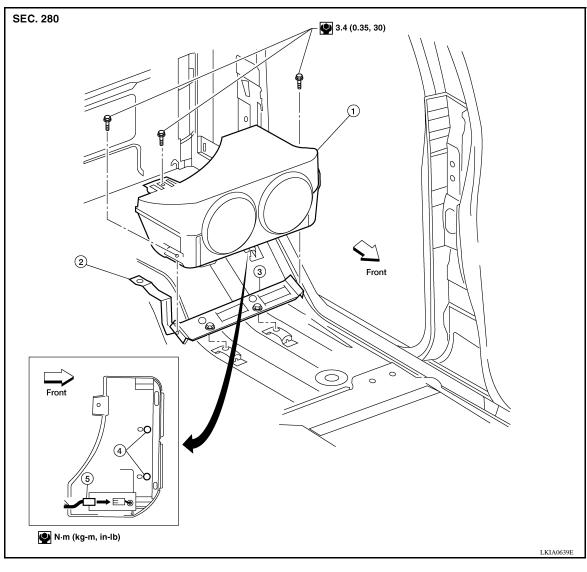
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# [PREMIUM AUDIO (CREW CAB)]

# < ON-VEHICLE REPAIR > SUBWOOFER

# Removal and Installation

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1. Subwoofer

2. Bracket

Connector

5.

3. Locating pin plate

4. Locating pin

#### REMOVAL

- 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

Installation is in the reverse order of removal.

# AV-172

### < ON-VEHICLE REPAIR >

# [PREMIUM AUDIO (CREW CAB)]

# TEL ANTENNA

# Removal and Installation

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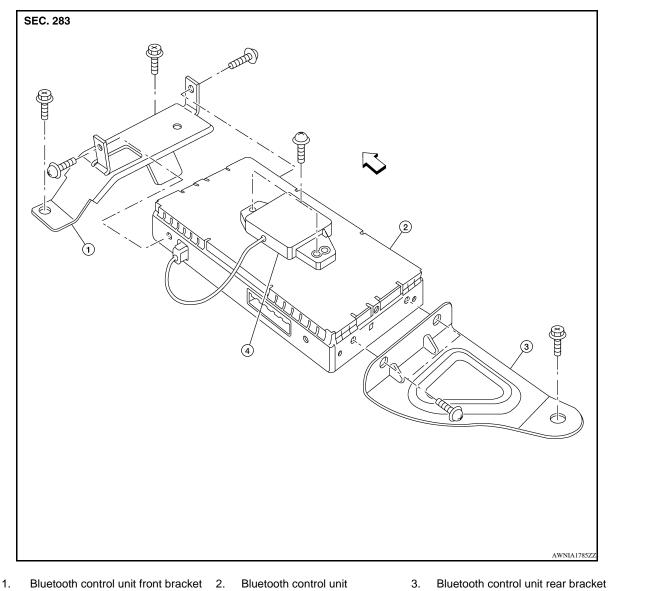
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4. Bluetooth antenna <>> Vehicle front

#### REMOVAL

- 1. Remove the RH front seat. Refer to SE-28, "Removal and Installation".
- 2. Disconnect the Bluetooth antenna harness connector.
- 3. Remove the Bluetooth antenna screws, then remove the Bluetooth antenna.

#### INSTALLATION

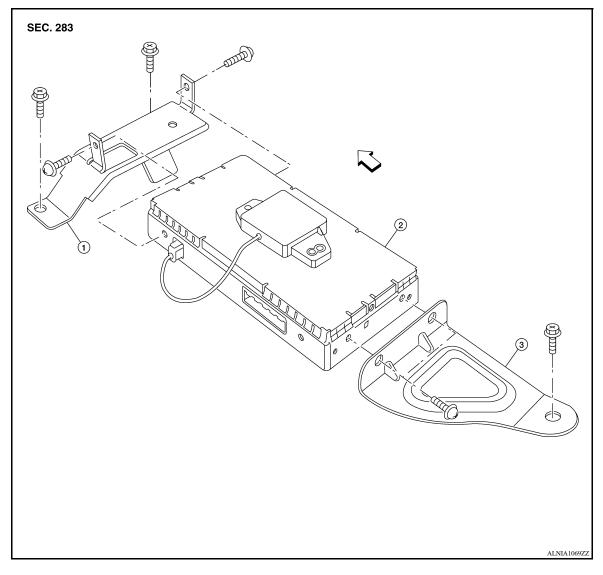
Installation is in the reverse order of removal.

# AV-173

# **BLUETOOTH CONTROL UNIT**

# Removal and Installation

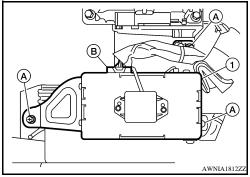
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1. Bluetooth control unit front bracket 2. Bluetooth control unit/antenna 3. Bluetooth control unit rear bracket

#### REMOVAL

- 1. Remove the RH front seat. Refer to SE-28, "Removal and Installation".
- 2. Disconnect the Bluetooth control unit harness connector (B).
- 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.



# **BLUETOOTH CONTROL UNIT**

#### < ON-VEHICLE REPAIR >

Installation is in the reverse order of removal.

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# < ON-VEHICLE REPAIR >

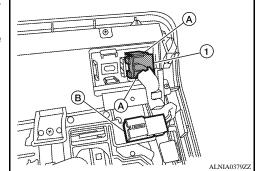
# MICROPHONE

# Removal and Installation

INFOID:000000004057145

#### 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).
- 3. Detach the Bluetooth microphone connector (B) and remove the Bluetooth microphone (1).



# INSTALLATION

Installation is in the reverse order of removal.

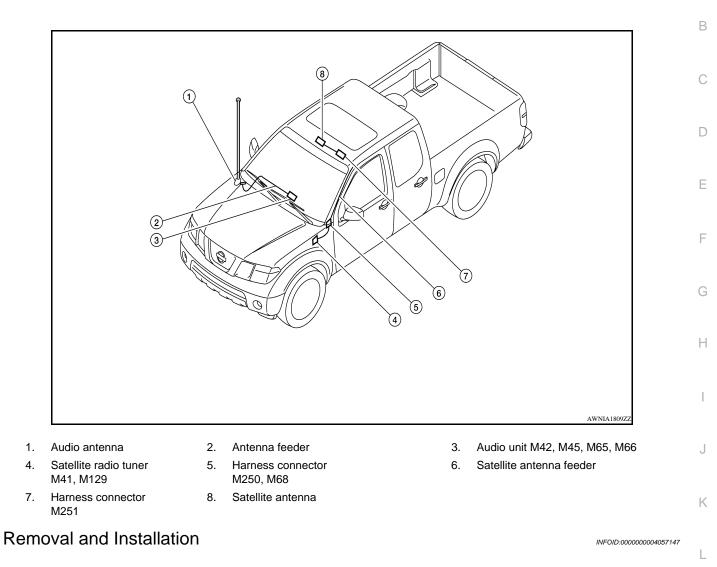
# [PREMIUM AUDIO (CREW CAB)]

### < ON-VEHICLE REPAIR > AUDIO ANTENNA

# Location of Antenna

INFOID:000000004057146

А



#### REMOVAL

- 1. Remove lower glove box. Refer to IP-11, "Removal and Installation".
- 2. Disconnect audio antenna cable from antenna feeder.

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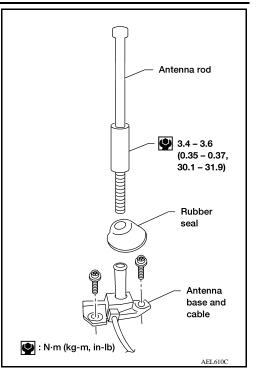
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# **AUDIO ANTENNA**

#### < 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 <u>Installation of Front Fender Protector"</u>.
- 7. Remove antenna base bolts.
- 8. Remove antenna base and cable.



#### **INSTALLATION**

Installation is in the reverse order of removal.

CAUTION:

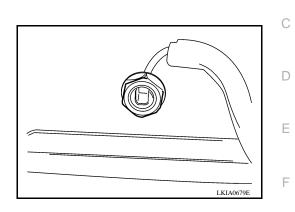
Always properly tighten the antenna rod during installation or the antenna rod may bend or break during vehicle operation.

# SATELLITE RADIO ANTENNA

Removal and Installation

### REMOVAL

- 1. Remove the roof console. Refer to INT-23, "Removal and Installation".
- 2. Disconnect the satellite radio antenna connector.
- 3. Remove the satellite radio antenna nut.
- 4. Remove the satellite radio antenna.



INSTALLATION Installation is in the reverse order of removal. INFOID:000000004057148

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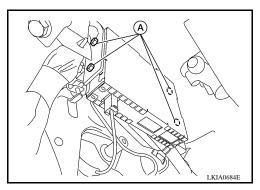
AV-179

# SATELLITE RADIO TUNER

Removal and Installation

#### REMOVAL

- 1. Disconnect the battery negative terminal.
- 2. Remove the lower instrument panel. Refer to IP-11, "Removal and Installation".
- 3. Disconnect the satellite radio tuner connectors.
- 4. Remove satellite radio tuner screws (A), and remove satellite radio tuner.



INSTALLATION Installation is in the reverse order of removal.