

# SECTION AV

## AUDIO VISUAL, NAVIGATION & TELEPHONE SYSTEM

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# PRECAUTIONS

## PRECAUTIONS

PFP:00001

### Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

NKS000C3

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

#### **WARNING:**

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

### Precautions for Battery Service

NKS000C4

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

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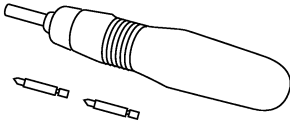
# PREPARATION

## PREPARATION

PFP:00002

### Commercial Service Tools

NKS000C6

Tool name	Description
<p>Power tool</p>  <p>PBIC0191E</p>	<p>Loosening bolts and nuts</p>

**AUDIO**

PFP:28111

**System Description  
BASE SYSTEM**

NKS000C7

For Audio System operation information, refer to Owner's Manual.

Power is supplied at all times

- through 15 A fuse [No. 37, located in the fuse and fusible link box]
- to audio unit terminal 6.

With the ignition switch in the ACC or ON position, power is supplied

- through 10 A fuse [No. 6, located in the fuse block (J/B)]
- to audio unit terminal 10.

Ground is supplied through the case of the audio unit.

When audio switch is pressed, audio signals are supplied

- through audio unit terminals 1, 2, 3, 4, 13, 14, 15 and 16
- to terminals 1 and 2 of driver door speaker and passenger door speaker
- to terminals 1 and 2 of rear speaker LH and RH
- to terminals 1 and 2 of tweeter (driver side) and tweeter (passenger side).

When one of steering switch is pressed to volume up, seek up, or mode ON, resistance in steering switch circuit changes depending on which button is pressed.

When one of steering switch is pressed to volume down, seek down, or power ON, resistance in steering switch circuit changes depending on which button is pressed.

**BOSE SYSTEM (COUPE MODELS)**

CD auto changer (built into audio unit) operation is controlled by audio unit.

Refer to owner's manual for the system operation.

Power is supplied at all times

- through 15 A fuse [No. 37, located in the fuse and fusible link box]
- to audio unit terminal 6
- to BOSE speaker amp. terminal 11
- to satellite radio tuner terminal 32,
- through 15 A fuse [No. 17, located in the fuse block (J/B)]
- to woofer amp. terminal 8.

With the ignition switch in the ACC or ON position, power is supplied

- through 10 A fuse [No. 6, located in the fuse block (J/B)]
- to audio unit terminal 10
- to satellite radio tuner terminal 36,
- through audio unit terminal 12
- to BOSE speaker amp. terminal 41,
- through BOSE speaker amp. terminal 32
- to woofer amp. terminal 6.

Ground is supplied through the case of the audio unit.

Ground is also supplied

- to BOSE speaker amp. terminal 27
- to woofer amp. terminal 7
- through body grounds B5, B6, D105 and T14.

When audio switch is pressed, audio signals are supplied

- through audio unit terminals 1, 2, 3, 4, 13, 14, 15 and 16
- to BOSE speaker amp. terminals 33, 34, 35, 36, 37, 38, 39 and 40.

Audio signals are amplified by the BOSE speaker amp.

The amplified audio signals are supplied

- through BOSE speaker amp. terminals 12, 19, 20, 21, 22, 23, 24, 25, 26 and 28
- to terminals 1 and 2 of driver door speaker and passenger door speaker

## AUDIO

- to terminals 1 and 2 of rear speaker LH and RH
- to terminals 1 and 2 of tweeter (driver side) and tweeter (passenger side)
- to terminals 1 and 2 of woofer amp.

Audio signals are amplified by the woofer amp.

The amplified audio signals are supplied

- through woofer amp. terminals 3 and 4
- to terminals 1 and 2 of woofer.

When one of steering switch is pressed to volume up, seek up, or mode ON, resistance in steering switch circuit changes depending on which button is pressed.

When one of steering switch is pressed to volume down, seek down, or power ON, resistance in steering switch circuit changes depending on which button is pressed.

### BOSE SYSTEM (ROADSTER MODELS)

CD auto changer (built into audio unit) operation is controlled by audio unit.

Refer to owner's manual for the system operation.

Power is supplied at all times

- through 15 A fuse [No. 37, located in the fuse and fusible link box]
- to audio unit terminal 6
- to BOSE speaker amp. terminal 11,
- through 15 A fuse [No. 17, located in the fuse block (J/B)]
- to woofer amp. terminal 8.

With the ignition switch in the ACC or ON position, power is supplied

- through 10 A fuse [No. 6, located in the fuse block (J/B)]
- to audio unit terminal 10,
- through audio unit terminal 12
- to BOSE speaker amp. terminal 41,
- through BOSE speaker amp. terminal 32
- to woofer amp. terminal 6.

Ground is supplied through the case of the audio unit.

Ground is also supplied

- to BOSE speaker amp. terminal 27
- to woofer amp. terminal 7
- through body grounds B5, B6 and T14.

When audio switch is pressed, audio signals are supplied

- through audio unit terminals 1, 2, 3, 4, 13, 14, 15 and 16
- to BOSE speaker amp. terminals 33, 34, 35, 36, 37, 38, 39 and 40.

Audio signals are amplified by the BOSE speaker amp.

The amplified audio signals are supplied

- through BOSE speaker amp. terminals 12, 19, 20, 21, 22, 23, 24, 25, 26 and 28
- to terminals 1 and 2 of driver door speaker and passenger door speaker
- to terminals 1 and 2 of rear speaker LH and RH
- to terminals 1 and 2 of tweeter (driver side) and tweeter (passenger side)
- to terminals 1 and 2 of woofer amp.

Audio signals are amplified by the woofer amp.

The amplified audio signals are supplied

- through woofer amp. terminals 3 and 4
- to terminals 1 and 2 of woofer.

When one of steering switch is pressed to volume up, seek up, or mode ON, resistance in steering switch circuit changes depending on which button is pressed.

When one of steering switch is pressed to volume down, seek down, or power ON, resistance in steering switch circuit changes depending on which button is pressed.

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## AudioPilot® System

AudioPilot® is the sound improving system that picks up by a microphone under the steering any noises or the sound of music coming into the vehicle, and that uses the BOSE speaker amp. to revise the frequency feature of music in real time in response to the frequency feature of the noise while driving and listening to music.

- If low frequency area noise from vehicle is loud, it adjusts low frequency element of music to be bigger than vehicle noise.
- If high frequency area noise from vehicle is loud, it adjusts high frequency element of music to be bigger than vehicle noise.
- If vehicle noise is smaller than the setting volume, correction is not performed.

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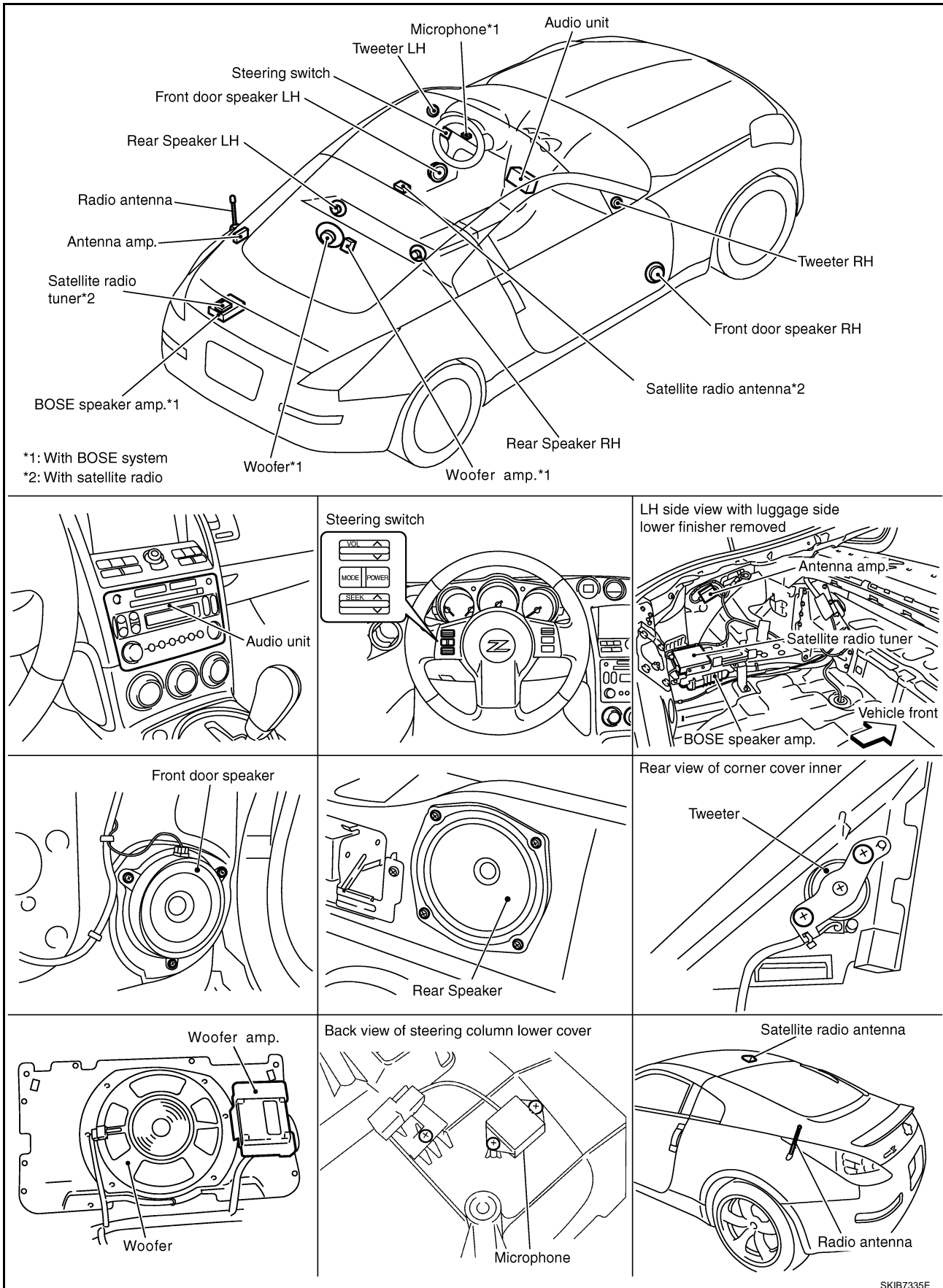
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# AUDIO

## Component Parts Location

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**AV-9**

## Revision: 2005 August

TKWT4061E

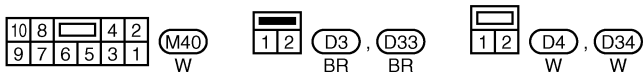
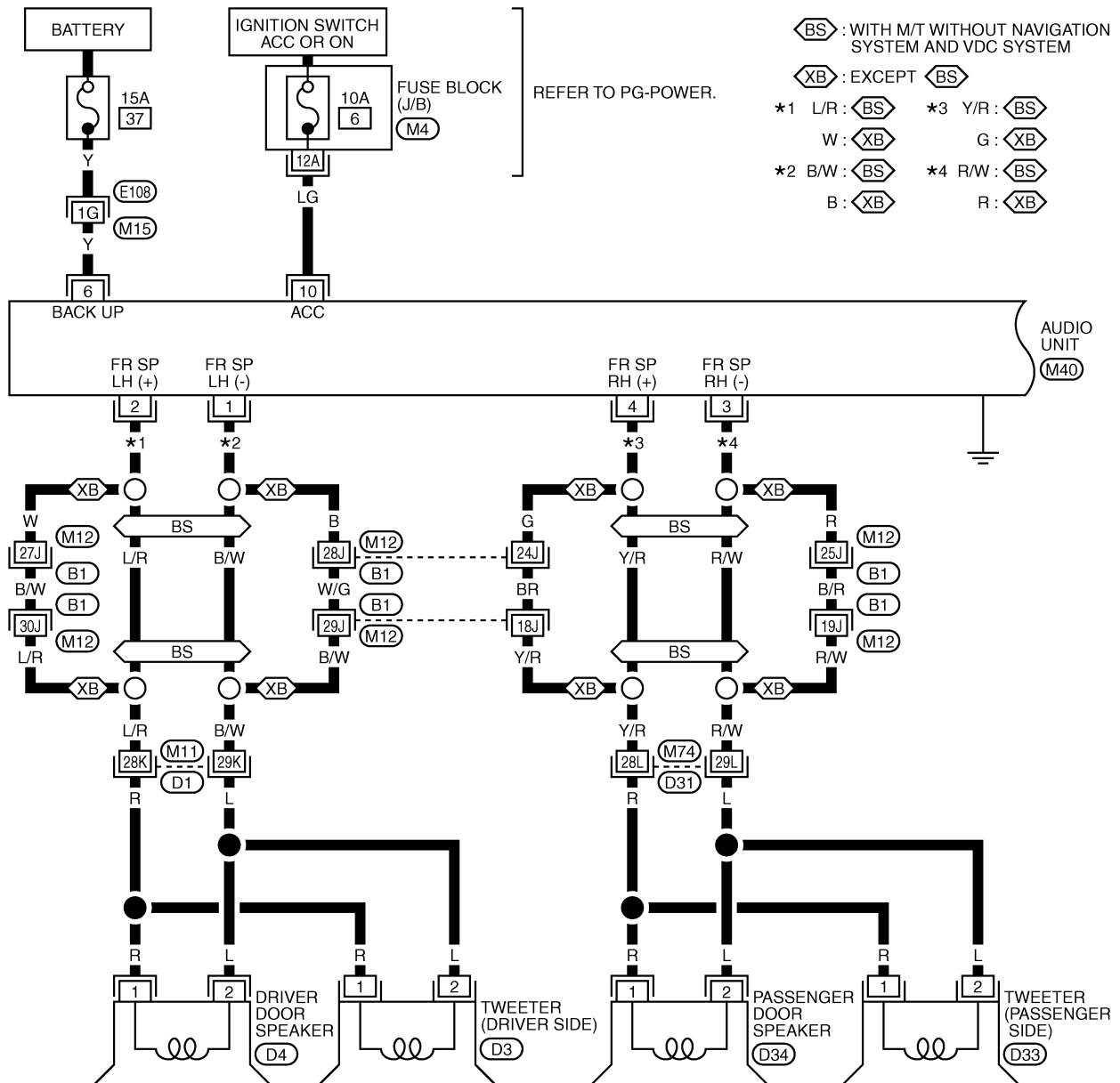


## AUDIO

## Wiring Diagram — AUDIO — / Base System

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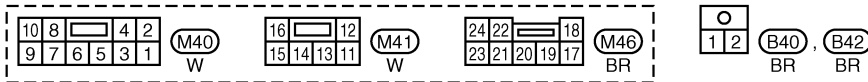
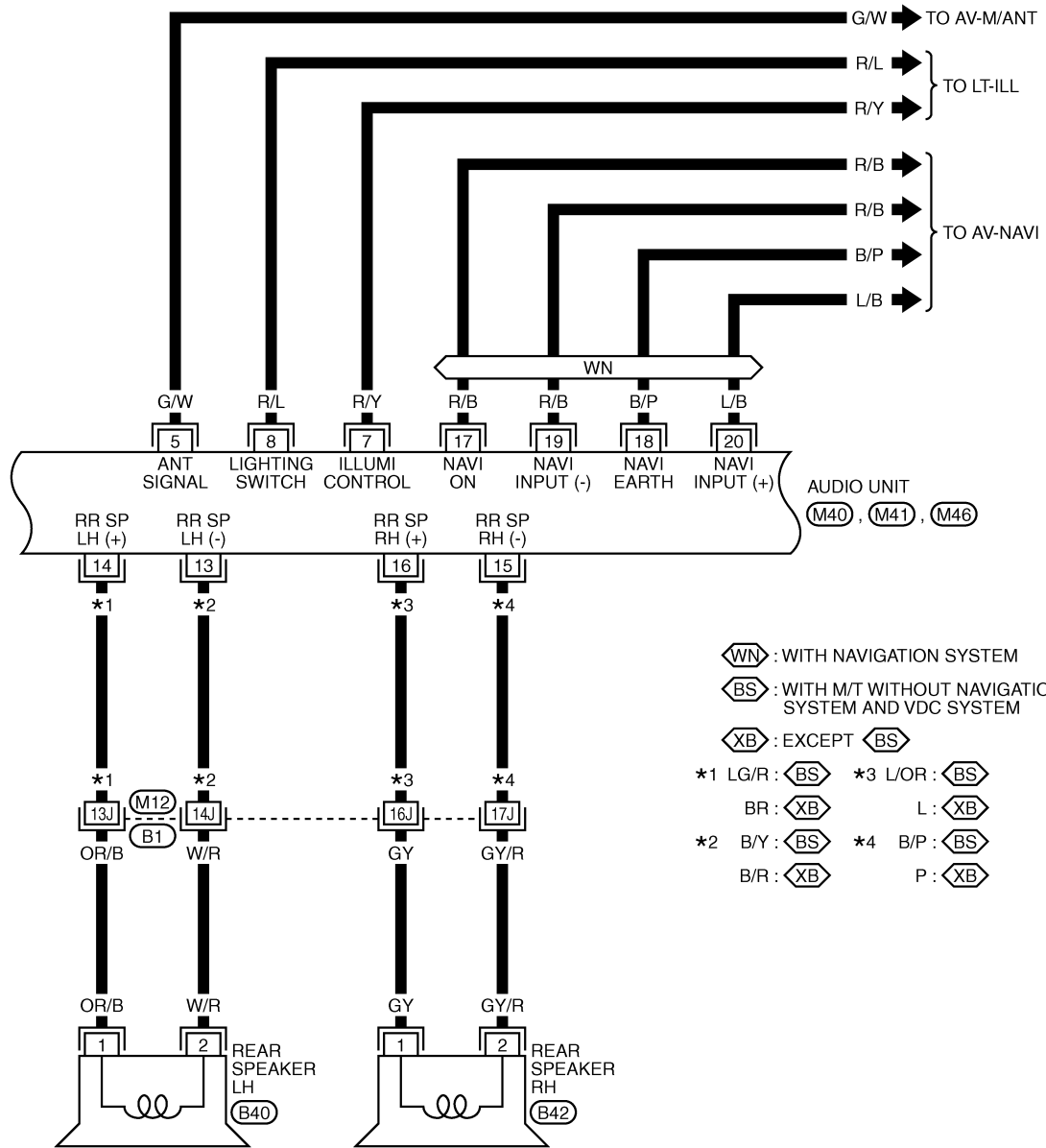
## AV-AUDIO-01



REFER TO THE FOLLOWING.

(E108), (B1), (D1), (D31)  
-SUPER MULTIPLE JUNCTION  
(SMJ)

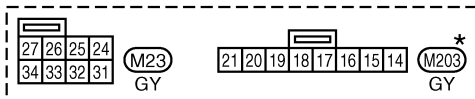
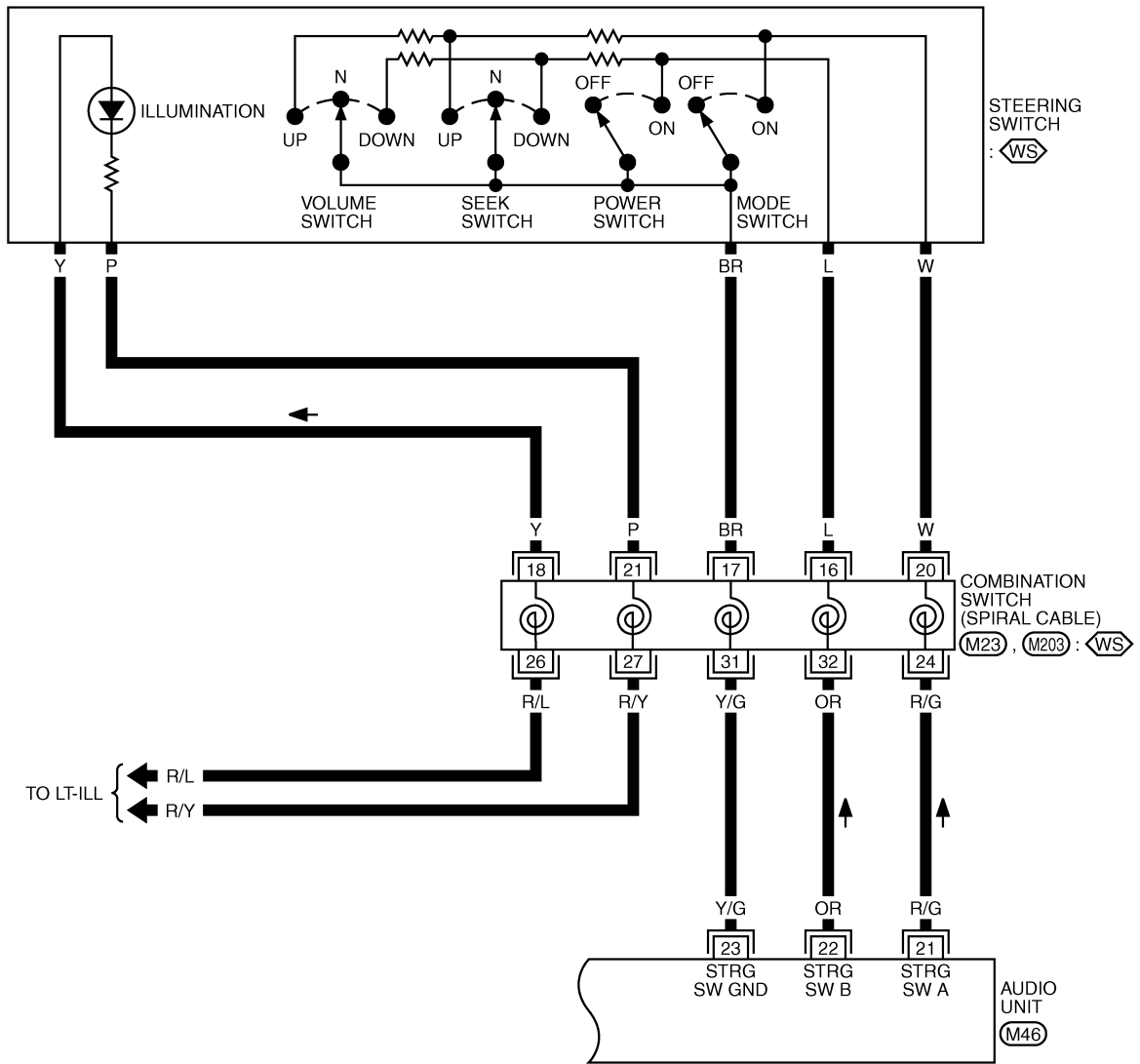
(M4) - FUSE BLOCK-JUNCTION  
BOX (J/B)



REFER TO THE FOLLOWING.

(B1) -SUPER MULTIPLE JUNCTION (SMJ)

⬡WS⬡ : WITH STEERING SWITCH



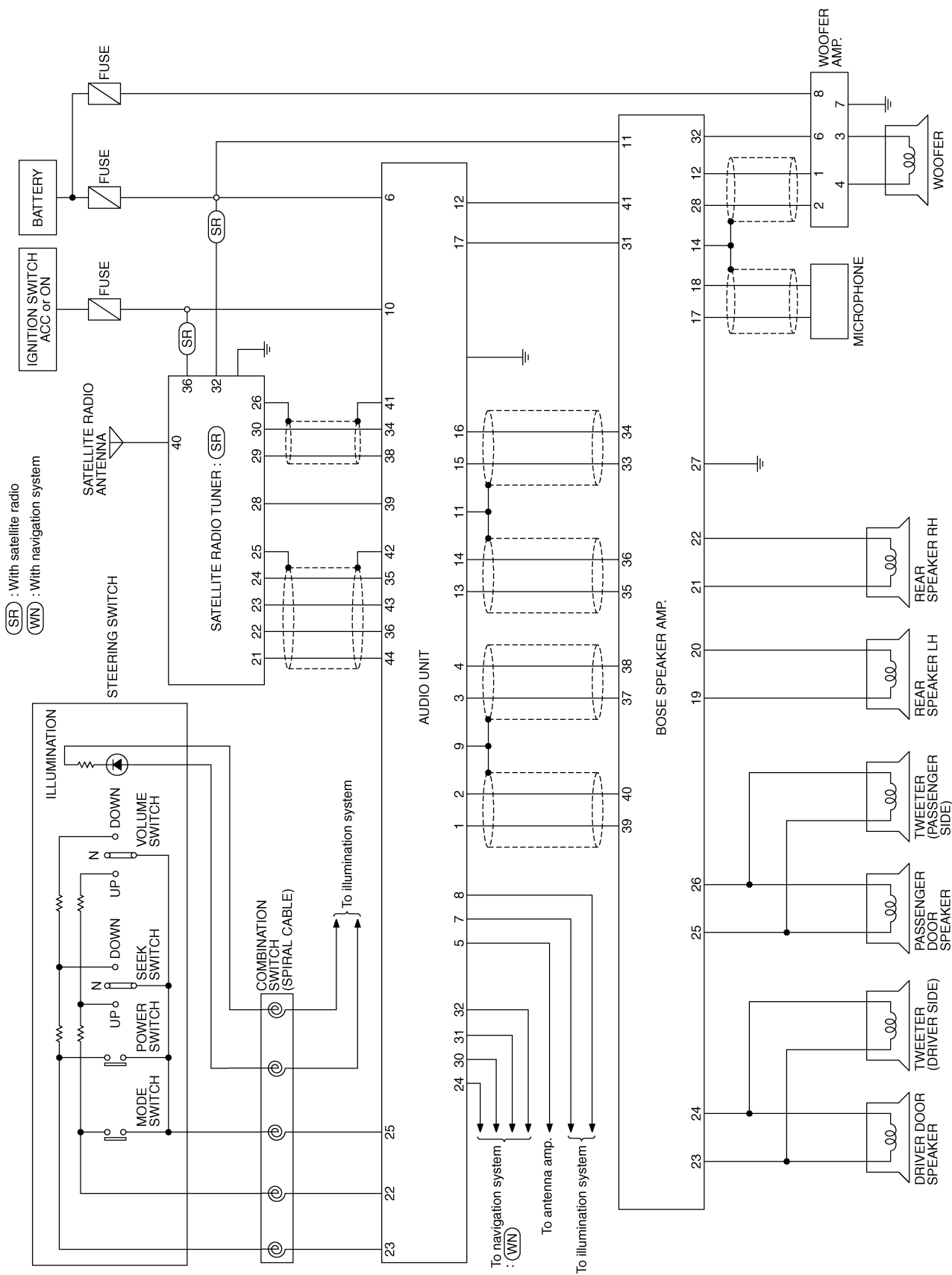
\*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

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Schematic / BOSE System

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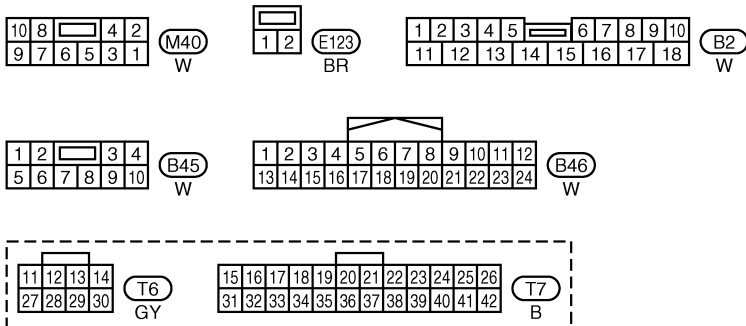
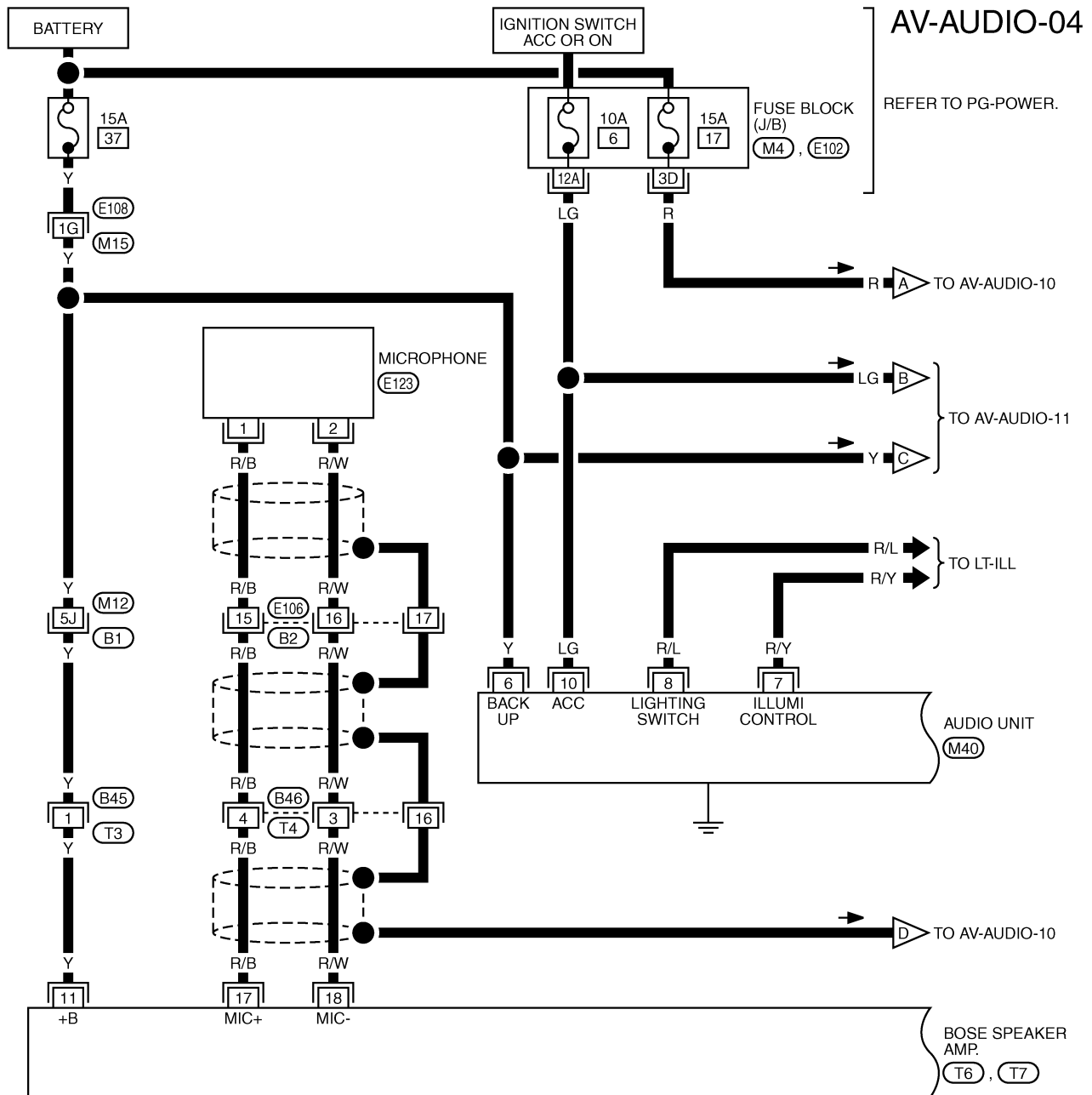


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## AUDIO

## Wiring Diagram — AUDIO — / BOSE System (Coupe Models)

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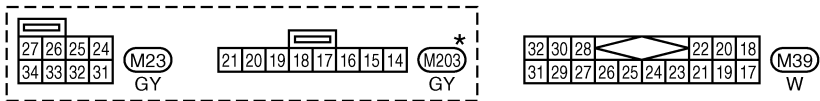
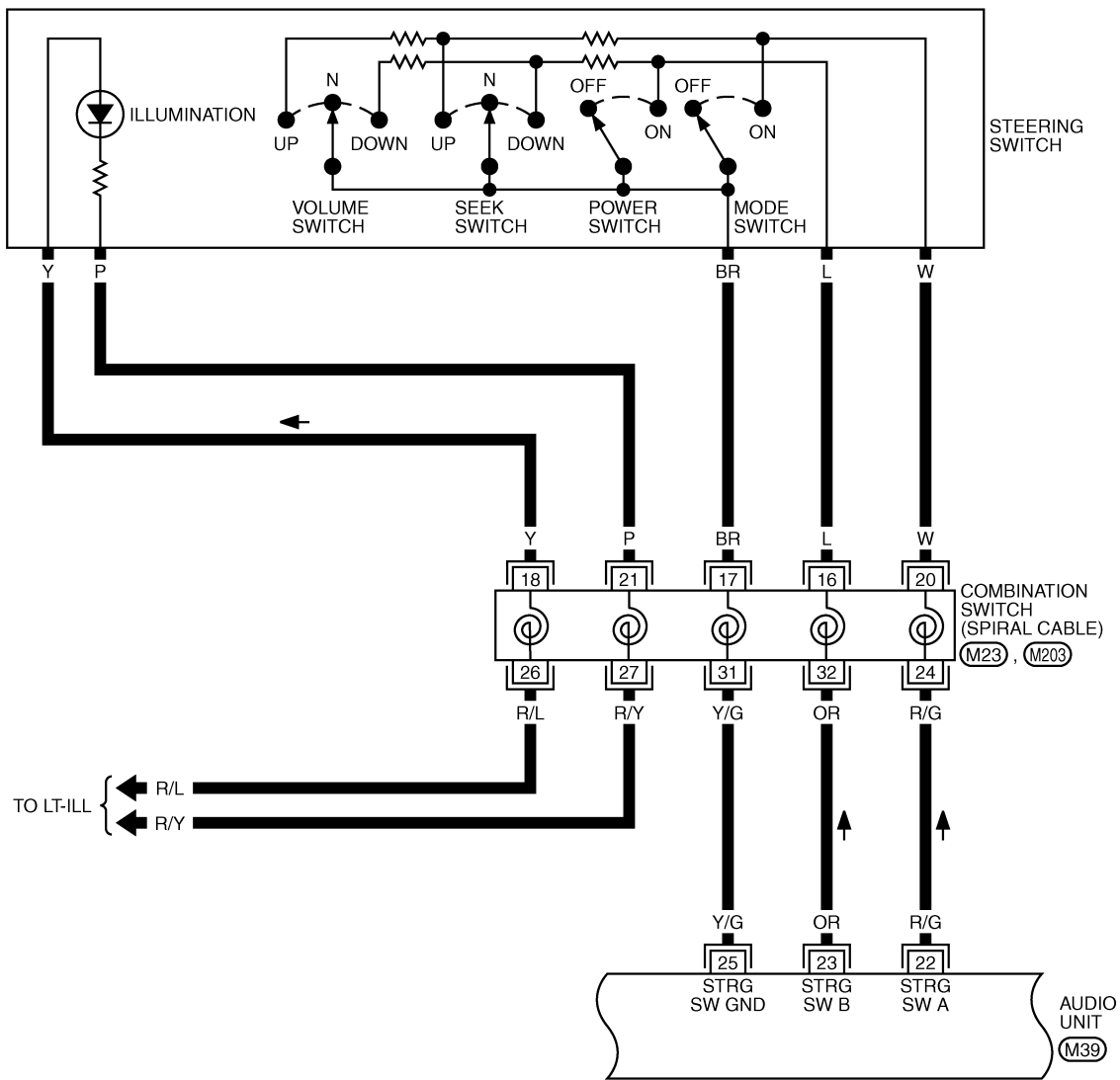


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(E108), (B1) -SUPER MULTIPLE JUNCTION (SMJ)

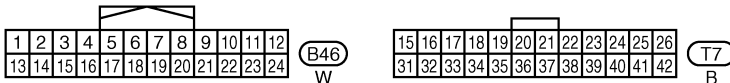
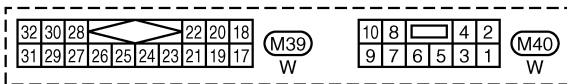
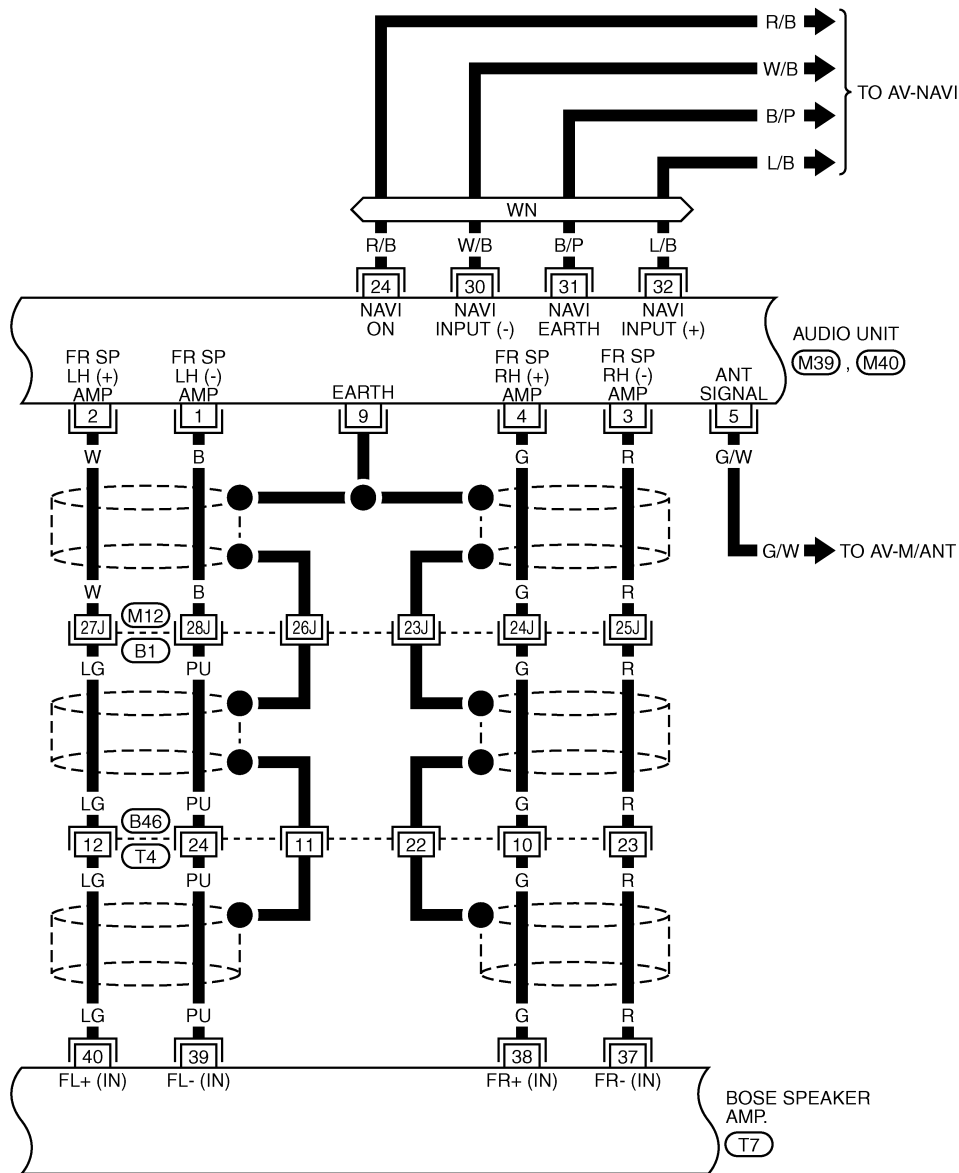
(M4), (E102) -FUSE BLOCK-JUNCTION BOX (J/B)

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★: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

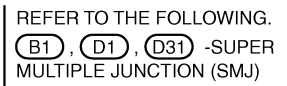
WN : WITH NAVIGATION SYSTEM

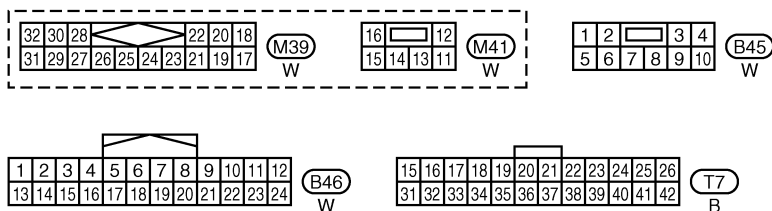
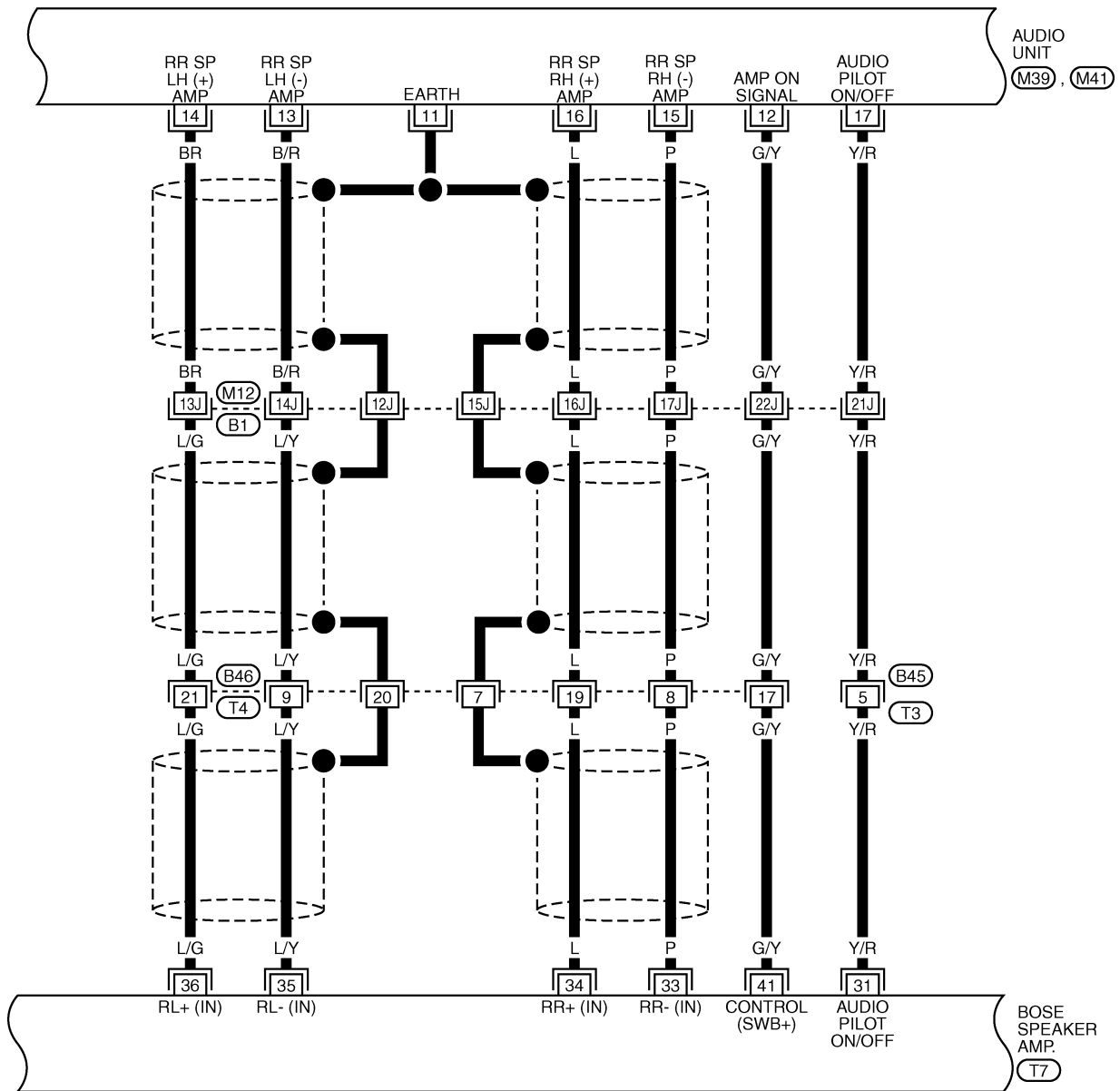


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(B1) -SUPER MULTIPLE JUNCTION (SMJ)



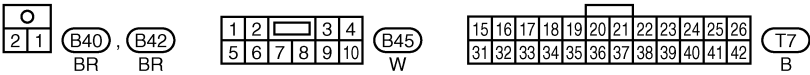
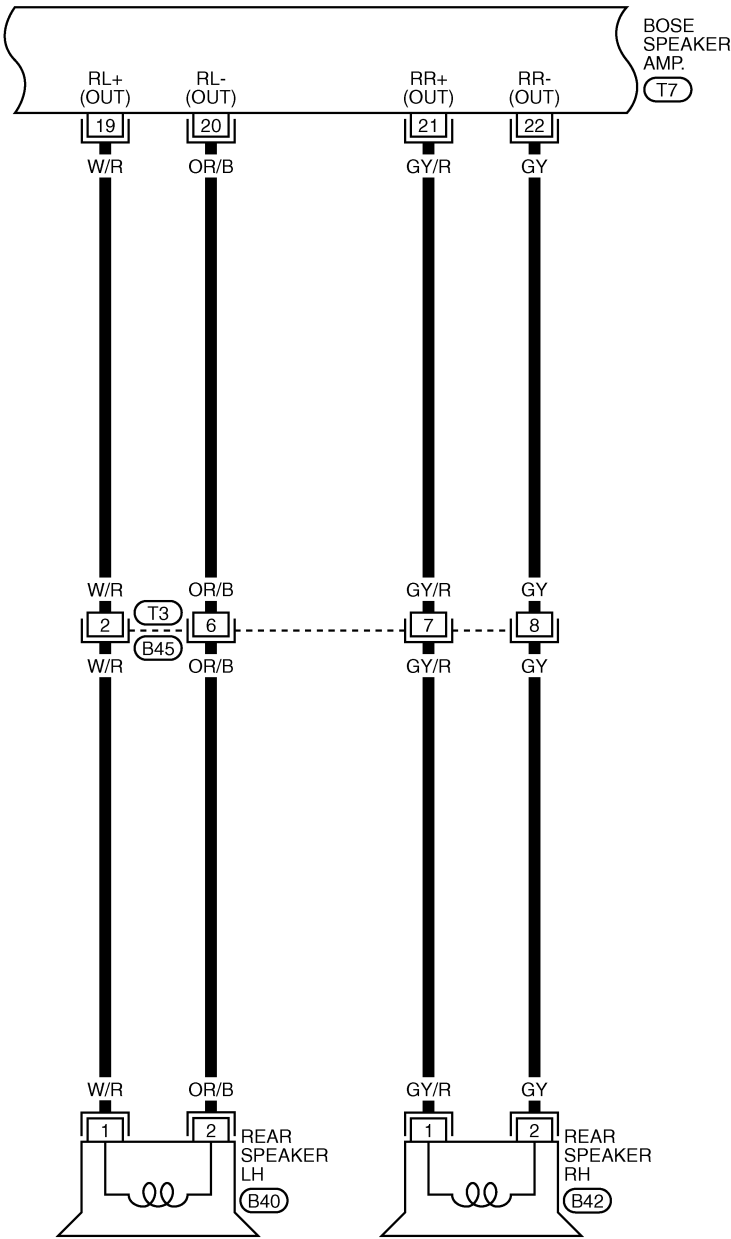
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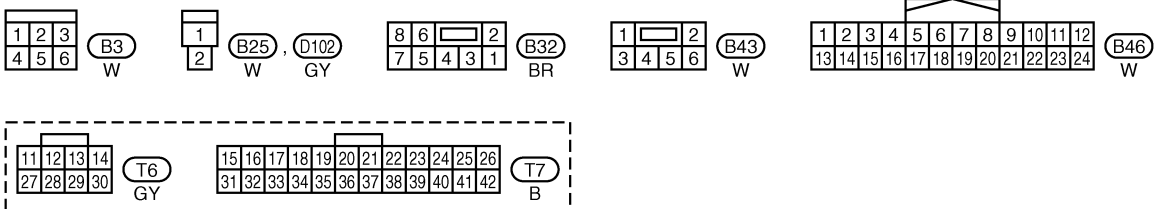
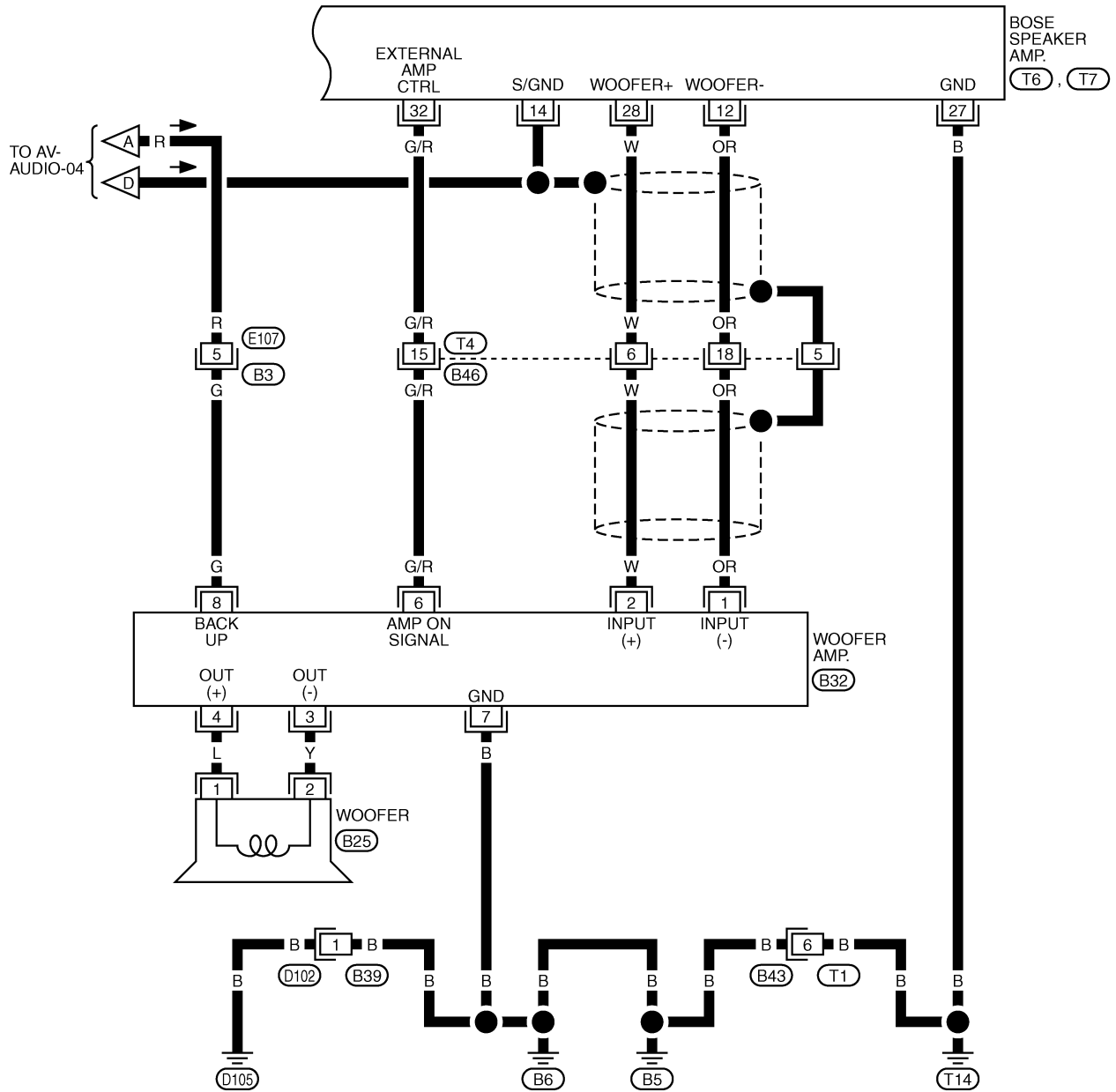
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**(B1)** -SUPER MULTIPLE JUNCTION (SMJ)

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# AUDIO

## AV-AUDIO-10



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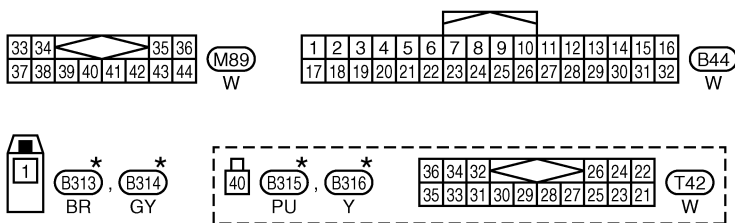
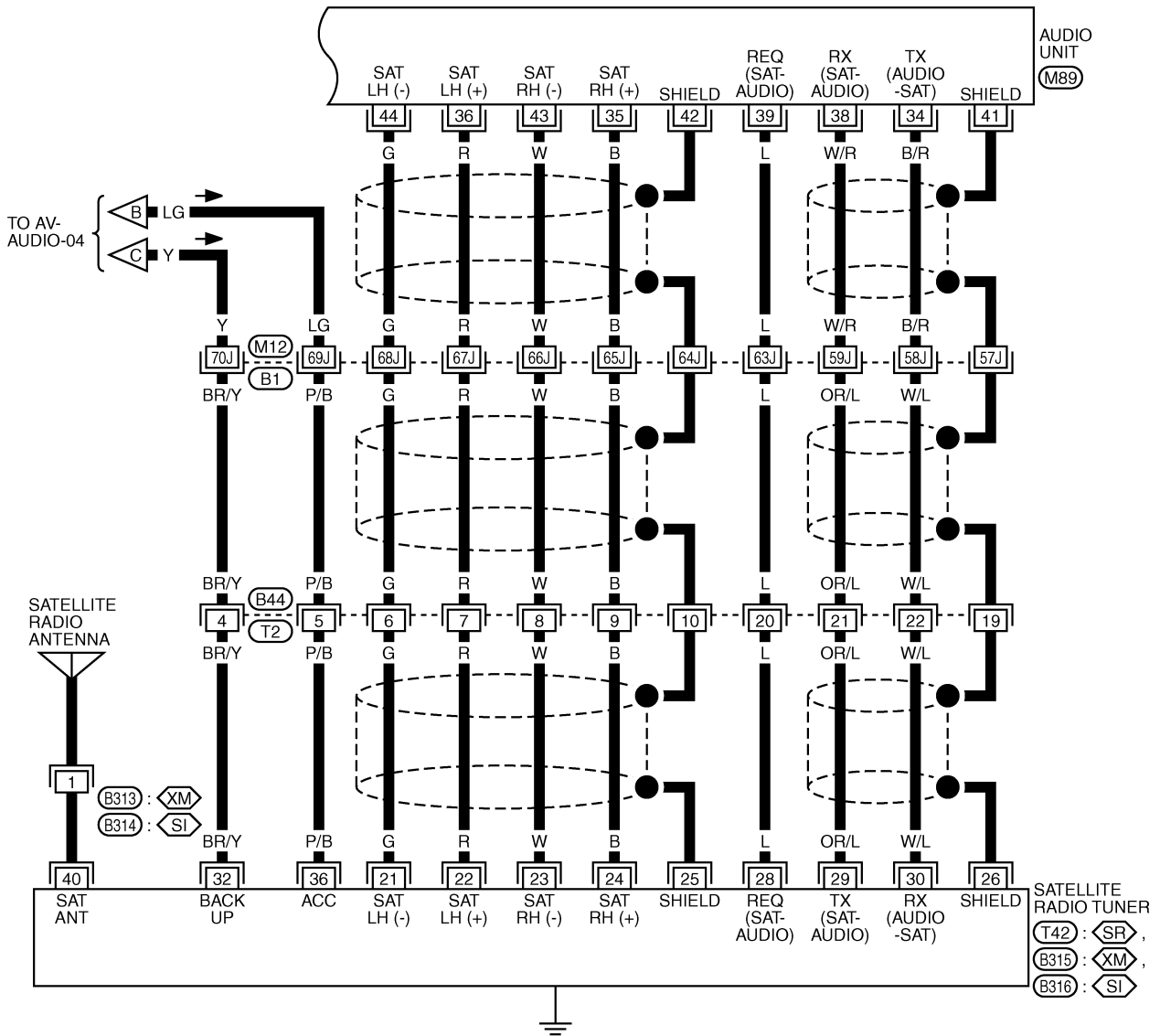
# AUDIO

AV-AUDIO-11

⬡SR⬡ : WITH SATELLITE RADIO

⬡XM⬡ : WITH SATELLITE RADIO (XM)

⬡SI⬡ : WITH SATELLITE RADIO (SIRIUS)



⬡ : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.

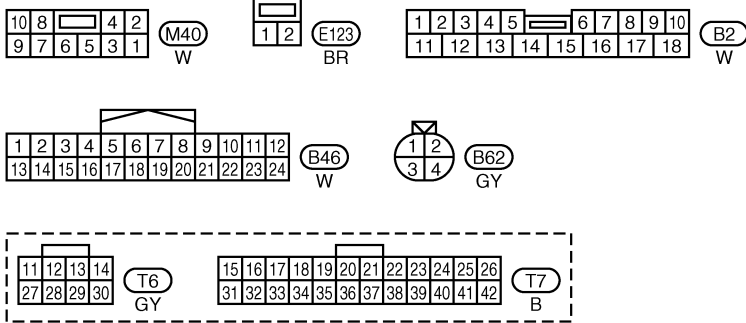
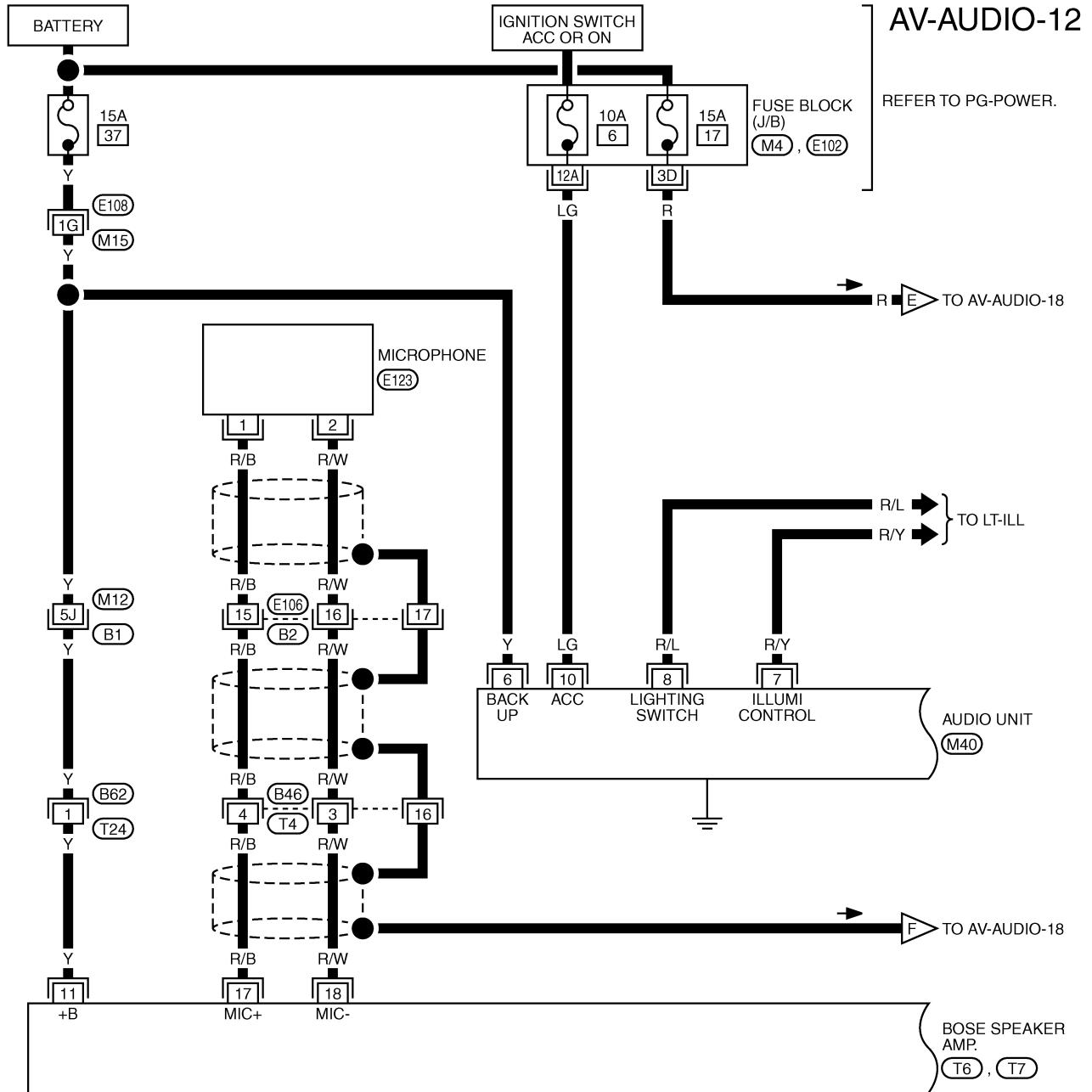
⬡B1⬡ : -SUPER MULTIPLE JUNCTION (SMJ)

TKWT4073E

# AUDIO

## Wiring Diagram — AUDIO — / BOSE System (Roadster Models)

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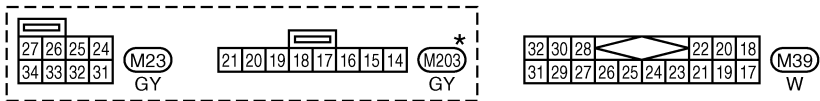
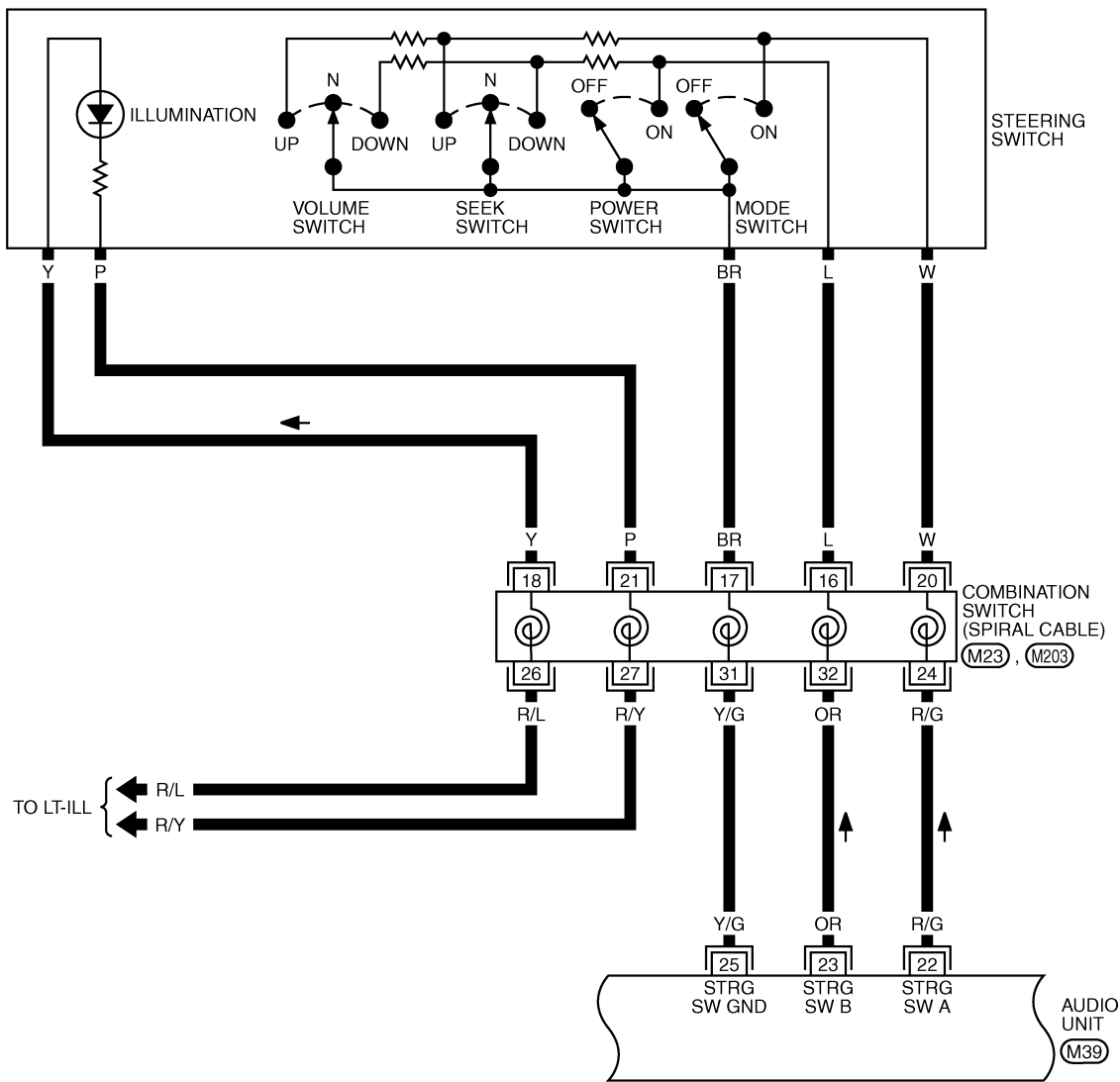


REFER TO THE FOLLOWING.

(E108), (B1) -SUPER MULTIPLE JUNCTION (SMJ)

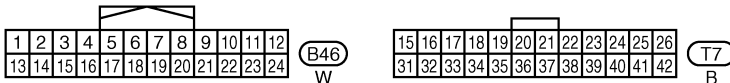
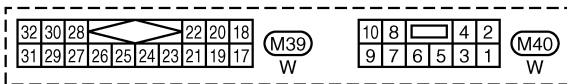
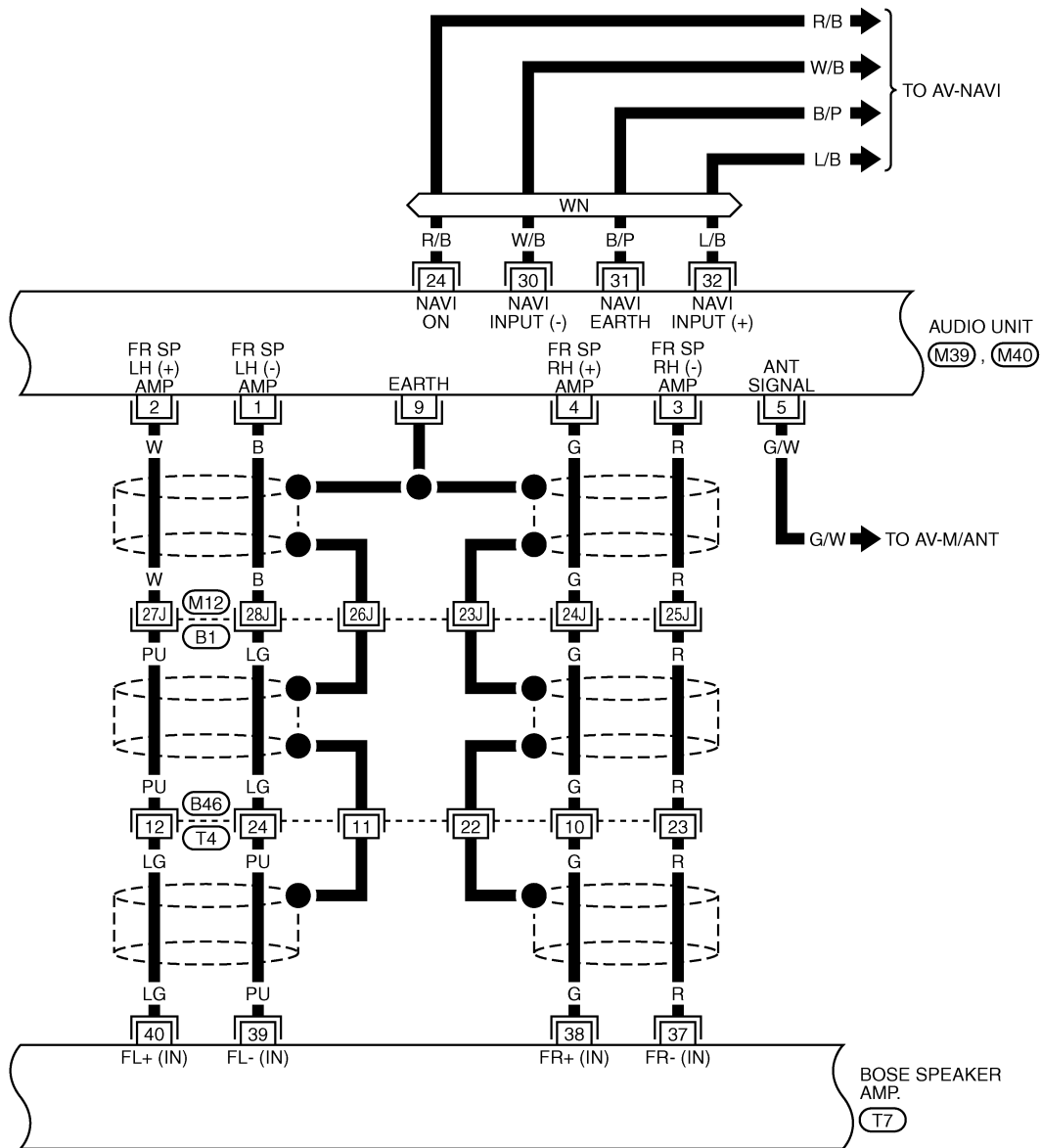
(M4), (E102) -FUSE BLOCK-JUNCTION BOX (J/B)

TKWT4074E



★: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

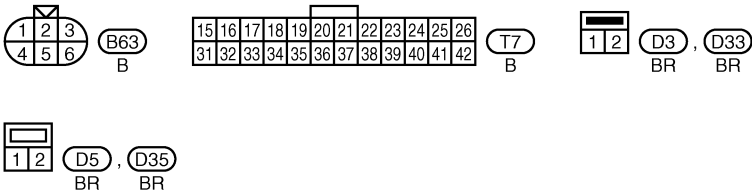
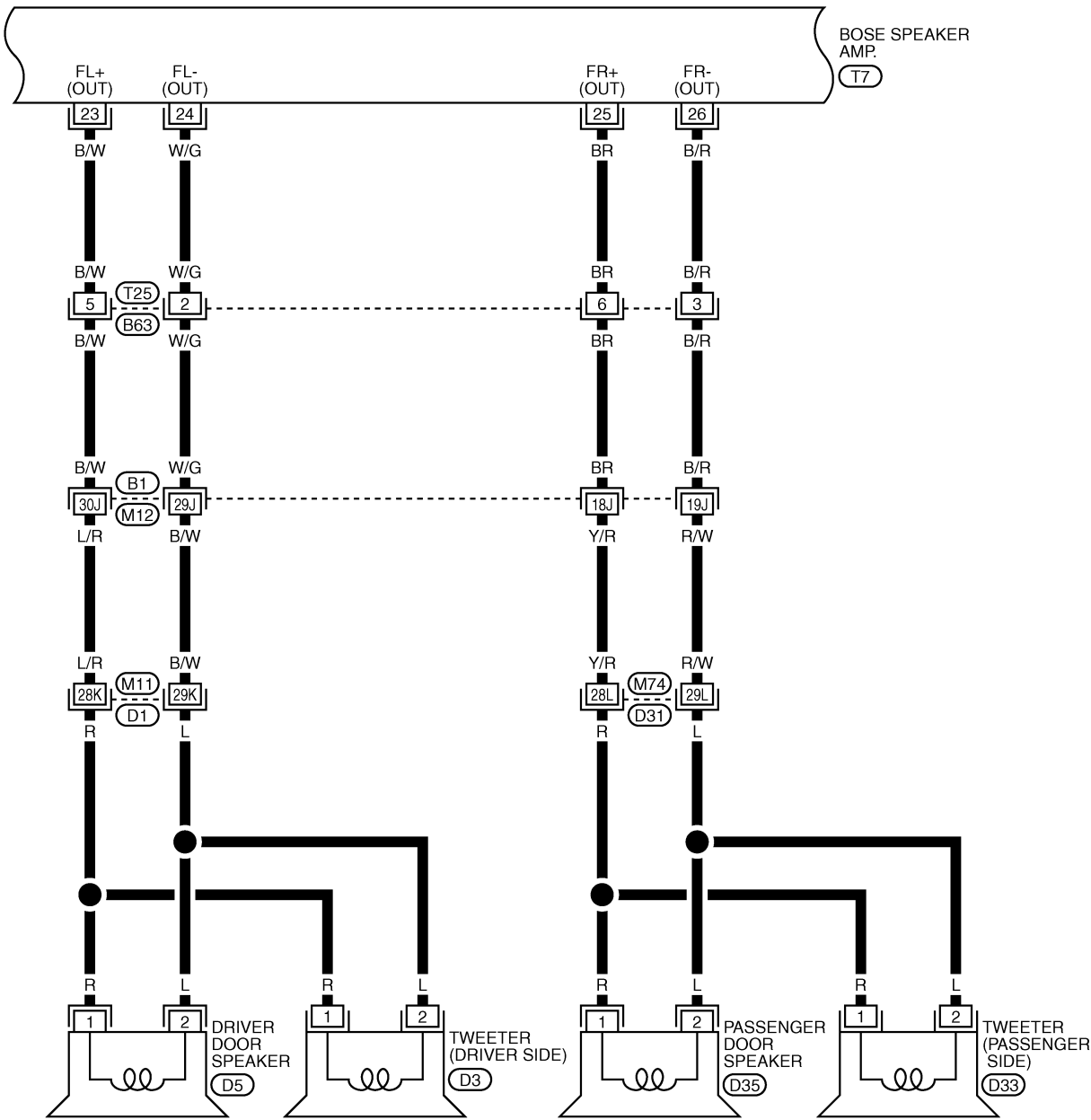
WN : WITH NAVIGATION SYSTEM



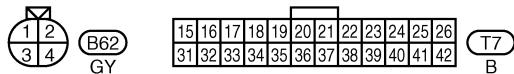
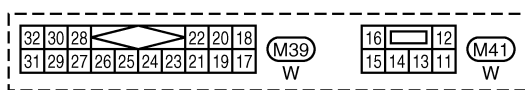
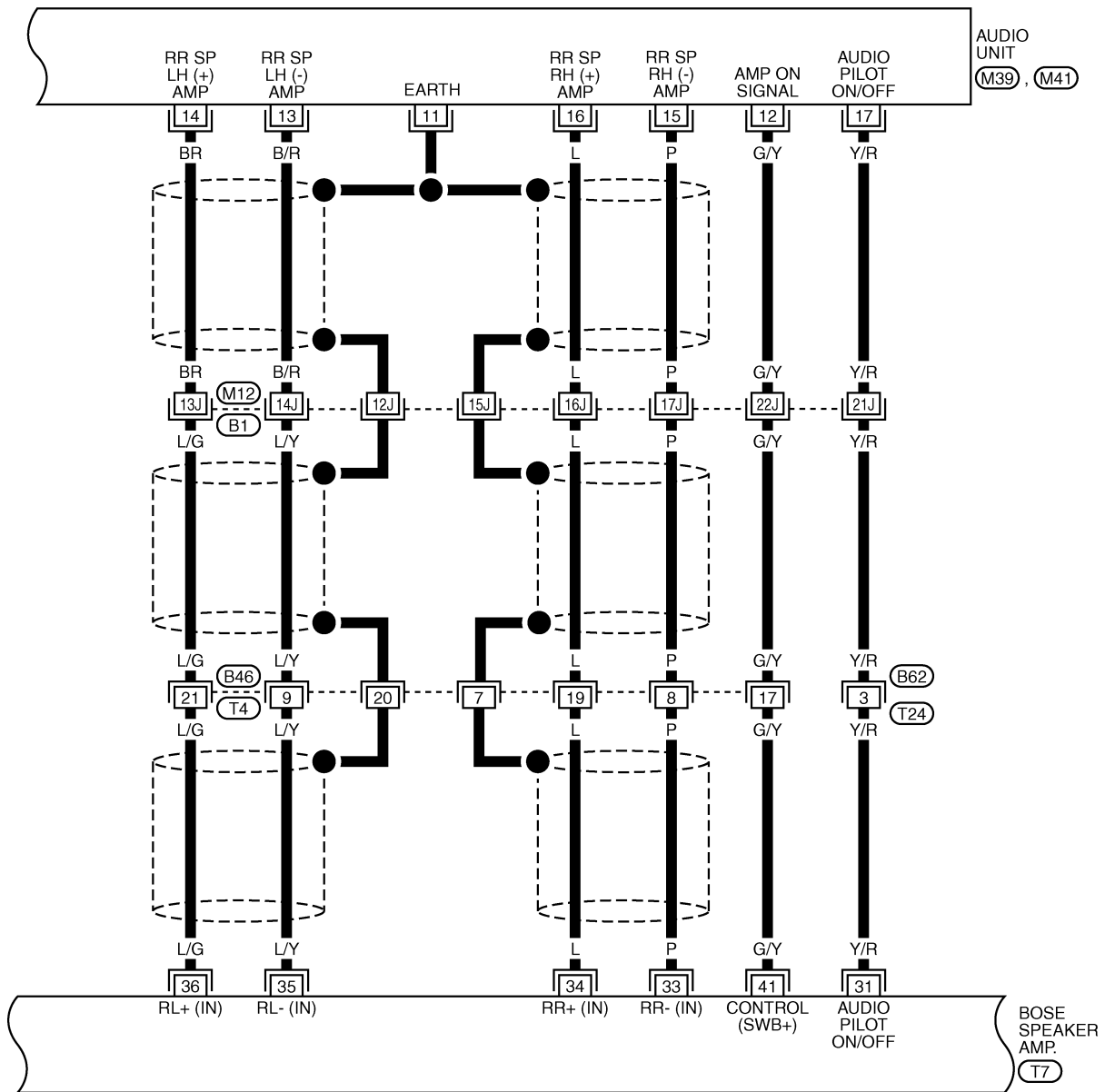
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(B1) -SUPER MULTIPLE JUNCTION (SMJ)



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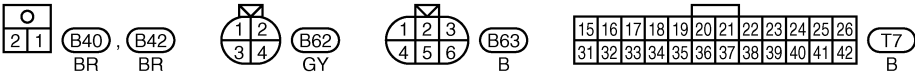
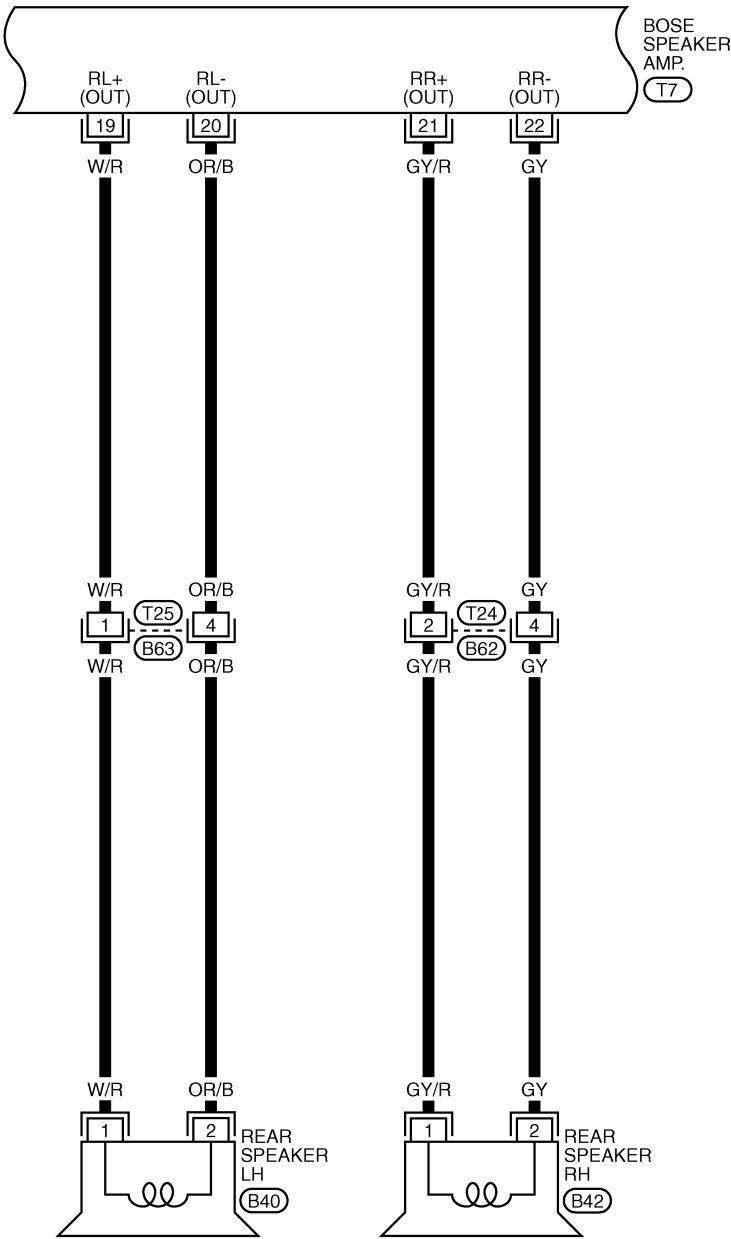


REFER TO THE FOLLOWING.  
(B1), (D1), (D31) -SUPER  
MULTIPLE JUNCTION (SMJ)



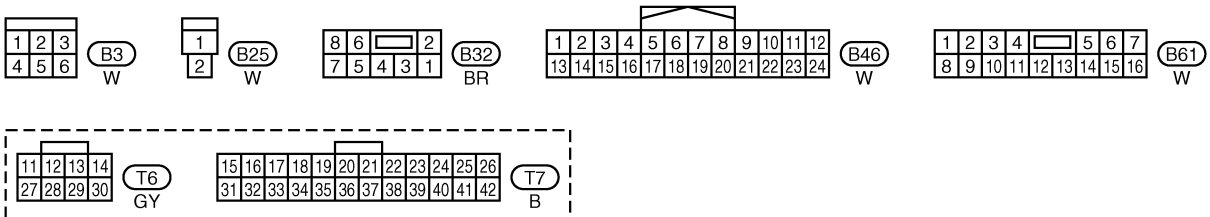
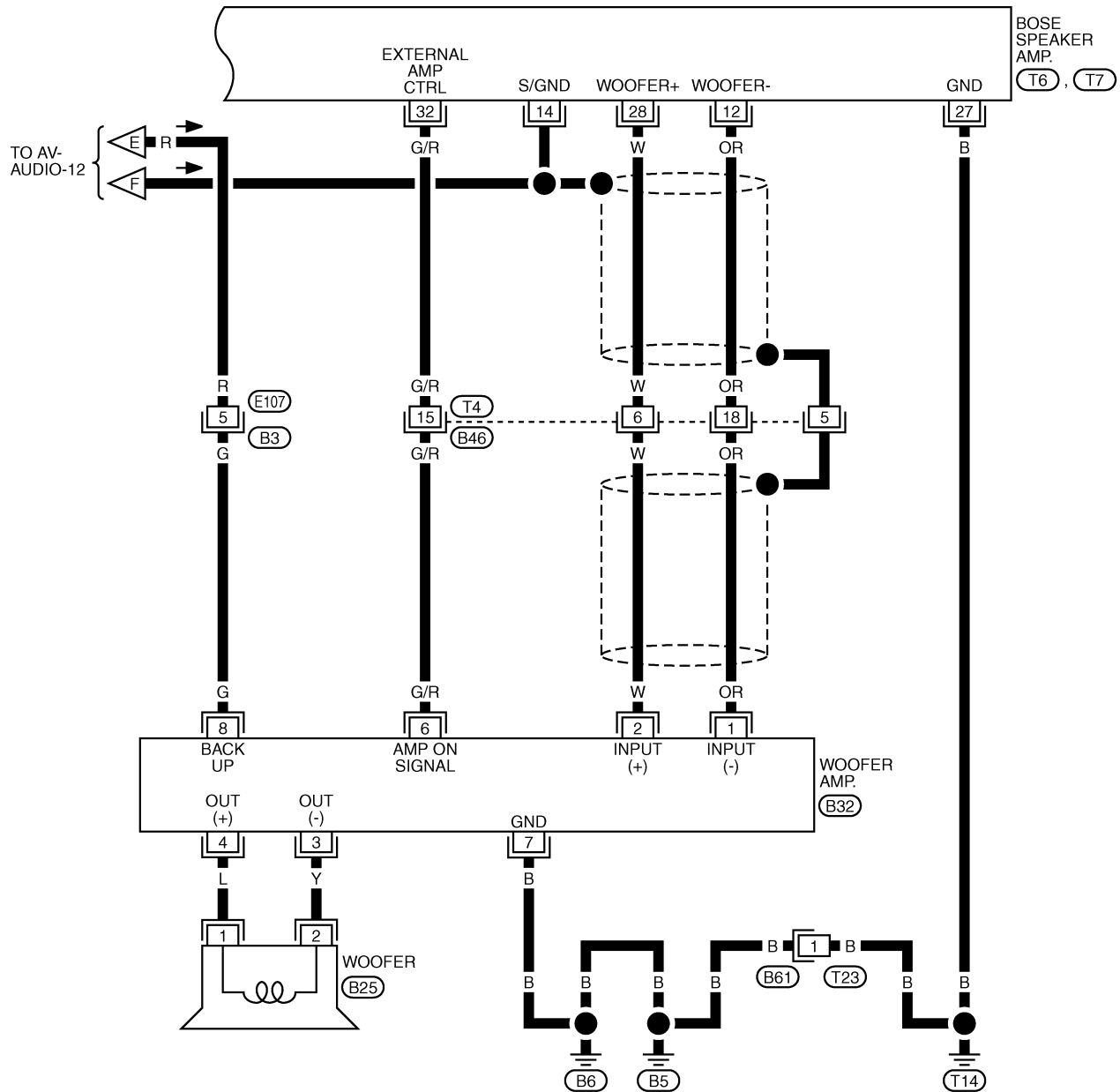
REFER TO THE FOLLOWING.  
 (B1) -SUPER MULTIPLE JUNCTION (SMJ)

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# AUDIO

## AV-AUDIO-18

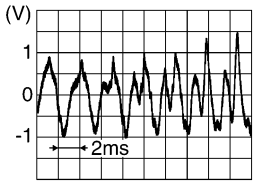
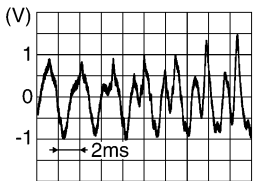
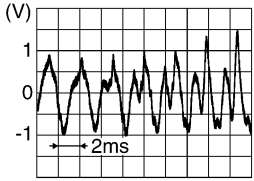
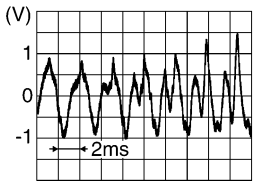
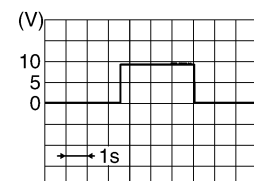


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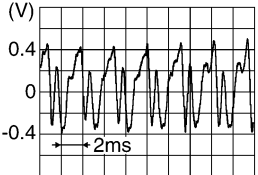
# AUDIO

## Terminals and Reference Value for Audio Unit / Base System

NKS002B9

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	—			Ignition switch	Operation	
2 (L/R)* <sup>1</sup> (W)* <sup>2</sup>	1 (B/W)* <sup>1</sup> (B)* <sup>2</sup>	Audio signal front LH	Output	ON	Receive audio signal	 <p>SKIB3609E</p>
4 (Y/R)* <sup>1</sup> (G)* <sup>2</sup>	3 (R/W)* <sup>1</sup> (R)* <sup>2</sup>	Audio signal front RH	Output	ON	Receive audio signal	 <p>SKIB3609E</p>
5 (G/W)	Ground	Antenna amp. ON signal	Output	ON	—	Approx. 12 V
6 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
7 (R/Y)	Ground	Illumination control signal	Input	ON	Illumination control switch is operated by lighting switch in ON position	Changes between approx. 0 and approx. 12 V
8 (R/L)	Ground	Lighting switch signal	Input	ON	Lighting switch ON	Approx. 12 V
					Lighting switch OFF	Approx. 0 V
10 (LG)	Ground	ACC power supply	Input	ACC	—	Battery voltage
14 (LG/R)* <sup>1</sup> (BR)* <sup>2</sup>	13 (B/Y)* <sup>1</sup> (B/R)* <sup>2</sup>	Audio signal rear LH	Output	ON	Receive audio signal	 <p>SKIB3609E</p>
16 (L/OR)* <sup>1</sup> (L)* <sup>2</sup>	15 (B/P)* <sup>1</sup> (P)* <sup>2</sup>	Audio signal rear RH	Output	ON	Receive audio signal	 <p>SKIB3609E</p>
17 (R/B)	18 (B/P)	Voice guidance ON signal* <sup>3</sup>	Input	ON	Press "VOICE" button	 <p>SKIB0232E</p>

# AUDIO

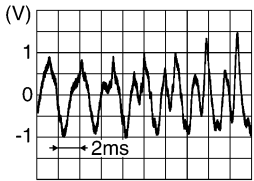
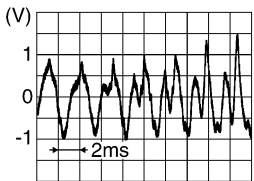
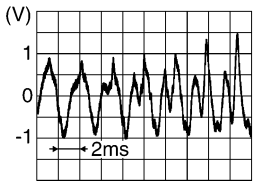
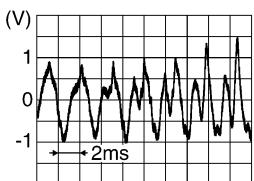
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	—			Ignition switch	Operation	
20 (L/B)	19 (R/B)	Voice guidance signal*3	Input	ON	Press "VOICE" button	
21 (R/G)	23 (Y/G)	Remote control signal A	Input	ON	Press and hold MODE switch	Approx. 0 V
					Press and hold SEEK UP switch	Approx. 1.7 V
					Press and hold VOLUME UP switch	Approx. 3.3 V
22 (OR)	23 (Y/G)	Remote control signal B	Input	ON	Press and hold POWER switch	Approx. 0 V
					Press and hold SEEK DOWN switch	Approx. 1.7 V
					Press and hold VOLUME DOWN switch	Approx. 3.3 V
23 (Y/G)	Ground	Remote control ground	—	ON	—	Approx. 0 V

- \*1: With M/T without navigation system and VDC system
- \*2: Except \*1
- \*3: With navigation system

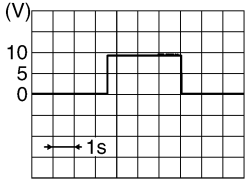
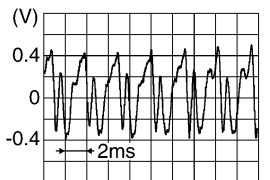
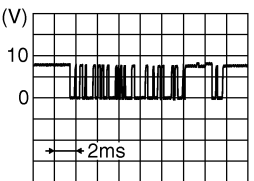
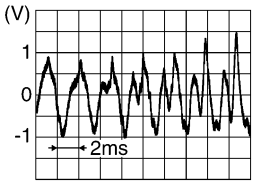
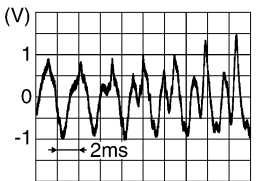
# AUDIO

## Terminals and Reference Value for Audio Unit / BOSE System

NKS002BA

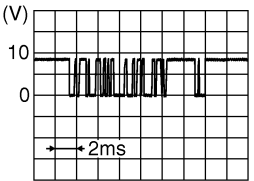
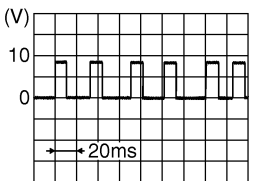
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	—			Ignition switch	Operation	
2 (W)	1 (B)	Audio signal front LH	Output	ON	Receive audio signal	 <p>SKIB3609E</p>
4 (G)	3 (R)	Audio signal front RH	Output	ON	Receive audio signal	 <p>SKIB3609E</p>
5 (G/W)	Ground	Antenna amp. ON signal	Output	ON	—	Approx. 12 V
6 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
7 (R/Y)	Ground	Illumination control signal	Input	ON	Illumination control switch is operated by lighting switch in ON position	Changes between approx. 0 and approx. 12 V
8 (R/L)	Ground	Lighting switch signal	Input	ON	Lighting switch ON	Approx. 12 V
					Lighting switch OFF	Approx. 0 V
9	—	Shield	—	—	—	—
10 (LG)	Ground	ACC power supply	Input	ACC	—	Battery voltage
11	—	Shield	—	—	—	—
12 (G/Y)	Ground	BOSE speaker amp. ON signal	Output	ON	—	Approx. 12 V
14 (BR)	13 (B/R)	Audio signal rear LH	Output	ON	Receive audio signal	 <p>SKIB3609E</p>
16 (L)	15 (P)	Audio signal rear RH	Output	ON	Receive audio signal	 <p>SKIB3609E</p>
17 (Y/R)	Ground	AudioPilot® ON/OFF signal	Output	ON	AudioPilot® OFF	Approx. 7.5 V
					AudioPilot® ON	Approx. 0 V

# AUDIO

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	—			Ignition switch	Operation	
22 (R/G)	25 (Y/G)	Remote control signal A	Input	ON	Press and hold MODE switch	Approx. 0 V
					Press and hold SEEK UP switch	Approx. 1.7 V
					Press and hold VOLUME UP switch	Approx. 3.3 V
23 (OR)	25 (Y/G)	Remote control signal B	Input	ON	Press and hold POWER switch	Approx. 0 V
					Press and hold SEEK DOWN switch	Approx. 1.7 V
					Press and hold VOLUME DOWN switch	Approx. 3.3 V
24 (R/B)	31 (B/P)	Voice guidance ON signal*1	Input	ON	Press "VOICE" button	 SKIB0232E
25 (Y/G)	Ground	Remote control ground	—	ON	—	Approx. 0 V
32 (L/B)	30 (W/B)	Voice guidance signal*1	Input	ON	Press "VOICE" button	 SKIB3597E
34 (B/R)	Ground	Communication signal Tx (AUDIO-SAT)*2	Output	ON	When setting to satellite radio mode	 SKIB7336E
35 (B)	43 (W)	Satellite radio audio signal RH*2	Input	ON	Receive satellite radio audio signal	 SKIB3609E
36 (R)	44 (G)	Satellite radio audio signal LH*2	Input	ON	Receive satellite radio audio signal	 SKIB3609E



# AUDIO

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	—			Ignition switch	Operation	
38 (W/R)	Ground	Communication signal Rx (SAT-AUDIO)*2	Input	ON	When setting to satellite radio mode	 <small>SKIB7337E</small>
39 (L)	Ground	Communication signal REQ (SAT-AUDIO)*2	Input	ON	When setting to satellite radio mode	 <small>SKIB7338E</small>
41	—	Shield*2	—	—	—	—
42	—	Shield*2	—	—	—	—

\*1: With navigation system

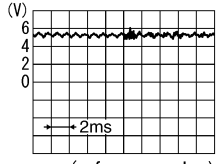
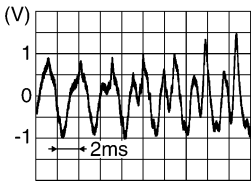
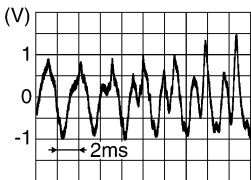
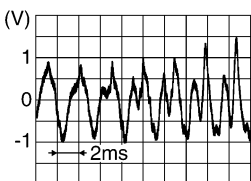
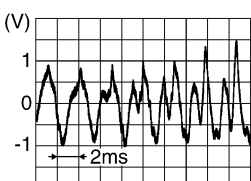
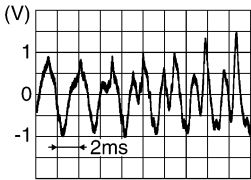
\*2: With satellite radio

AV

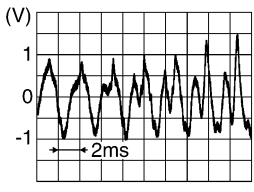
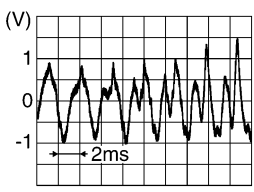
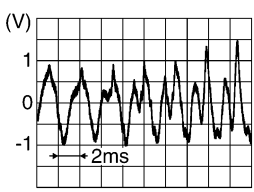
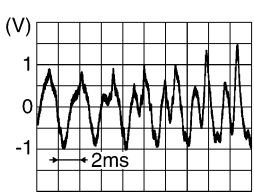
# AUDIO

## Terminals and Reference Value for BOSE Speaker Amp.

NKS002BB

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	—			Ignition switch	Operation	
11 (Y)	Ground	Battery power supply	Input	ON	—	Battery voltage
14	—	Shield	—	—	—	—
17 (R/B)	18 (R/W)	Microphone signal	Input	ON	When inputting some sounds (voice, etc.) toward the microphone	 <p>(reference value)</p> <p>PKIA2104E</p>
19 (W/R)	20 (OR/B)	Audio signal rear LH	Output	ON	Receive audio signal	 <p>SKIB3609E</p>
21 (GY/R)	22 (GY)	Audio signal rear RH	Output	ON	Receive audio signal	 <p>SKIB3609E</p>
23 (B/W)	24 (W/G)	Audio signal front LH	Output	ON	Receive audio signal	 <p>SKIB3609E</p>
25 (BR)	26 (B/R)	Audio signal front RH	Output	ON	Receive audio signal	 <p>SKIB3609E</p>
27 (B)	Ground	Ground	—	ON	—	Approx. 0 V
28 (W)	12 (OR)	Audio signal woofer	Output	ON	Receive audio signal	 <p>SKIB3609E</p>
31 (Y/R)	Ground	AudioPilot® ON/OFF signal	Input	ON	AudioPilot® OFF	Approx. 7.5 V
					AudioPilot® ON	Approx. 0 V
32 (G/R)	Ground	Woofer amp. ON signal	Output	ON	—	Approx. 12 V

# AUDIO

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	—			Ignition switch	Operation	
34 (L)	33 (P)	Audio signal rear RH	Input	ON	Receive audio signal	 SKIB3609E
36 (L/G)	35 (L/Y)	Audio signal rear LH	Input	ON	Receive audio signal	 SKIB3609E
38 (G)	37 (R)	Audio signal front RH	Input	ON	Receive audio signal	 SKIB3609E
40 (LG)	39 (PU)	Audio signal front LH	Input	ON	Receive audio signal	 SKIB3609E
41 (G/Y)	Ground	BOSE speaker amp. ON signal	Input	ON	—	Approx. 12 V

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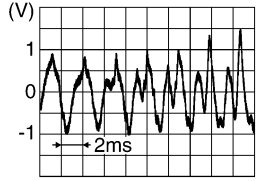
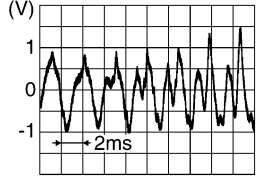
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# AUDIO

## Terminals and Reference Value for Woofer Amp.

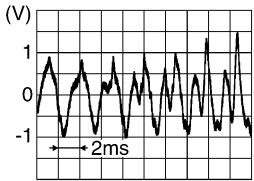
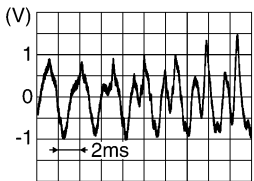
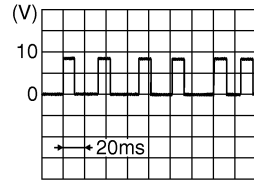
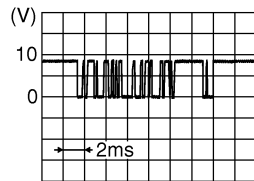
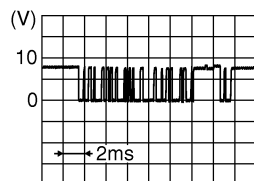
NKS002BC

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	—			Ignition switch	Operation	
2 (W)	1 (OR)	Audio signal woofer	Input	ON	Receive audio signal	 <p>SKIB3609E</p>
4 (L)	3 (Y)	Audio signal woofer	Output	ON	Receive audio signal	 <p>SKIB3609E</p>
6 (G/R)	Ground	Woofer amp. ON signal	Input	ON	—	Approx. 12 V
7 (B)	Ground	Ground	—	ON	—	Approx. 0 V
8 (G)	Ground	Battery power supply	Input	OFF	—	Battery voltage

# AUDIO

## Terminals and Reference Value for Satellite Radio Tuner

NKS002EC

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	—			Ignition switch	Operation	
22 (R)	21 (G)	Satellite radio audio signal LH	Output	ON	Receive satellite radio audio signal	 <p>SKIB3609E</p>
24 (B)	23 (W)	Satellite radio audio signal RH	Output	ON	Receive satellite radio audio signal	 <p>SKIB3609E</p>
25	—	Shield	—	—	—	—
26	—	Shield	—	—	—	—
28 (L)	Ground	Communication signal REQ (SAT-AUDIO)	Output	ON	When setting to satellite radio mode	 <p>SKIB7338E</p>
29 (OR/L)	Ground	Communication signal Tx (SAT-AUDIO)	Output	ON	When setting to satellite radio mode	 <p>SKIB7337E</p>
30 (W/L)	Ground	Communication signal Rx (AUDIO-SAT)	Input	ON	When setting to satellite radio mode	 <p>SKIB7336E</p>
32 (BR/Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
36 (P/B)	Ground	ACC power supply	Input	ACC	—	Battery voltage
40	—	Satellite radio antenna	—	—	—	—

# AUDIO

## Trouble Diagnosis

NKS002ED

- The majority of the audio malfunctions are the result of outside causes (bad CD, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and then determine the cause.
- Refer to "SERVICE BULLETIN NTB04-119" for the diagnosis of satellite radio.

Symptom	Possible malfunction location
Audio system does not work properly.	<ul style="list-style-type: none"> <li>• Audio unit power supply circuit</li> <li>• Audio unit</li> </ul>
No sound can be heard from all speakers.	<b>Base system</b> <ul style="list-style-type: none"> <li>• Audio unit</li> </ul>
	<b>BOSE system</b> <ul style="list-style-type: none"> <li>• BOSE speaker amp. power supply and ground circuit</li> <li>• BOSE speaker amp. ON signal circuit</li> <li>• Audio unit</li> <li>• BOSE speaker amp.</li> </ul>
No sound can be heard from one or several speakers.	<b>Base system</b> <ul style="list-style-type: none"> <li>• Audio signal circuit between audio unit and speaker</li> <li>• Speaker</li> <li>• Tweeter</li> <li>• Audio unit</li> </ul>
	<b>BOSE system</b> <ul style="list-style-type: none"> <li>• Audio signal circuit between audio unit and BOSE speaker amp.</li> <li>• Audio signal circuit between BOSE speaker amp. and speaker</li> <li>• Speaker</li> <li>• Tweeter</li> <li>• Audio unit</li> <li>• BOSE speaker amp.</li> </ul>
No sound can be heard from woofer.	<ul style="list-style-type: none"> <li>• Woofer amp. power supply and ground circuit</li> <li>• Woofer amp. ON signal circuit</li> <li>• Audio signal circuit between BOSE speaker amp. and woofer</li> <li>• Audio signal circuit between woofer amp. and woofer</li> <li>• Woofer</li> <li>• Woofer amp.</li> <li>• BOSE speaker amp.</li> </ul>
No sound can be heard from radio or noise is caught.	<ul style="list-style-type: none"> <li>• Antenna amp. ON signal circuit</li> <li>• Antenna feeder</li> <li>• Antenna</li> <li>• Antenna amp.</li> <li>• Audio unit</li> </ul>

### NOTE:

Noise resulting 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 a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

# AUDIO

## Power Supply Circuit Inspection

NKS002BF

### 1. CHECK FUSE

Make sure that the following fuses of the audio unit, BOSE speaker amp. and woofer amp. are not blown.

Unit	Signal	Fuse No.
Audio unit	Battery power supply	37
	Ignition switch ACC or ON	6
BOSE speaker amp.	Battery power supply	37
Woofer amp.	Battery power supply	17

OK or NG

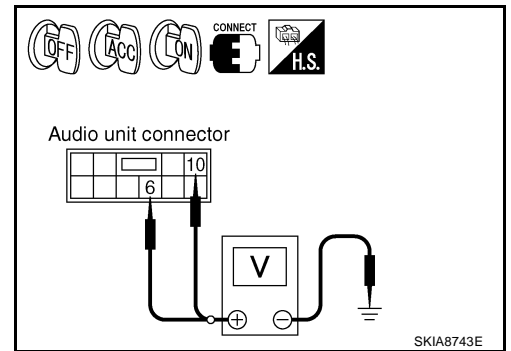
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#).

### 2. CHECK POWER SUPPLY CIRCUIT

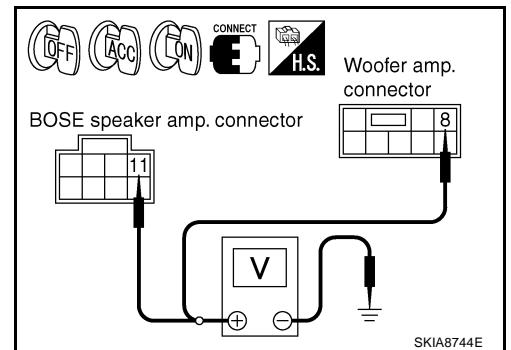
1. Check voltage between audio unit harness connector terminals and ground.

Unit	Terminals			OFF	ACC	ON
	(+)		(-)			
	Connector	Terminal				
Audio unit	M40	6	Ground	Battery voltage	Battery voltage	Battery voltage
		10	Ground	0 V	Battery voltage	Battery voltage



2. Check voltage between BOSE speaker amp., woofer amp. harness connector terminals and ground (BOSE system).

Unit	Terminals		OFF	ACC	ON	
	(+) (+)					(-)
	Connector	Terminal				
BOSE speaker amp.	T6	11	Ground	Battery voltage	Battery voltage	Battery voltage
Woofer amp.	B32	8				



OK or NG

OK >> ● INSPECTION END (Base system)

● GO TO 3 (BOSE system).

NG >> Repair harness or connector.

# AUDIO

## 3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE speaker amp. and woofer amp. connectors.
3. Check continuity between BOSE speaker amp. harness connector T6 terminal 27 and ground.

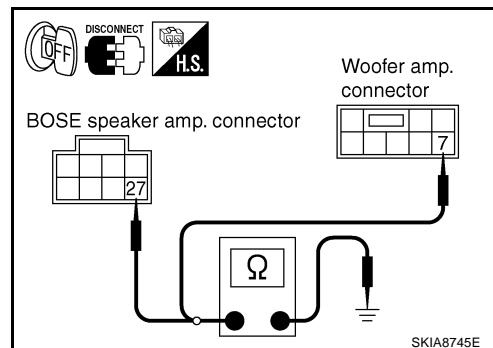
**27 – Ground : Continuity should exist.**

4. Check continuity between woofer amp. harness connector B32 terminal 7 and ground.

**7 – Ground : Continuity should exist.**

OK or NG

OK >> INSPECTION END  
NG >> Repair harness or connector.



SKIA8745E

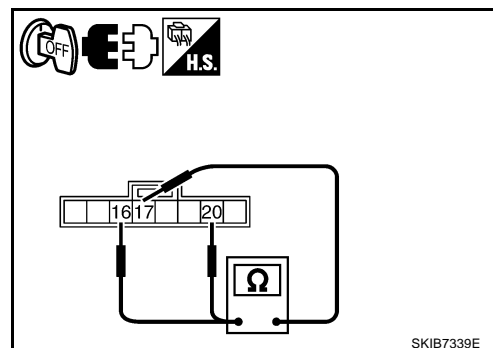
NKS002EE

## Steering Switch Does Not Operate

### 1. CHECK STEERING SWITCH RESISTANCE

1. Turn ignition switch OFF.
2. Disconnect combination switch (spiral cable) connector.
3. Check resistance between steering switch harness connector M203 terminals.

Terminal	Signal name	Condition	Resistance (Ω)
16	Power	Press and hold POWER switch.	Approx. 0
	Seek down	Press and hold SEEK DOWN switch.	Approx. 165
	Volume down	Press and hold VOLUME DOWN switch.	Approx. 652
20	Mode	Press and hold MODE switch.	Approx. 0
	Seek up	Press and hold SEEK UP switch.	Approx. 165
	Volume up	Press and hold VOLUME UP switch.	Approx. 652



SKIB7339E

OK or NG

OK >> GO TO 2.  
NG >> Replace steering switch.

### 2. CHECK SPIRAL CABLE

1. Disconnect combination switch (spiral cable) connector.
2. Check continuity between combination switch (spiral cable) connector (A) terminals 16, 17, 20 and connector (B) terminals 32, 31, 24.

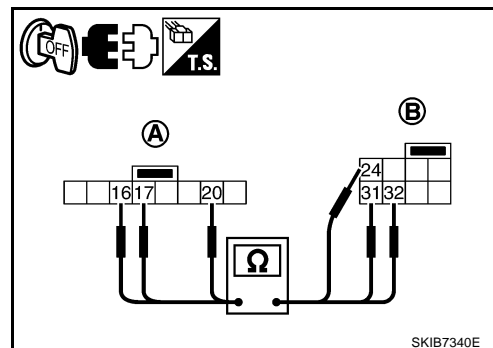
**16 – 32 : Continuity should exist.**

**17 – 31 : Continuity should exist.**

**20 – 24 : Continuity should exist.**

OK or NG

OK >> GO TO 3.  
NG >> Replace spiral cable.



SKIB7340E



## 3. CHECK HARNESS

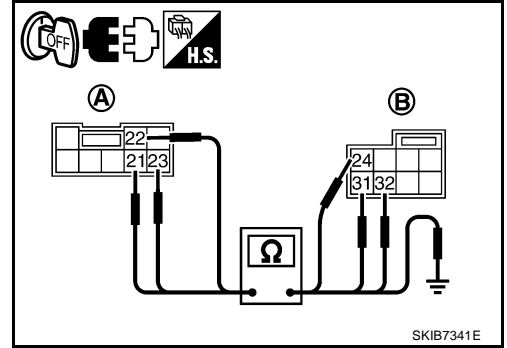
### Base system

1. Disconnect audio unit connector.
2. Check continuity between audio unit harness connector (A) M46 terminals 21, 22, 23 and combination switch (spiral cable) harness connector (B) M23 terminals 24, 32, 31.

**21 – 24 : Continuity should exist.**  
**22 – 32 : Continuity should exist.**  
**23 – 31 : Continuity should exist.**

3. Check continuity between audio unit harness connector (A) M46 terminals 21, 22 and ground.

**21, 22 – Ground : Continuity should not exist.**



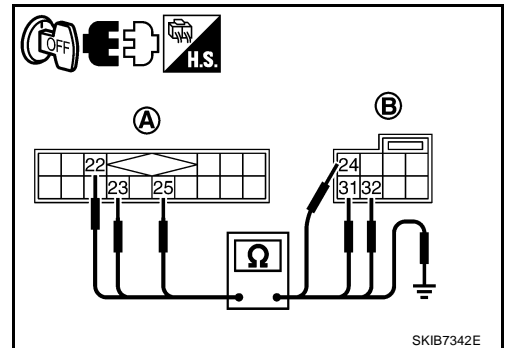
### BOSE system

1. Disconnect audio unit connector.
2. Check continuity between audio unit harness connector (A) M39 terminals 22, 23, 25 and combination switch (spiral cable) harness connector (B) M23 terminals 24, 32, 31.

**22 – 24 : Continuity should exist.**  
**23 – 32 : Continuity should exist.**  
**25 – 31 : Continuity should exist.**

3. Check continuity between audio unit harness connector (A) M39 terminals 22, 23 and ground.

**22, 23 – Ground : Continuity should not exist.**



### OK or NG

- OK >> Replace audio unit.  
 NG >> Repair harness or connector.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
L  
M

AV

# AUDIO

## AudioPilot® Does Not Work

NKS002BG

### 1. CHECK AUDIO UNIT

Check AudioPilot® turns ON.

OK or NG

OK >> GO TO 2.

NG >> Turn AudioPilot® ON.

### 2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect audio unit and BOSE speaker amp. connectors.
3. Check continuity between audio unit harness connector M39 terminal 17 and BOSE speaker amp. harness connector T7 terminal 31.

**17 – 31 : Continuity should exist.**

4. Check continuity between audio unit harness connector M39 terminal 17 and ground.

**17 – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

### 3. CHECK AUDIOPILOT® SIGNAL

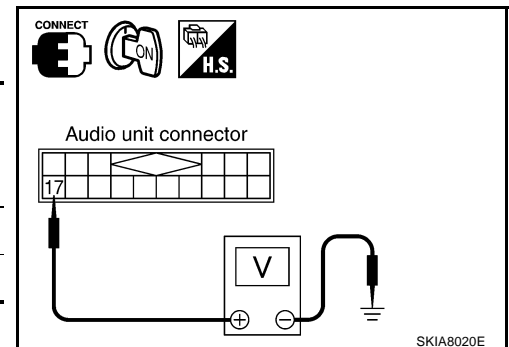
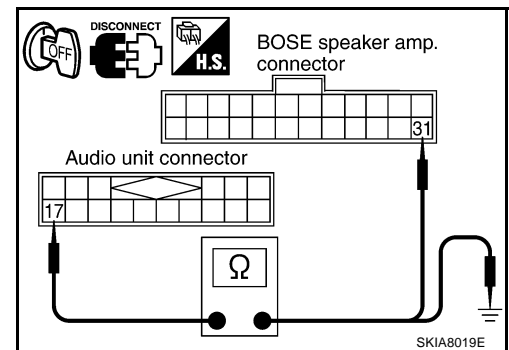
1. Connect audio unit and BOSE speaker amp. connectors.
2. Turn ignition switch ON.
3. Check voltage between audio unit harness connector terminals and ground.

Terminals			Condition	Voltage
(+)		(–)		
Connector	Terminal			
M39	17	Ground	AudioPilot® OFF	Approx. 7.5 V
			AudioPilot® ON	Approx. 0 V

OK or NG

OK >> GO TO 4.

NG >> Replace audio unit.



## 4. CHECK HARNESS

1. Turn ignition switch OFF
2. Disconnect BOSE speaker amp. and microphone connectors.
3. Check continuity between BOSE speaker amp. harness connector T7 terminal 17 and microphone harness connector E123 terminal 1.

**17 – 1 : Continuity should exist.**

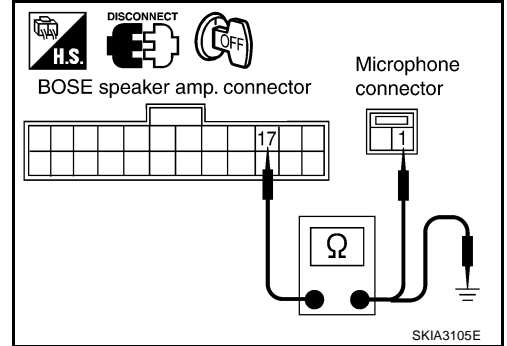
4. Check continuity between BOSE speaker amp. harness connector T7 terminal 17 and ground.

**17 – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 5.

NG >> Repair harness or connector.



## 5. CHECK HARNESS

1. Check continuity between BOSE speaker amp. harness connector T7 terminal 18 and microphone harness connector E123 terminal 2.

**18 – 2 : Continuity should exist.**

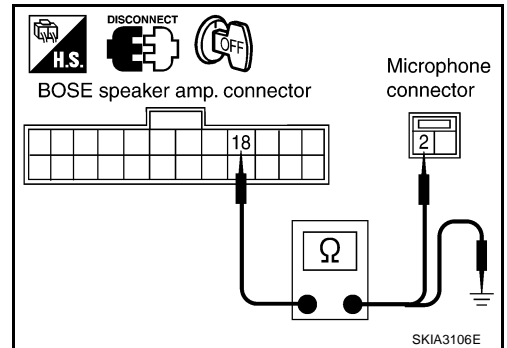
2. Check continuity between BOSE speaker amp. harness connector T7 terminal 18 and ground.

**18 – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 6.

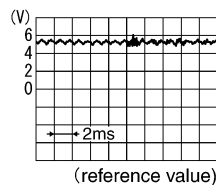
NG >> Repair harness or connector.



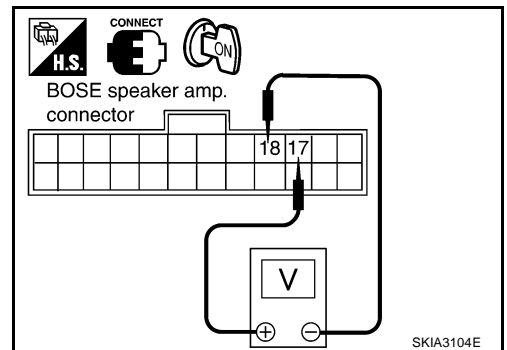
## 6. CHECK MICROPHONE SIGNAL

1. Connect BOSE speaker amp. and microphone connectors.
2. Turn ignition switch ON.
3. Check voltage waveform between BOSE speaker amp. harness connector T7 terminal 17 and 18 using CONSULT-II or oscilloscope, when inputting some sounds (voice, etc.) toward the microphone.

**17 – 18:**



PKIA2104E



Does the voltage waveform change with sounds?

YES >> Replace BOSE speaker amp.

NO >> Replace microphone.

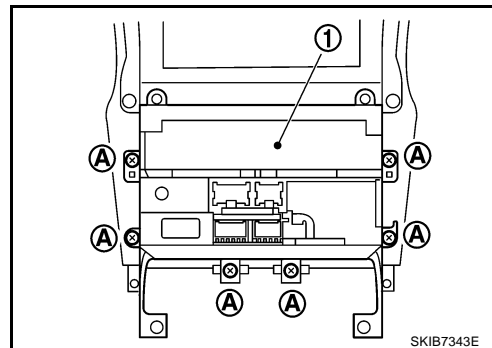
## AUDIO

### Removal and Installation of Audio Unit (Base system)

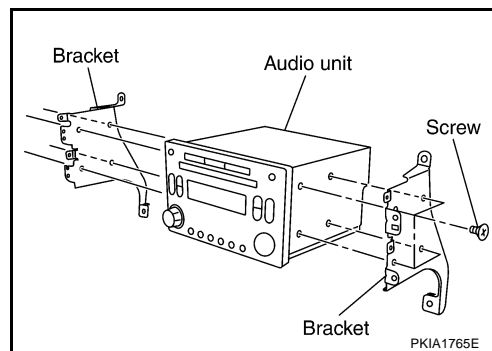
NKS002BH

#### REMOVAL

1. Remove cluster lid C. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#).
2. Remove screws (A), and remove audio unit (1).



3. Remove screws (8), and remove bracket.



#### INSTALLATION

Installation is the reverse order of removal.

### Locking CD Auto Changer Mechanism (Audio unit of BOSE system)

NKS002BI

#### CAUTION:

- Prior to removing a malfunctioning CD auto changer unit (Audio unit of BOSE system) that will be shipped for repair, the changer mechanism **MUST BE LOCKED** to prevent the mechanism from being damaged during shipping.
- If a CD is jammed or unable to be removed from the unit, do **NOT** lock the changer mechanism. If the unit is to be shipped for repair, carefully package the unit to prevent vibration and shock.

#### DAMPER LOCK PROCEDURE

1. Eject and remove any CDs from the audio unit (BOSE system).
2. Turn ignition switch OFF. Wait until audio unit (BOSE system) display is off and mechanism stops moving (mechanism sound stops).
3. Press any one of the disc selection buttons once. When a display shows on the audio unit (BOSE system), press the same disc selection button again within 5 seconds.
  - The changer mechanism will lock itself within 10 seconds.
4. After mechanism stops moving (mechanism sound stops), open the driver and passenger window, and then disconnect negative battery cable.

#### CAUTION:

After the battery cables are disconnected, do not open/close the driver and/or front passenger door with the window in the full up position. The automatic window adjusting function will not work and the side roof panel may be damaged.

#### NOTE:

After installing a new or remanufactured audio unit (BOSE system), switching the audio unit (BOSE system) ON will automatically unlock the mechanism. A special unlocking procedure is not required.

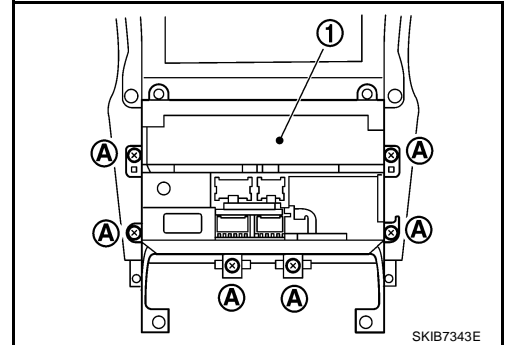
# AUDIO

## Removal and Installation of Audio Unit (BOSE system)

NKS002BJ

### REMOVAL

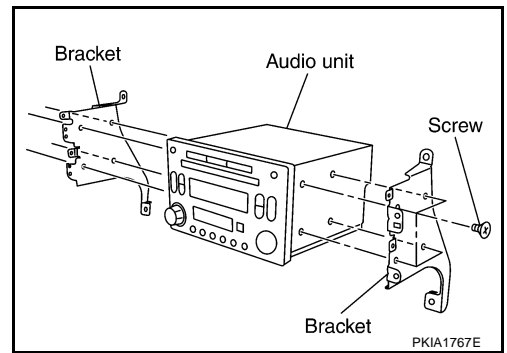
1. Perform damper lock operation. Refer to [AV-44, "Locking CD Auto Changer Mechanism \(Audio unit of BOSE system\)"](#) .
2. Remove cluster lid C. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) .
3. Remove screws (A), and remove audio unit (1).



4. Remove screws (8), and remove bracket.

### CAUTION:

- When carrying audio unit body, do not touch internal mechanism access from cassette tape slot.
- Be careful not to allow foreign matter from cassette tape slot.



### INSTALLATION

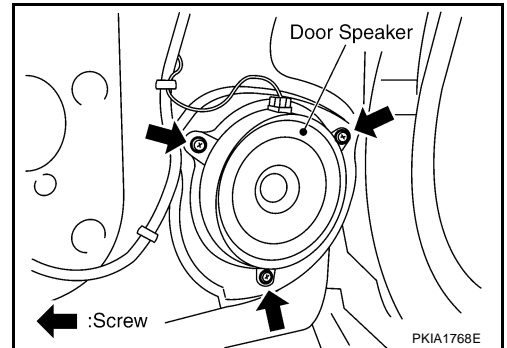
Installation is the reverse order of removal.

## Removal and Installation of Door Speaker

NKS002BK

### REMOVAL

1. Remove door finisher. Refer to [EI-33, "Removal and Installation"](#) .
2. Remove screws (3), and remove door speaker.



### INSTALLATION

Installation is the reverse order of removal.

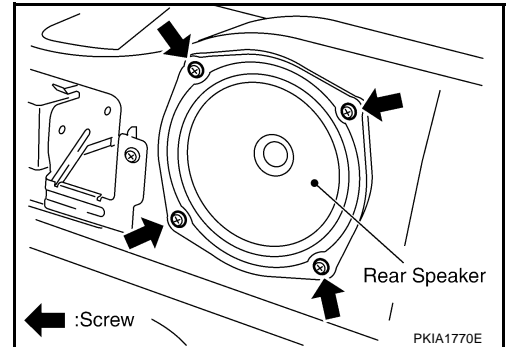
## AUDIO

### Removal and Installation of Rear Speaker

NKS002BL

#### REMOVAL

1. Remove luggage floor finisher upper (front) (Coupe models), or luggage floor finisher upper (Roadster models). Refer to [EI-39, "Removal and Installation \(for Coupe Models\)"](#) , or [EI-41, "Removal and Installation \(for Roadster Models\)"](#) .
2. Remove screws (4), and remove rear speaker.



#### INSTALLATION

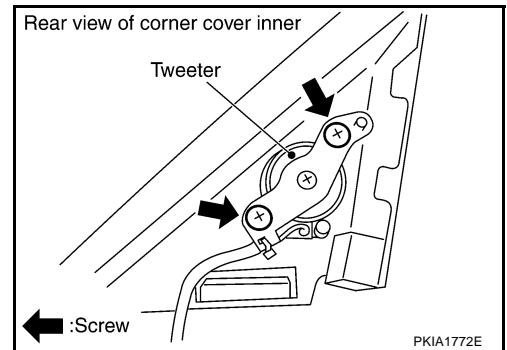
Installation is the reverse order of removal.

### Removal and Installation of Tweeter

NKS002BM

#### REMOVAL

1. Remove corner cover inner. Refer to [GW-85, "Removal and Installation"](#) .
2. Remove screws (2), and remove tweeter from corner cover inner.



#### INSTALLATION

Installation is the reverse order of removal.

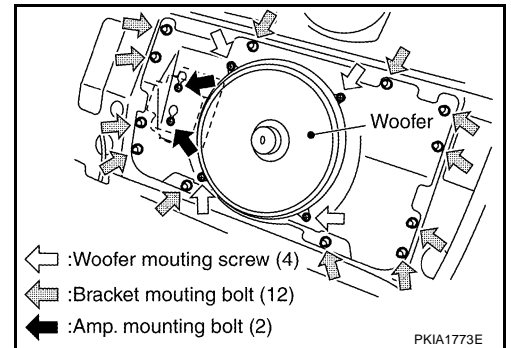
## Removal and Installation of Woofer and Woofer Amp. (BOSE System)

NKS002BN

### REMOVAL

#### Woofer Assembly

1. Remove luggage floor finisher lower. Refer to [EI-39, "Removal and Installation \(for Coupe Models\)"](#) , or [EI-41, "Removal and Installation \(for Roadster Models\)"](#) .
2. Remove woofer mounting screws (4), and remove woofer.
3. Remove bracket mounting bolts (12), and remove bracket.
4. Remove woofer amp. mounting bolts (2), and remove woofer amp. from bracket.



#### Woofer or Woofer Amp. Only

1. Remove luggage floor finisher mask. Refer to [EI-39, "Removal and Installation \(for Coupe Models\)"](#) , or [EI-41, "Removal and Installation \(for Roadster Models\)"](#) .
2. Remove woofer mounting screws (4), and remove woofer.
3. Remove woofer amp. mounting bolts (2), and remove woofer amp. from bracket.

### INSTALLATION

Installation is the reverse order of removal, taking care of the following point.

**Bracket mounting bolt**



**: 9 N·m (0.92 kg-m, 80 in-lb)**

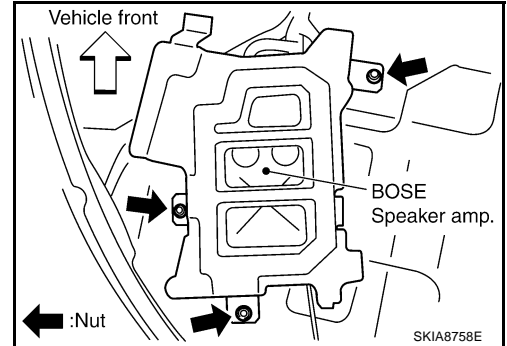
# AUDIO

## Removal and Installation of BOSE Speaker Amp.

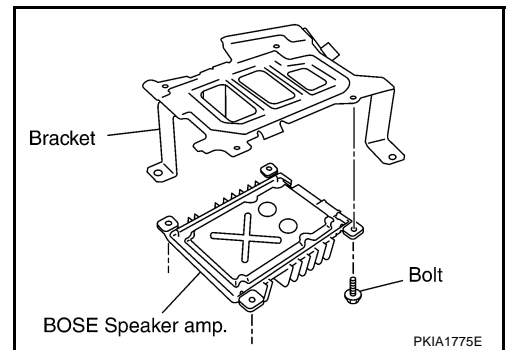
NKS002B0

### REMOVAL

1. Remove trunk side box. Refer to [EI-39, "Removal and Installation \(for Coupe Models\)"](#) , or [EI-49, "Removal and Installation \(for Roadstar Models\)"](#) .
2. Remove luggage floor carpet and spare tire cover (Coupe models), or trunk floor carpet and spare tire cover (Roadster models). Refer to [EI-39, "Removal and Installation \(for Coupe Models\)"](#) , or [EI-49, "Removal and Installation \(for Roadstar Models\)"](#) .
3. Remove nuts (3), and remove BOSE speaker amp. from trunk room floor.



4. Remove bolts (4), and remove bracket.



### INSTALLATION

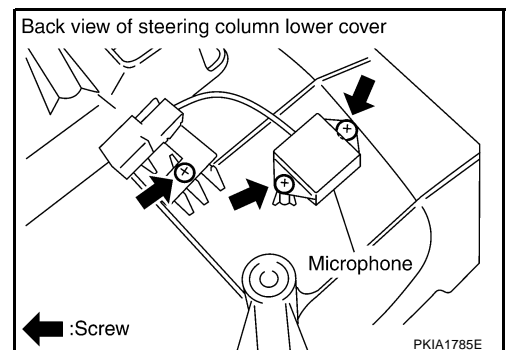
Installation is the reverse order of removal.

## Removal and Installation of Microphone

NKS002BP

### REMOVAL

1. Remove steering column lower cover. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) .
2. Remove screws (3), and remove microphone.



### INSTALLATION

Installation is the reverse order of removal.



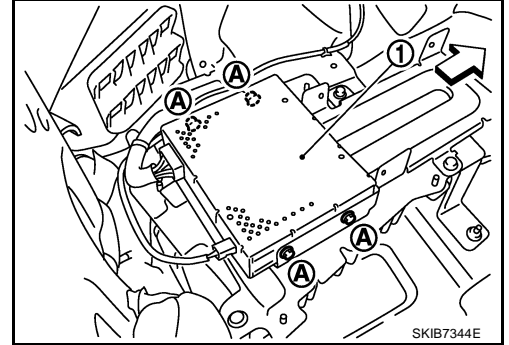
## Removal and Installation of Satellite Radio Tuner

NKS002EF

### REMOVAL

⇐: Vehicle front

1. Remove trunk side box. Refer to [EI-39, "Removal and Installation \(for Coupe Models\)"](#).
2. Remove luggage floor carpet and spare tire cover. Refer to [EI-39, "Removal and Installation \(for Coupe Models\)"](#).
3. Remove screws (A), and remove satellite radio tuner (1).



### INSTALLATION

Installation is the reverse order of removal.

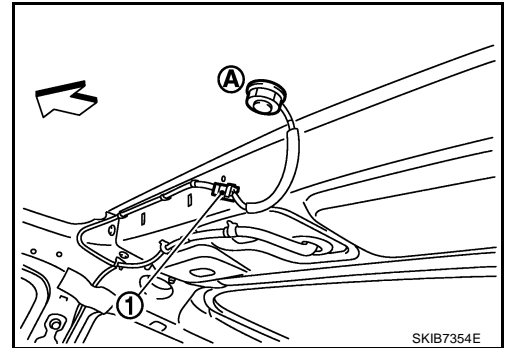
## Removal and Installation of Satellite Radio Antenna

NKS002EL

### REMOVAL

⇐: Vehicle front

1. Remove head lining. Refer to [EI-44, "Removal and Installation \(for Coupe Models\)"](#).
2. Remove nut (A), and then disconnect connector (1).
3. Remove satellite radio antenna.



### INSTALLATION

Installation is the reverse order of removal.

Roof antenna mounting nut  : 6.0 N·m (0.61 kg-m, 53 in-lb)

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## ANTENNA

PFP:28200

### System Description

NKS002EG

With the ignition switch in ACC or ON, power is supplied

- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to audio unit terminal 10.

Ground is supplied through the case of the antenna amp.

When the radio switch is turned ON, antenna signal is supplied

- through audio unit terminal 5
- to antenna amp. terminal 1.

Then the antenna amp. is activated.

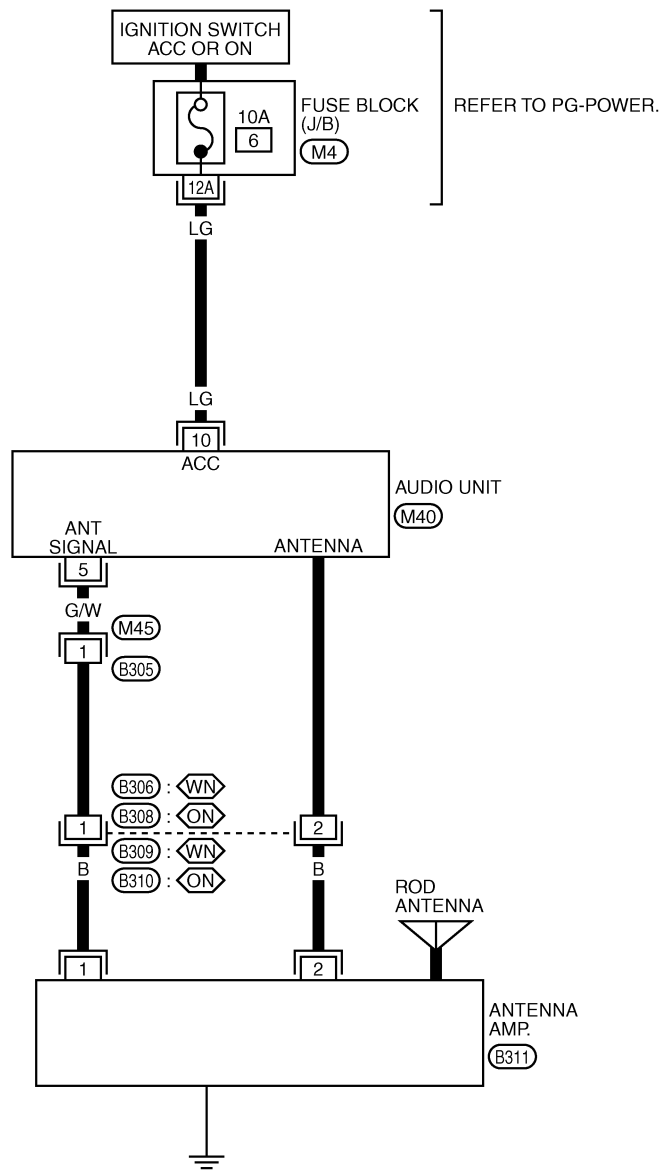
Antenna signals amplified by the antenna amp. are supplied to the audio unit.

ANTENNA

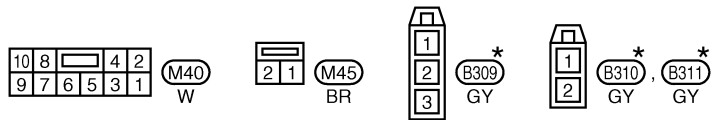
Wiring Diagram — M/ANT —

NKS002EH

AV-M/ANT-01



WN : WITH NAVIGATION SYSTEM  
ON : WITHOUT NAVIGATION SYSTEM



REFER TO THE FOLLOWING.  
M4 - FUSE BLOCK-JUNCTION BOX (J/B)

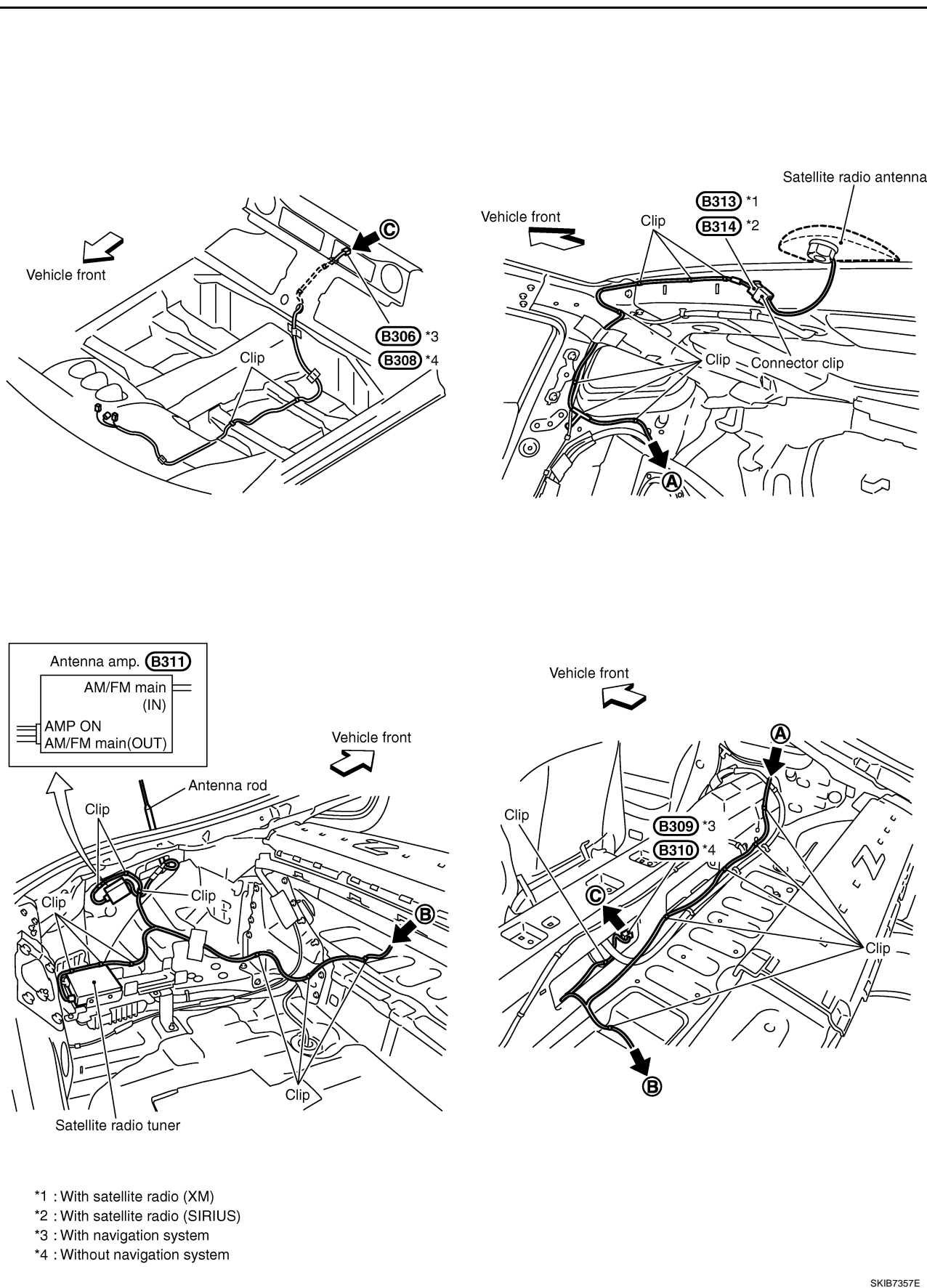
★: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWT0509E

# ANTENNA

## Location of Antenna

NKS002E1



SKIB7357E

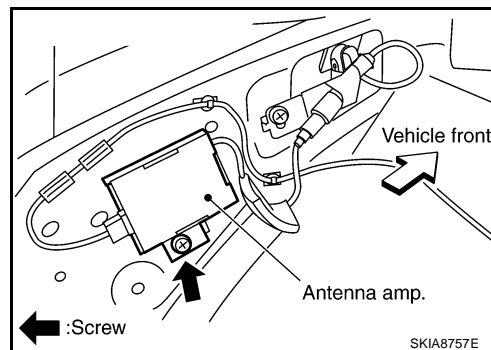
# ANTENNA

## Removal and Installation of Antenna Amp.

NKS002EJ

### REMOVAL

1. Remove luggage side finisher lower (LH) (Coupe models), or trunk front finisher (Roadster models). Refer to [EI-39, "Removal and Installation \(for Coupe Models\)"](#) , or [EI-49, "Removal and Installation \(for Roadstar Models\)"](#) .
2. Remove luggage floor carpet and spare tire cover (Coupe models), or trunk floor carpet and spare tire cover (Roadster models). Refer to [EI-39, "Removal and Installation \(for Coupe Models\)"](#) , or [EI-49, "Removal and Installation \(for Roadstar Models\)"](#) .
3. Remove screw (1), and remove antenna amp.

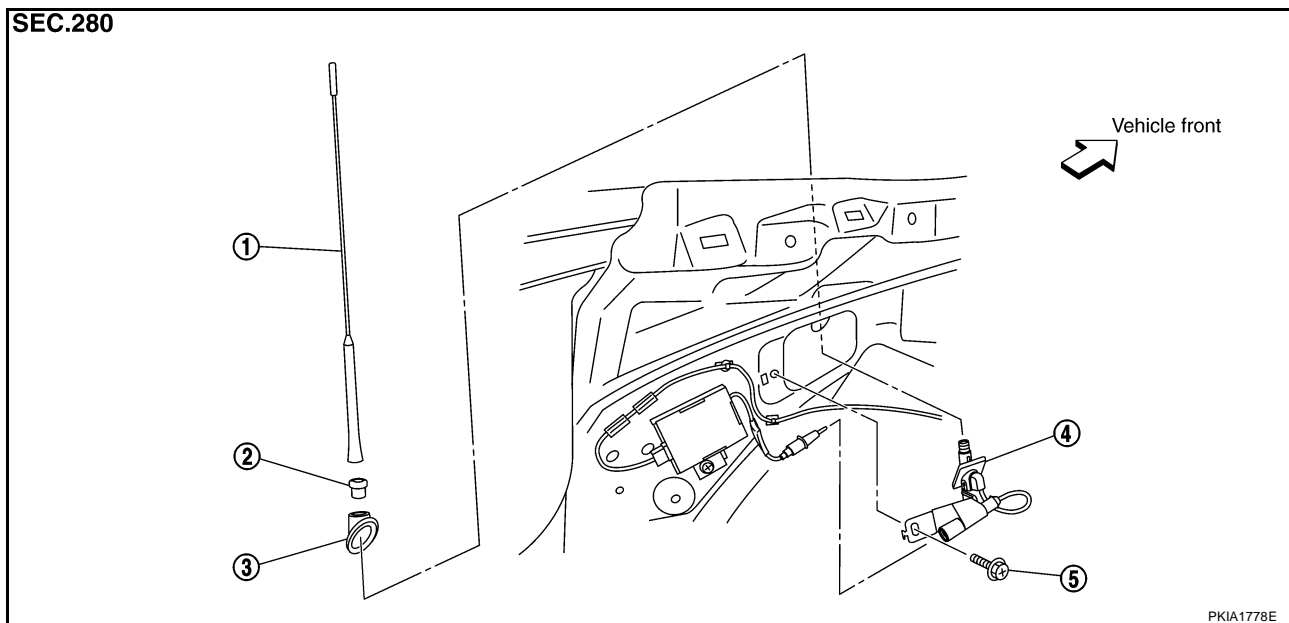


### INSTALLATION

Installation is the reverse order of removal.

## Removal and Installation of Antenna

NKS002EK



- |                     |                |                 |
|---------------------|----------------|-----------------|
| 1. Antenna rod      | 2. Antenna nut | 3. Antenna base |
| 4. Antenna assembly | 5. Screw       |                 |

### REMOVAL

1. Remove luggage side finisher lower (LH) (Coupe models), or trunk front finisher (Roadster models). Refer to [EI-39, "Removal and Installation \(for Coupe Models\)"](#) , or [EI-49, "Removal and Installation \(for Roadstar Models\)"](#) .
2. Remove antenna rod and remove antenna nut.
3. Disconnect antenna amp. plug.
4. Remove screw and remove antenna assembly.
5. Remove antenna base.

### INSTALLATION

Installation is the reverse order of removal.

# ANTENNA

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## Removal and Installation of Satellite Radio Antenna

NKS002KG

Refer to [AV-49, "Removal and Installation of Satellite Radio Antenna"](#) .

## NAVIGATION SYSTEM

PDF:25915

### System Description

NKS000CX

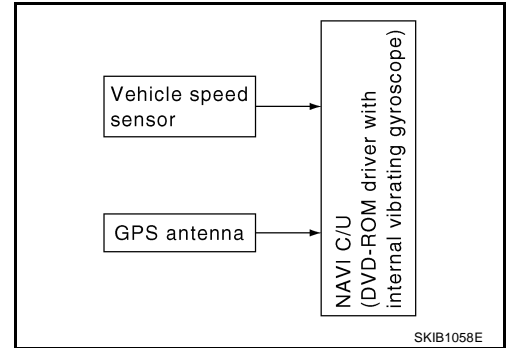
For Navigation System operation information, refer to Navigation System Owner's Manual.

### LOCATION DETECTION PRINCIPLE

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

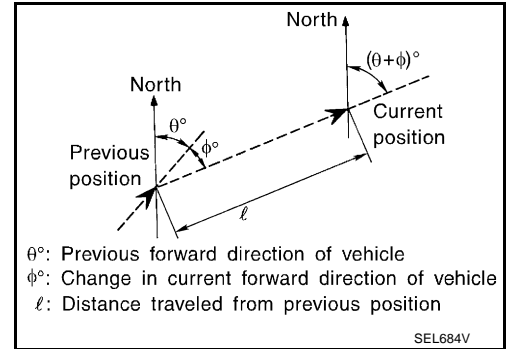
- Travel distance of the vehicle as determined by the vehicle speed sensor
- Turning angle of the vehicle as determined by the gyroscope (angular velocity sensor)
- Direction of vehicle travel as determined by the GPS antenna (GPS information)

The current position of the vehicle is then identified by comparing the calculated vehicle position with map data read from the DVD-ROM, which is stored in the DVD-ROM drive (map-matching), and indicated on the screen as a current-location mark. More accurate data is judged and used by comparing vehicle position detection results found by the GPS with the result by map-matching.



The current vehicle position will be calculated by detecting the distance the vehicle moved from the previous calculation point and its direction.

- Travel distance  
Travel distance calculations are based on the vehicle speed sensor input signal. Therefore, the calculation may become incorrect as the tires wear down. To prevent this, an automatic distance correction function has been adopted.
- Travel direction  
Change in the travel direction of the vehicle is calculated by a gyroscope (angular velocity sensor) and a GPS antenna (GPS information). They have both advantages and disadvantages.



Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	Can detect the vehicle's turning angle quite accurately.	Direction errors may accumulate when vehicle is driven for long distances without stopping.
GPS antenna (GPS information)	Can detect the vehicle's travel direction (North/South/East/West).	Correct direction cannot be detected when vehicle speed is low.

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

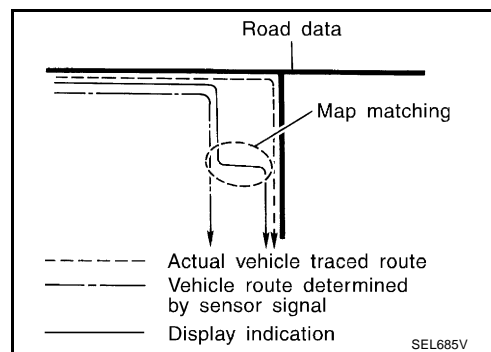
# NAVIGATION SYSTEM

## MAP-MATCHING

Map-matching compares a current location detected by the method in the "Location Detection Principle" with a road map data from DVD-ROM stored in DVD-ROM drive.

### NOTE:

The road map data is based on data stored in the DVD-ROM.

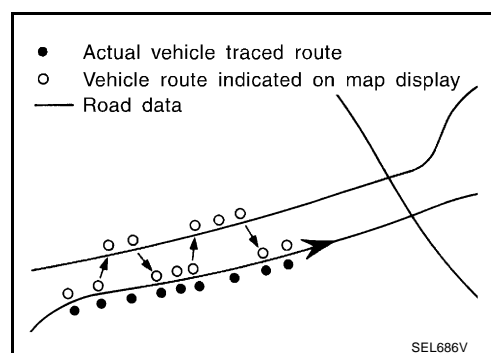


The vehicle position may not be corrected under the following circumstances and after driving for a certain time when GPS information is difficult to receive. In this case, the current-location mark on the display must be corrected manually.

- In map-matching, alternative routes to reach the destination will be shown and prioritized, after the road on which the vehicle is currently driven has been judged and the current-location mark has been repositioned.

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

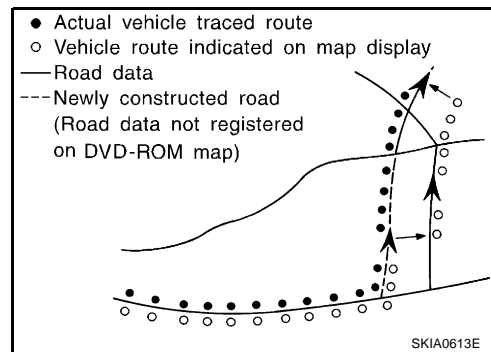
If two roads are running in parallel, they are of the same priority. Therefore, the current-location mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road.



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

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

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





# NAVIGATION SYSTEM

## GPS (GLOBAL POSITIONING SYSTEM)

GPS (Global Positioning System) was developed for and is controlled by the US Department of Defense. The system utilizes GPS satellites (NAVSTAR), sending out radio waves while flying on an orbit around the earth at an altitude of approximately 21,000 km (13,100 miles).

The GPS receiver calculates the vehicle's position in three dimensions (latitude/longitude/altitude) according to the time lag of the radio waves received from four or more GPS satellites (three-dimensional positioning). If radio waves were received only from three GPS satellites, the GPS receiver calculates the vehicle's position in two dimensions (latitude/longitude), and utilize the altitude data calculated previously with radio waves from four or more GPS satellites (two-dimensional positioning).

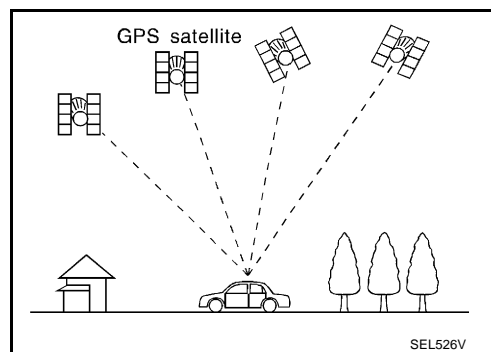
Position correction by GPS is not available while the vehicle is stopped.

Accuracy of GPS will deteriorate under the following conditions:

- In two-dimensional positioning, GPS accuracy will deteriorate when altitude of the vehicle position changes.
- The accuracy can be even lower depending on the arrangement of the GPS satellites utilized for the positioning.
- Position detection is not possible when vehicle is in an area where radio waves from the GPS satellite do not reach, such as in a tunnel, parking lot in a building, and under an elevated highway. Radio waves from the GPS satellites may not be received when some object is located over the GPS antenna.

### NOTE:

- Even a high-precision three dimensional positioning, the detection result has an error about 10 m (30ft).
- Because the signals of GPS satellite is controlled by the Tracking and Control Center in the United States, the accuracy may be degraded lower intentionally or the radio waves may stop.



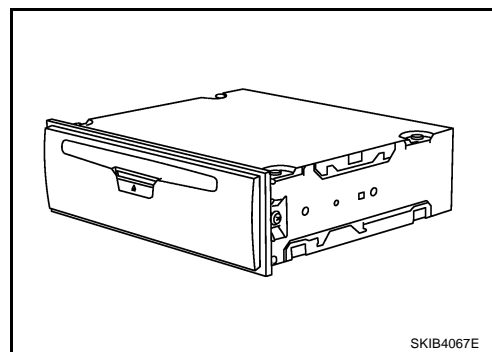
# NAVIGATION SYSTEM

## Component Description

NKS002QA

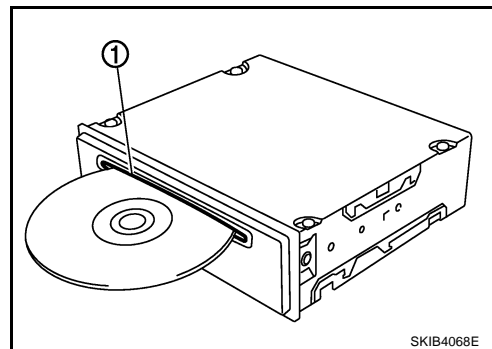
### NAVI CONTROL UNIT

- NAVI control unit connects to the display unit and NAVI switch with communication lines.
- The gyro (angular speed sensor) and the DVD-ROM drive are built-in units that control the navigation functions.
- Signals are received from the gyro, the vehicle speed sensor, and the GPS antenna. Vehicle location is determined by combining these data with the data contained in the DVD-ROM map. Locations information is shown on display unit.
- NAVI control unit outputs ON signal and voice guidance signal to audio unit.



### DVD-ROM Drive

Maps, traffic control regulations, and other pertinent information can be easily read from the DVD-ROM (1).



### DVD-ROM

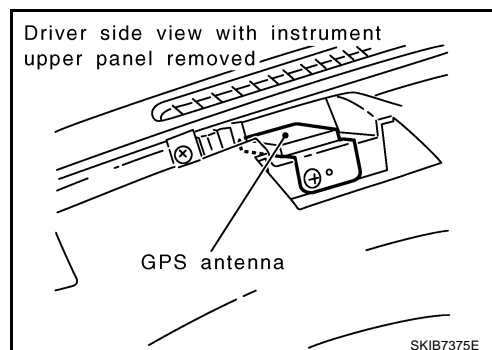
- The DVD-ROM has maps, traffic control regulations, and other pertinent information.
- To improve DVD-ROM map matching and route determination functions, the DVD-ROM uses an exclusive Nissan format. Therefore, the use of a DVD-ROM provided by other manufacturers cannot be used.

### Gyro (Angular Speed Sensor)

- The oscillator gyro sensor is used to detect changes in vehicle steering angle.
- The gyro is built into the NAVI control unit.

### GPS ANTENNA

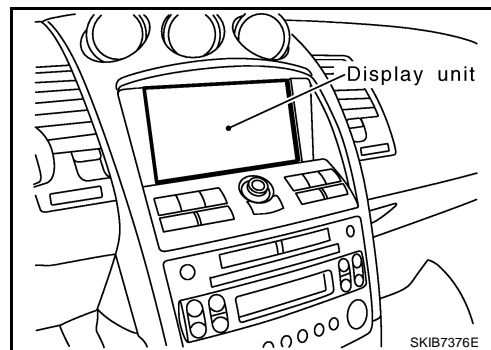
The GPS antenna receives and amplifies the radio waves from the GPS satellites, and then transmits the GPS signal to NAVI control unit.



# NAVIGATION SYSTEM

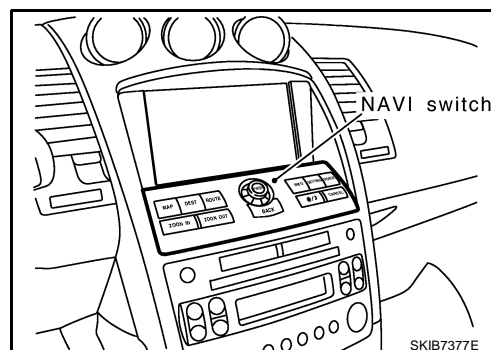
## DISPLAY UNIT

- Display unit connects to the NAVI control unit and NAVI switch with communication lines.
- Display unit receives RGB image signal from NAVI control unit, and RGB image is displayed.



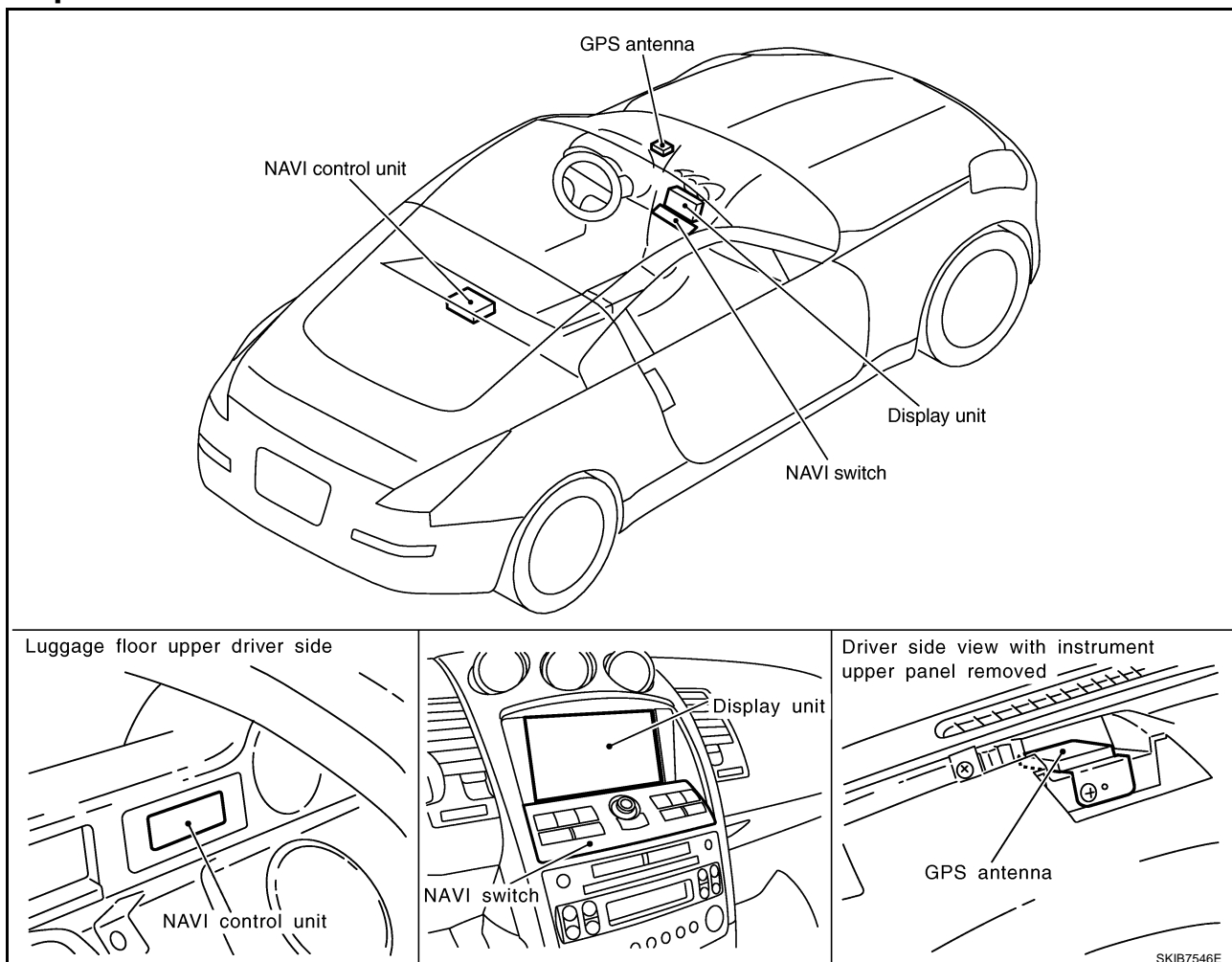
## NAVI SWITCH

- NAVI switch connects to the display unit and NAVI control unit with communication lines.
- Operation signal from NAVI switch is transmitted to NAVI control unit through display unit.



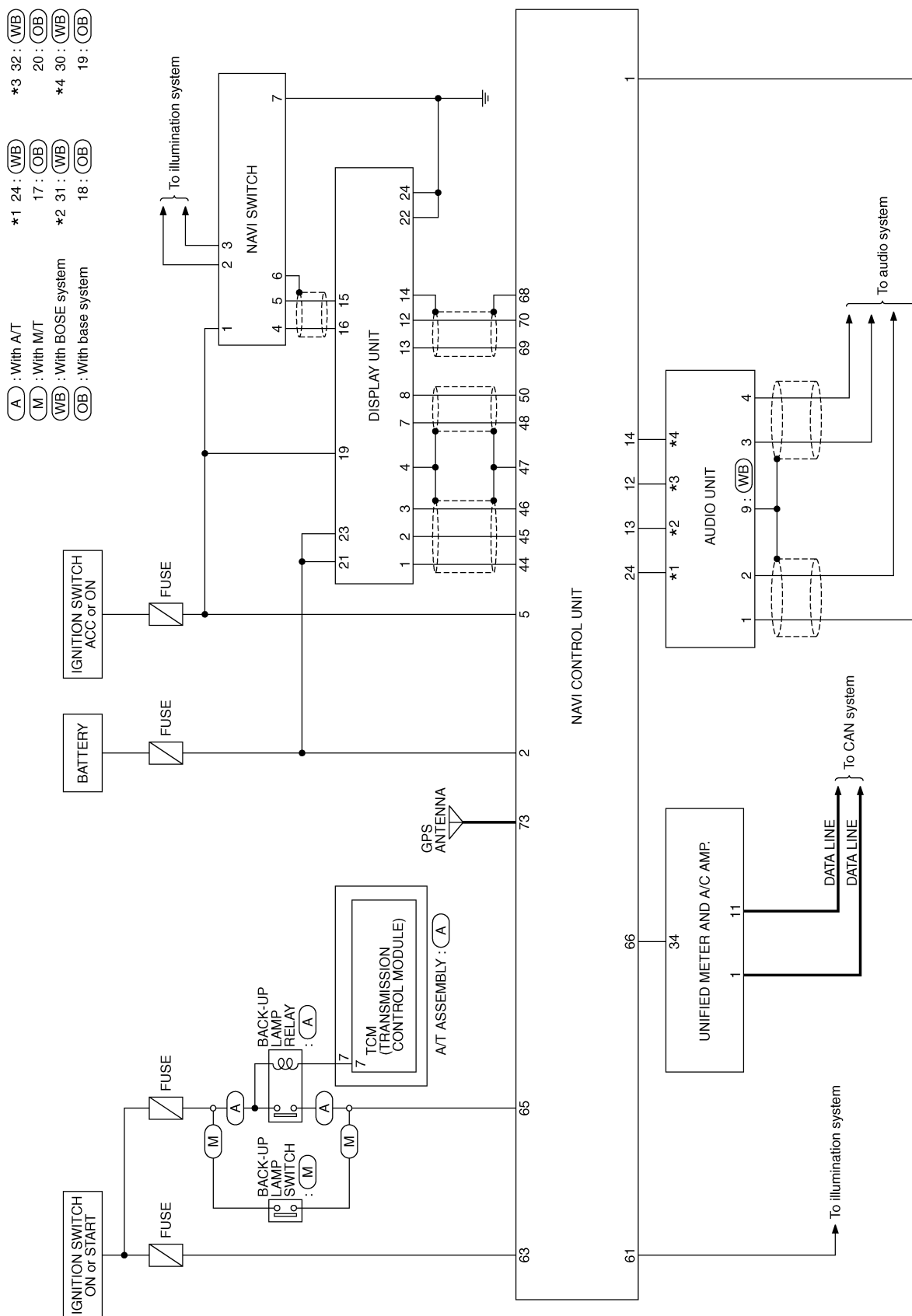
## Component Parts Location

NKS000CZ



## Schematic

NKS000D0



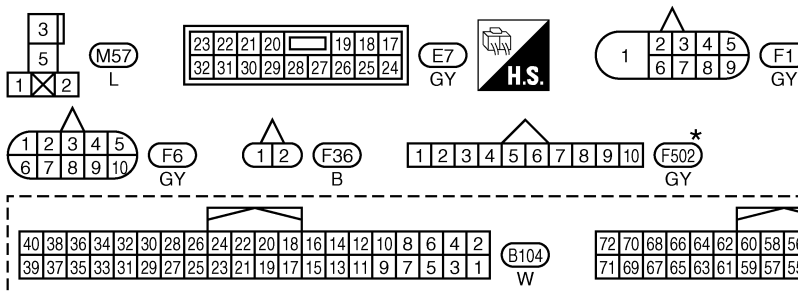
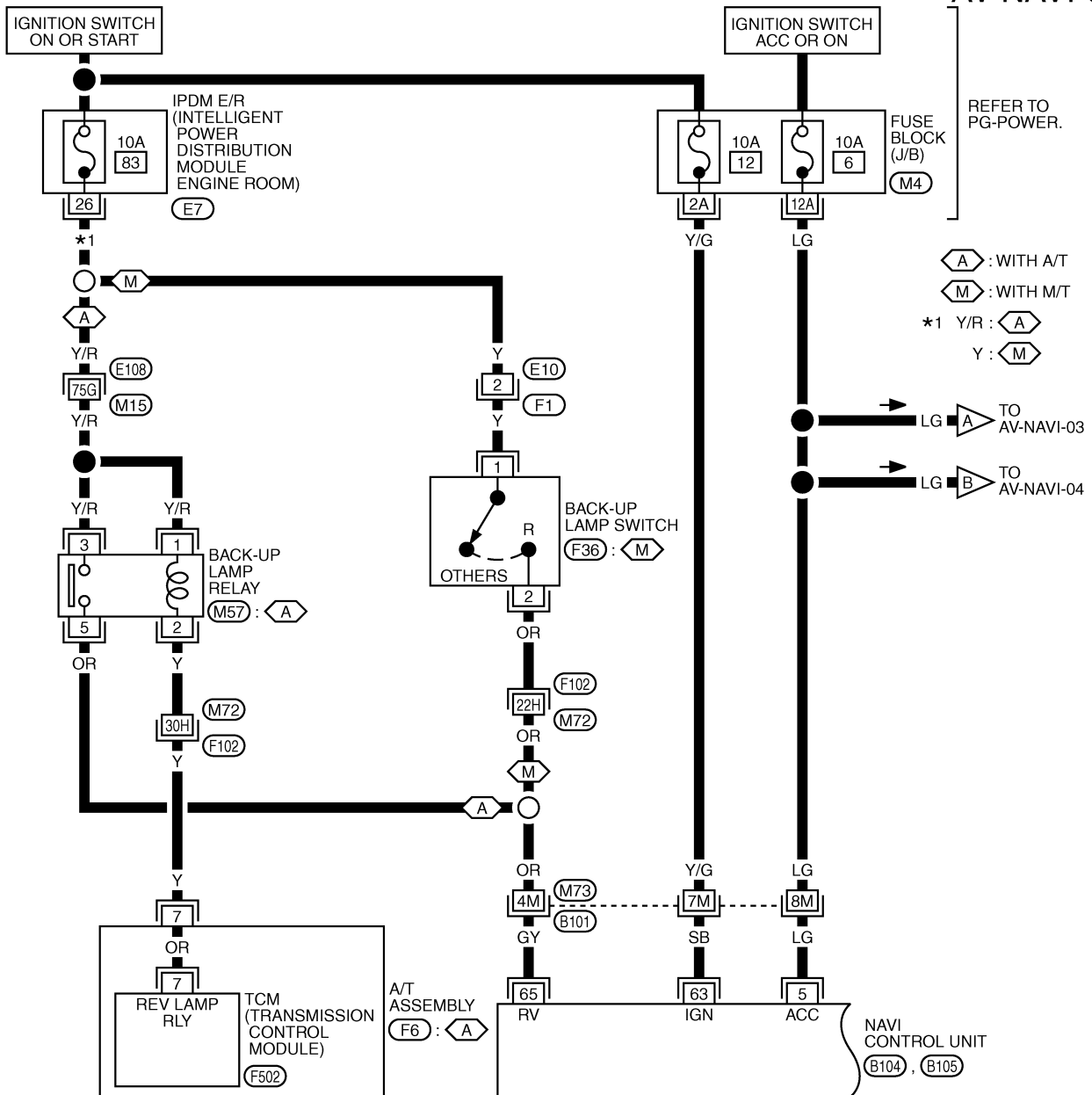
TKWT4081E

# NAVIGATION SYSTEM

## Wiring Diagram — NAVI —

NKS000D1

AV-NAVI-01

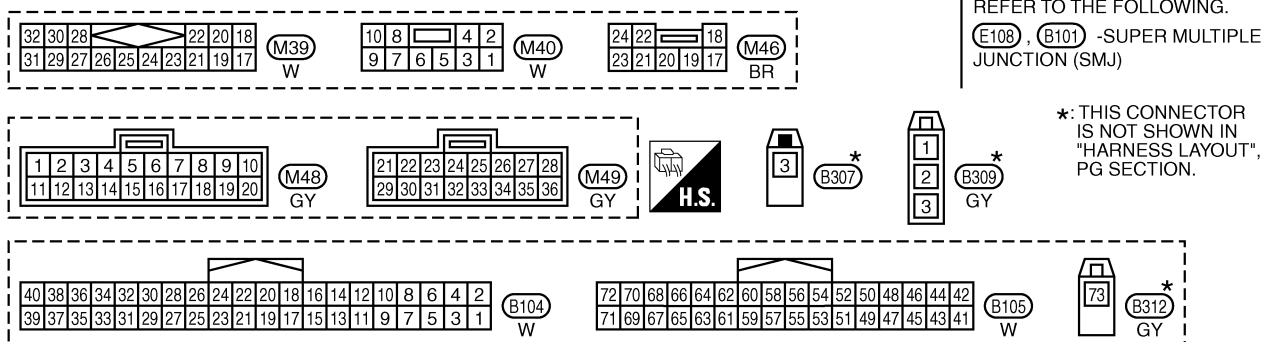
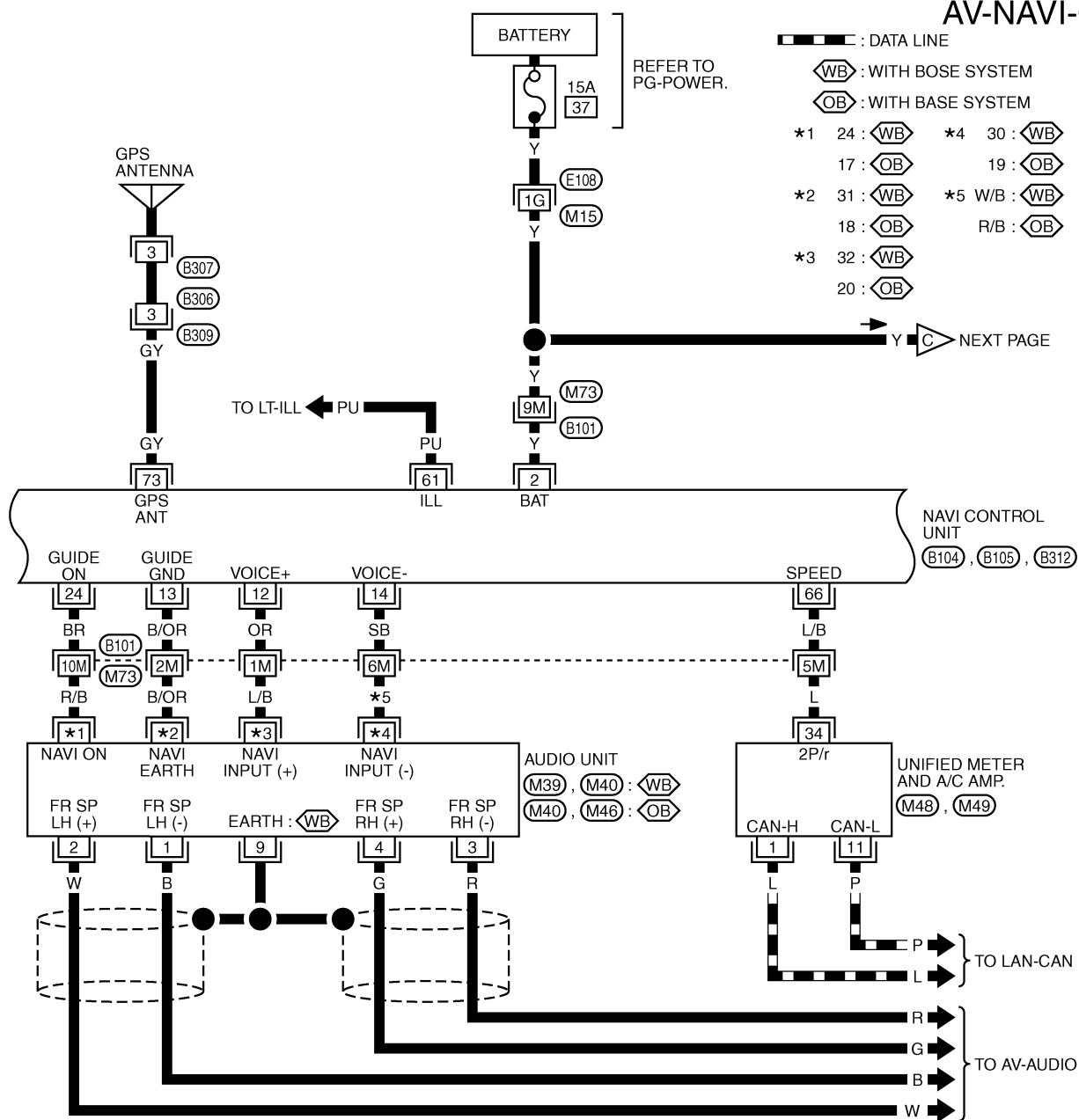


REFER TO THE FOLLOWING.  
 (E108), (F102), (B101) -SUPER  
 MULTIPLE JUNCTION (SMJ)  
 (M4) -FUSE BLOCK-JUNCTION  
 BOX (J/B)

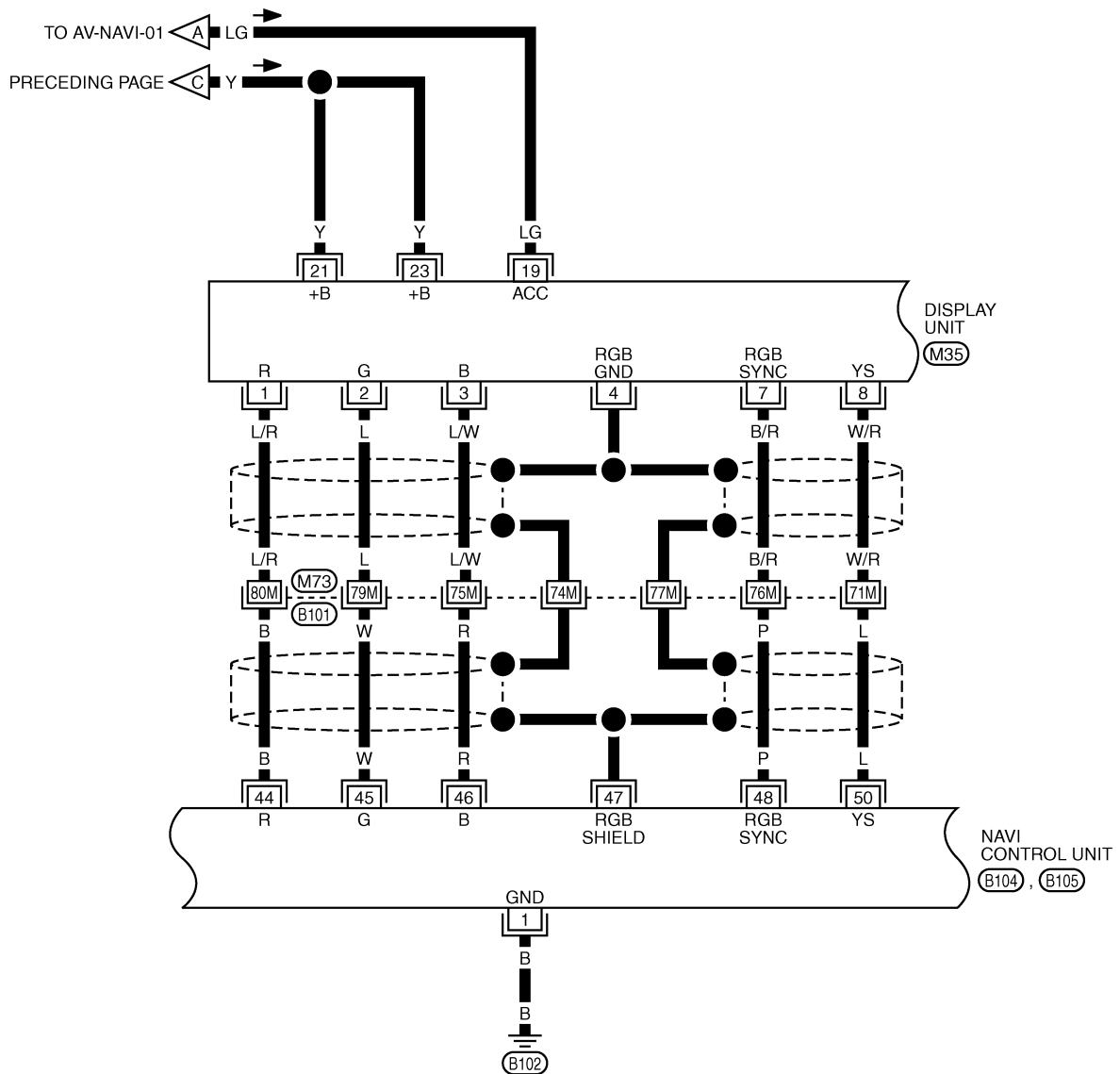
★: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

## NAVIGATION SYSTEM

## AV-NAVI-02



TKWT4083E



24	22	20	18	16	14			10	8	6	4	2
23	21	19	17	15	13	12	11	9	7	5	3	1

(M35)  
GY

REFER TO THE FOLLOWING.  
(B101) -SUPER MULTIPLE JUNCTION (SMJ)

40	38	36	34	32	30	28	26	24	22	20	18	16	14	12	10	8	6	4	2
39	37	35	33	31	29	27	25	23	21	19	17	15	13	11	9	7	5	3	1

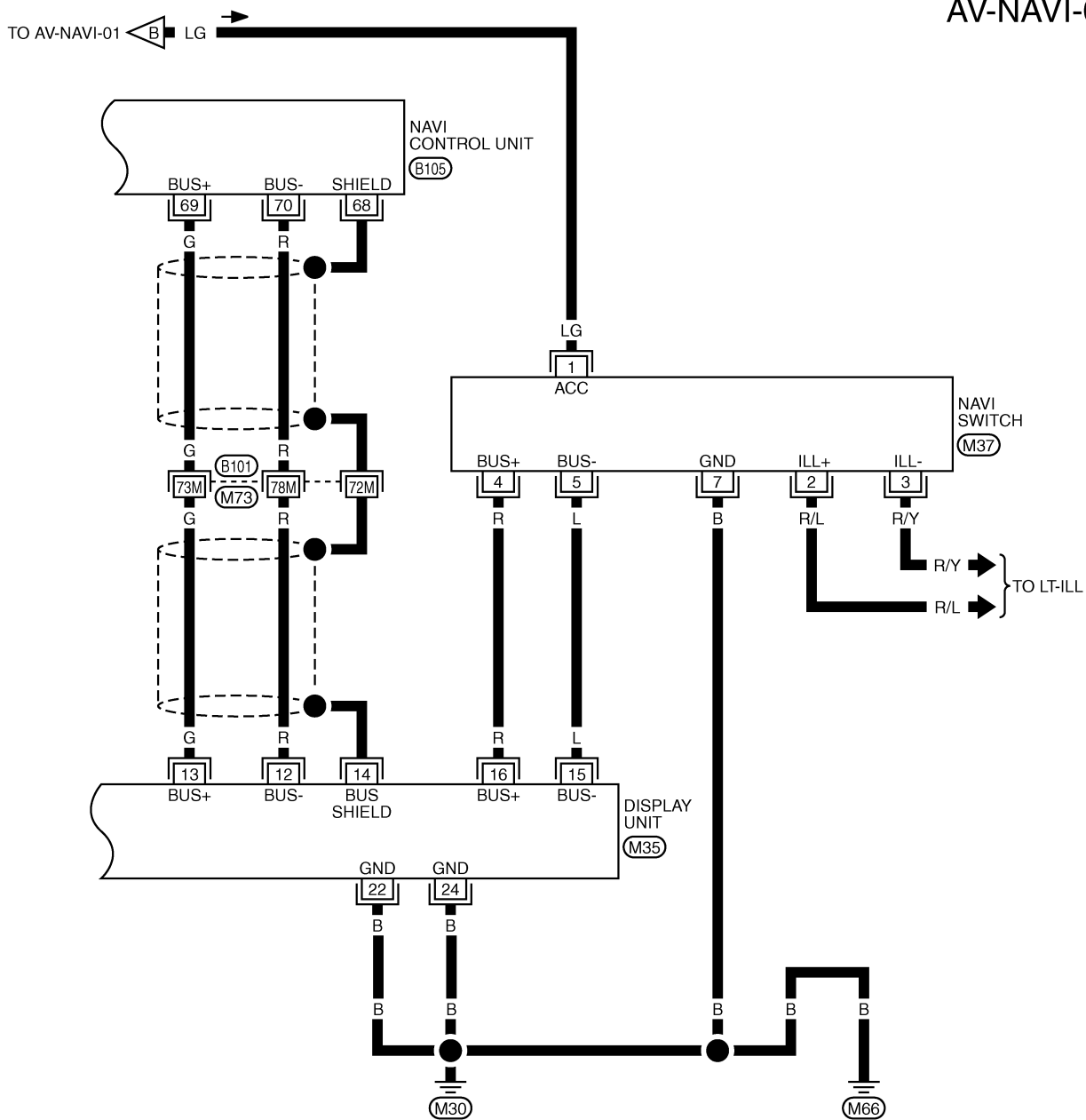
(B104)  
W

72	70	68	66	64	62	60	58	56	54	52	50	48	46	44	42
71	69	67	65	63	61	59	57	55	53	51	49	47	45	43	41

(B105)  
W

# NAVIGATION SYSTEM

AV-NAVI-04



24	22	20	18	16	14	12	10	8	6	4	2
23	21	19	17	15	13	11	9	7	5	3	1

(M35)  
GY

3	2	1
8	7	6

(M37)  
W

72	70	68	66	64	62	60	58	56	54	52	50	48	46	44	42
71	69	67	65	63	61	59	57	55	53	51	49	47	45	43	41

(B105)  
W

REFER TO THE FOLLOWING.  
(B101) -SUPER MULTIPLE  
JUNCTION (SMJ)

TKWT4085E

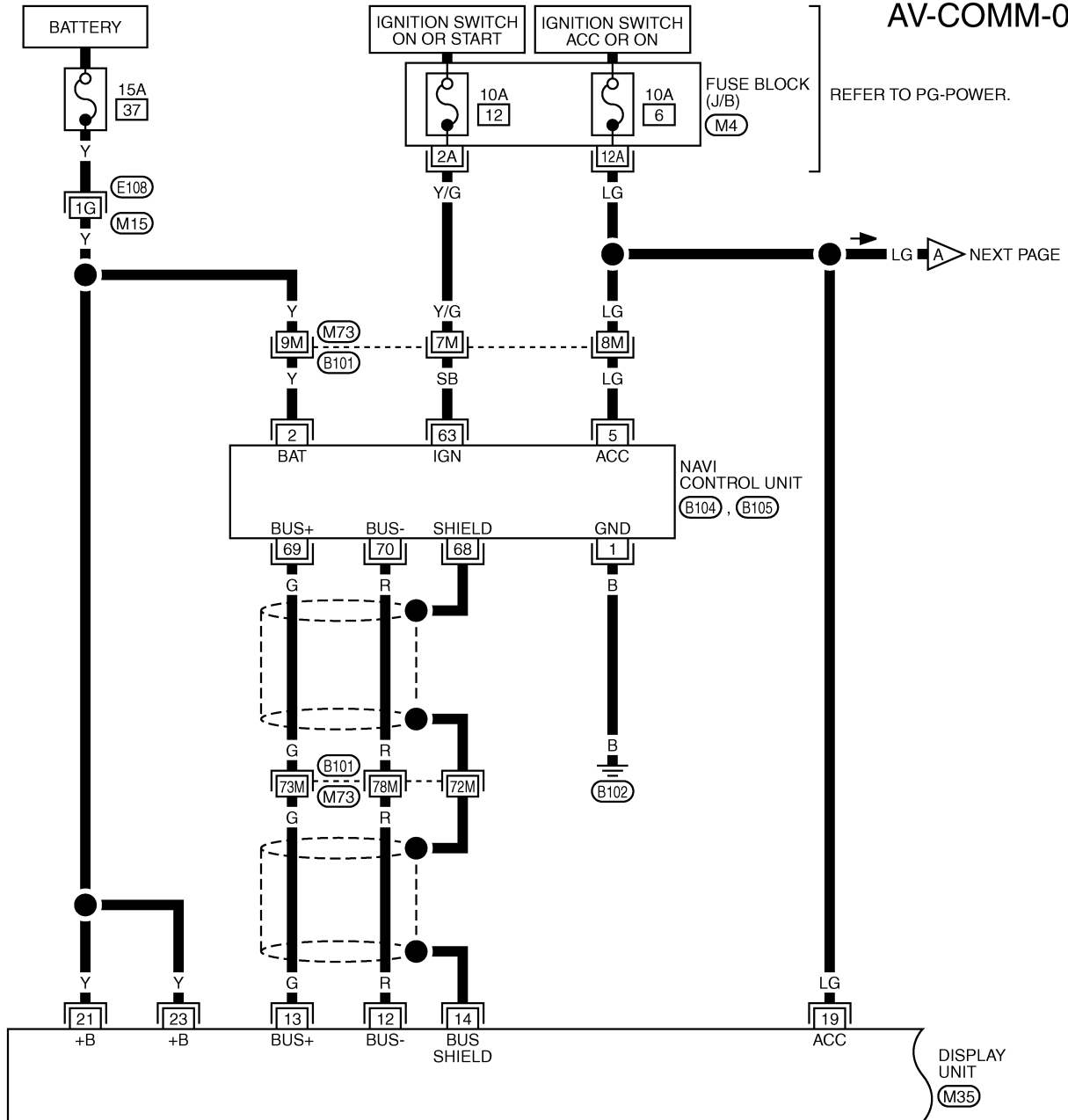


# NAVIGATION SYSTEM

## Wiring Diagram — COMM —

NKS000D2

AV-COMM-01



24	22	20	18	16	14	12	10	8	6	4	2
23	21	19	17	15	13	11	9	7	5	3	1

(M35)  
GY

REFER TO THE FOLLOWING.  
 (E108), (B101) -SUPER MULTIPLE JUNCTION (SMJ)  
 (M4) -FUSE BLOCK-JUNCTION BOX (J/B)

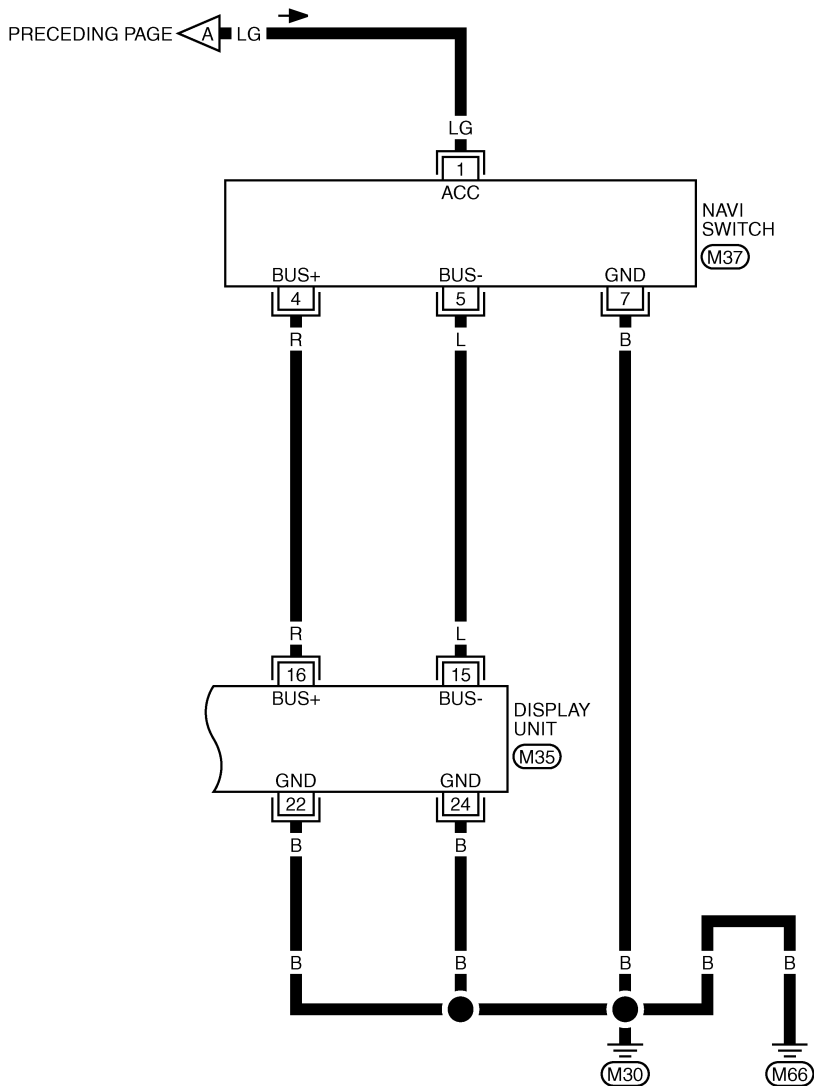
40	38	36	34	32	30	28	26	24	22	20	18	16	14	12	10	8	6	4	2
39	37	35	33	31	29	27	25	23	21	19	17	15	13	11	9	7	5	3	1

(B104)  
W

72	70	68	66	64	62	60	58	56	54	52	50	48	46	44	42
71	69	67	65	63	61	59	57	55	53	51	49	47	45	43	41

(B105)  
W

TKWT4086E



24	22	20	18	16	14	12	11	10	8	6	4	2
23	21	19	17	15	13	12	11	9	7	5	3	1

(M35) GY

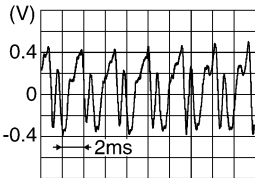
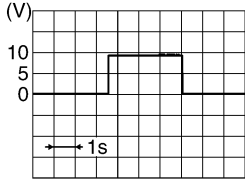
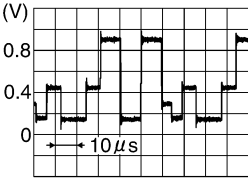
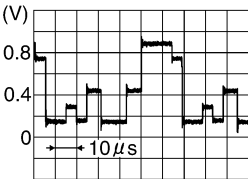
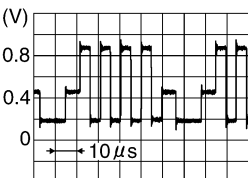
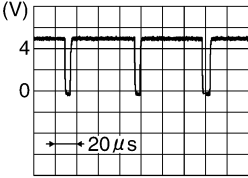
3	2	1
8	7	6

(M37) W

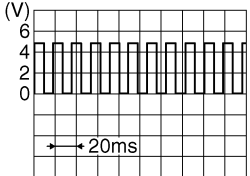
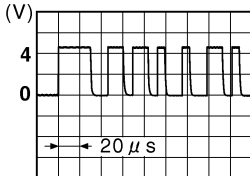
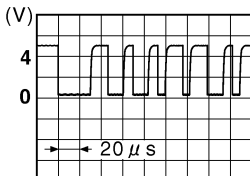
# NAVIGATION SYSTEM

## Terminals and Reference Value for NAVI Control Unit

NKS000D3

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
(+)	(-)			Ignition switch	Operation	
1 (B)	Ground	Ground	—	ON	—	Approx. 0 V
2 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
5 (LG)	Ground	ACC power supply	Input	ACC	—	Battery voltage
12 (OR)	14 (SB)	Voice guidance signal	Output	ON	Press "VOICE" button	 <p>SKIB3597E</p>
24 (BR)	13 (B/OR)	Voice guidance ON signal	Output	ON	Press "VOICE" button	 <p>SKIB0232E</p>
44 (B)	Ground	RGB signal (R: red)	Output	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting "Color Spectrum bar" on Display Diagnosis screen	 <p>SKIB7360E</p>
45 (W)	Ground	RGB signal (G: green)	Output	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting "Color Spectrum bar" on Display Diagnosis screen	 <p>SKIB7361E</p>
46 (R)	Ground	RGB signal (B: blue)	Output	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting "Color Spectrum bar" on Display Diagnosis screen	 <p>SKIB7362E</p>
47	—	Shield	—	—	—	—
48 (P)	Ground	RGB synchronizing signal	Output	ON	—	 <p>SKIB3603E</p>
50 (L)	Ground	RGB area (YS) signal	Output	ON	—	Approx. 5 V

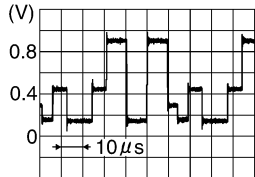
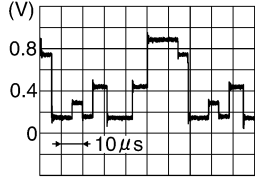
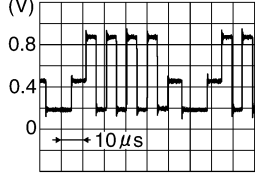
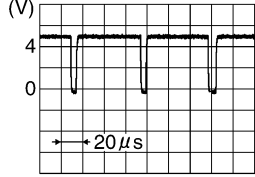
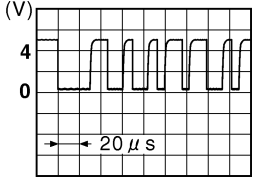
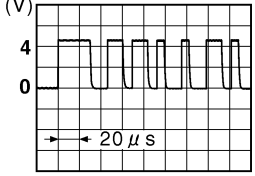
# NAVIGATION SYSTEM

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
(+)	(-)			Ignition switch	Operation	
61 (PU)	Ground	Illumination signal	Input	ON	Lighting switch ON	Approx. 12 V
					Lighting switch OFF	Approx. 0 V
63 (SB)	Ground	Ignition signal	Input	ON	—	Battery voltage
65 (GY)	Ground	Reverse signal	Input	ON	Select R position	Approx. 12 V
					Other position	Approx. 0 V
66 (L/B)	Ground	Vehicle speed signal (2-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 SKIA6649J
68	—	Shield	—	—	—	—
69 (G)	Ground	Communication signal (+)	Input/ Output	ON	Operate navigation system with NAVI switch	 SKIB7378E
70 (R)	Ground	Communication signal (-)	Input/ Output	ON	Operate navigation system with NAVI switch	 SKIB7379E
73 (GY)	Ground	GPS signal	Input	ON	Connector is not connected	Approx. 5 V

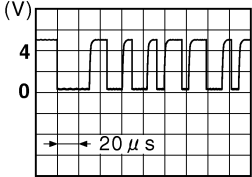
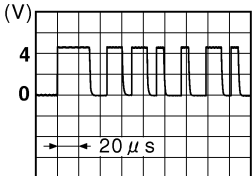
# NAVIGATION SYSTEM

## Terminals and Reference Value for Display Unit

NKS000D4

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
(+)	(-)			Ignition switch	Operation	
1 (L/R)	Ground	RGB signal (R: red)	Input	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting "Color Spectrum bar" on Display Diagnosis screen	 <p>SKIB7360E</p>
2 (L)	Ground	RGB signal (G: green)	Input	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting "Color Spectrum bar" on Display Diagnosis screen	 <p>SKIB7361E</p>
3 (L/W)	Ground	RGB signal (B: blue)	Input	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting "Color Spectrum bar" on Display Diagnosis screen	 <p>SKIB7362E</p>
4	—	Shield	—	—	—	—
7 (B/R)	Ground	RGB synchronizing signal	Input	ON	—	 <p>SKIB3603E</p>
8 (W/R)	Ground	RGB area (YS) signal	Input	ON	—	Approx. 5 V
12 (R)	Ground	Communication signal (-)	Input/Output	ON	Operate navigation system with NAVI switch	 <p>SKIB7379E</p>
13 (G)	Ground	Communication signal (+)	Input/Output	ON	Operate navigation system with NAVI switch	 <p>SKIB7378E</p>
14	—	Shield	—	—	—	—

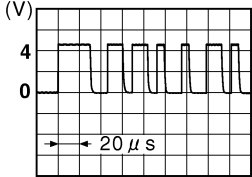
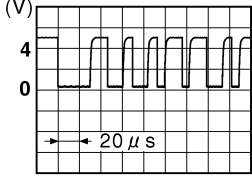
# NAVIGATION SYSTEM

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
(+)	(-)			Ignition switch	Operation	
15 (L)	Ground	Communication signal (-)	Input/ Output	ON	Operate navigation system with NAVI switch	 <small>SKIB7379E</small>
16 (R)	Ground	Communication signal (+)	Input/ Output	ON	Operate navigation system with NAVI switch	 <small>SKIB7378E</small>
19 (LG)	Ground	ACC power supply	Input	ACC	—	Battery voltage
21 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
22 (B)	Ground	Ground	—	ON	—	Approx. 0 V
23 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
24 (B)	Ground	Ground	—	ON	—	Approx. 0 V

# NAVIGATION SYSTEM

## Terminals and Reference Value for NAVI Switch

NKS000D5

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
(+)	(-)			Ignition switch	Operation	
1 (LG)	Ground	ACC power supply	Input	ACC	—	Battery voltage
2 (R/L)	Ground	Illumination signal	Input	ON	Lighting switch ON	Approx. 12 V
					Lighting switch OFF	Approx. 0 V
3 (R/Y)	Ground	Illumination control signal	Input	ON	Illumination control switch is operated by lighting switch in ON position	Changes between approx. 0 and approx. 12 V
4 (R)	Ground	Communication signal (+)	Input/ Output	ON	Operate navigation system with NAVI switch	 <p>SKIB7378E</p>
5 (L)	Ground	Communication signal (-)	Input/ Output	ON	Operate navigation system with NAVI switch	 <p>SKIB7379E</p>
7 (B)	Ground	Ground	—	ON	—	Approx. 0 V

## Special Note for Trouble Diagnosis

NKS002JP

Prior to perform trouble diagnosis, make sure there are no corresponding description in the “Example of Symptoms Possible No Malfunction”. Refer to [AV-93, "Example of Symptoms Possible No Malfunction"](#) .

## On Board Self-Diagnosis Function

NKS000D6

### DESCRIPTION

- Trouble diagnosis function of navigation system has a Self Diagnosis mode by automatic operation and a Confirmation/Adjustment mode by manual operation.
- Self Diagnosis mode checks for connections between the units constituting this system, analyzes each individual unit at the same time, and displays the results on the display unit.
- Confirmation/Adjustment mode displays trouble diagnosis that require an operation and a judgment by a human (auto-decision can not be performed by the system), confirmation of preset value, and an error history.

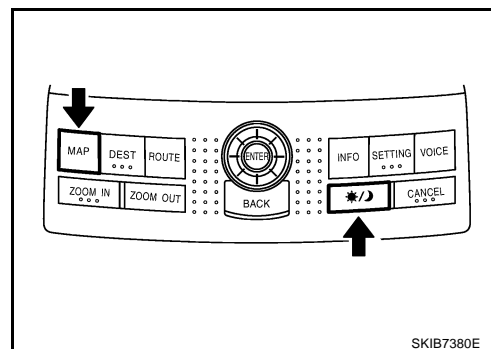
### DIAGNOSIS ITEM

Mode		Description
Self Diagnosis		<ul style="list-style-type: none"> <li>● NAVI control unit diagnosis (DVD-ROM drive will not be diagnosed when no DVD-ROM is in it.).</li> <li>● Analyzes connection between the NAVI control unit and the GPS antenna, connection between the NAVI control unit and each unit, and operation of each unit.</li> </ul>
Confirmation/ Adjustment	Display Diagnosis	Color tone and shading of the screen can be checked by the display of a color bar and a gray scale.
	Vehicle Signals	Diagnosis of signals that are input to NAVI control unit can be performed for Vehicle speed, Lights, Ignition and Reverse.
	Navigation	Steering Angle Adjustment This mode is used to correct difference between actual turning angle of a vehicle and turning angle of the vehicle mark on the display.
		Speed Calibration Under ordinary conditions, the navigation system distance measuring function will automatically compensate for minute decreases in wheel and tire diameter caused by tire wear or low-pressure. Speed Calibration can immediately restore system accuracy in cases such as when distance calibration is needed because of the use of tire chains.
	Error History	Malfunctions that occurred in the past are displayed, along with the number of times each has occurred. Time and location when/where the errors occurred are also displayed.
	Delete Unit Connection Log	Erase the connection history of unit and error history.

## Self Diagnosis Mode OPERATION PROCEDURE

NKS000D7

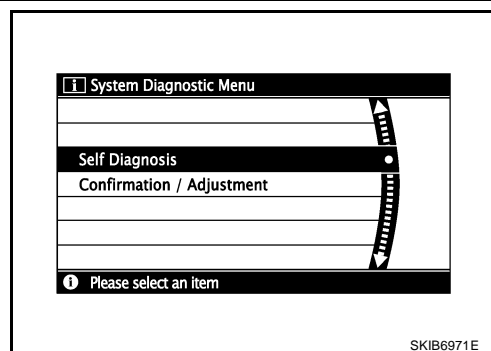
1. Start the engine.
2. Press and hold “MAP” and “\* / ” buttons simultaneously for 5 seconds or more.
  - Shifting from current screen to previous screen is performed by pressing “BACK” button.



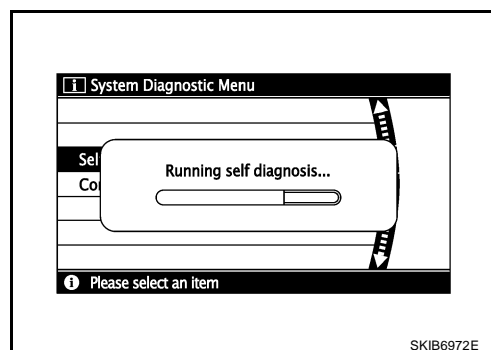


# NAVIGATION SYSTEM

- The initial trouble diagnosis screen will be shown, and items "Self Diagnosis" and "Confirmation/Adjustment" will become selective.

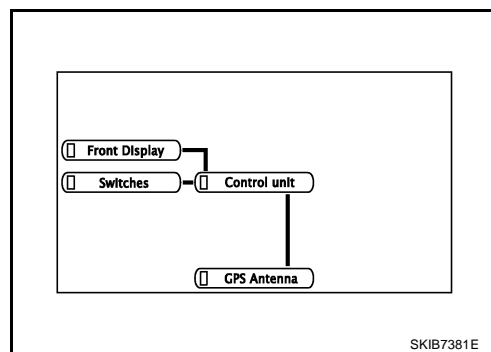


- Perform self-diagnosis by selecting the "Self Diagnosis".
  - Self-diagnosis screen is displayed, and then self-diagnosis starts.
  - The bar graph visible below self-diagnosis screen displays progress of the diagnosis.



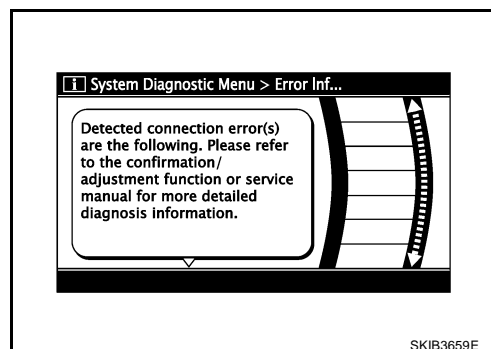
- On the diagnosis results screen, each unit name and connection line will be colored according to the diagnosis result, as follows.

Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
DVD-ROM drive undiagnosed	Gray	Green
DVD-ROM and DVD-ROM drive malfunction	Yellow	Green
Unit returned an error	Red	Green



## NOTE:

- Control unit = NAVI control unit
  - Switches = NAVI switch
  - Only Control unit (NAVI control unit) is displayed in red.
  - If multiple malfunctions occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > yellow > gray.
- Select a switch on the diagnosis results screen, and comments for the diagnosis results will be shown.

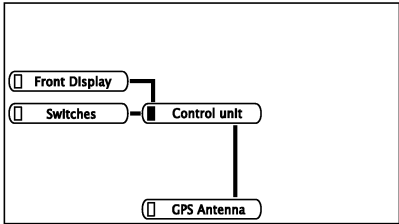
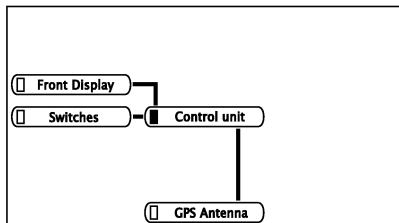
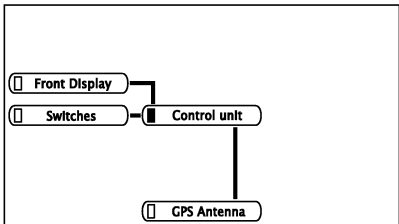
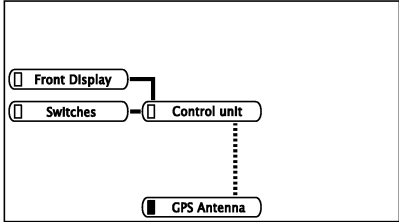


# NAVIGATION SYSTEM

## SELF-DIAGNOSIS RESULT

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

### Quick Reference Table

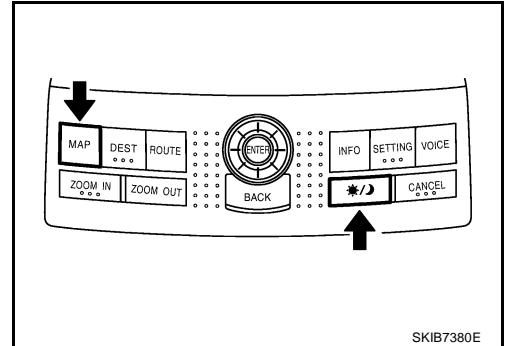
Self-diagnosis result screen	Possible cause	Action to take
 <p>■ : Red</p> <p>SKIB7382E</p>	<p>NAVI control unit malfunction is detected</p>	<p>Replace NAVI control unit Refer to <a href="#">AV-96. "Removal and Installation of NAVI Control Unit"</a></p>
 <p>■ : Yellow</p> <p>SKIB7383E</p>	<ul style="list-style-type: none"> <li>● Malfunction is detected on DVD-ROM drive pickup lens in NAVI control unit</li> <li>● There is dirt and damage on the DVD-ROM</li> </ul>	<ol style="list-style-type: none"> <li>1. Check if the inserted DVD-ROM is specified for this navigation system, and the DVD-ROM is dirty, scratched or warped.</li> <li>2. If the results from the above checkup show no malfunction, insert the same DVD-ROM, and then restart self-diagnosis.</li> <li>3. If self-diagnosis results still show any malfunction, replace NAVI control unit.</li> </ol>
 <p>■ : Gray</p> <p>SKIB7384E</p>	<p>DVD-ROM not inserted is detected</p>	<p>Insert DVD-ROM</p>
 <p>■ : Gray      ..... : Yellow</p> <p>SKIB7385E</p>	<p>GPS antenna connection malfunction is detected</p>	<ol style="list-style-type: none"> <li>1. Check if GPS antenna feeder line is snapped or pinched.</li> <li>2. If the results from the above checkup show no malfunction, replace GPS antenna, and then restart self-diagnosis.</li> <li>3. If self-diagnosis results still show any malfunction, replace NAVI control unit.</li> </ol>

# NAVIGATION SYSTEM

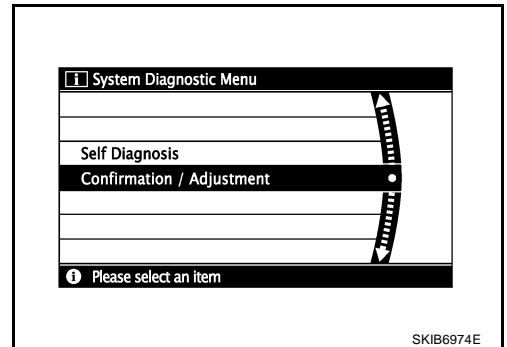
## Confirmation/Adjustment Mode OPERATION PROCEDURE

NKS000D8

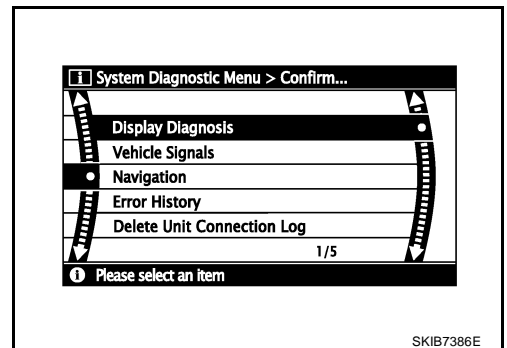
1. Start the engine.
2. Press and hold "MAP" and "☀/☾" buttons simultaneously for 5 seconds or more.
  - Shifting from current screen to previous screen is performed by pressing "BACK" button.



3. The initial trouble diagnosis screen will be shown, and items "Self Diagnosis" and "Confirmation/Adjustment" will become selective.
4. Select "Confirmation/Adjustment".

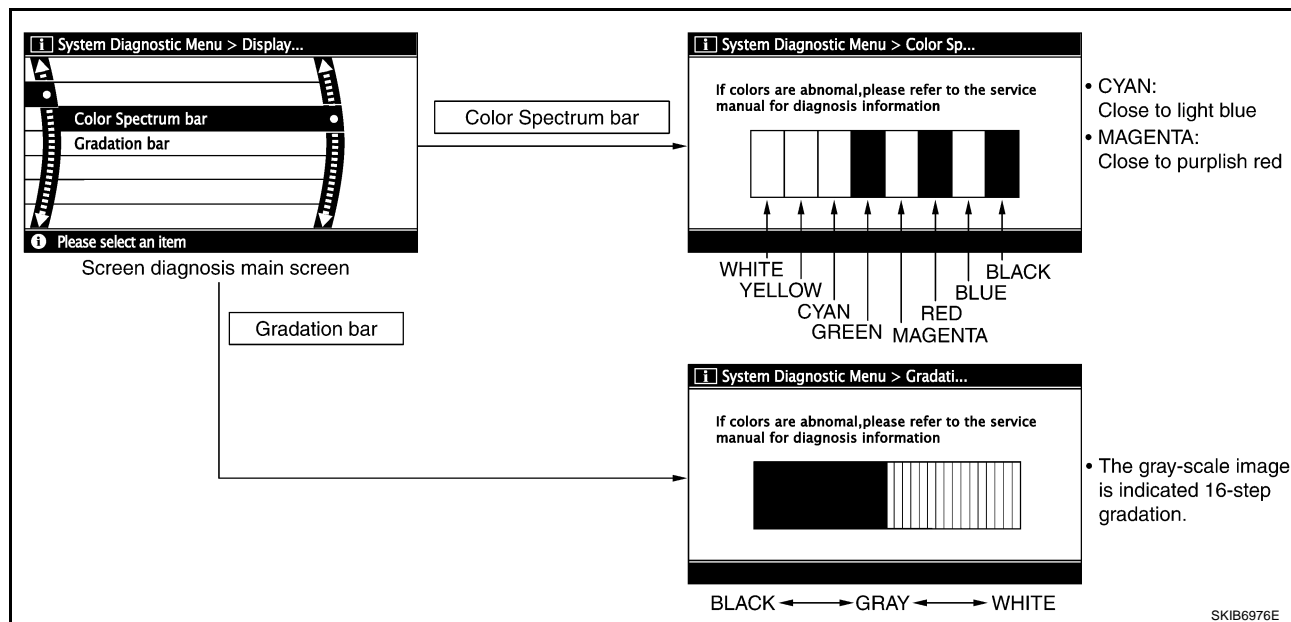


5. Each diagnosis is shown by selecting each screen switch on Confirmation/Adjustment screen.



# NAVIGATION SYSTEM

## DISPLAY DIAGNOSIS



- If RGB signal is malfunctioning, the tint of the color bar display is as follows.

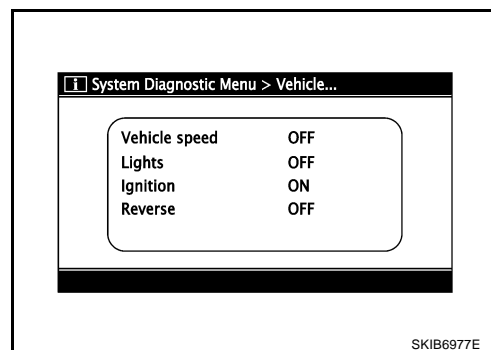
**R (red) signal error** : Light blue (Cyan) tint

**G (green) signal error** : Purple (Magenta) tint

**B (blue) signal error** : Yellow tint

## VEHICLE SIGNALS

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



Diagnosis item	Display	Condition	Remarks
Vehicle speed	ON	When vehicle speed is more than 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	When vehicle speed is 0 km/h (0 MPH)	
	—	Ignition switch in ACC position	
Lights	ON	Lighting switch ON	—
	OFF	Lighting switch OFF	
Ignition	ON	Ignition switch ON	—
	OFF	Ignition switch ACC position	
Reverse	ON	Selector lever in R position	Changes in indication may be delayed. This is normal.
	OFF	Selector lever in any position other than R position	
	—	Ignition switch in ACC position	

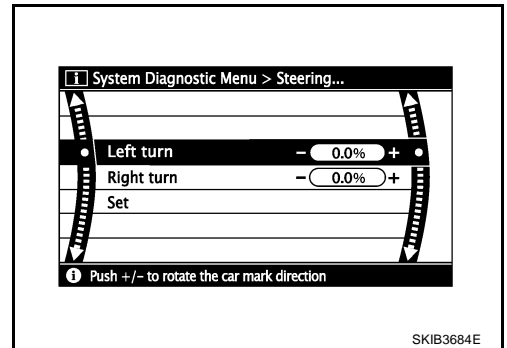
### NOTE:

If ignition signal is NG, each vehicle signal of vehicle speed and reverse is not displayed.

## NAVIGATION

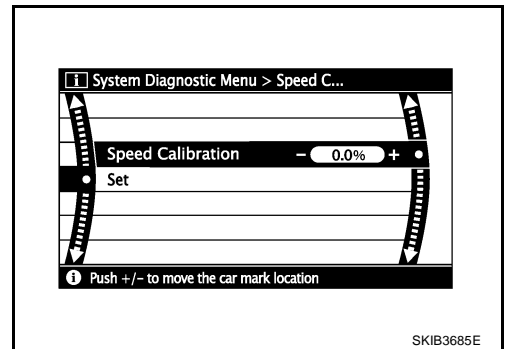
### Steering Angle Adjustment

The steering angle output value detected by the gyroscope can be adjusted.



### Speed Calibration

Usually the automatic distance correction function adjusts the malfunction in distance caused by the tires wearing down or the tire pressure change. If prompt adjustment is necessary when the tire chains are installed etc., perform this procedure.



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AV

# NAVIGATION SYSTEM

## ERROR HISTORY

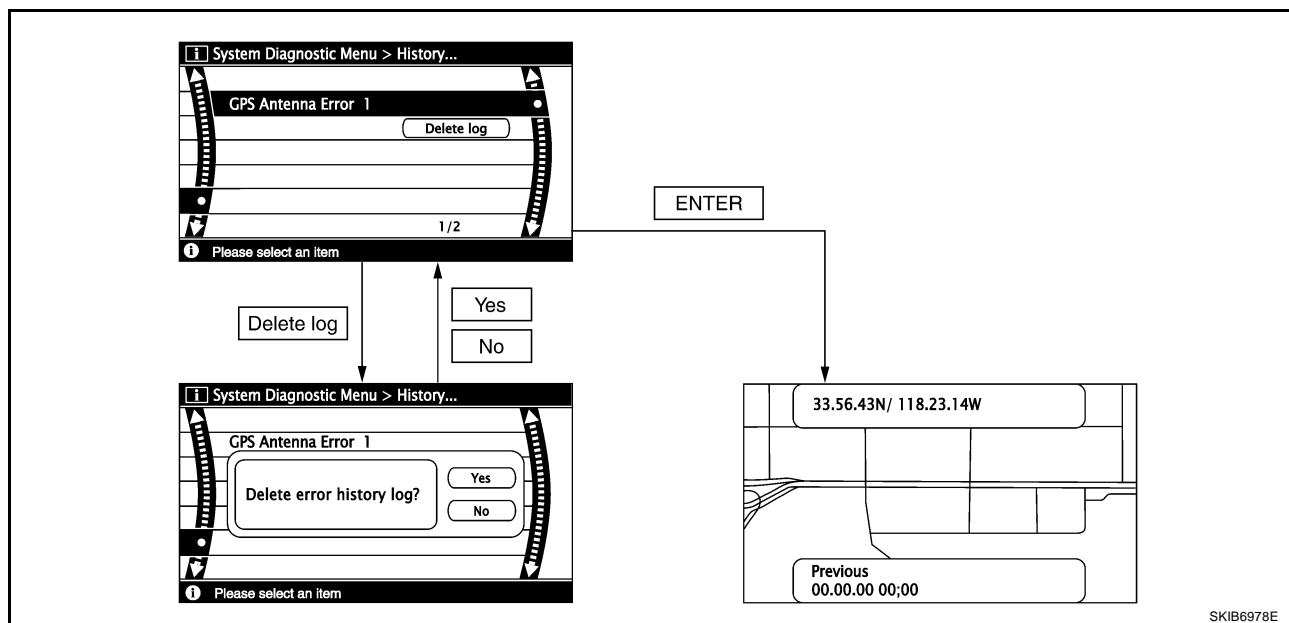
Diagnosis results of self-diagnosis depend on if any error occurred during the time after selecting “Self Diagnosis” until self-diagnosis results is displayed.

Meanwhile, when an error occurs before selecting “Self Diagnosis”, and if an error does not occur until self-diagnosis results is displayed, a diagnosis result is judged as normal.

Consequently, a diagnosis needs to be performed with “Error History” for the past error that is not available with self-diagnosis.

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

- Correct time of the error occurrence may not be displayed when the GPS antenna substrate within the NAVI control unit has malfunctioned.
- Place of the error occurrence is represented by the position of the vehicle mark at the time when the error occurred. If the vehicle mark has deviated from the correct position, then the place of the error occurrence may not be located correctly.
- When the ignition switch is turned ON if the error is detected, the counter increases 1. Even if it is normal when the ignition switch is turned ON the next time, the counter does not decrease.
- The upper limit of the counter is 50. 51 or more is displayed as 50. It can be reset to 0 by “Delete log” switch.



SKIB6978E

# NAVIGATION SYSTEM

## Diagnosis by Error History

- When having a difficulty on the investigation of cause due to multiple errors with a reproducible malfunction, turn ON the ignition switch from OFF mode after making a memo of the item and number of time (or delete "Error History"). Check "Error History" again after the malfunction was reproduced, and then perform diagnosis focusing on the item of which number of time increased.
- DVD-ROM error history may be restored because DVD-ROM cannot be temporarily read. (Driving on rough road etc.) Then, erase the error history. (This is not a malfunction.) Perform service in "Action to take" if error history are repeatedly indicated again.

Error item	Possible cause	Action to take
GPS Antenna Error	GPS antenna connection malfunction is detected	<ol style="list-style-type: none"> <li>1. Start self-diagnosis, and make sure of the result.</li> <li>2. If any error is found, GO TO 3. If any error is not found, delete the error history and end the diagnosis. (This is not a malfunction.)</li> <li>3. Check if GPS antenna feeder line is snapped or pinched.</li> <li>4. If the results from the above checkup show no malfunction, replace GPS antenna, and then restart self-diagnosis.</li> <li>5. If self-diagnosis results still show any malfunction, replace NAVI control unit.</li> </ol>
FLASH-ROM Error Of Control Unit	NAVI control unit malfunction is detected	<ol style="list-style-type: none"> <li>1. Start self-diagnosis, and make sure of the result.</li> <li>2. If any error is found, replace NAVI control unit. Refer to <a href="#">AV-96, "Removal and Installation of NAVI Control Unit"</a>. If any error is not found, delete the error history and end the diagnosis. (This is not a malfunction.)</li> </ol>
Connection Of Gyro		
GPS Communication Error	GPS malfunction is detected	<p>If the symptoms such as the GPS receipt malfunction occur, intermittent malfunction caused by strong radio interference may be detected.</p> <p>If the malfunction always occurs, replace NAVI control unit.</p>
GPS ROM Error		
GPS RAM Error		
GPS RTC Error		
DVD-ROM Mechanism not Detected	<ul style="list-style-type: none"> <li>Malfunction is detected on DVD-ROM drive pickup lens in NAVI control unit</li> <li>There is dirt and damage on the DVD-ROM</li> </ul>	<ol style="list-style-type: none"> <li>1. Check if the inserted DVD-ROM is specified for this navigation system, and the DVD-ROM is dirty, scratched or warped.</li> <li>2. If the results from the above checkup show no malfunction, insert the same DVD-ROM, and then restart self-diagnosis.</li> <li>3. If self-diagnosis results still show any malfunction, replace NAVI control unit.</li> </ol>
DVD-ROM Communication Error		
DVD-ROM Mechanism Error		
DVD-ROM Focus Error		
DVD-ROM TOC Error		
DVD-ROM Disc Error		
DVD-ROM Seek Error		
DVD-ROM Error Correction Error		
DVD-ROM Read Error		
DVD-ROM Data Transfer Error		
DVD-ROM Data Error		
DVD-ROM Loading / Eject Error		
DVD-ROM Time-out		

## NAVIGATION SYSTEM

Error item	Possible cause	Action to take
Front Display Connection Error	Display unit power supply and ground circuit malfunction is detected	<ol style="list-style-type: none"><li>1. Delete the error history, and turn OFF ignition switch.</li><li>2. Turn ON ignition switch, and make sure of the error history.</li><li>3. If the error item listed left is displayed again, GO TO 4. If the error item is not displayed, end the diagnosis. (This is not a malfunction.)</li><li>4. Check display unit power supply and ground circuit.</li><li>5. If the results from the above checkup show no malfunction, replace display unit.</li></ol>

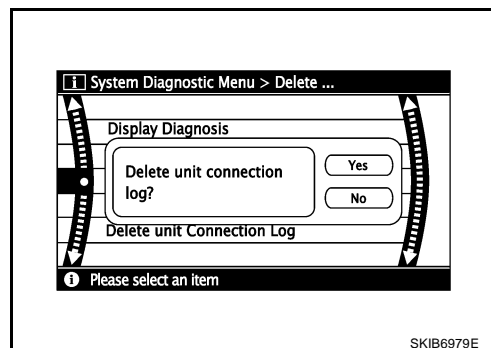


# NAVIGATION SYSTEM

Error item	Possible cause	Action to take
Switches Connection Error	<ul style="list-style-type: none"> <li>● NAVI switch power supply and ground circuit malfunction is detected</li> <li>● Malfunction is detected on communication signal between display unit and NAVI switch</li> <li>● Malfunction is detected on communication signal between NAVI control unit and display unit</li> </ul>	<ol style="list-style-type: none"> <li>1. Delete the error history, and turn OFF ignition switch.</li> <li>2. Turn ON ignition switch, and make sure of the error history.</li> <li>3. If the error item listed left is displayed again, GO TO 4. If the error item is not displayed, end the diagnosis. (This is not a malfunction.)</li> <li>4. Check NAVI switch power supply and ground circuit.</li> <li>5. Check communication circuit between display unit and NAVI switch.</li> <li>6. Check communication circuit between NAVI control unit and display unit.</li> <li>7. If the results from the above checkup show no malfunction, replace NAVI switch, display unit, or NAVI control unit, and then start self-diagnosis.</li> <li>8. If self-diagnosis results still show any malfunction, replace one of the two units that is not replaced yet.</li> <li>9. If self-diagnosis results still show any malfunction, replace the other unit.</li> </ol>
<ul style="list-style-type: none"> <li>● Front Display Connection Error</li> <li>● Switches Connection Error</li> </ul>	<ul style="list-style-type: none"> <li>● Malfunction is detected on communication signal between NAVI control unit and display unit</li> <li>● Malfunction is detected on communication signal between display unit and NAVI switch</li> </ul>	<ol style="list-style-type: none"> <li>1. Delete the error history, and turn OFF ignition switch.</li> <li>2. Turn ON ignition switch, and make sure of the error history.</li> <li>3. If the error item listed left is displayed again, GO TO 4. If the error item is not displayed, end the diagnosis. (This is not a malfunction.)</li> <li>4. Check communication circuit between NAVI control unit and display unit.</li> <li>5. Check communication circuit between display unit and NAVI switch.</li> <li>6. If the results from the above checkup show no malfunction, replace NAVI switch, display unit, or NAVI control unit, and then start self-diagnosis.</li> <li>7. If self-diagnosis results still show any malfunction, replace one of the two units that is not replaced yet.</li> <li>8. If self-diagnosis results still show any malfunction, replace the other unit.</li> </ol>

## DELETE UNIT CONNECTION LOG

Erase the connection history of unit and error history that is recorded in NAVI control unit (clear the connection history of the removed unit).




# NAVIGATION SYSTEM

## All Images Are Not Displayed

NKS000DI

Symptom: RGB image such as a map screen is not displayed.

### 1. CHECK CONDITION

Check if brightness of screen changes when  button on NAVI switch is turned on after turning on ignition switch.

Does brightness of screen change?

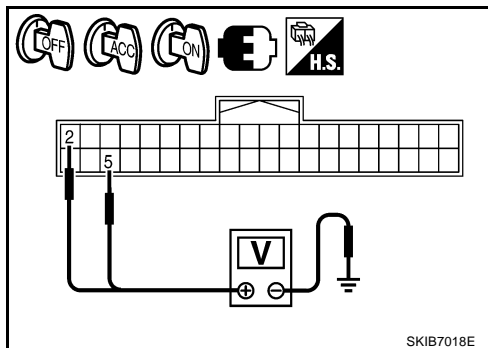
YES >> GO TO 5.

NO >> GO TO 2.

### 2. CHECK NAVI CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

1. Check voltage between NAVI control unit harness connector terminals and ground.

Terminals		OFF	ACC	ON
(+)	(-)			
Connector	Terminal			
B104	2	Battery voltage	Battery voltage	Battery voltage
	5	0 V	Battery voltage	Battery voltage



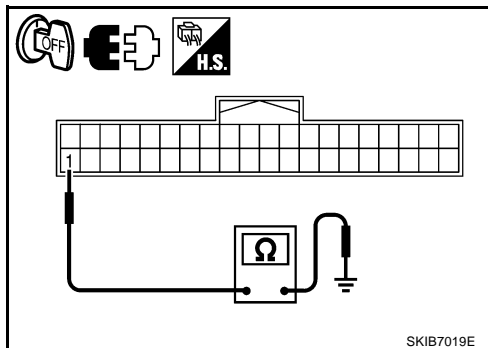
2. Turn ignition switch OFF.
3. Disconnect NAVI control unit connector.
4. Check continuity between NAVI control unit harness connector B104 terminal 1 and ground.

**1 – Ground : Continuity should exist.**

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



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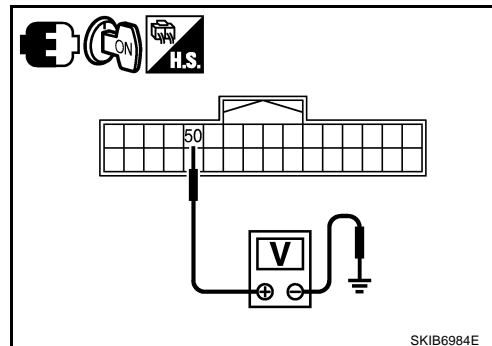
## 6. CHECK RGB AREA (YS) SIGNAL

1. Connect NAVI control unit and display unit connectors.
2. Turn ignition switch ON.
3. Check voltage between NAVI control unit harness connector B105 terminal 50 and ground.

**50 – Ground : Approx. 5 V**

OK or NG

- OK >> Replace display unit.  
NG >> Replace NAVI control unit.



# NAVIGATION SYSTEM

## Navigation System Is Not Operated by NAVI Switch

NKS000DJ

Symptom: Initial screen (NISSAN screen) or warning screen is displayed after ignition switch turns ON. But NAVI switch does not work.

### 1. CHECK NAVI SWITCH POWER SUPPLY AND GROUND CIRCUIT

1. Check voltage between NAVI switch harness connector terminal and ground.

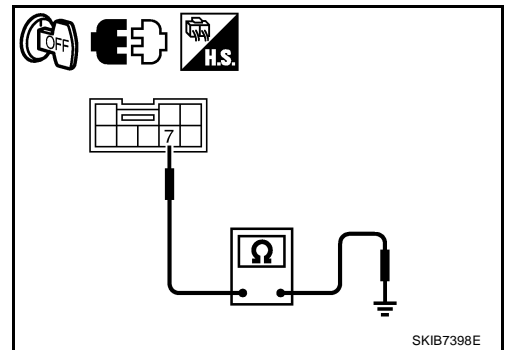
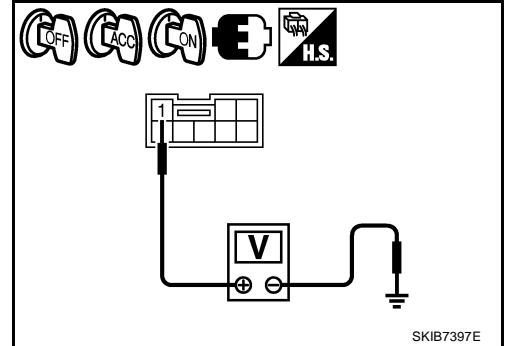
Terminals			OFF	ACC	ON
(+)		(-)			
Connector	Terminal				
M37	1	Ground	0 V	Battery voltage	Battery voltage

2. Turn ignition switch OFF.
3. Disconnect NAVI switch connector.
4. Check continuity between NAVI switch harness connector M37 terminal 7 and ground.

**7 – Ground : Continuity should exist.**

OK or NG

- OK >> GO TO 2.  
NG >> Repair harness or connector.



### 2. CHECK HARNESS

1. Disconnect display unit connector.
2. Check continuity between display unit harness connector (A) M35 terminals 15, 16 and NAVI switch harness connector (B) M37 terminals 5, 4.

**15 – 5 : Continuity should exist.**

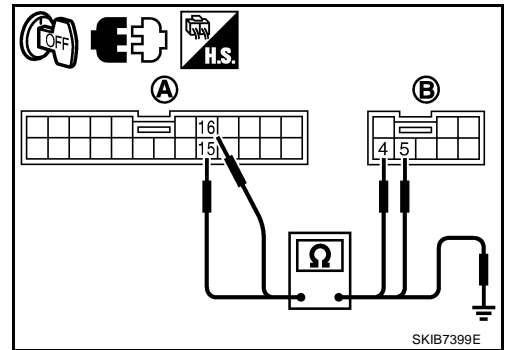
**16 – 4 : Continuity should exist.**

3. Check continuity between display unit harness connector (A) M35 terminals 15, 16 and ground.

**15, 16 – Ground : Continuity should not exist.**

OK or NG

- OK >> GO TO 3.  
NG >> Repair harness or connector.



# NAVIGATION SYSTEM

## 3. CHECK HARNESS

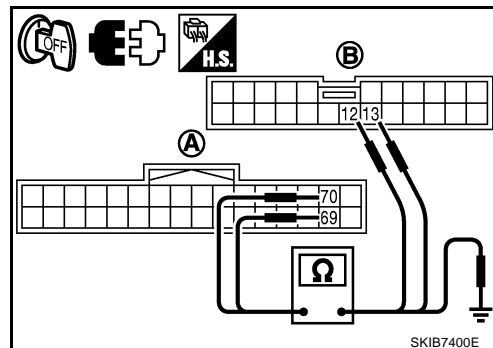
1. Disconnect NAVI control unit connector.
2. Check continuity between NAVI control unit harness connector  
(A) B105 terminals 69, 70 and display unit harness connector  
(B) M35 terminals 13, 12.

**69 – 13 : Continuity should exist.**

**70 – 12 : Continuity should exist.**

3. Check continuity between NAVI control unit harness connector  
(A) B105 terminals 69, 70 and ground.

**69, 70 – Ground : Continuity should not exist.**



OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.

## 4. CHECK NAVI SWITCH, DISPLAY UNIT AND NAVI CONTROL UNIT

1. Replace NAVI switch, display unit, or NAVI control unit.
2. Make sure that navigation system can be operated by NAVI switch.

OK or NG

OK >> INSPECTION END

NG >> GO TO 5.

## 5. CHECK NAVI SWITCH, DISPLAY UNIT AND NAVI CONTROL UNIT

1. Replace one of the two units that is not replaced yet.
2. Make sure that navigation system can be operated by NAVI switch.

OK or NG

OK >> INSPECTION END

NG >> Replace the other unit.

## Tint Is Strange for The RGB Image

NKS000DL

Symptom: Tint of RGB image is strange.

### 1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and display unit connectors.
3. Check the malfunctioning circuit according to the symptoms.

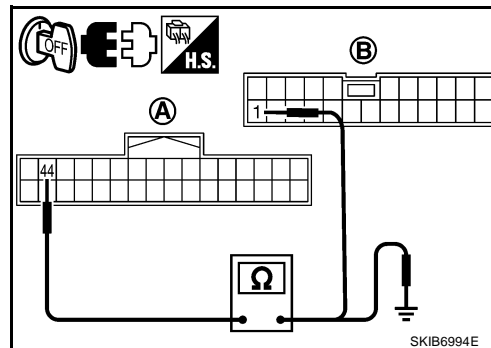
#### ● Light blue (Cyan) tinged screen

Check continuity between NAVI control unit harness connector (A) B105 terminal 44 and display unit harness connector (B) M35 terminal 1.

**44 – 1 : Continuity should exist.**

Check continuity between NAVI control unit harness connector (A) B105 terminal 44 and ground.

**44 – Ground : Continuity should not exist.**



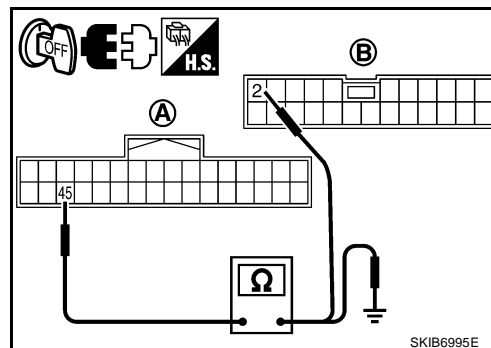
#### ● Purple (Magenta) tinged screen

Check continuity between NAVI control unit harness connector (A) B105 terminal 45 and display unit harness connector (B) M35 terminal 2.

**45 – 2 : Continuity should exist.**

Check continuity between NAVI control unit harness connector (A) B105 terminal 45 and ground.

**45 – Ground : Continuity should not exist.**



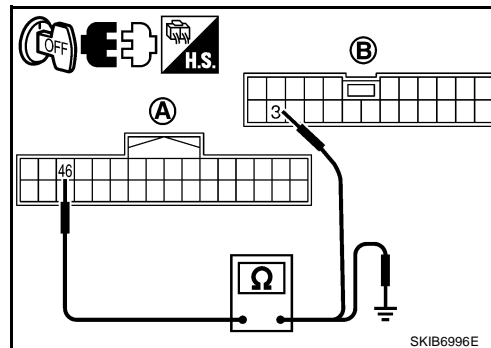
#### ● Yellow tinged screen

Check continuity between NAVI control unit harness connector (A) B105 terminal 46 and display unit harness connector (B) M35 terminal 3.

**46 – 3 : Continuity should exist.**

Check continuity between NAVI control unit harness connector (A) B105 terminal 46 and ground.

**46 – Ground : Continuity should not exist.**



OK or NG

- OK     >> GO TO 2.  
 NG     >> Repair harness or connector.

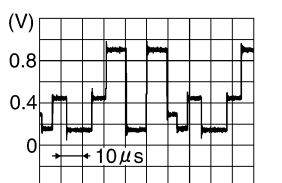
## 2. CHECK RGB SIGNAL

1. Connect NAVI control unit and display unit connectors.
2. Turn ignition switch ON.
3. Start Confirmation/Adjustment mode. Refer to [AV-75, "Confirmation/Adjustment Mode"](#) .
4. Display color bar by selecting "Color Spectrum bar" on Display Diagnosis screen. Refer to [AV-76, "DISPLAY DIAGNOSIS"](#) .
5. Check the malfunctioning circuit according to the symptoms.

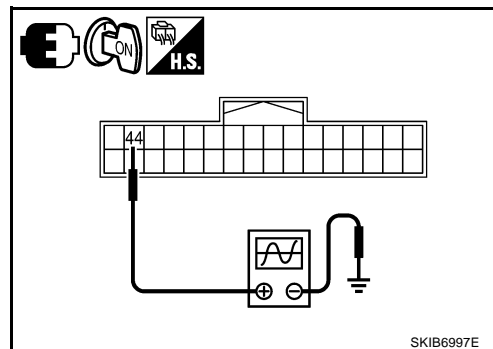
- **Light blue (Cyan) tinged screen**

Check voltage waveform between NAVI control unit harness connector B105 terminal 44 and ground using CONSULT-II or oscilloscope.

**44 – Ground:**



SKIB7360E

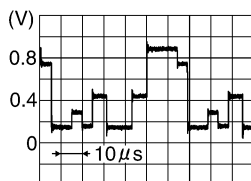


SKIB6997E

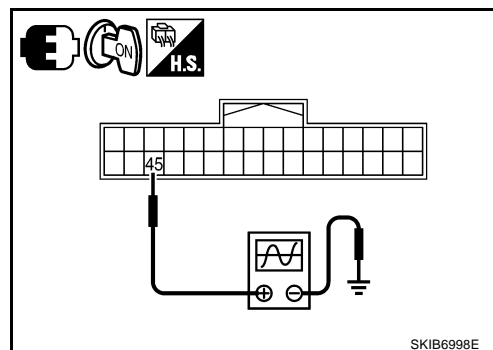
- **Purple (Magenta) tinged screen**

Check voltage waveform between NAVI control unit harness connector B105 terminal 45 and ground using CONSULT-II or oscilloscope.

**45 – Ground:**



SKIB7361E

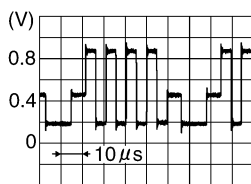


SKIB6998E

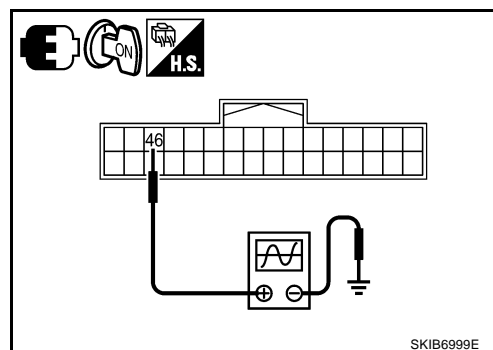
- **Yellow tinged screen**

Check voltage waveform between NAVI control unit harness connector B105 terminal 46 and ground using CONSULT-II or oscilloscope.

**46 – Ground:**



SKIB7362E



SKIB6999E

OK or NG

- OK     >> Replace display unit.
- NG     >> Replace NAVI control unit.



## RGB Image Is Rolling

NKS000DM

Symptom: RGB image such as a map screen is rolling.

### 1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and display unit connectors.
3. Check continuity between NAVI control unit harness connector (A) B105 terminal 48 and display unit harness connector (B) M35 terminal 7.

**48 – 7 : Continuity should exist.**

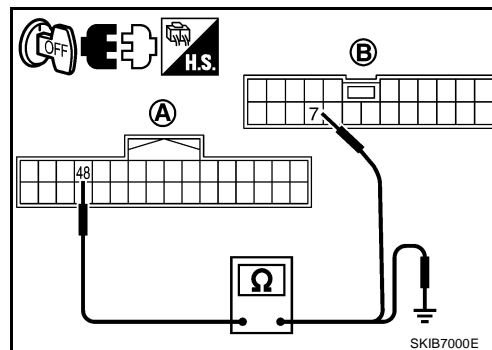
4. Check continuity between NAVI control unit harness connector (A) B105 terminal 48 and ground.

**48 – Ground : Continuity should not exist.**

OK or NG

OK >> GO TO 2.

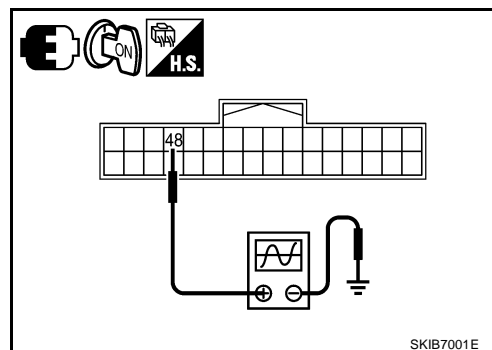
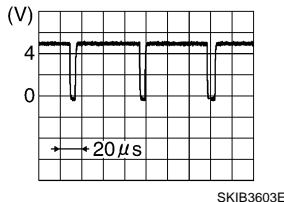
NG >> Repair harness or connector.



### 2. CHECK RGB SYNCHRONIZING SIGNAL

1. Connect NAVI control unit and display unit connectors.
2. Turn ignition switch ON.
3. Check voltage waveform between NAVI control unit harness connector B105 terminal 48 and ground using CONSULT-II or oscilloscope.

**48 – Ground:**



OK or NG

OK >> Replace display unit.

NG >> Replace NAVI control unit.

## Voice Guidance Is Not Heard

NKS000DN

Symptom: Voice guidance does not sound at route guidance.

### 1. CHECK CONDITION

Turn audio system ON, and check if any sound can be heard from front door speaker.

OK or NG

OK >> GO TO 2.

NG >> Refer to [AV-38, "Trouble Diagnosis"](#) and repair malfunctioning part.

### 2. CHECK CONDITION

Turn audio system ON, and check if front door speaker is muted when pressing "VOICE" button during sound-ing from front door speaker.

Is front door speaker muted?

YES >> GO TO 3.

NO >> GO TO 5.

### 3. CHECK HARNESS

#### With BOSE system

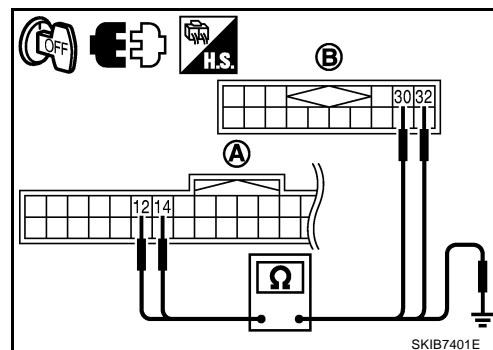
1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and audio unit connectors.
3. Check continuity between NAVI control unit harness connector (A) B104 terminals 12, 14 and audio unit harness connector (B) M39 terminals 32, 30.

**12 – 32 : Continuity should exist.**

**14 – 30 : Continuity should exist.**

4. Check continuity between NAVI control unit harness connector (A) B104 terminals 12, 14 and ground.

**12, 14 – Ground : Continuity should not exist.**



#### With base system

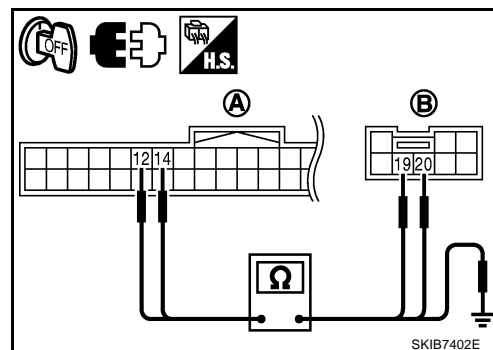
1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and audio unit connectors.
3. Check continuity between NAVI control unit harness connector (A) B104 terminals 12, 14 and audio unit harness connector (B) M46 terminals 20, 19.

**12 – 20 : Continuity should exist.**

**14 – 19 : Continuity should exist.**

4. Check continuity between NAVI control unit harness connector (A) B104 terminals 12, 14 and ground.

**12, 14 – Ground : Continuity should not exist.**



OK or NG

OK >> GO TO 4.

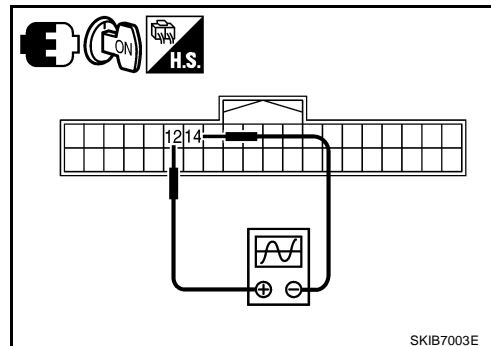
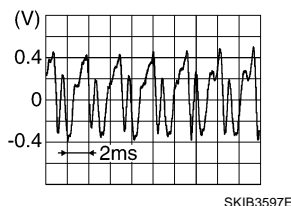
NG >> Repair harness or connector.

# NAVIGATION SYSTEM

## 4. CHECK VOICE GUIDANCE SIGNAL

1. Connect NAVI control unit and audio unit connectors.
2. Turn ignition switch ON.
3. When pressing "VOICE" button, check voltage waveform between NAVI control unit harness connector B104 terminals 12 and 14 using CONSULT-II or oscilloscope.

12 – 14:



OK or NG

- OK >> Replace audio unit.  
NG >> Replace NAVI control unit.

## 5. CHECK HARNESS

**With BOSE system**

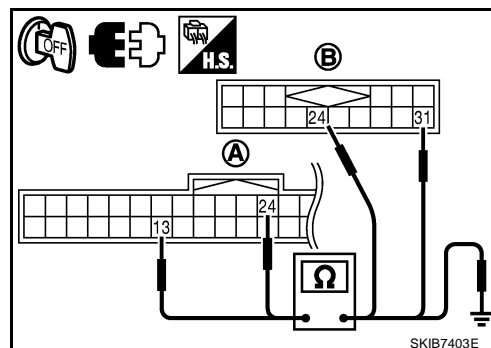
1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and audio unit connectors.
3. Check continuity between NAVI control unit harness connector (A) B104 terminals 13, 24 and audio unit harness connector (B) M39 terminals 31, 24.

13 – 31 : Continuity should exist.

24 – 24 : Continuity should exist.

4. Check continuity between NAVI control unit harness connector (A) B104 terminal 24 and ground.

24 – Ground : Continuity should not exist.



**With base system**

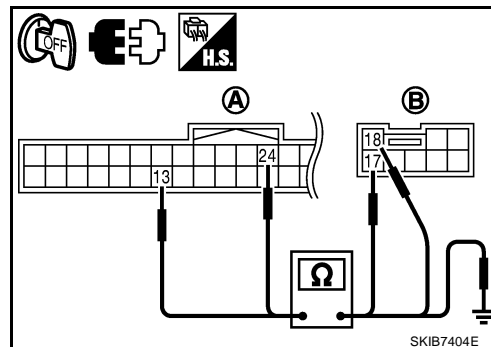
1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and audio unit connectors.
3. Check continuity between NAVI control unit harness connector (A) B104 terminals 13, 24 and audio unit harness connector (B) M46 terminals 18, 17.

13 – 18 : Continuity should exist.

24 – 17 : Continuity should exist.

4. Check continuity between NAVI control unit harness connector (A) B104 terminal 24 and ground.

24 – Ground : Continuity should not exist.



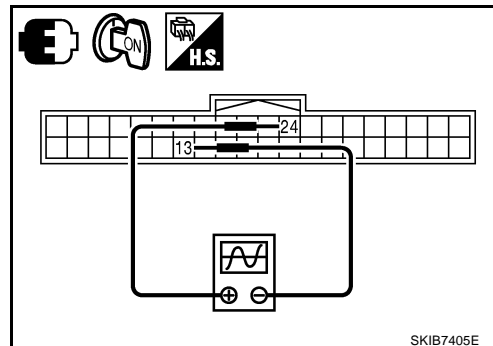
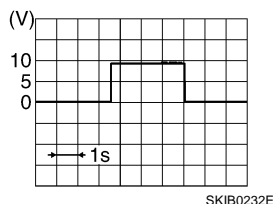
OK or NG

- OK >> GO TO 6.  
NG >> Repair harness or connector.

## 6. CHECK VOICE GUIDANCE ON SIGNAL

1. Connect NAVI control unit and audio unit connectors.
2. Turn ignition switch ON.
3. When pressing "VOICE" button, check voltage waveform between NAVI control unit harness connector B104 terminals 24 and 13 using CONSULT-II or oscilloscope.

**24 – 13:**



OK or NG

- OK >> Replace audio unit.
- NG >> Replace NAVI control unit.

## Vehicle Mark Is Not Displayed Properly

NKS000DO

Symptom: Vehicle mark is not displayed at the vehicle driving position properly.

### 1. NAVIGATION SYSTEM ADJUSTMENT

1. Select "Navigation" in Confirmation/Adjustment mode, and adjust items, "Steering Angle Adjustment" and "Speed Calibration". Refer to [AV-77, "NAVIGATION"](#).
2. Check symptom with driving.

Is any malfunction observed?

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

### 2. SELF-DIAGNOSIS

Start self-diagnosis, and check any malfunction related to GPS. Refer to [AV-72, "Self Diagnosis Mode"](#).

Is any malfunction related to GPS observed?

- YES >> Repair malfunctioning part by diagnosis results.
- NO >> GO TO 3.

### 3. CHECK VEHICLE SIGNAL

Select "Vehicle Signals" in Confirmation/Adjustment mode, and check the vehicle speed signal and reverse signal inputting to NAVI control unit. Refer to [AV-76, "VEHICLE SIGNALS"](#).

OK or NG

- OK >> Limit of position detection capacity.
- NG >>
  - Check NAVI control unit vehicle speed signal circuit, and repair malfunctioning part.
  - Check NAVI control unit reverse signal circuit, and repair malfunctioning part.


# NAVIGATION SYSTEM

## Example of Symptoms Possible No Malfunction

NKS002JQ

For Navigation System operation information, refer to Navigation System Owner's Manual.


### BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The display is turned off.	Press and hold the  button to turn on the display.
No voice guidance is available. or The volume is too high or too low.	The volume is not set correctly, or it is turned off.	Adjust the volume of voice guidance.
No map is displayed on the screen.	The DVD-ROM is not inserted, or it is inserted upside down.	Insert the DVD-ROM correctly.
	A screen other than map screen is displayed.	Press the "MAP" button.
	The pickup lens of the DVD unit is dirty.	The pickup lens can become dirty depending on how you use the vehicle. Contact a NIS-SAN dealer or qualified workshop for pickup lens cleaning.
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, then operate the navigation system.

#### NOTE:

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

### VEHICLE MARKS

Symptom	Possible cause	Possible solution
Names of roads and locations differ between plan view and BIRD-VIEW™.	This is because the quantity of the displayed information is reduced so that the screen does not become difficult to read. There is also a chance that names of the roads or locations may be displayed several times, and the names appearing on the screen may be different because of a processing procedure.	This is not a malfunction.
The vehicle mark is not displayed in the correct position.	The vehicle was transported after the ignition switch was turned off, for example, by a ferry or car transporter.	Drive the vehicle for a while on a road where GPS signals can be received.
	The position and direction of the vehicle mark may be incorrect depending on the driving environments and the levels of positioning accuracy of the navigation system.	This is not a malfunction. Drive the vehicle for a while to automatically correct the position and direction of the vehicle mark.
When the vehicle is travelling on a new road, the vehicle mark is located on another road nearby.	The system automatically places the vehicle mark on the nearest available road, because the new road is not stored in the map data.	Updated road information will be included in the next version of the DVD-ROM.
The screen does not switch to the night screen even after turning on the headlights.	The daytime screen was set the last time the headlights were turned on.	Set the screen to the night screen mode using  button when you turn on the headlights.
The map does not scroll even when the vehicle is moving.	The current location map screen is not displayed.	Press the "MAP" button.
The vehicle mark is not displayed.	The current location map screen is not displayed.	Press the "MAP" button.

# NAVIGATION SYSTEM

Symptom	Possible cause	Possible solution
The GPS indicator on the screen remains gray.	GPS signals cannot be received depending on the vehicle location, such as in a parking garage, on a road that has numerous tall buildings, etc.	Drive on an open, straight road for a while.
	A sufficient amount of GPS satellites is not available.	Please wait for the satellites to move to locations available for your navigation system.
The location of the vehicle mark is misaligned from the actual position.	When using tire chains or replacing the tires, speed calculations based on the speed sensor may be incorrect.	Drive the vehicle for a while [at approximately 30 km/h (19 MPH) for about 30 minutes] to automatically correct the vehicle's mark position. If this does not correct the vehicle mark position, contact a NISSAN dealer or qualified workshop.
	The map data has a mistake or is incomplete (the vehicle mark position is always misaligned in the same area).	Updated road information will be included in the next version of the DVD-ROM.

## DVD-ROM

Symptom	Possible cause	Possible solution
The message "Error" appears.	The DVD-ROM is dirty or partially damaged.	Check the DVD-ROM and wipe it clean with a soft cloth.
		In you see any damage, replace the DVD-ROM.


## ROUTE CALCULATION AND VISUAL GUIDANCE

Symptom	Possible cause	Possible solution
In the auto re-route calculation, waypoints are not included.	Waypoints that you have already passed are not included in the auto re-route calculation.	If you want to go to that waypoint again, you need to edit the route.
Route information is not displayed.	Route calculation has not yet been performed.	Set the destination and perform route calculation.
	You are not driving on the suggested route.	Drive on the suggested route.
	Route guidance is set to off.	Turn on the route guidance.
The auto re-route calculation (or detour calculation) suggests the same route as the one previously suggested.	Route calculations took priority conditions into consideration, but the same route was calculated.	This is not a malfunction.
A waypoint cannot be added.	Five waypoints are already set on the route, including the ones that you have already passed.	A maximum of 5 waypoints can be set on the route. If you want to go to 6 or more waypoints, perform route calculations several times, as necessary.
The suggested route is not displayed.	Roads near the destination cannot be calculated.	Reset the destination to a main or ordinary road, and recalculate the route.
	The starting point and destination are too close.	Set a more distant destination.
	The starting point and destination are too far away.	Divide your trip by selecting one or two intermediate destinations, and perform a global route calculation based on multiple route calculations.
	There are time restricted roads (day of week, time) near the current vehicle location or destination.	Set [Use Time Restricted Roads] to off.
The part of the route that you have already passed is deleted.	A route is managed by sections between waypoints. If you passed the first waypoint, the section between the starting point and the waypoint is deleted. (It may not be deleted depending on the area.)	This is not a malfunction.

# NAVIGATION SYSTEM

Symptom	Possible cause	Possible solution
An indirect route is suggested.	If there are restrictions (such as one-way streets) on roads close to the starting point or destination, the system may suggest an indirect route.	Adjust the location of the starting point or destination.
	The system may suggest an indirect route because route calculation does not take into consideration some areas such as narrow streets (grey roads).	Reset the destination to a main or ordinary road, and recalculate the route.
The landmark information does not correspond to the actual information.	This may be caused by insufficient or incorrect data on the DVD-ROM.	Updated information will be included in the next version of the DVD-ROM.
The suggested route does not exactly connect with the starting point, waypoints, or destination.	There is no data for route calculation closer to these locations.	Set the starting point, waypoints and destination on a main road, and perform route calculation.

## VOICE GUIDANCE

Symptom	Possible cause	Possible solution
Voice guidance is not available.	Voice guidance is only available at certain intersections marked with  . In some cases, voice guidance is not available even when the vehicle should make a turn.	This is not malfunction.
	The vehicle has deviated from the suggested route.	Go back to the suggested route or request route calculation again.
	Voice guidance is set to off.	Turn on the voice guidance.
	Route guidance is set to off.	Turn on the route guidance.
The guidance content does not correspond to the actual condition.	The content of voice guidance may vary, depending on the types of intersections where turns are made.	Follow all traffic rules and regulations.

AV

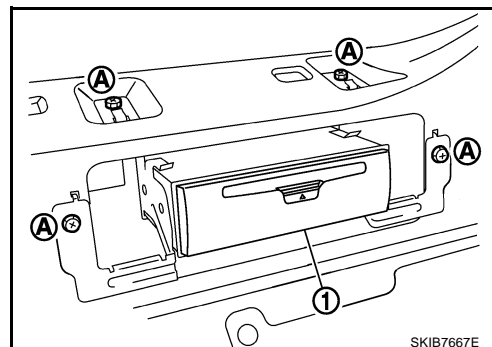
# NAVIGATION SYSTEM

## Removal and Installation of NAVI Control Unit

NKS000DT

### REMOVAL

1. Remove luggage floor finisher upper (front) (Coupe models), or luggage floor finisher upper (Roadster models). Refer to [EI-39, "Removal and Installation \(for Coupe Models\)"](#) , or [EI-41, "Removal and Installation \(for Roadster Models\)"](#) .
2. Remove screws (A), and remove NAVI control unit (1).
3. Remove NAVI control unit from bracket.



### INSTALLATION

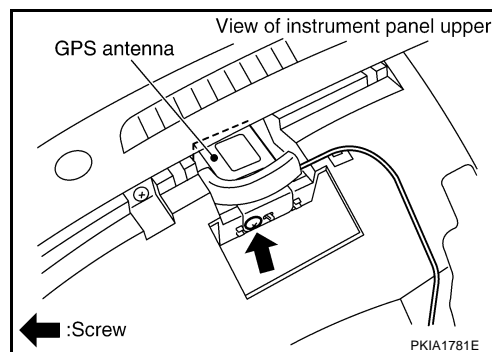
Installation is the reverse order of removal.

## Removal and Installation of GPS Antenna

NKS000DU

### REMOVAL

1. Remove instrument driver panel upper. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) .
2. Remove screw (1), and remove GPS antenna.



### INSTALLATION

Installation is the reverse order of removal.

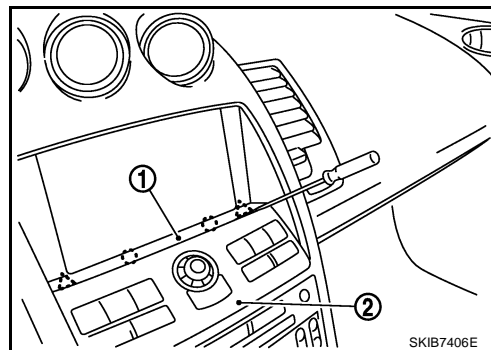


# NAVIGATION SYSTEM

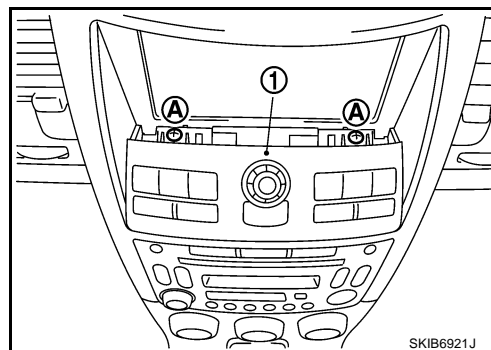
## Removal and Installation of NAVI Switch

### REMOVAL

1. Insert cloth-covered driver into gaps between mask (1) and NAVI switch (2), and remove mask (1).



2. Remove screws (A), and remove NAVI switch (1).



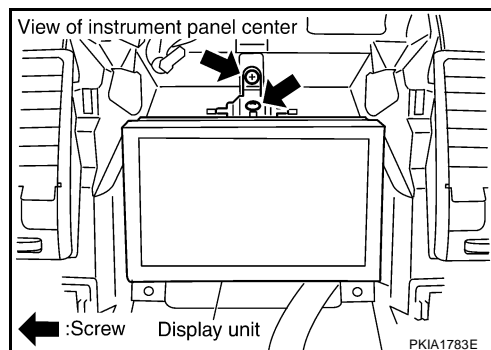
### INSTALLATION

Installation is the reverse order of removal.

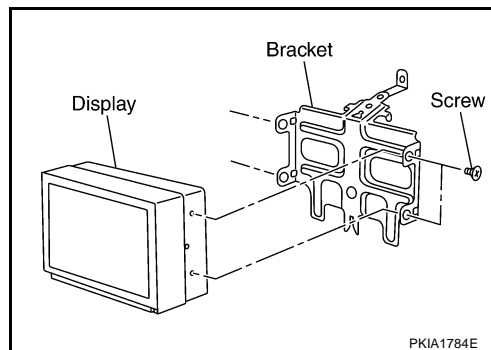
## Removal and Installation of Display Unit

### REMOVAL

1. Remove cluster lid C. Refer to [IP-10. "INSTRUMENT PANEL ASSEMBLY"](#).
2. Remove screws (2), and remove display unit.



3. Remove screws (4), and remove bracket.



### INSTALLATION

Installation is the reverse order of removal.

# NAVIGATION SYSTEM

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