

SECTION **AV**

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AUDIO VISUAL, NAVIGATION & TELEPHONE SYSTEM

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PRECAUTIONS

PRECAUTIONS

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

AKS007X5

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.

Wiring Diagrams and Trouble Diagnosis

AKS007X6

When reading wiring diagrams, refer to the following:

- Refer to [GI-15, "How to Read Wiring Diagrams"](#) .
Refer to [PG-3, "POWER SUPPLY ROUTING CIRCUIT"](#) .

When performing trouble diagnosis, refer to the following:

- Refer to [GI-11, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES"](#) .
Refer to [GI-27, "How to Perform Efficient Diagnosis for an Electrical Incident"](#) .

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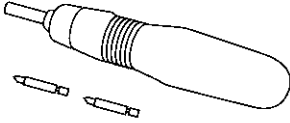
PREPARATION

PREPARATION

PFP:00002

Commercial Service Tools

AKS007VR

Tool name	Description
<p data-bbox="140 410 252 436">Power tool</p>  <p data-bbox="836 512 911 532">PBIC0191E</p>	<p data-bbox="999 312 1254 338">Loosening bolts and nuts</p>

AUDIO

PFP:28111

System Description BASE SYSTEM

AKS005T3

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

Power is supplied at all times

- through 15A fuse (No. 32, located in the fuse and fusible link block)
- to audio unit terminal 6
- to A/C and AV switch terminal 1 and
- to display control unit terminal 1 (with navigation system) or display unit terminal 1 (without navigation system).

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

- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to audio unit terminal 10
- to A/C and AV switch terminal 2 and
- to display control unit terminal 10 (with navigation system) or display unit terminal 2 (without navigation system).

Ground is supplied through the case of the audio unit.

Ground is also supplied

- to A/C and AV switch terminal 5
- to display control unit terminal 3 and 13 (with navigation system)
- to display terminal 1 (with navigation system) and
- to display unit terminal 6 and 15 (without navigation system)
- through body ground M35, M45 and M85
- to option connector for satellite radio receiver terminal 10
- through body ground B15 and B45.

Audio unit, A/C and audio controller are connected by FPC (Flexible Print Circuit).

A/C and audio controller integrates A/C switches and audio switches.

When A/C and audio controller is pushed to audio switch, it sends audio signal to audio unit.

Then audio signals are supplied

- through audio unit terminals 1, 2, 3, 4, 13, 14, 15, and 16
- to terminals 1 and 2 of front door speaker LH and RH
- to terminals 1 and 2 of rear door speaker LH and RH
- to terminals 1 and 2 of instrument speaker LH and RH.

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

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

BOSE SYSTEM

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

Power is supplied at all times

- through 15A fuse (No. 32, located in the fuse and fusible link block)
- to audio unit terminal 6
- to woofer terminal 1
- to A/C and AV switch terminal 1 and
- to display control unit terminal 1 (with navigation system) or display unit terminal 1 (without navigation system),
- through 20A fuse [No.17, located in the fuse block (J/B)]
- to BOSE speaker amp. terminal 1.

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

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

AUDIO

- to A/C and AV switch terminal 2 and
- to display control unit terminal 10 (with navigation system) or display unit terminal 2 (without navigation system).

Ground is supplied through the case of the audio unit.

Ground is also supplied

- to BOSE speaker amp. terminal 17
- through body ground B203 and B210,
- to A/C and AV switch terminal 5
- to display control unit terminal 3 and 13 (with navigation system)
- to display terminal 1 (with navigation system) and
- to display unit terminal 6 and 15 (without navigation system)
- through body ground M35, M45 and M85,
- to woofer terminal 2
- to option connector for satellite radio receiver terminal 10
- through body ground B15 and B45.

Audio unit, A/C and audio controller are connected by FPC (Flexible Print Circuit).

A/C and audio controller integrates A/C switches and audio switches.

When A/C and audio controller is pushed to audio switch, it send audio signal to audio unit.

Then audio signals are supplied

- through audio unit terminals 1, 2, 3, 4, 13, 14, 15, and 16
- to BOSE speaker amp. terminals 23, 24, 25, 26, 27, 28, 29, and 30.

Audio signals are amplified by the BOSE speaker amp.

The amplified audio signals are supplied

- through BOSE speaker amp. terminals 2, 3, 4, 9,10,11,12, 13, 14, 15, 16, 18, 19 and 20
- to terminals 1 and 2 of front door speaker LH and RH
- to terminals 1 and 2 of rear door speaker LH and RH
- to terminals 1 and 2 of tweeter LH and RH.
- to terminals 1 and 2 of instrument speaker LH, RH, and CENTER,
- to terminals 7 and 8 of woofer.

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

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

SPEED SENSITIVE VOLUME SYSTEM

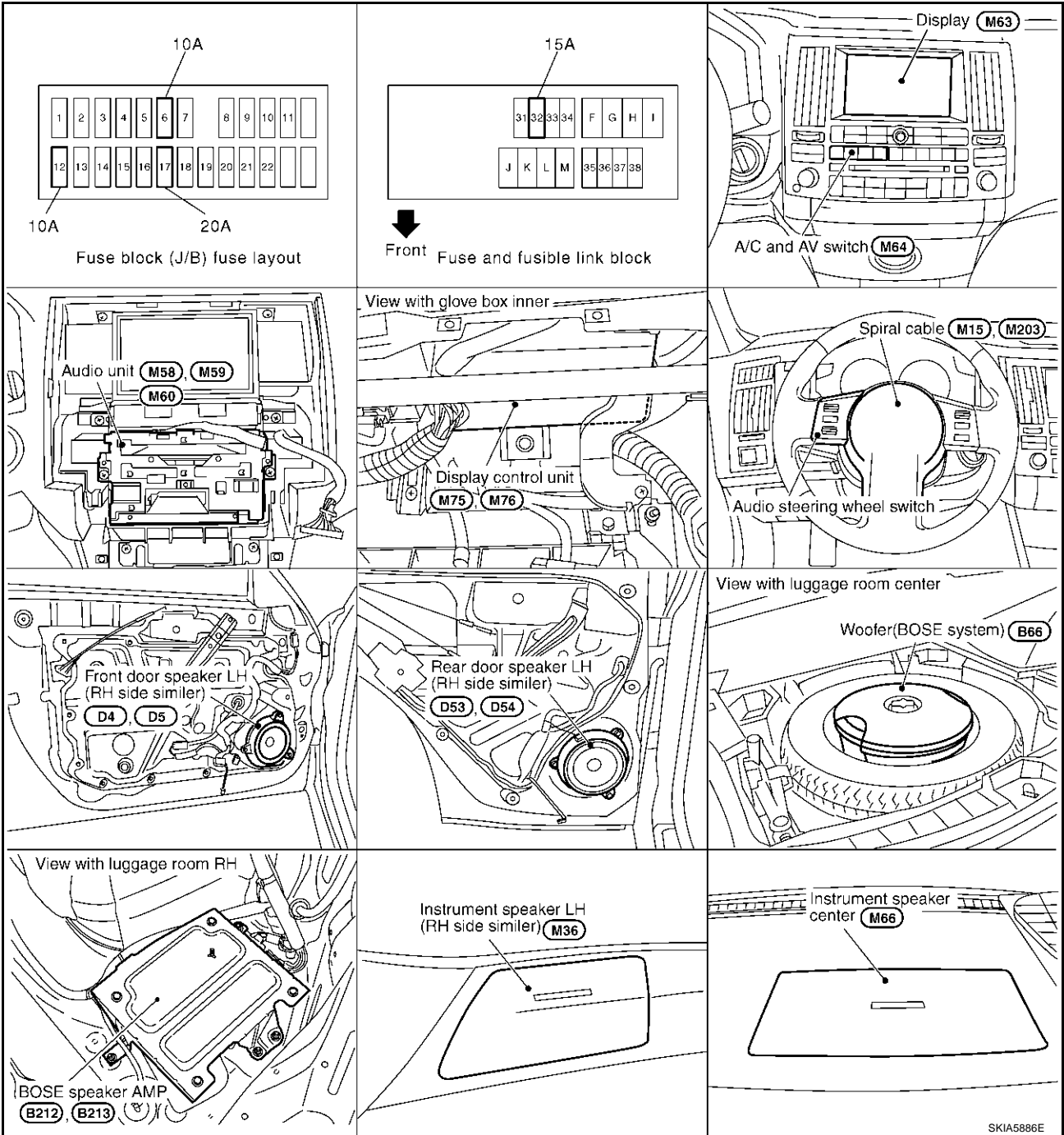
Volume level of this system gone up and down automatically in proportion to the vehicle speed. And the control level can be selected by the customer.

AUDIO

Component Parts and Harness Connector Location

AKS00711

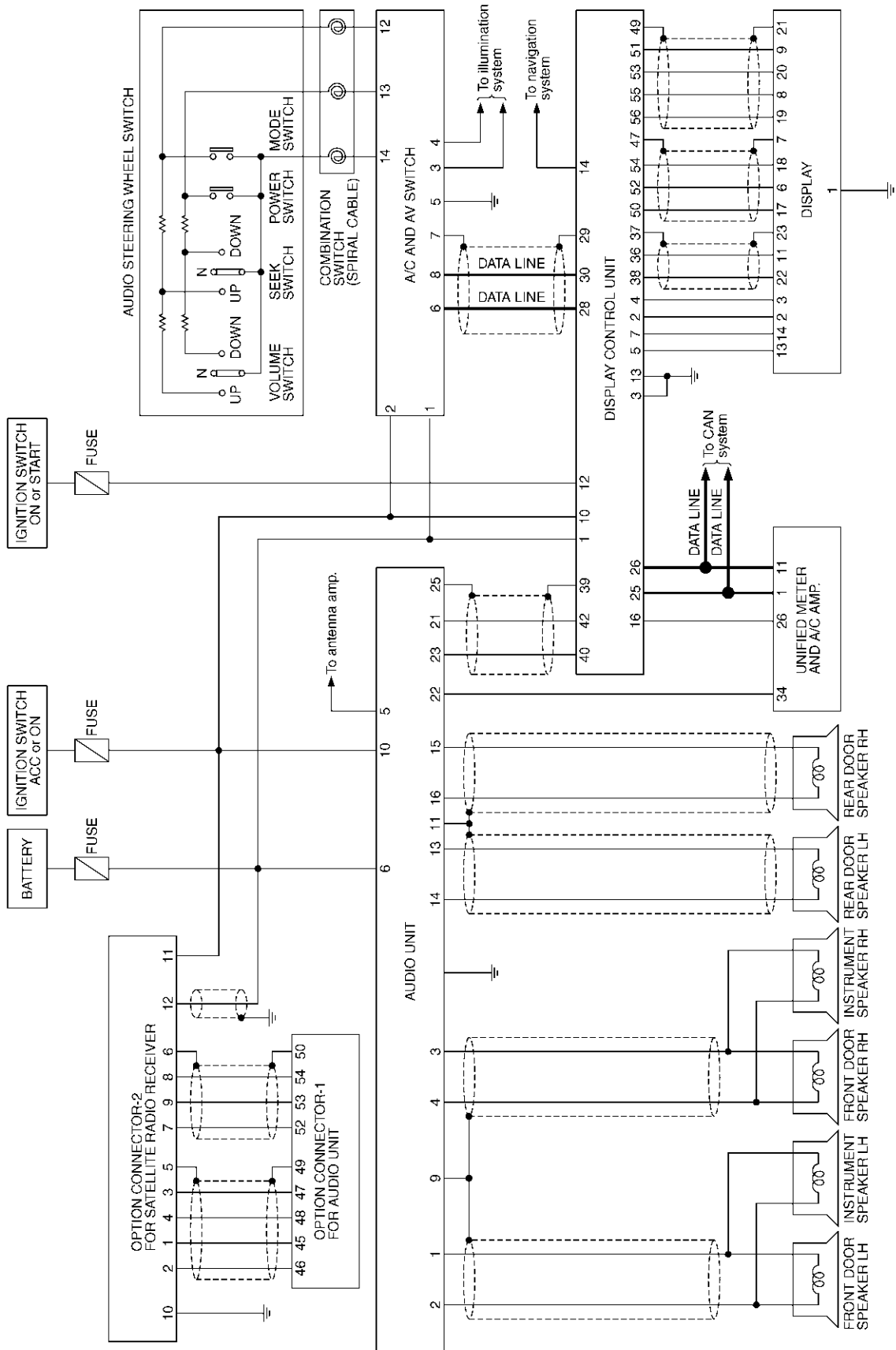
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AUDIO

Schematic — Base System — WITH NAVIGATION SYSTEM

AKS005T4



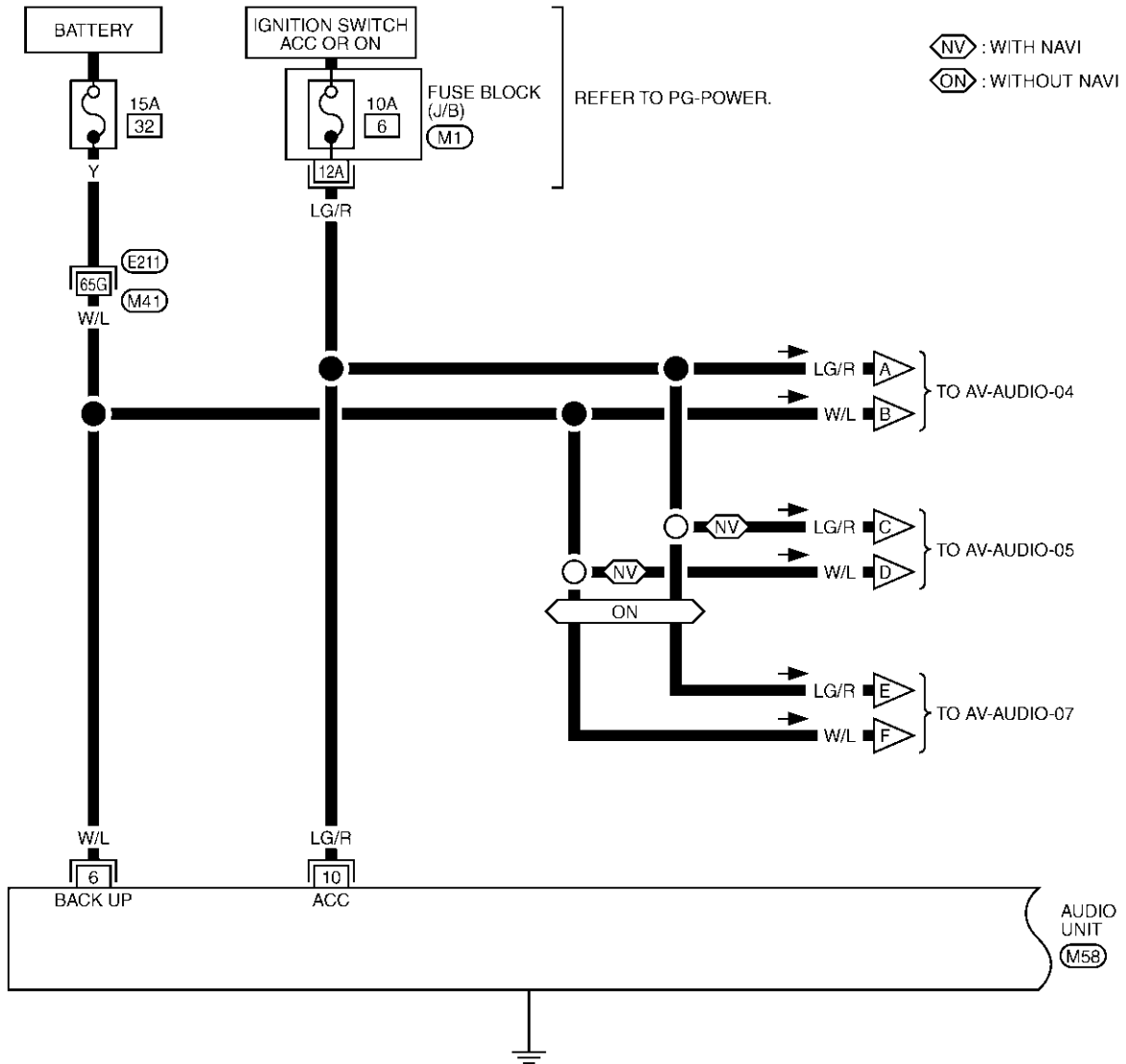
TKWM0552E

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Wiring Diagram — AUDIO — / Base System

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AV-AUDIO-01



10	8	4	2
9	7	6	5

M58
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REFER TO THE FOLLOWING.

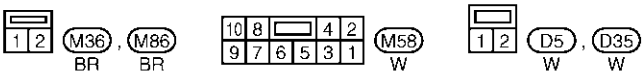
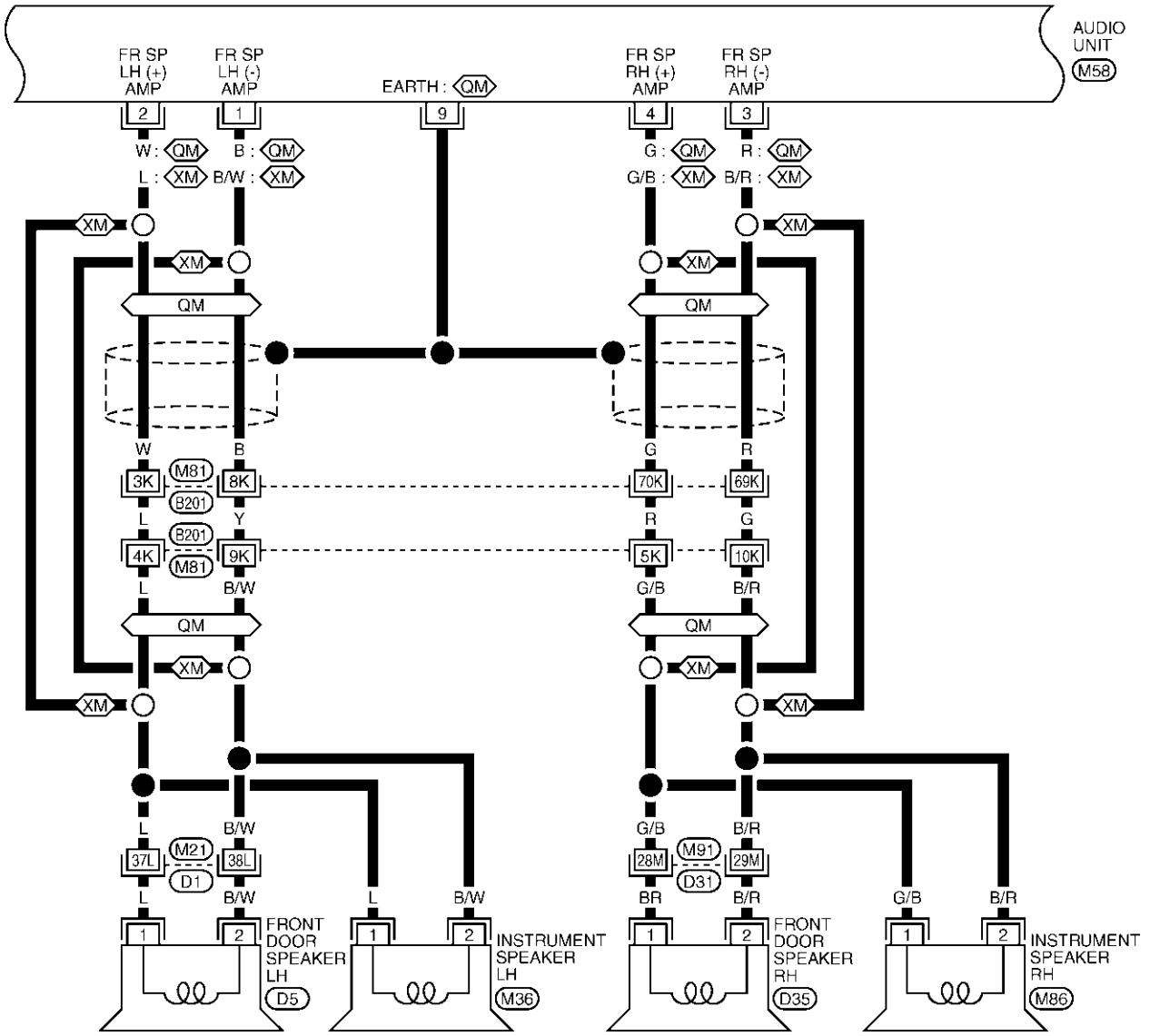
- (E211) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1) -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM0554E

AUDIO

AV-AUDIO-02

QM : WITH VQ ENGINE OR WITH ICC, NAVI OR DVD PLAYER
XM : EXCEPT FOR QM



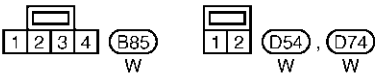
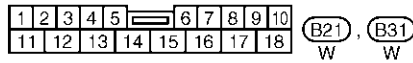
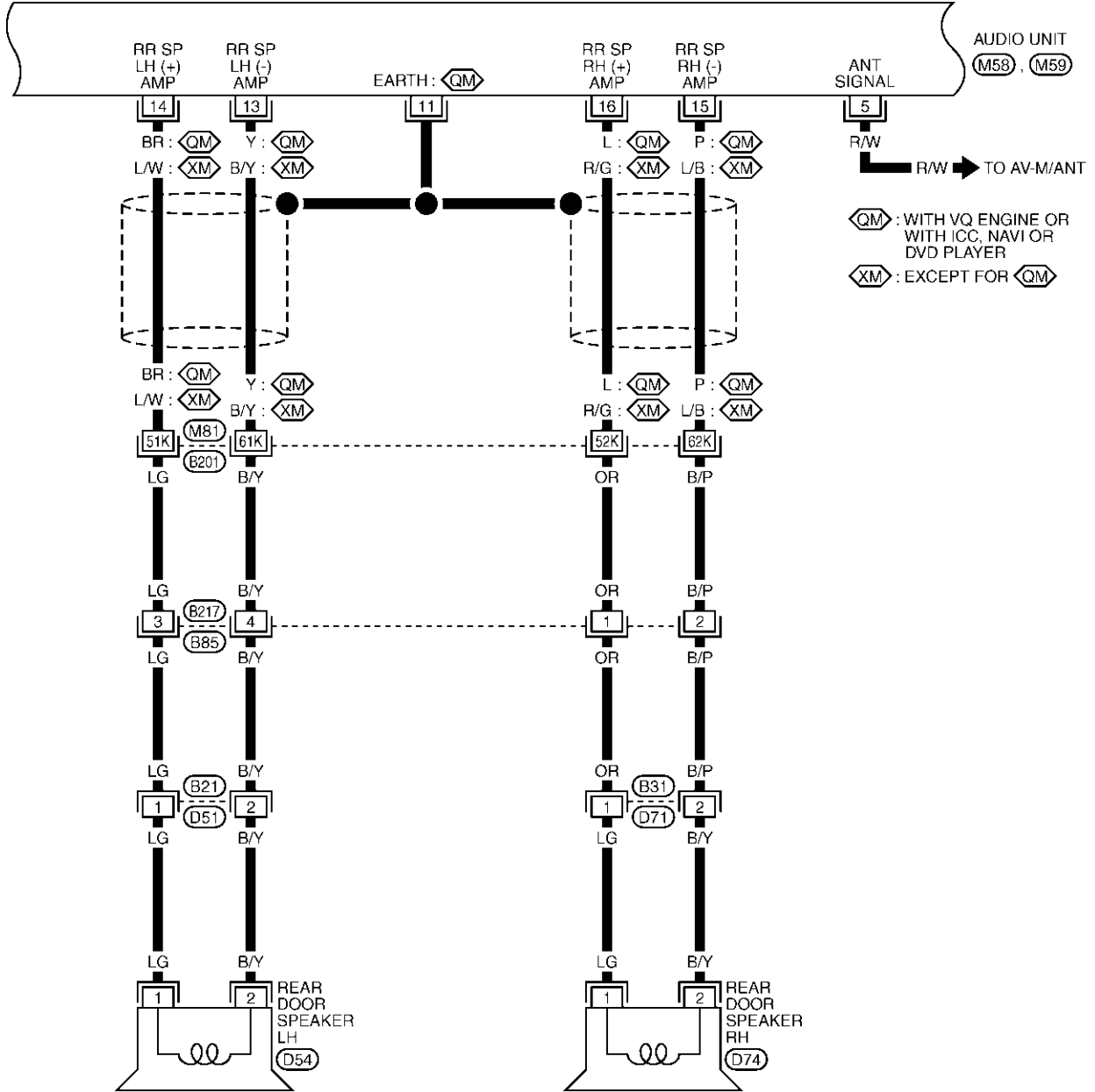
REFER TO THE FOLLOWING.
B201, D1, D31 -SUPER MULTIPLE JUNCTION (SMJ)

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AUDIO

AV-AUDIO-03



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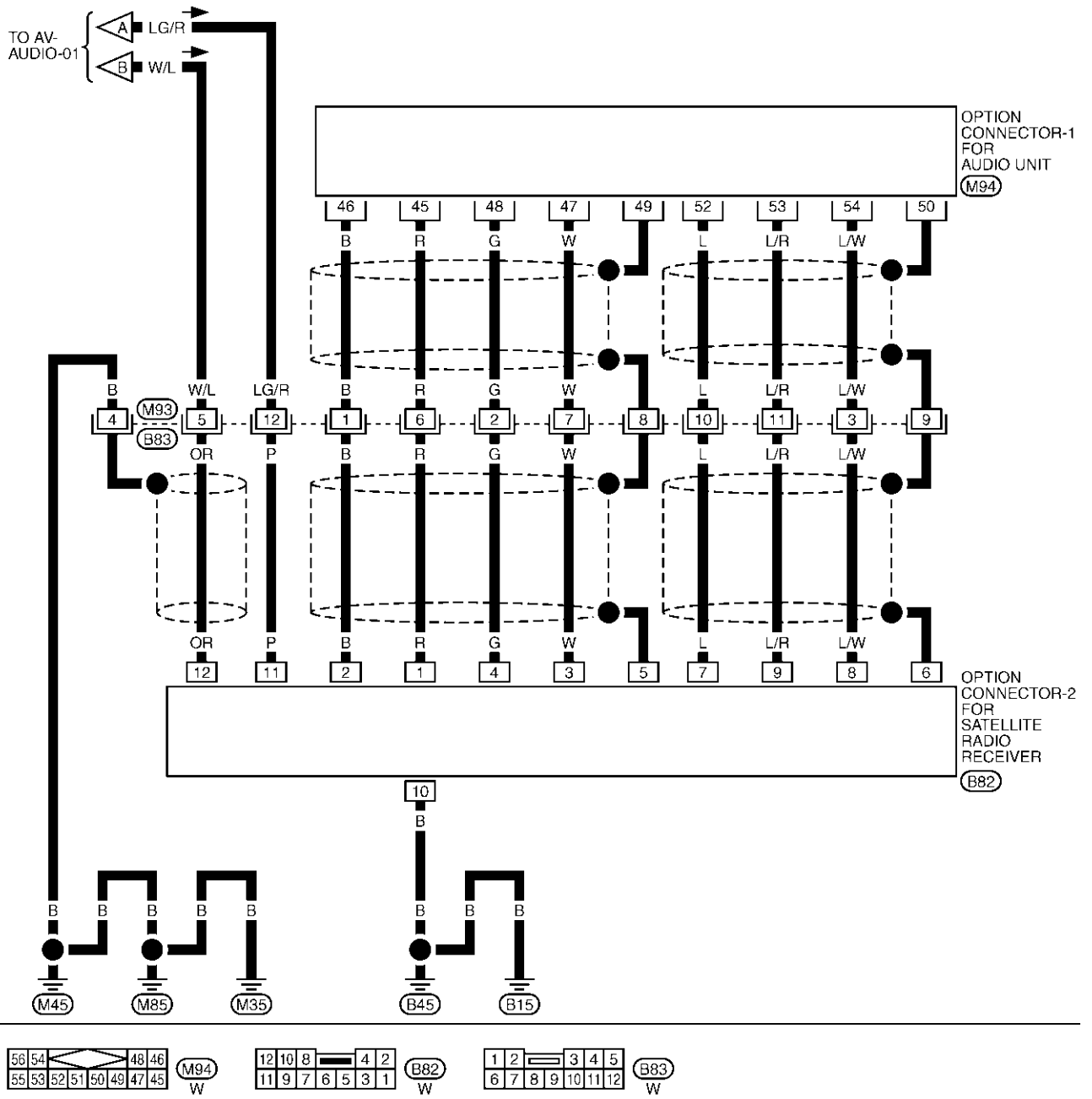
(B201) -SUPER MULTIPLE JUNCTION (SMJ)

TKWH0256E

AUDIO

AV-AUDIO-04

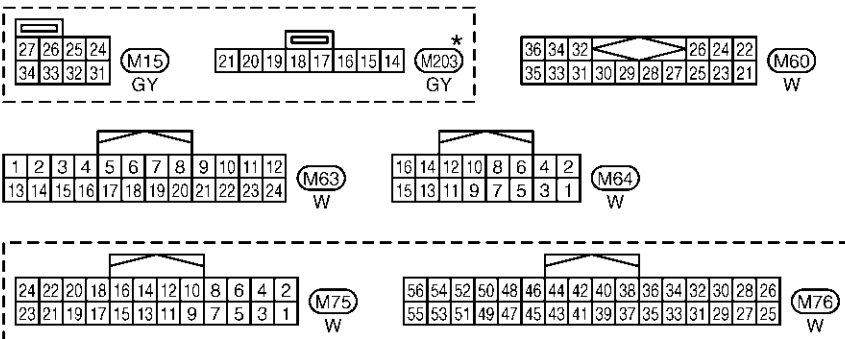
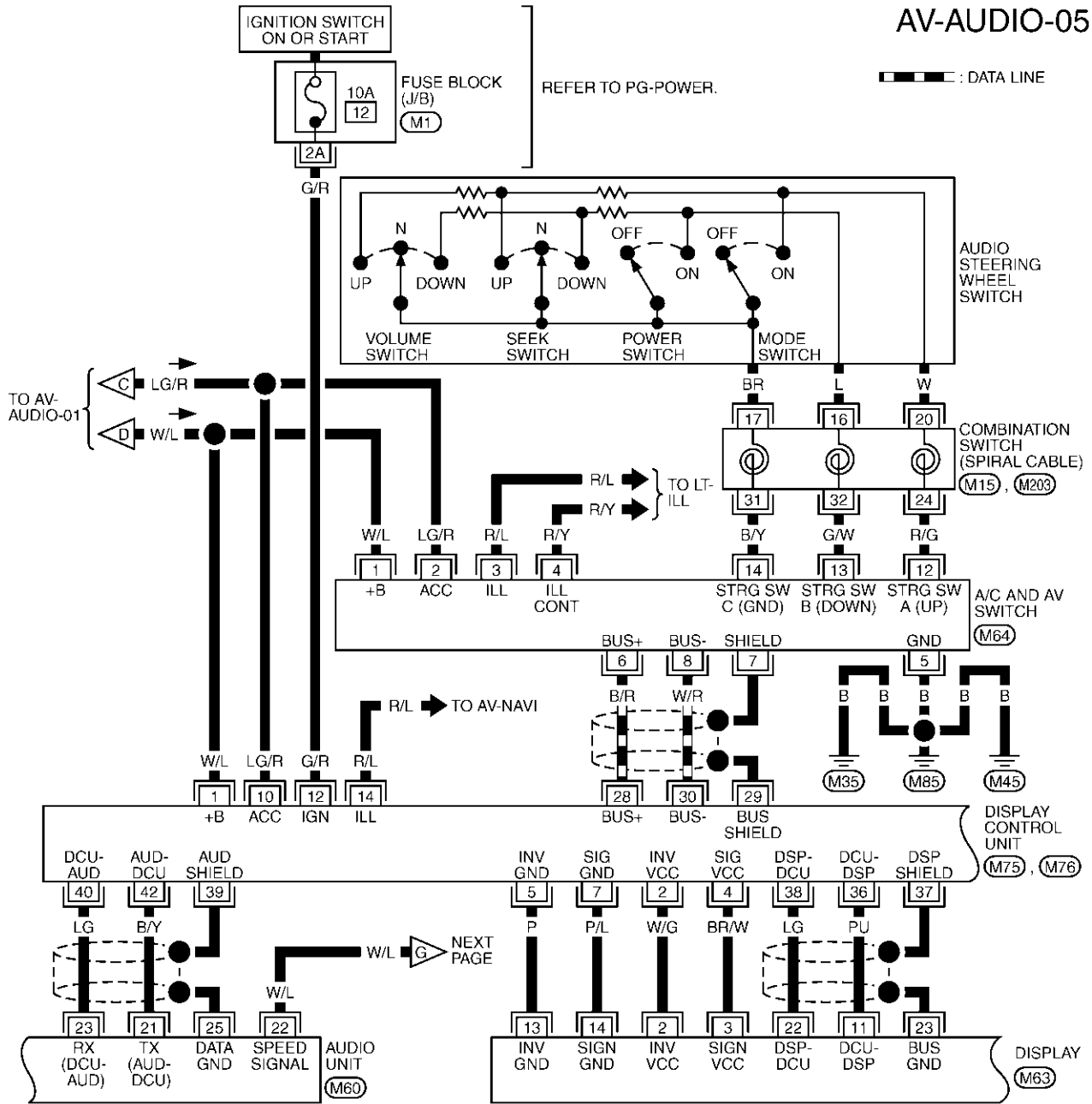
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REFER TO THE FOLLOWING.
 (M1) - FUSE BLOCK-JUNCTION BOX (J/B)

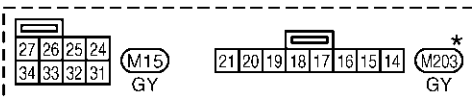
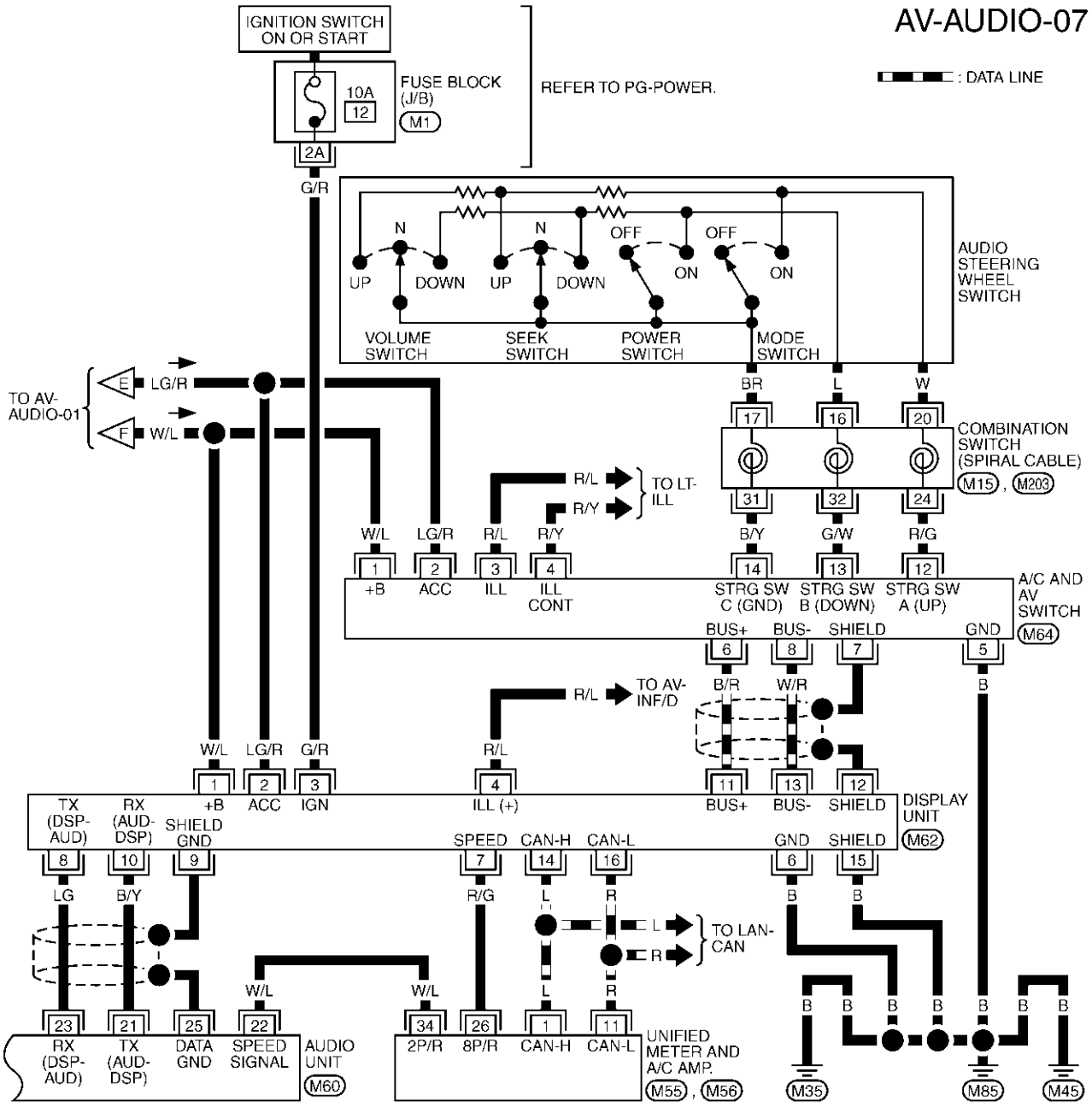
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

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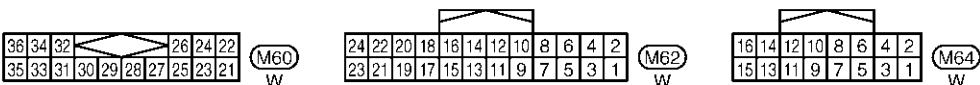
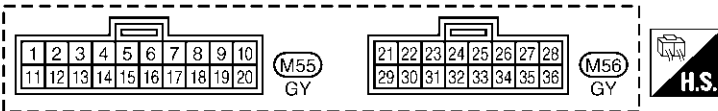
AUDIO

AV-AUDIO-07

— : DATA LINE



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



REFER TO THE FOLLOWING.

(M1) - FUSE BLOCK-JUNCTION BOX (J/B)

TKWM0558E

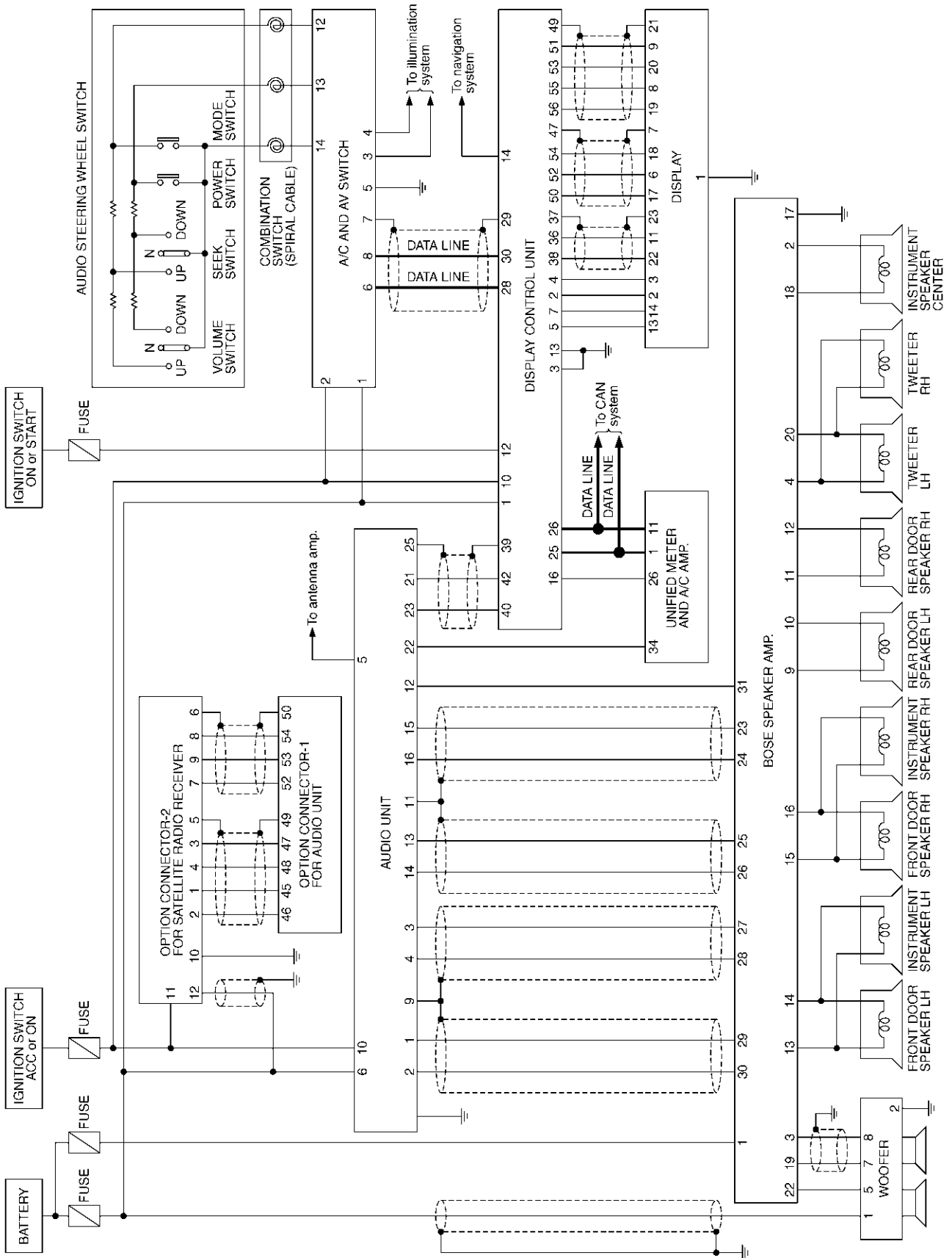
AUDIO

Schematic — BOSE System — WITH NAVIGATION SYSTEM

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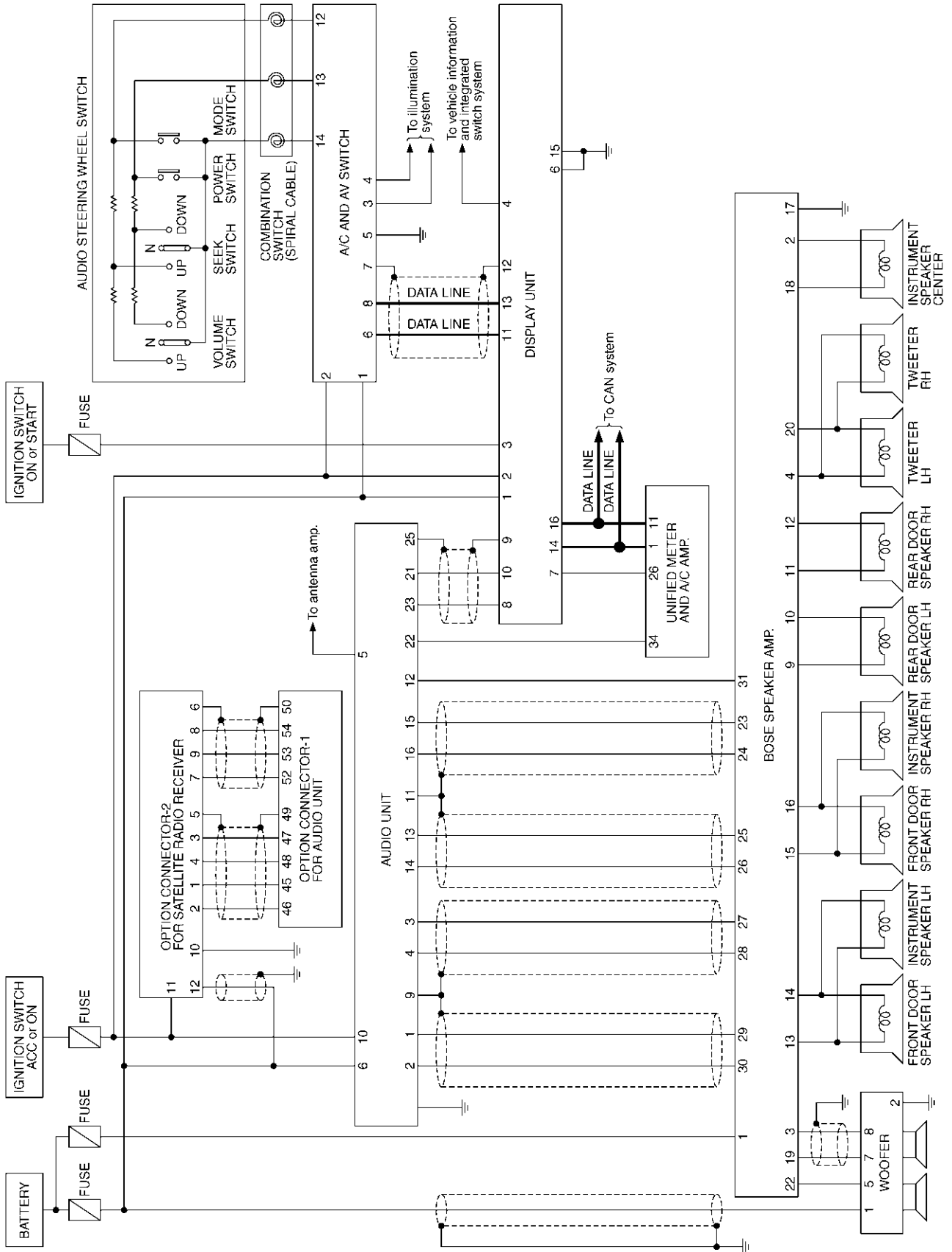
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TKWM0559E

AUDIO

WITHOUT NAVIGATION SYSTEM

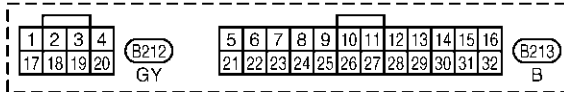
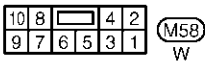
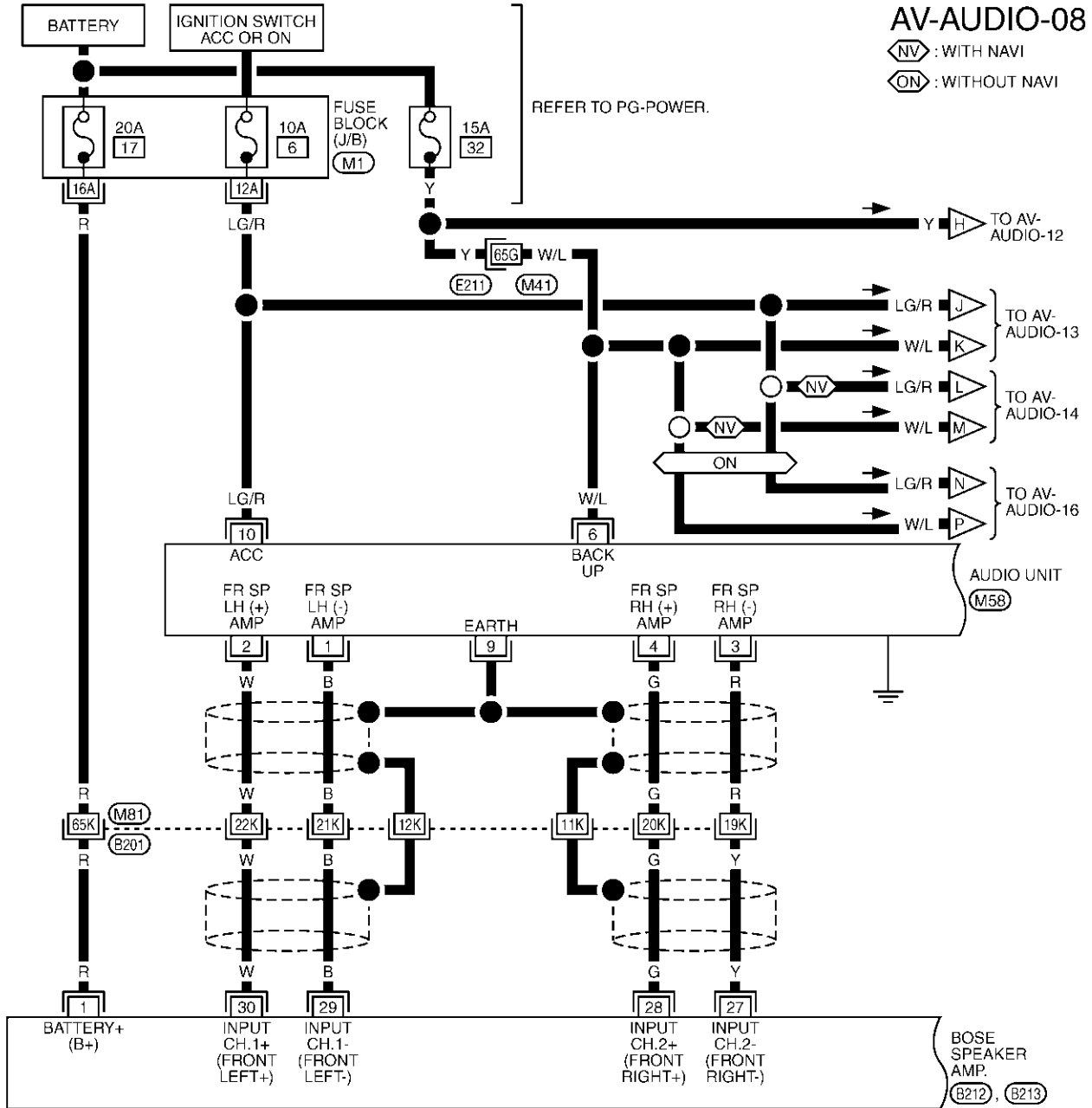


TKWM0560E

AUDIO

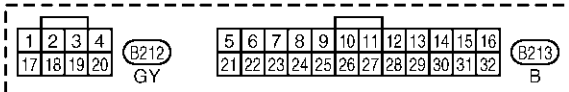
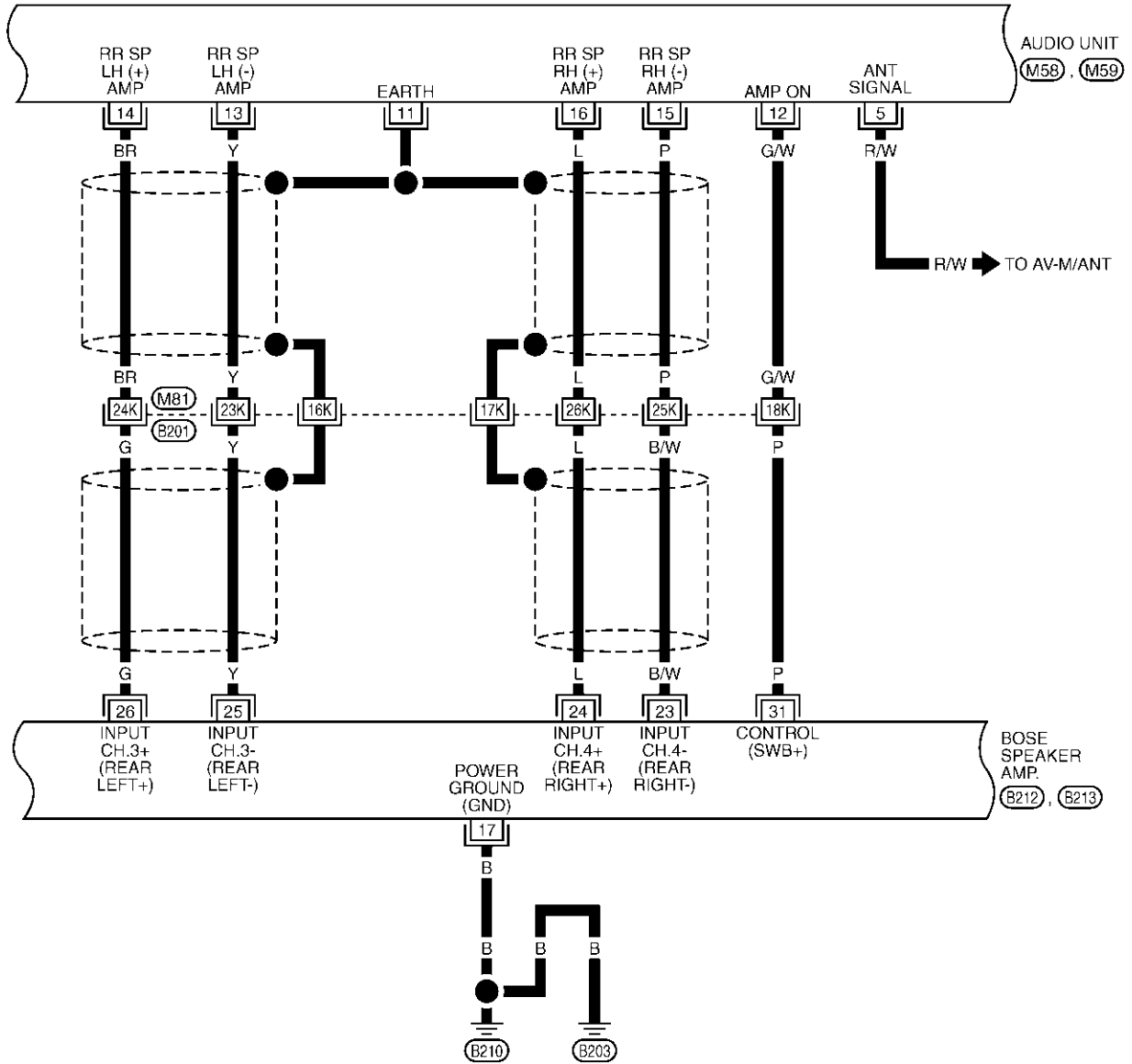
Wiring Diagram — AUDIO — / BOSE System

AKS007X4



REFER TO THE FOLLOWING.
 (E21), (B201) -SUPER MULTIPLE JUNCTION (SMJ)
 (M1) -FUSE BLOCK-JUNCTION BOX (J/B)

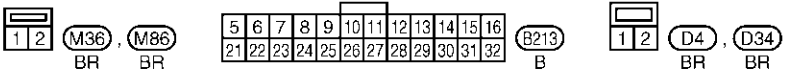
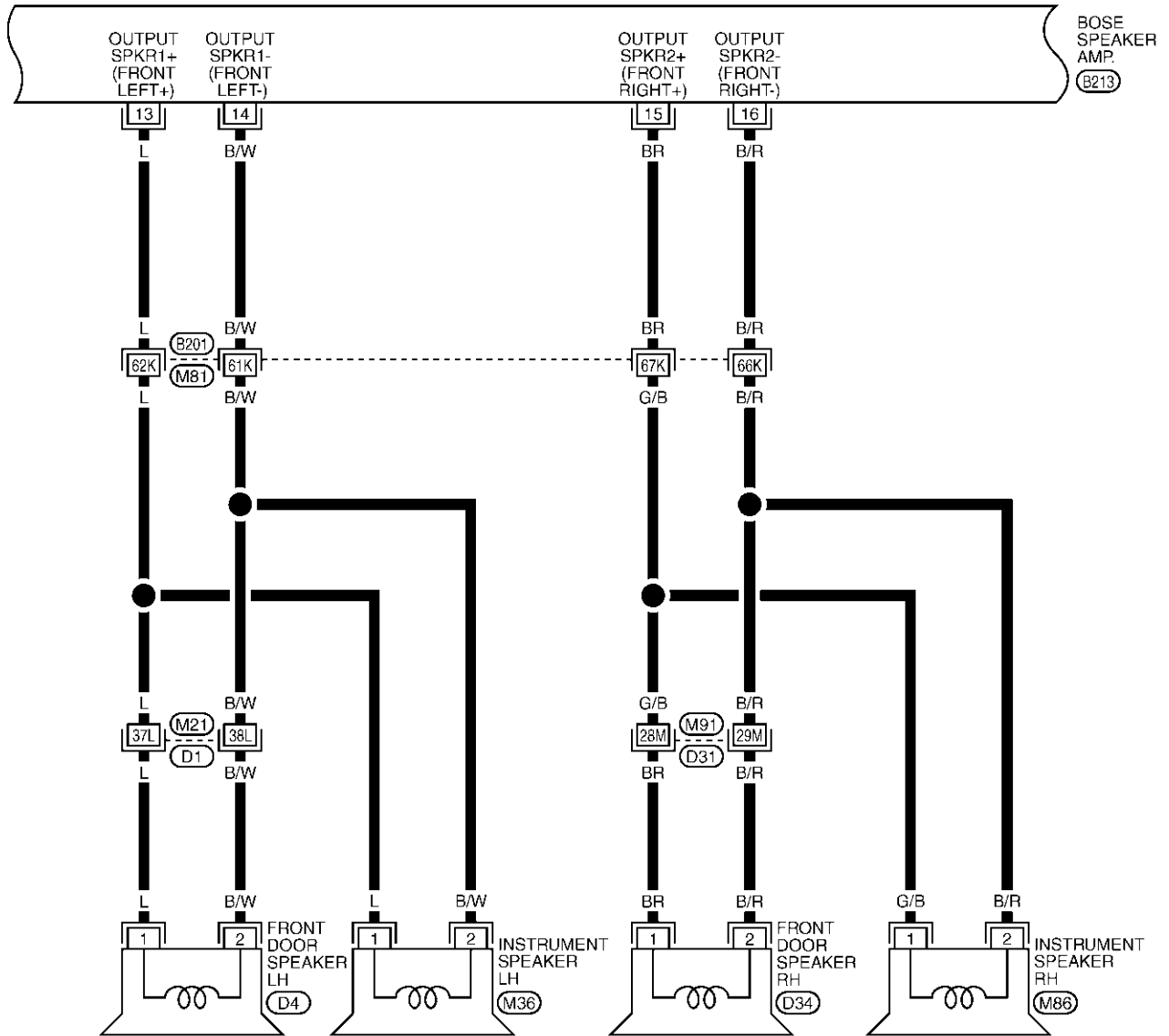
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REFER TO THE FOLLOWING.
 (B201) -SUPER MULTIPLE JUNCTION (SMJ)

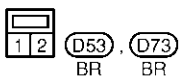
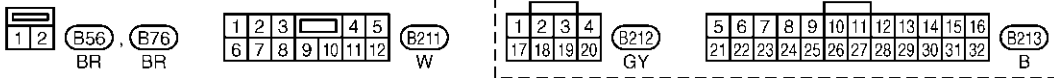
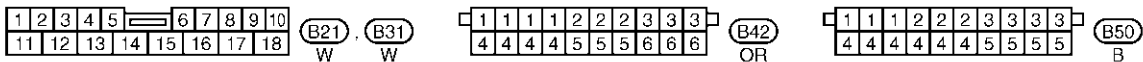
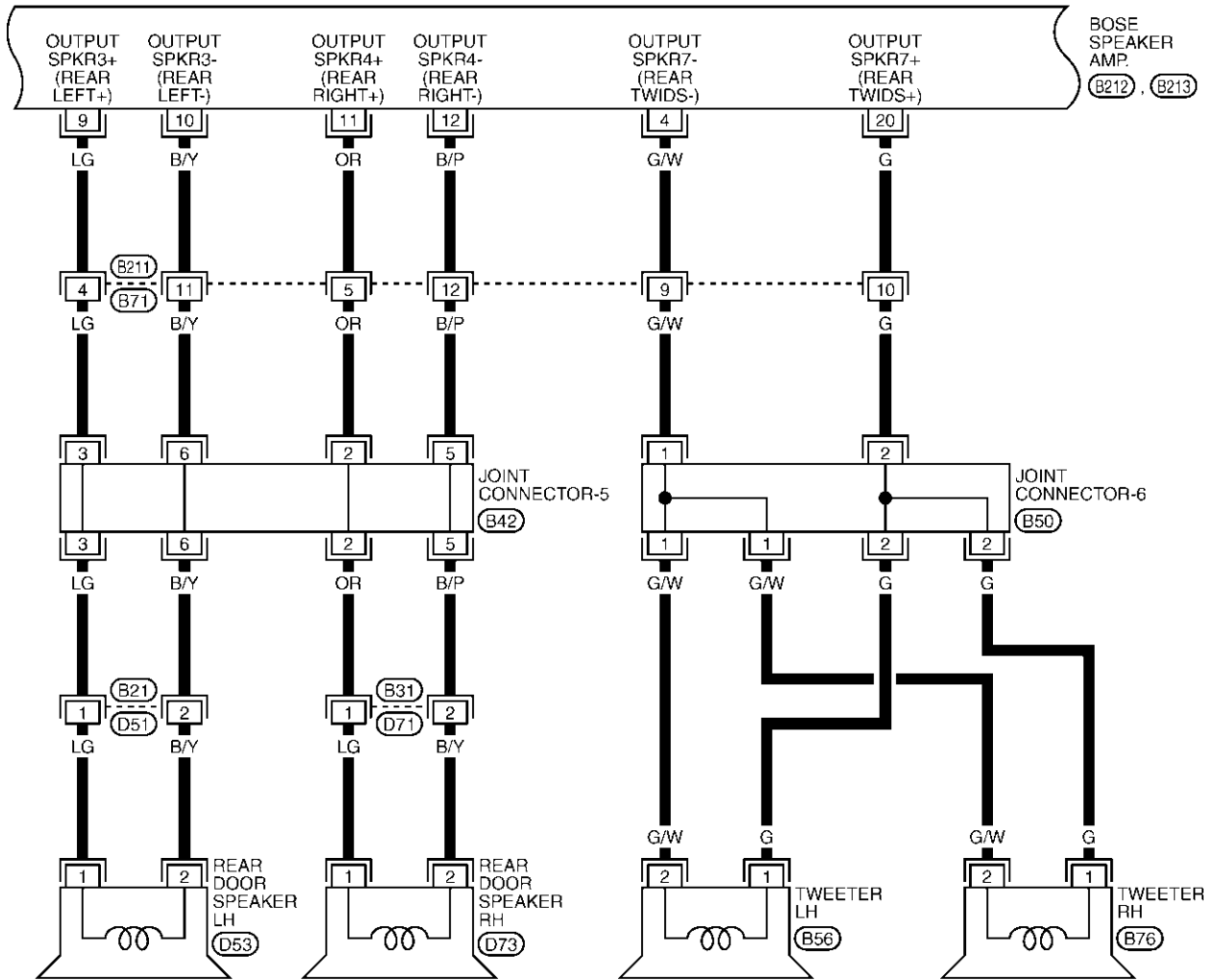
AUDIO

AV-AUDIO-10



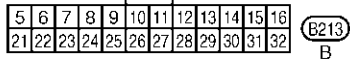
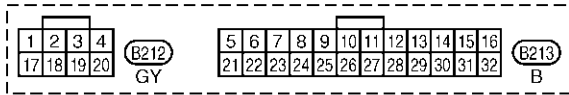
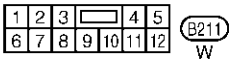
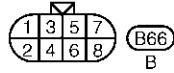
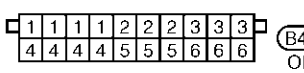
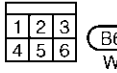
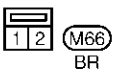
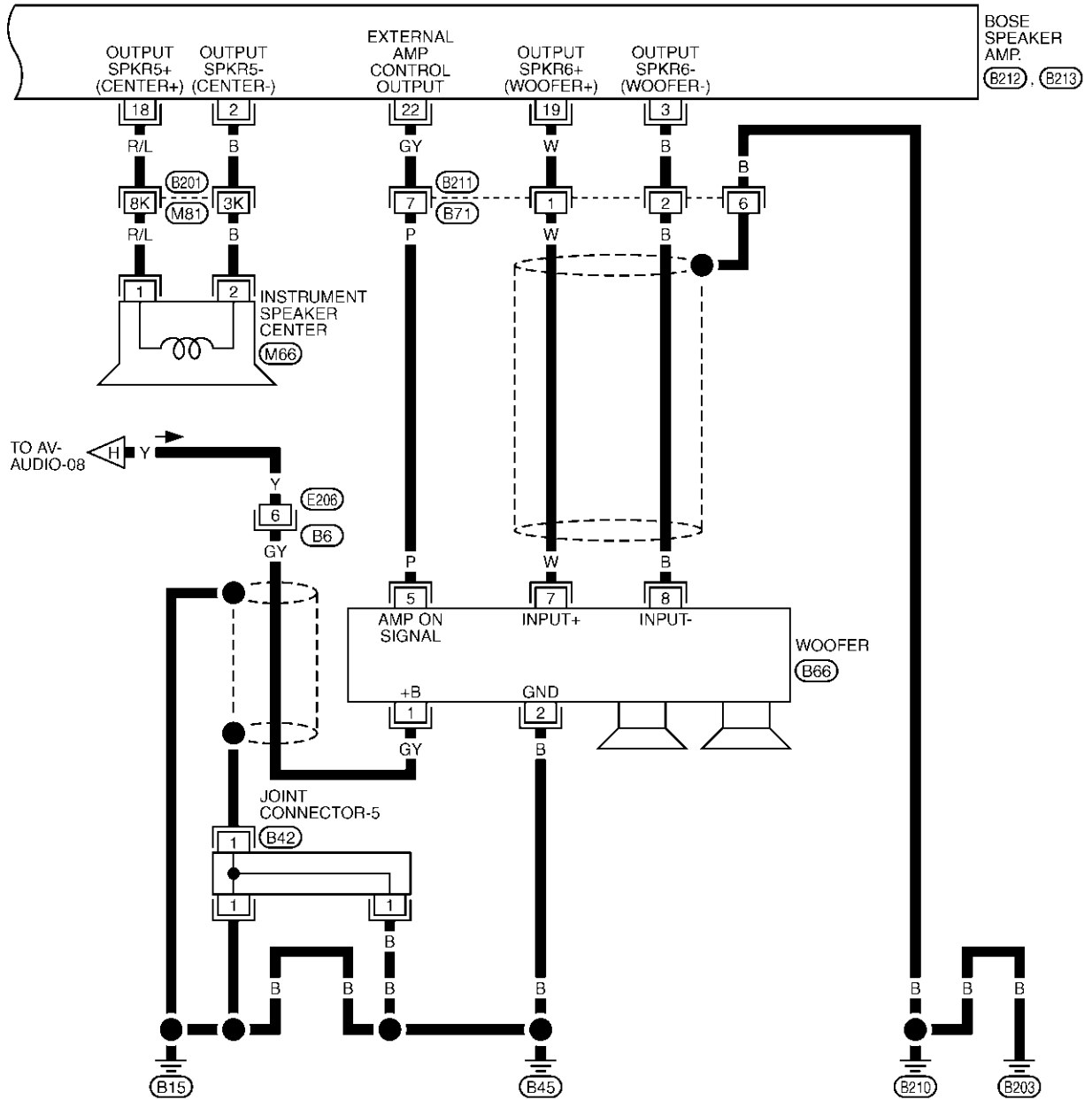
REFER TO THE FOLLOWING.
 (B201), (D1), (D31) -SUPER
 MULTIPLE JUNCTION (SMJ)

TKWM0563E



AUDIO

AV-AUDIO-12

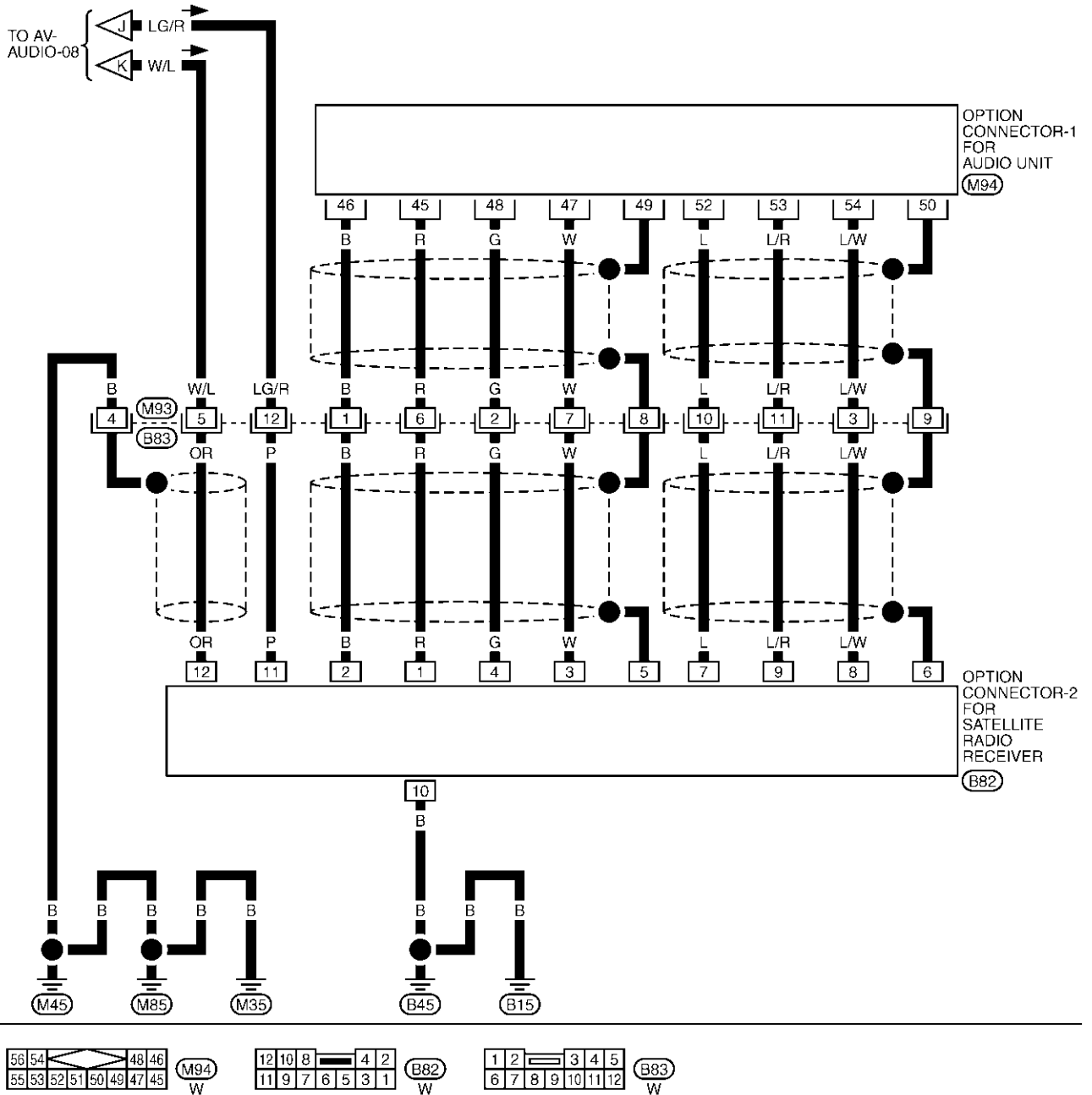


REFER TO THE FOLLOWING.
 (B201) -SUPER MULTIPLE JUNCTION (SMJ)

TKWM0565E

AUDIO

AV-AUDIO-13

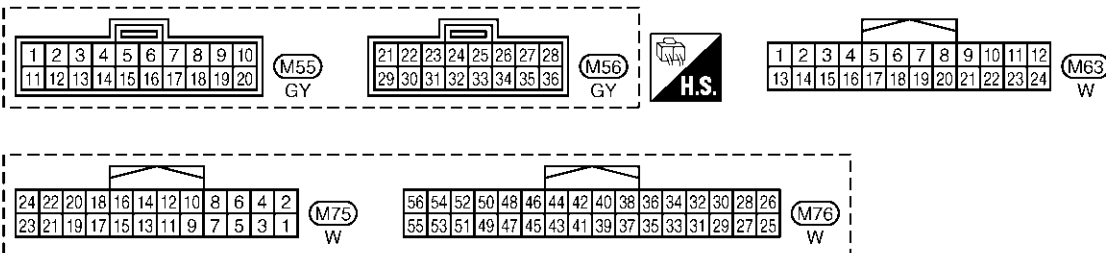
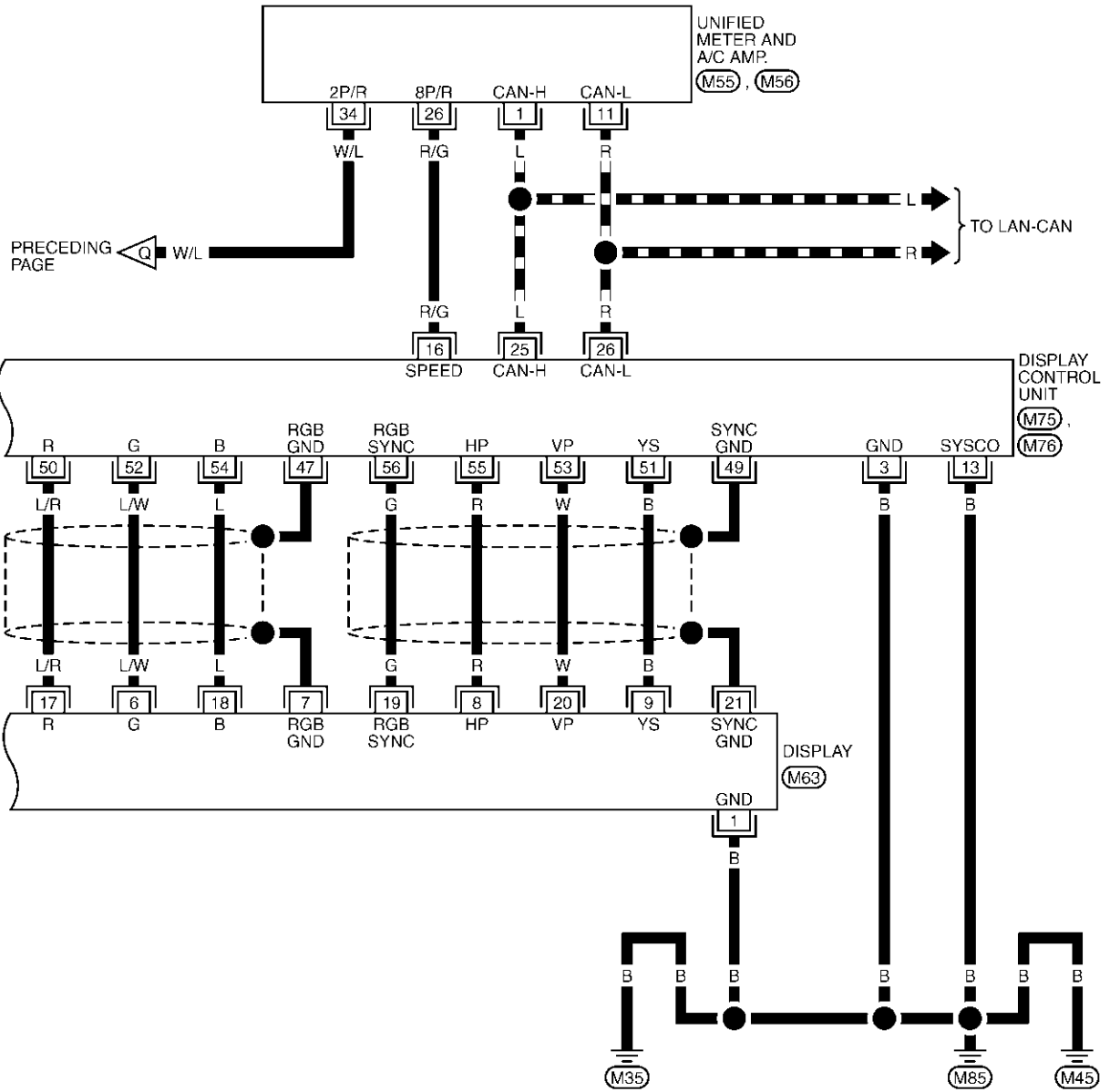


TKWM0768E

AUDIO

AV-AUDIO-15

▬ : DATA LINE

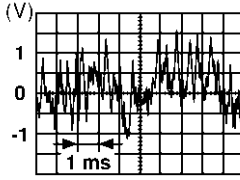
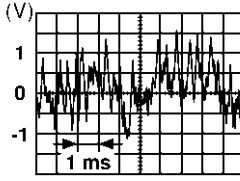
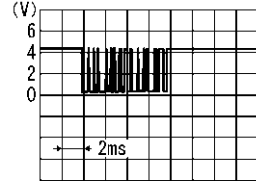
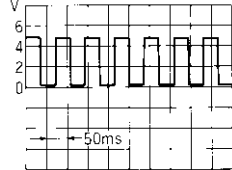
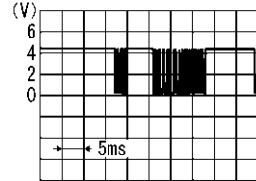


TKWM0567E

AUDIO

Terminals and Reference Value for Audio Unit

AKS005T6

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symp- tom
+	-			Ignition switch	Operation		
2 (W) ^{*1} , (L) ^{*2}	1 (B) ^{*1} , (B/W) ^{*2}	Audio sound signal front LH	Output	ON	Receive audio signal	 <p style="text-align: right; font-size: small;">SKIA0177E</p>	No sound from front door speaker LH and instru- ment speaker LH.
4 (G) ^{*1} , (G/B) ^{*2}	3 (R) ^{*1} , (B/R) ^{*2}	Audio sound signal front RH	Output	ON			No sound from front door speaker RH and instru- ment speaker RH.
5 (R/W)	Ground	Antenna signal	Output	ON	-	Approx. 12V	Antenna amp. does not work properly.
6 (W/L)	Ground	Battery power sup- ply	Input	OFF	-	Battery voltage	System will not work properly.
9 ^{*1}	-	Shield	-	ON	-	Approx. 0V	-
10 (LG/R)	Ground	ACC power supply	Input	ACC	-	Battery voltage	System does not work properly.
11 ^{*1}	-	Shield	-	ON	-	Approx. 0V	-
12 ^{*3} (G/W)	Ground	Amp ON signal	Output	ON	-	Approx. 12V	BOSE speaker amp. does not work properly.
14 (BR) ^{*1} , (L/W) ^{*2}	13 (Y) ^{*1} , (B/Y) ^{*2}	Audio sound signal rear LH	Output	ON	Receive audio signal	 <p style="text-align: right; font-size: small;">SKIA0177E</p>	No sound from rear door speaker LH.
16 (L) ^{*1} , (R/G) ^{*2}	15 (P) ^{*1} , (L/B) ^{*2}	Audio sound signal rear RH	Output	ON			No sound from rear door speaker RH.
21 (B/Y)	Ground	Audio TX signal (AUD - DCU)	Output	ON	Operate audio volume	 <p style="text-align: right; font-size: small;">SKIA4402E</p>	Audio does not operate properly.
22 (W/L)	Ground	Vehicle speed signal (2 pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25MPH)	 <p style="text-align: right; font-size: small;">ELF1080D</p>	Speed sensitive volume system dose not work properly.
23 (LG)	Ground	Audio RX signal (DCU - AUD)	Input	ON	Operate audio volume	 <p style="text-align: right; font-size: small;">SKIA4403E</p>	Audio does not operate properly.
25	-	Shield	-	ON	-	Approx. 0V	-

AUDIO

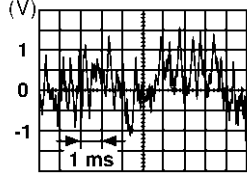
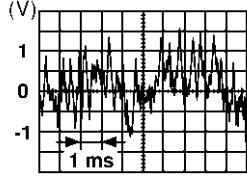
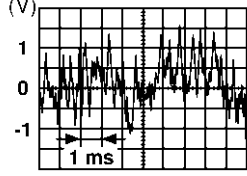
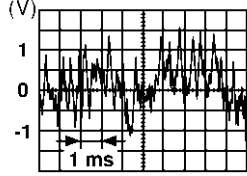
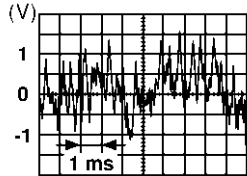
*1: BOSE system and with VQ engine or with sunroof, ICC system, Navigation system or DVD player

*2: Except for above

*3: BOSE system only

Terminals and Reference Value for BOSE Speaker Amp.

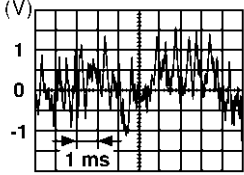
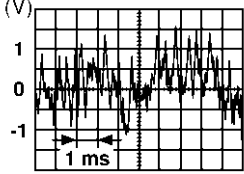
AKS00578

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	-			Igni- tion switch	Operation		
1 (R)	Ground	Battery power supply	Input	OFF	-	Battery voltage	System does not work properly.
9 (LG)	10 (B/Y)	Audio sound signal rear LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear door speaker LH.
11 (OR)	12 (B/P)	Audio sound signal rear RH	Output	ON			No sound from rear door speaker RH.
13 (L)	14 (B/W)	Audio sound signal front LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker LH and instrument speaker LH.
15 (BR)	16 (B/R)	Audio sound signal front RH	Output	ON			No sound from front door speaker RH and instrument speaker RH.
17 (B)	Ground	Ground (Power)	-	ON	-	Approx. 0V	BOSE speaker amp. dose not work properly.
18 (R/L)	2 (B)	Audio sound signal (Instrument CENTER)	Output	ON	Receive audio signal	 SKIA0177E	No sound from instrument speaker CENTER.
19 (W)	3 (B)	Woofers signal	Output	ON	Receive audio signal	 SKIA0177E	No sound from woofer.
20 (G)	4 (G/W)	Tweeter signal	Output	ON	Receive audio signal	 SKIA0177E	No sound from tweeter.
22 (GY)	Ground	Amp ON signal (woofer)	Output	ON	-	Approx. 12V	Woofer does not work properly.

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AV

AUDIO

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	-			Igni- tion switch	Operation		
24 (L)	23 (B/W)	Audio sound signal rear RH	Input	ON	Receive audio signal	 <small>SKIA0177E</small>	No sound from rear door speaker RH.
26 (G)	25 (Y)	Audio sound signal rear LH	Input	ON			No sound from rear door speaker LH.
28 (G)	27 (Y)	Audio sound signal front RH	Input	ON	Receive audio signal	 <small>SKIA0177E</small>	No sound from front door speaker RH or instrument speaker RH.
30 (W)	29 (B)	Audio sound signal front LH	Input	ON			No sound from front door speaker LH or instrument speaker LH.
31 (P)	Ground	Control signal	Input	ON	-	Approx. 12V	BOSE speaker amp. does not work properly.

AUDIO

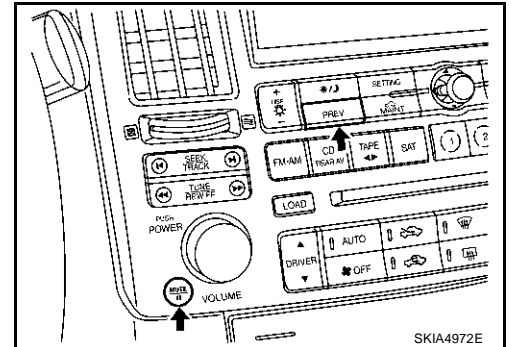
AKS0070E

A/C and AV Switch Self-Diagnosis Function

It can check ON/OFF operation of each switch in the A/C and AV switch and diagnose the input signals to the audio steering wheel switch.

STARTING THE SELF-DIAGNOSIS MODE

1. Turn ignition switch from OFF to ACC.
2. Within 10 seconds press and hold the switches "MUTE/II" and "PREV" simultaneously for 3 seconds.



DIAGNOSIS FUNCTION

The following are checked:

- All the indicators (LED) in the A/C and AV switch.
- Continuity of the switches by sounding the buzzer when the A/C and AV switch is pressed.
- Continuity of harness between A/C and AV switch and audio steering wheel switch.

EXITING THE SELF-DIAGNOSIS MODE

- Turn ignition switch OFF.

Trouble Diagnosis

AKS00BHK

The majority of the audio malfunctions are the result of outside causes (bad CD/cassette, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.

MALFUNCTION WITH RADIO, TAPE AND CD (BASE SYSTEM)

Make sure that operation excepting audio system can be done with A/C and AV switch. If not, refer [AV-96, "A/C and AV Switch Does Not Operate"](#) to repair malfunctioning parts.

Symptom	Check item
Inoperative	<ul style="list-style-type: none"> ● Audio unit power supply circuit. Refer to AV-37, "Power Supply Circuit Inspection" . ● Audio communication line (With out navigation system). Refer to , AV-94, "Audio Communication Line Inspection" . ● Audio communication line (With navigation system). Refer to AV-157, "Self-Diagnosis Mode (DCU)" . ● A/C and AV switch. Refer to AV-39, "A/C and AV Switch Inspection" . ● Audio unit
Audio steering wheel switch dose not operate	<ul style="list-style-type: none"> ● Audio steering wheel switch. Refer to AV-38, "Audio Steering Wheel Switch Inspection" . ● A/C and AV switch. Refer to AV-39, "A/C and AV Switch Inspection" .
One or several speaker does not sound	<ul style="list-style-type: none"> ● Front door speaker ● Rear door speaker ● Audio unit
Poor sound	<ul style="list-style-type: none"> ● Audio unit ● Speaker
Noisy	<ul style="list-style-type: none"> ● Audio unit ● Each electrical equipment

AUDIO

MALFUNCTION WITH RADIO, TAPE AND CD (BOSE SYSTEM)

Make sure that operation excepting audio system can be done with A/C and AV switch. If not, refer [AV-96, "A/C and AV Switch Does Not Operate"](#) (without navigation system), [AV-157, "Self-Diagnosis Mode \(DCU\)"](#) (with navigation system) to repair malfunctioning parts.

Symptom	Check item
Inoperative	<ul style="list-style-type: none"> ● Audio unit power supply circuit. Refer to AV-37, "Power Supply Circuit Inspection" . ● Audio communication line (Without navigation system). Refer to AV-94, "Audio Communication Line Inspection" . ● Audio communication line (With navigation system). Refer to AV-157, "Self-Diagnosis Mode (DCU)" . ● A/C and AV switch. Refer to AV-39, "A/C and AV Switch Inspection" . ● Audio unit
Audio steering wheel switch dose not operate	<ul style="list-style-type: none"> ● Audio steering wheel switch. Refer to AV-38, "Audio Steering Wheel Switch Inspection" . ● A/C and AV switch. Refer to AV-39, "A/C and AV Switch Inspection" .
One or several speaker does not sound	<ul style="list-style-type: none"> ● BOSE speaker amp. power supply and ground circuit. Refer to AV-37, "Power Supply Circuit Inspection" . ● Front door speaker ● Rear door speaker ● BOSE speaker amp. AV-40, "BOSE Speaker Amp. Inspection." . ● Audio unit
Woofer does not sound	<ul style="list-style-type: none"> ● Woofer ● BOSE speaker amp
Speed sensitive volume system dose not work	<ul style="list-style-type: none"> ● Vehicle speed signal. Refer to AV-40, "Vehicle Speed Signal Inspection" . ● Audio unit
Poor sound	<ul style="list-style-type: none"> ● Audio unit ● BOSE speaker amp ● Speaker ● Woofer
Noisy	<ul style="list-style-type: none"> ● Audio unit ● BOSE speaker amp ● Each electrical equipment

AUDIO

FOR RADIO ONLY

Symptom	Check item
No sound	<ul style="list-style-type: none"> ● Audio unit ● Antenna feeder ● Antenna amp.
Noisy	<ul style="list-style-type: none"> ● Audio unit ● Antenna feeder ● Antenna amp. ● Noise prevention parts ● Each electrical equipment ● Wire harness of each piece of electrical equipment
Selected radio stations stored in memory are deleted	Audio unit

NOTE:

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

FOR CASSETTE PLAYER ONLY

Symptom	Check item
Cassette tape cannot be inserted	<ul style="list-style-type: none"> ● Cassette tape ● Audio unit
Cassette tape cannot be ejected	
Auto reverse does not work, or the tape direction changes in the middle of play	
There is much noise	
The sound is not clear	
Sound fluctuates/tape speed not correct	
No sound	

FOR CD ONLY

Symptom	Check item
CD cannot be inserted	<ul style="list-style-type: none"> ● CD ● Audio unit
CD cannot be ejected	
The CD cannot be played	
The sound skips, stops suddenly, or is distorted	

AUDIO

AKS005TC

Noise Inspection

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

NOTE:

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

TYPE OF NOISE AND POSSIBLE CAUSE

Occurrence condition		Possible cause
Occurs only when engine is ON.	A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed.	<ul style="list-style-type: none"> ● Ignition condenser
	A whistling noise occurs while the engine speed is high. A booming noise occurs while the engine is running and the lighting switch is ON.	<ul style="list-style-type: none"> ● Alternator
The occurrence of the noise is linked with the operation of the fuel pump.		<ul style="list-style-type: none"> ● Fuel pump condenser
Noise only occurs when various electrical components are operating.	A cracking or snapping sound occurs with the operation of various switches.	<ul style="list-style-type: none"> ● Relay malfunction, radio malfunction
	The noise occurs when various motors are operating.	<ul style="list-style-type: none"> ● Motor case ground ● Motor
The noise occurs constantly, not just under certain conditions.		<ul style="list-style-type: none"> ● Rear window defogger coil malfunction ● Open circuit in printed heater ● Poor ground of antenna amplifier or antenna feeder line ● Mirror type film is attached on the rear window glass ● After-market TV antenna and/or electrical accessories such as radio are attached on the rear window glass.
A cracking or snapping sound occurs while the vehicle is being driven, especially when it is vibrating excessively.		<ul style="list-style-type: none"> ● Ground wire of body parts. ● Ground due to incorrect installation of parts. ● Wiring connections or a short circuit.

AUDIO

AKS005TD

Power Supply Circuit Inspection

1. CHECK FUSE

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

Unit	Signal	Fuse No.
Audio unit	Battery power supply	32
	ACC power supply	6
BOSE speaker amp.	Battery power supply	17
Woofer	Battery power supply	32

OK or NG

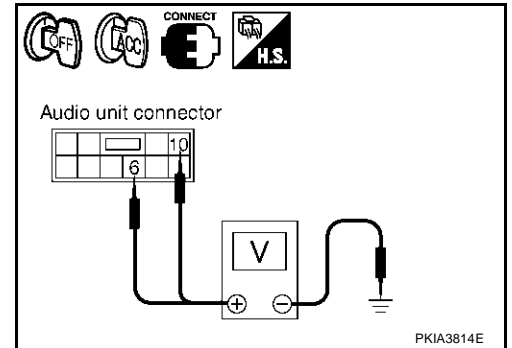
OK >> GO TO 2

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

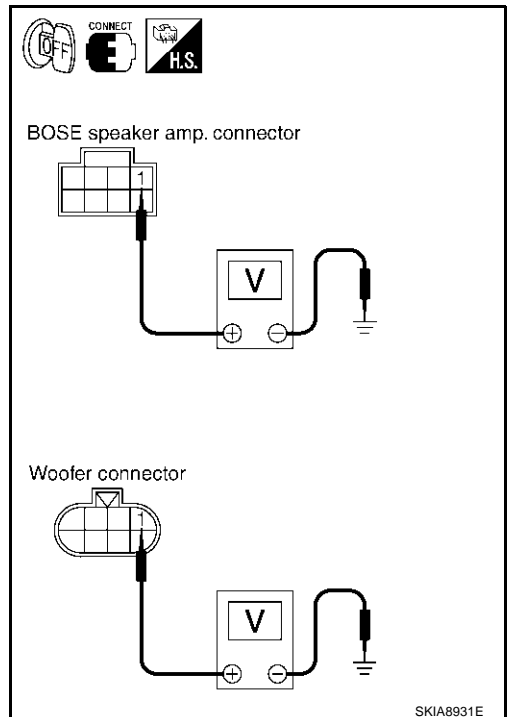
1. Check voltage between the audio unit harness connector terminals and ground.

Unit	Terminal No.			Ignition switch	Voltage
	(+)		(-)		
	Connector	Terminal (Wire color)			
Audio unit	M58	6 (W/L)	Ground	OFF	Battery voltage
		10 (LG/R)	Ground	ACC	Battery voltage



2. Turn ignition switch OFF.
3. Check voltage between BOSE speaker amp. harness connector terminal or woofer harness connector terminal and ground.

Unit	Terminal No.			Ignition switch	Voltage
	(+)		(-)		
	Connector	Terminal (Wire color)			
BOSE speaker amp.	B212	1 (R)	Ground	OFF	Battery voltage
Woofer	B66	1 (GY)	Ground	OFF	Battery voltage



OK or NG

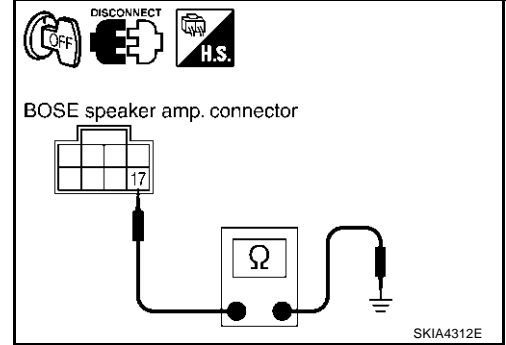
- OK >> ● INSPECTION END (Audio unit is OK)
 ● GO TO 3 (BOSE speaker amp. and woofer).
- NG >> ● Repair harness or connector.

AUDIO

3. CHECK GROUND CIRCUIT

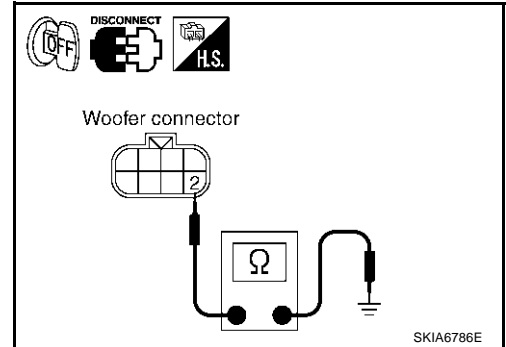
1. Disconnect BOSE speaker amp. connector and woofer connector.
2. Check continuity between BOSE speaker amp. harness connector B212 terminal 17 (B) and ground.

17 – Ground :Continuity should exist.



3. Check continuity between woofer harness connector B66 terminal 2 (B) and ground.

2 – Ground :Continuity should exist.



OK or NG

- OK >> INSPECTION END (System is OK)
 NG >> Repair harness or connector.

Audio Steering Wheel Switch Inspection

1. A/C AND AV SWITCH SELF-DIAGNOSIS FUNCTION

1. Start A/C and AV switch self-diagnosis function. Refer to [AV-33, "A/C and AV Switch Self-Diagnosis Function"](#).
2. Operate audio steering wheel switch.

Does the audio steering wheel switch is operated normally?

- YES >> INSPECTION END (System is OK)
 NO >> GO TO 2

2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect A/C and AV switch connector and spiral cable connector (Vehicle harness side).
3. Check continuity between A/C and AV switch harness connector M64 terminal 12 (R/G), 13 (G/W), 14 (B/Y) and spiral cable harness connector M15 terminal 24 (R/G), 32 (G/W), 31 (B/Y).

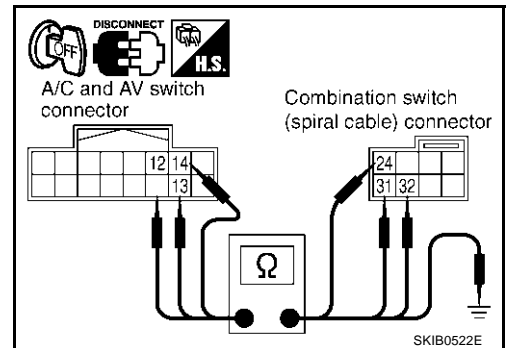
12 – 24 : Continuity should exist.

13 – 32 : Continuity should exist.

14 – 31 : Continuity should exist.

4. Check continuity between A/C and AV switch harness connector M64 terminal 12 (R/G), 13 (G/W), 14 (B/Y) and ground.

12, 13, 14 – Ground :Continuity should not exist.



OK or NG

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

AUDIO

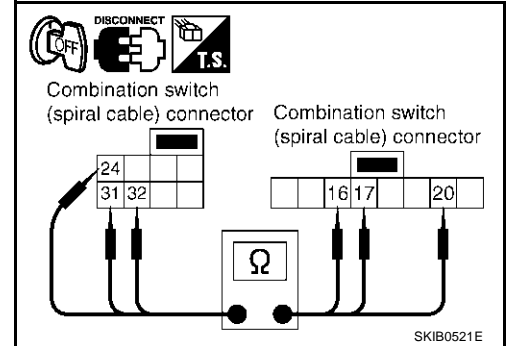
3. CHECK SPIRAL CABLE

1. Disconnect spiral cable connector (Audio steering wheel switch harness side).
2. Check continuity between spiral cable connector terminal 24, 31, 32 and terminal 20, 17, 16.

24 – 20 : Continuity should exist.
 31 – 17 : Continuity should exist.
 32 – 16 : Continuity should exist.

OK or NG

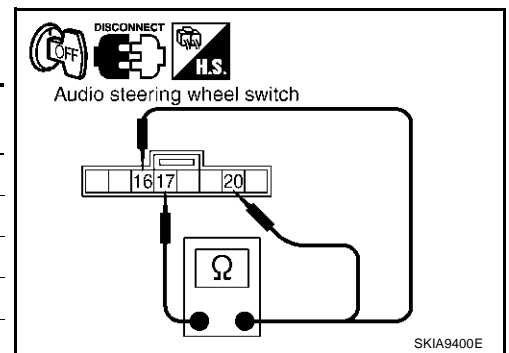
OK >> GO TO 4
 NG >> Replace spiral cable.



4. CHECK AUDIO STEERING WHEEL SWITCH

Check resistance audio steering wheel switch connector M203 terminals.

Terminal	Switch name	Condition	Resistance (Ω)
16	17	Power	Depress power switch. Approx. 0
		Seek down	Depress seek down switch. Approx. 165
		Volume (down)	Depress volume down switch. Approx. 652
20	17	Mode	Depress mode switch. Approx. 0
		Seek up	Depress seek up switch. Approx. 165
		Volume (up)	Depress volume up switch. Approx. 652



OK or NG

OK >> Replace A/C and AV switch.
 NG >> Replace audio steering wheel switch.

A/C and AV Switch Inspection

AKS007H9

1. A/C AND AV SWITCH SELF-DIAGNOSIS FUNCTION

1. Start A/C and AV switch self-diagnosis function. Refer to [AV-33, "A/C and AV Switch Self-Diagnosis Function"](#).
2. Operate A/C and AV switch.

Does the A/C and AV switch is operated normally?

YES >> INSPECTION END (System is OK)
 NO >> GO TO 2.

2. CHECK A/C AND AV SWITCH POWER SUPPLY AND GROUND

Check A/C and AV switch power supply and ground circuit. Refer to [AV-92, "Power Supply and Ground Circuit Check for A/C and AV Switch"](#) (Without Navigation System), [AV-175, "Power Supply and Ground Circuit Check for A/C and AV Switch"](#) (With Navigation System).

OK or NG

OK >> Replace A/C and AV switch.
 NG >> Repair malfunctioning parts.

AUDIO

AKS007WD

BOSE Speaker Amp. Inspection.

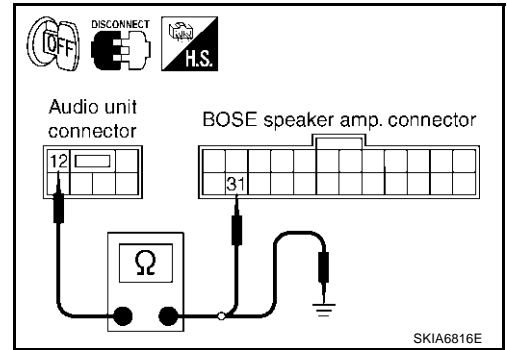
1. CHECK HARNESS

1. Disconnect audio unit connector and BOSE speaker amp. connector.
2. Check continuity between audio unit harness connector M59 terminal 12 (G/W) and BOSE speaker amp. harness connector B213 terminal 31 (P).

12 – 31 : Continuity should exist.

3. Check continuity between audio unit harness connector M59 terminal 12 (G/W) and ground.

12 – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 2

NG >> Repair harness or connector.

2. CHECK AMP. ON SIGNAL

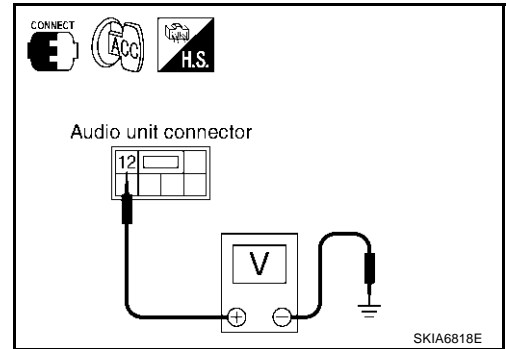
1. Connect audio unit connector.
2. Turn the ignition switch ACC.
3. Check voltage between audio unit harness connector M59 terminal 12 (G/W) and ground.

12 – Ground : More than approx. 6.5V

OK or NG

OK >> INSPECTION END (System is OK)

NG >> Replace audio unit.



Vehicle Speed Signal Inspection

AKS007VI

1. CHECK VEHICLE SPEED OPERATION

Start engine and drive vehicle.

Dose speedometer is operated normally?

YES >> GO TO 2

NO >> Check combination meter trouble diagnosis. Refer to [DI-14, "Diagnosis Flow"](#).

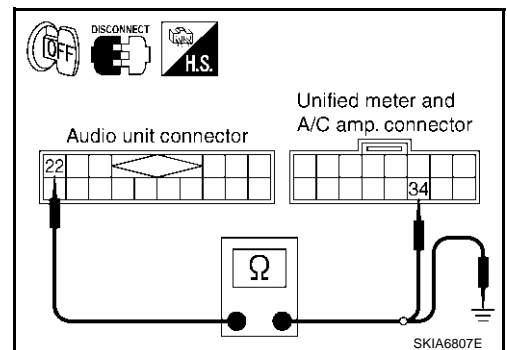
2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect audio unit connector and unified meter and A/C amp. connector.
3. Check continuity between audio unit harness connector M60 terminal 22 (W/L) and unified meter and A/C amp. harness connector M56 terminal 34 (W/L).

22 – 34 : Continuity should exist.

4. Check continuity between audio unit harness connector M60 terminal 22 (W/L) and ground.

22 – Ground : Continuity should not exist.



OK or NG

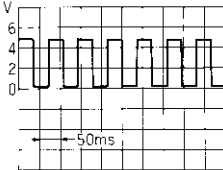
OK >> GO TO 3

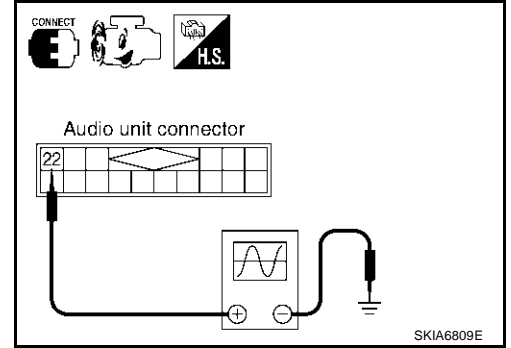
NG >> Repair harness or connector.

AUDIO

3. CHECK VEHICLE SPEED SIGNAL

1. Connect audio unit connector and unified meter and A/C amp. connector.
2. Start engine and drive vehicle at more than 40 km/h (25MPH).
3. Check the signal between audio unit harness connector M60 terminal 22 (W/L) and ground with CONSULT-II or oscilloscope.

Terminal		Condition	Reference signal
(+)	(-)		
22	Ground	When vehicle speed is approx.40 km/h (25MPH)	 <p style="text-align: right;">ELF1080D</p>



OK or NG

- OK >> INSPECTION END (System is OK)
 NG >> Replace unified meter and A/C amp.

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AUDIO

Locking CD Auto-changer Mechanism

AKS007GD

CAUTION:

- Prior to removing a malfunctioning CD auto-changer unit 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.
2. Turn ignition switch OFF. Wait until audio unit 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, 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.

NOTE:

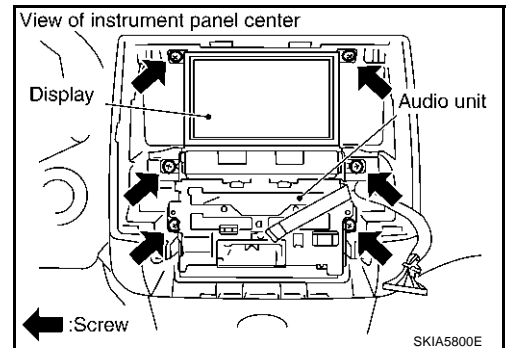
After installing a new or remanufactured audio unit, switching the audio unit ON will automatically unlock the mechanism. A special unlocking procedure is not required.

Removal and Installation of Audio Unit

AKS005TO

REMOVAL

1. Perform damper lock operation. Refer to [AV-42, "Locking CD Auto-changer Mechanism"](#).
2. Remove cluster lid C. Refer to [IP-11, "Removal and Installation"](#).
3. Remove screws (6) with power tool, and remove audio unit with display and unified meter and A/C amp. from instrument panel.



INSTALLATION

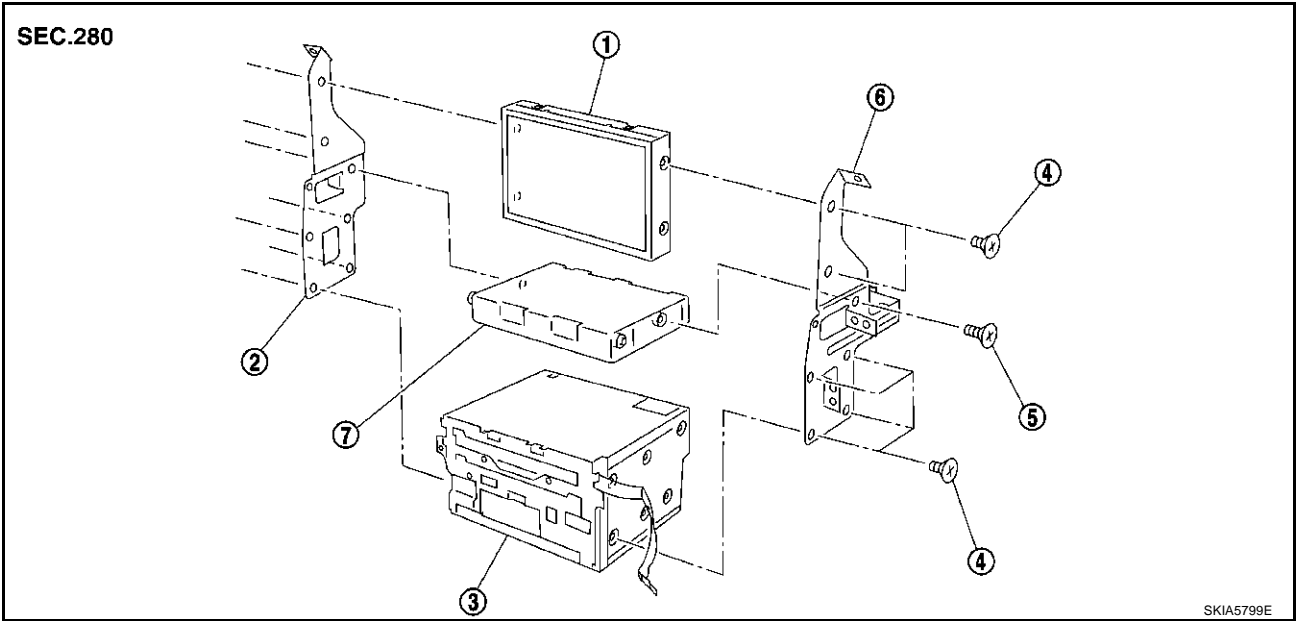
Installation in the reverse of removal.

AUDIO

Disassembly and Assembly for Audio Unit

AKS007YV

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- | | | |
|-------------------------------|------------------------|-----------------|
| 1. Display | 2. Bracket (LH) | 3. Audio unit |
| 4. Screw (For metal) | 5. Screw (For plastic) | 6. Bracket (RH) |
| 7. Unified meter and A/C amp. | | |

DISASSEMBLY

Remove audio unit screws (8) and display screws (4) and unified meter and A/C amp. screws (2) with power tool 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.

ASSEMBLY

Install in the reverse order of disassembly.

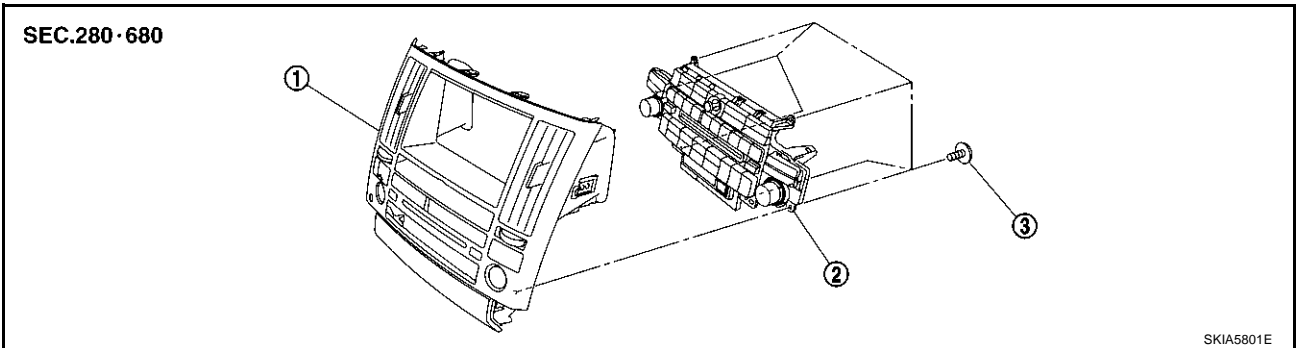
NOTE:

Use appropriate screws for each, as screws for audio unit and display unit are different from that for unified meter and A/C amp.

Removal and Installation for A/C and AV Switch

AKS005TP

REMOVAL

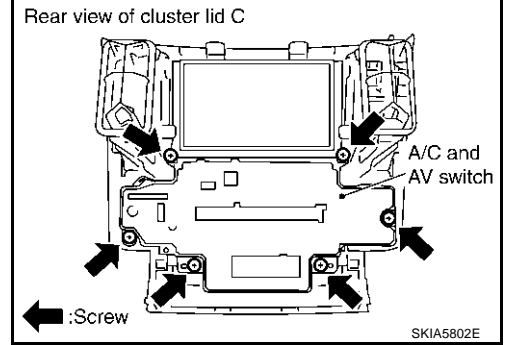


- | | | |
|------------------|----------------------|-----------|
| 1. Cluster lid C | 2. A/C and AV switch | 3. Screws |
|------------------|----------------------|-----------|

1. Remove cluster lid C. Refer to [IP-11, "Removal and Installation"](#).

AUDIO

2. Remove screws (6) and remove A/C and AV switch from cluster lid C.



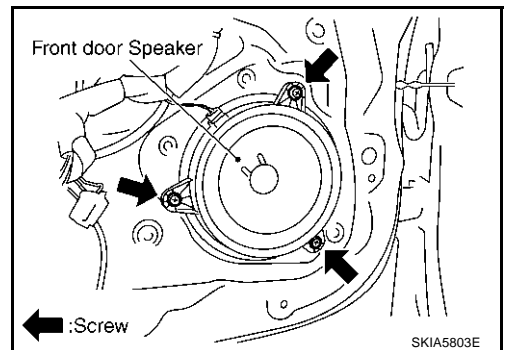
INSTALLATION

Install in the reverse order of removal.

Removal and Installation for Front Door Speaker

1. Remove front door finisher. Refer to [EI-35, "Removal and Installation"](#).
2. Remove screws (3) and remove front door speaker.

AKS0057Q



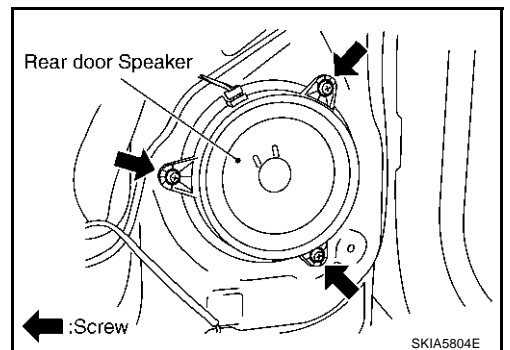
INSTALLATION

Install in the reverse order of removal.

Removal and Installation for Rear Door Speaker

1. Remove rear door finisher. Refer to [EI-35, "Removal and Installation"](#).
2. Remove screws (3) and remove rear door speaker.

AKS0057S



INSTALLATION

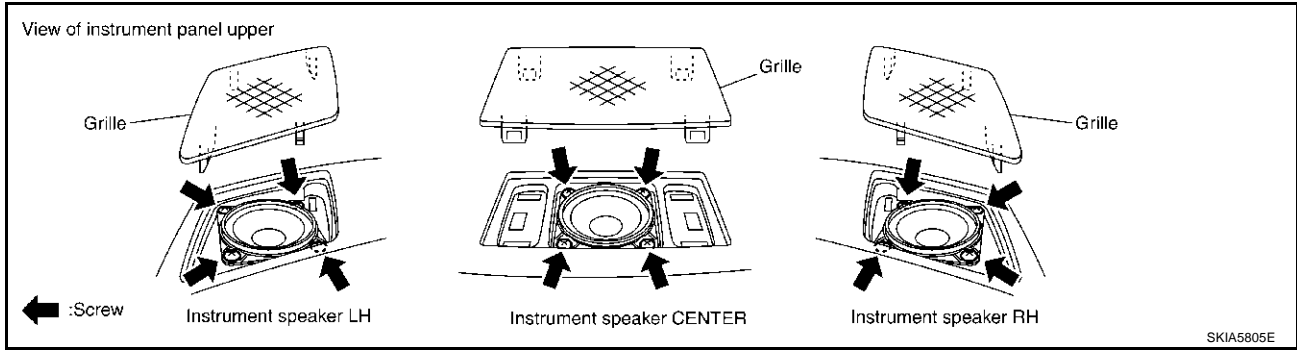
Installation in the reverse of removal.

AUDIO

Removal and Installation for Instrument Speaker

AKS005TU

REMOVAL



1. Remove grille from instrument panel.
2. Remove screws (4) and disconnect connector.
3. Remove instrument speaker.

INSTALLATION

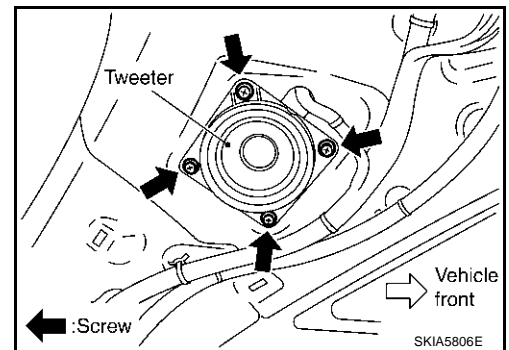
Install in the reverse order of removal.

Removal and Installation for Tweeter (BOSE System)

AKS005TV

REMOVAL

1. Remove rear pillar upper garnish assembly. Refer to [EI-44](#), "[Removal and Installation](#)".
2. Remove screws (4), and disconnect connector.
3. Remove tweeter.



INSTALLATION

Install in the reverse order of removal.

Removal and Installation for Woofer (BOSE System)

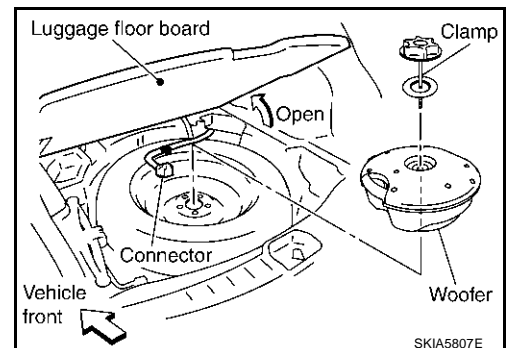
AKS007GE

REMOVAL

1. Open luggage floor board.
2. Remove speaker clamp and harness clip.
3. Disconnect connector.
4. Remove woofer.

CAUTION:

- Connectors must be placed in the left side, when installed.



INSTALLATION

Install in the reverse order of removal.

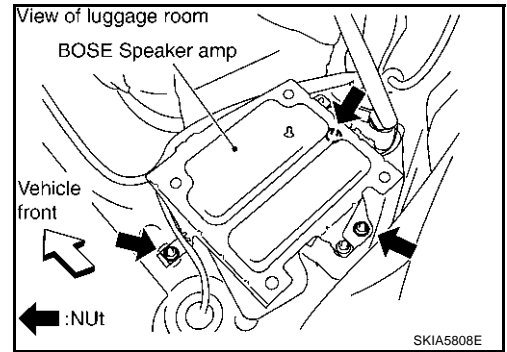
AUDIO

Removal and Installation for BOSE Speaker Amp.

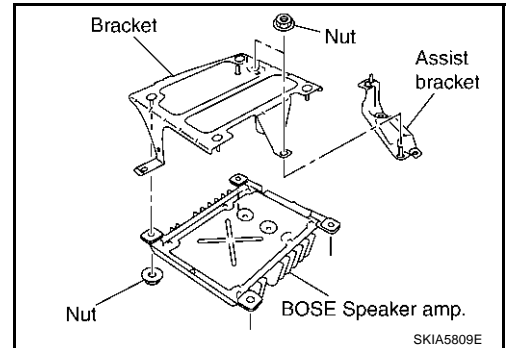
AKS007GF

REMOVAL

1. Remove luggage side right box assembly. Refer to [EI-44](#), "[Removal and Installation](#)".
2. Remove nuts (3) with power tool, and remove BOSE speaker amp. from luggage room floor.



3. Remove nuts (2) with power tool, and remove assist bracket.
4. Remove nuts (4) with power tool, and remove bracket.



INSTALLATION

Install in the reverse order of removal.

AUDIO ANTENNA

AUDIO ANTENNA

PFP:28200

System Description

AKS007WE

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 the antenna amp.

Then the antenna amp. is activated.

The amplified radio signals are supplied to the audio unit through the antenna amp.

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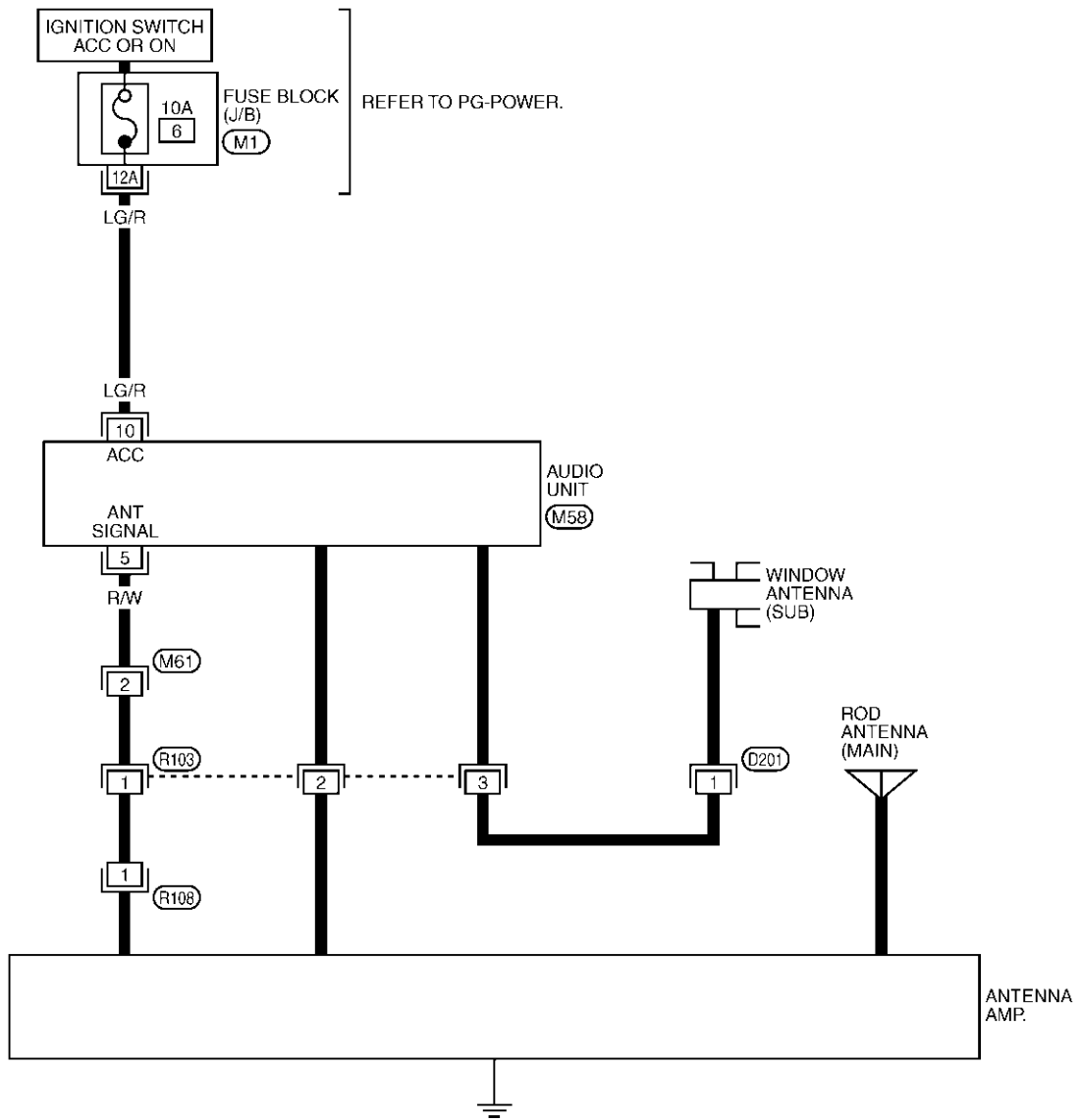
M

AUDIO ANTENNA

Wiring Diagram — M/ANT —

AKS007WF

AV-M/ANT-01



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

REFER TO THE FOLLOWING.

(M1) - FUSE BLOCK-JUNCTION BOX (J/B)

TKWM0569E

AUDIO ANTENNA

Terminals and Reference Value for Audio Unit

AKS007WW

Terminal (wire color)		Item	Signal input/output	Condition		Reference value	Example of symptom
+	-			Ignition switch	Operation		
5 (R/W)	Ground	Antenna signal	Output	ACC	-	Approx. 12V	Receiving status of radio broadcast becomes bad.
10 (LG/R)	Ground	ACC power supply	Input	ACC	-	Battery voltage	System does not work properly

Antenna Amp. Inspection

AKS007WX

1. CHECK ANTENNA FEEDER

Check with visual observation if antenna feeder between audio unit and antenna amp. has disconnection or malfunction on the mounting part (engagement, looseness of shield earth, etc.).

OK or NG

- OK >> GO TO 2
- NG >> Replace antenna feeder.

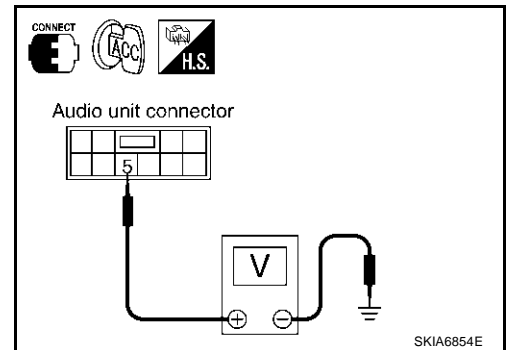
2. CHECK ANTENNA SIGNAL

1. Turn ignition switch ACC.
2. Check voltage between audio unit harness connector M58 terminal 5 (R/W) and ground.

5 – Ground : Approx. 12V

OK or NG

- OK >> INSPECTION END (System is OK)
- NG >> Replace audio unit.

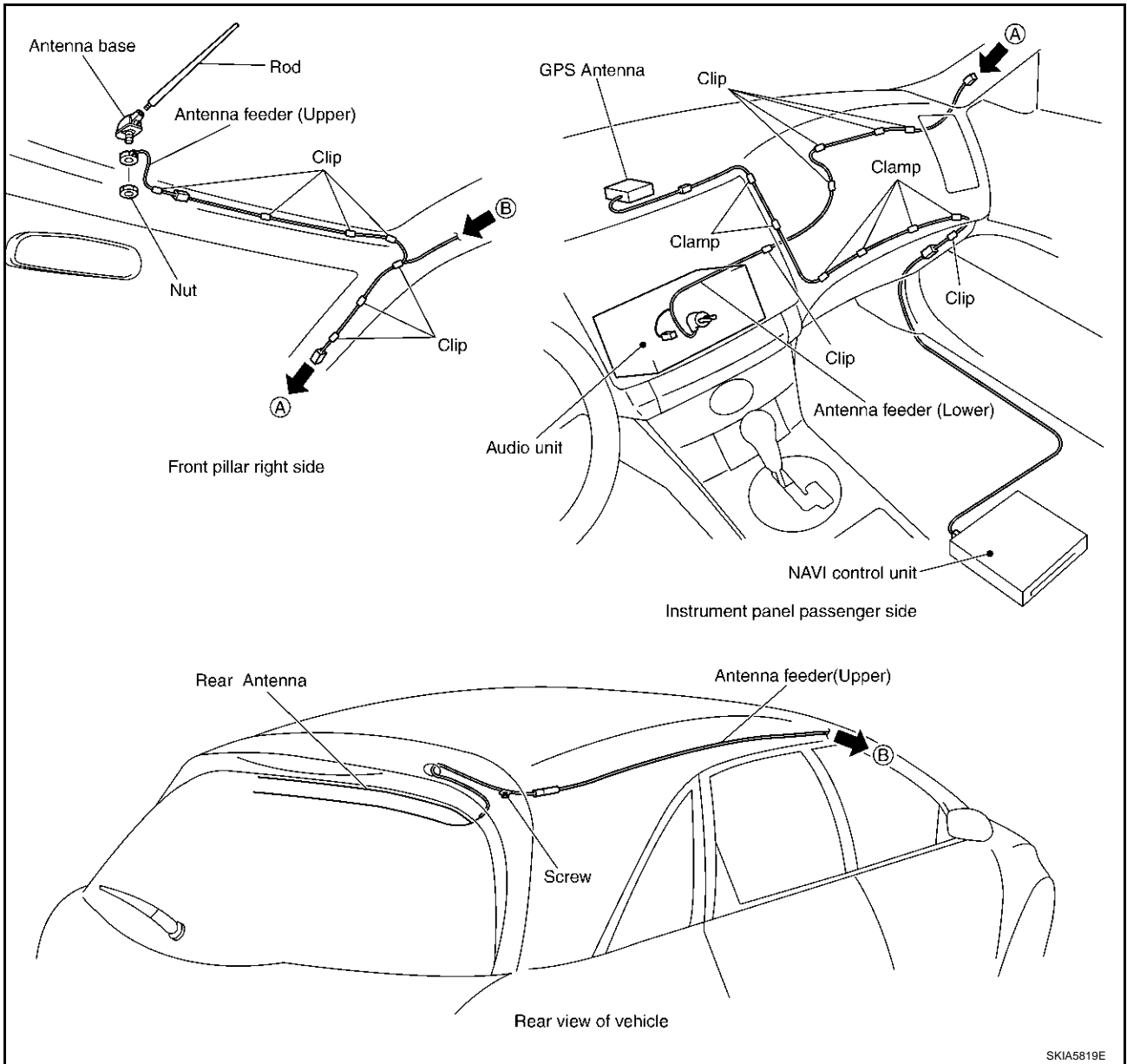


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AUDIO ANTENNA

Location of Antenna

AKS005TX

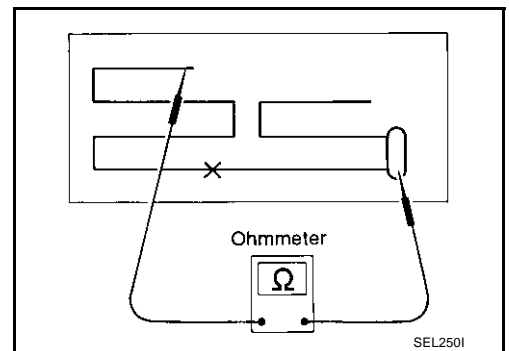


Window Antenna Repair

CHECK ELEMENT

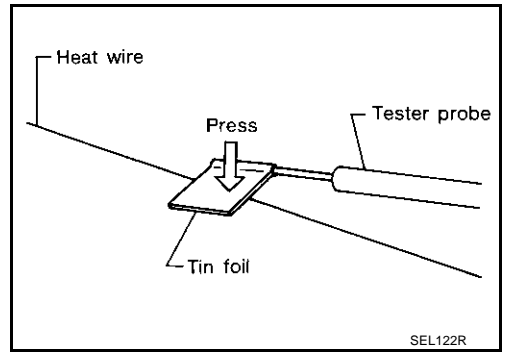
AKS005TY

1. Attach probe circuit tester (ohm setting) to antenna terminal on each side.

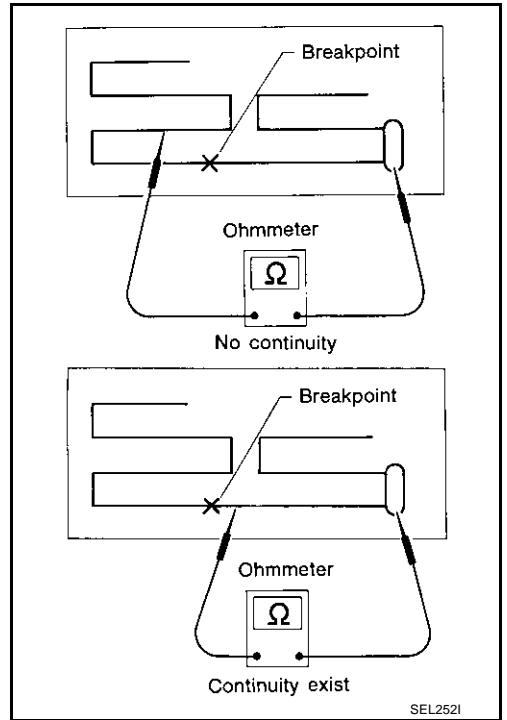


AUDIO ANTENNA

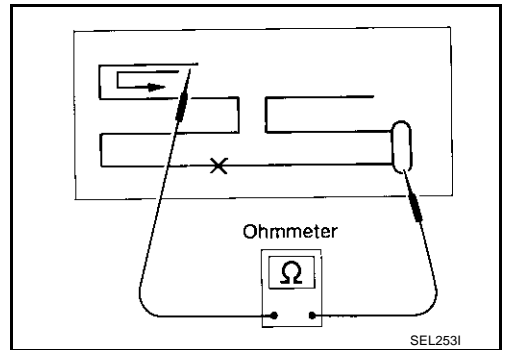
- When measuring continuity, wrap tin foil around the top of probe. Then, press the foil against the wire with your finger.



2. If an element is broken, no continuity will exist.



3. To locate a break, move probe along element. Tester needle will swing abruptly when probe passes the broken point.



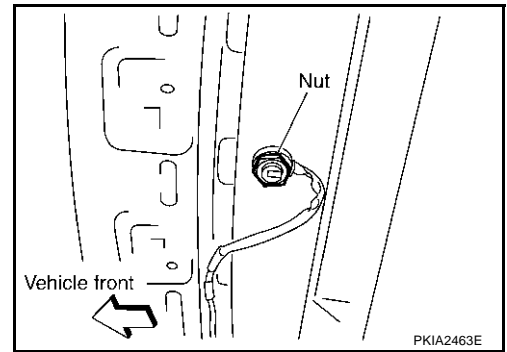
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AUDIO ANTENNA

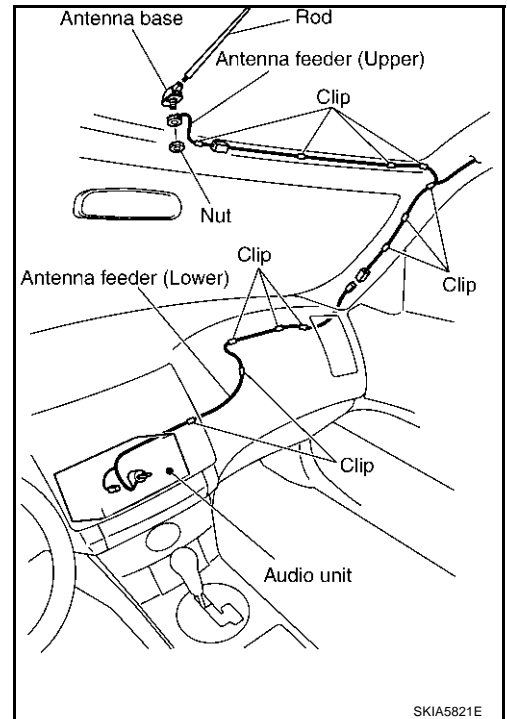
Removal and Installation of Roof antenna REMOVAL

AKS005TZ

1. Remove head lining. Refer to [EI-42, "HEADLINING"](#) .
2. Remove nut and remove rod and antenna base.



3. Remove instrument panel. Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) .
4. Disassembly antenna feeder (upper) and antenna feeder (lower).
5. Disengaged the clips (7) to separate antenna feeder (upper) from vehicle.
6. Pull off antenna feeder (lower) from audio unit.
7. Disengaged the clips (5) to separate antenna feeder (lower) from vehicle.



INSTALLATION

Install in the reverse order of removal.

INTEGRATED DISPLAY SYSTEM

INTEGRATED DISPLAY SYSTEM

PFP:28090

System Description A/C AND AV SWITCH SYSTEM

AKS005U0

Refer to Owner's Manual for A/C and AV switch operating instructions.

Using the A/C and AV switch at the center of the instrument panel, the controls of the following systems are centralized:

- Integrated display system (Drive computer, setting screen, etc.)
- Auto A/C system
- Audio system

PRECAUTION OF LCD MONITOR

- In order to use LED for backlight of a display, by in car temperature, brightness may change. In low temperature, the refreshing rate of the picture also becomes low because of the low response of the LCD monitor. When passenger room becomes warm, however, the LCD recovers the normal display.
- Backlight sometimes flickers or darkens according to the total consumption hours and the number of times switched ON and OFF. In this case, display unit should be replaced. (Exchange only of backlight is impossible.)

POWER SUPPLY AND GROUND

Power is supplied at all times

- through 15A fuse (No. 32, located in fuse and fusible link box)
- to display unit terminal 1, and
- to A/C and AV switch terminal 1.

When ignition switch is in ACC or ON position, power is supplied

- through 10A fuse [No. 6, located in fuse block (J/B)]
- to display unit terminal 2, and
- to A/C and AV switch terminal 2.

When ignition switch is in ON or START position, power is supplied

- through 10A fuse [No. 12, located in fuse block (J/B)]
- to display unit terminal 3.

Ground is supplied

- to display unit terminals 6 and 15, and
- to A/C and AV switch terminal 5
- through body grounds M35, M45 and M85.

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INTEGRATED DISPLAY SYSTEM

DRIVE COMPUTER

Refer to Owner's Manual for drive computer operating instructions.

TRIP Switch

When "TRIP" switch is pressed, display TRIP screen. As TRIP information, it indicates journey time (TIME), trip odometer (DIST), average vehicle speed (AVG).

Pressing "TRIP" switch once cycles display from TRIP 1→TRIP 2→Display OFF→TRIP 1.

"TIME"

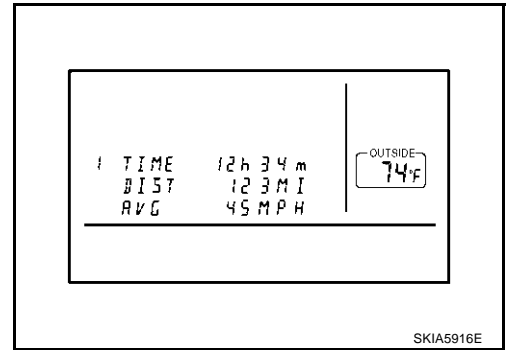
- Journey time indication is performed by reset or battery connection.
- When pushing "TRIP RESET" or "TRIP" switch more than approximately 1.5 seconds, journey time will be reset.
- If journey time is reset, journey distance and average speed will be reset at the same time.

"DIST"

- Trip odometer indication is performed by vehicle speed signal.
- When pushing "TRIP RESET" or "TRIP" switch more than approximately 1.5 seconds, driving distance will be reset.
- If trip odometer is reset, journey time and average speed will be reset at the same time.

"AVG"

- Average speed indication is performed by running distance and running time.
- Indication will be renewed every 30 seconds.
- When pushing "TRIP RESET" or "TRIP" switch more than approximately 1.5 seconds, average speed will be reset.
- After reset operation, the displays shows "*" for 30 seconds.



FUEL ECON Switch

When "FUEL ECON" switch is pressed, display FUEL ECON screen. As FUEL ECON information, it indicates average fuel consumption (AVG), distance to empty (DTE).

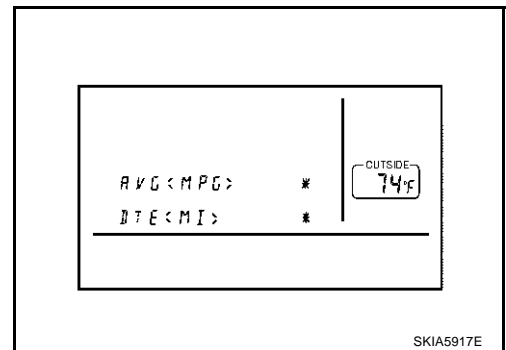
Pressing "FUEL ECON" switch once cycles display from FUEL ECON→Display OFF→FUEL ECON.

"AVG" (Average Fuel Consumption)

- Average fuel consumption indication is performed by fuel consumption signal and vehicle speed signal after system is reset.
- Indication will be renewed every 30 seconds.
- When pushing "TRIP RESET" or "FUEL ECON" switch more than approximately 1.5 seconds, average fuel economy will be reset.
- After reset operation, the display shows "*.*" until the vehicle is driven 1,600 ft (500 m.) or 30 seconds has passed.

"DTE" (Distance to Empty)

- Distance to empty receives via CAN communication and indicates values calculated by meter.
- Display range is maximum 999 miles (maximum 999 km).
- If low-fuel WARNING is received from meter via CAN communication, distance to empty indication will be "*".
- Indication will be renewed every 30 seconds.



INTEGRATED DISPLAY SYSTEM

MAINT Switch (Maintenance Switch)

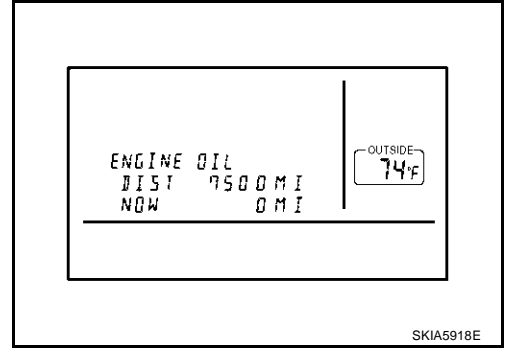
- When "MAINT" switch is pressed, display vehicle information screen. As vehicle information, it indicates engine oil, tire rotation and tire pressure.
- Pressing "MAINT" switch once cycles display from engine oil→tire rotation→(tire pressure)^{Note} →display OFF→engine oil.

NOTE:

For models with low tire pressure warning system.

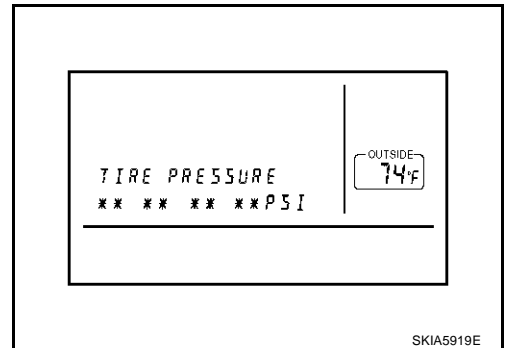
Engine Oil and Tire Rotation

- Operating the joystick left/right, replace distance can be set.
- When journey distance is the same as replace distance, alert is displayed. (SERVICE ALERT setting is ON.)
- Selected replace distance is 0 - 7,500 miles (0 - 12,000 km) in increments of 500 mile (800 km).
- Press and hold "TRIP RESET or MAINT" switch for 1.5 seconds or longer, reset present journey distance.
- During driving, cannot change settings.



Tire Pressure

- Tire pressure signal is received from low tire pressure warning control unit via CAN communication.
- Tire pressure is displayed.
- When FLAT TIRE signal is received from low tire pressure warning control unit, "FLAT TIRE" is displayed.



E/M SWITCH

When "E/M" (English/Metric) switch is pressed, change the unit as followings.

Unit	US	Mile, °F, MPG
	Metric	km, °C, l/100km

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AV

INTEGRATED DISPLAY SYSTEM

SETTING SCREEN

- Setting of electric status can be changed by A/C and AV switch. The signal is sent to BCM through display unit to change vehicle electric system setting.
- Display unit is communicating with driver seat control unit.
- Pressing “SETTING” switch once cycles display from DISPLAY→LANGUAGE→BEEP SET→SERVICE ALERT→PERSONALIZED SETTINGS MENU→DISPLAY OFF→DISPLAY.
- Using the joystick, setting of each item will become possible.

Adjustable Vehicle Status

Setting items		Setting variations	Initial setting	Operation
DISPLAY		ON/OFF	ON	It switches displayed/Non-displayed of the screen.
LANGUAGE		ENGLISH/ FRANCAIS	–	It switches displayed language.
BEEP SET		ON/OFF	ON	It selects beep sound ON/OFF during switch operation. However, even if beep is set OFF, beep for NO OPERATION and for screen interception are not reset.
SERVICE ALERT		ON/OFF	OFF	It switches displayed/Non-displayed of alert indication. <ul style="list-style-type: none"> ● When the setting is ON, if engine oil or tire rotation will be replace distance, alert is displayed. ● When the setting is OFF, alert is not displayed.
PERSONALIZED SETTING MENU	SLIDE BACK DR SEAT ON EXIT	ON/OFF	ON ^{Note}	The driver's seat automatically moves back and returns to the original position for exceptional ease of exit and entry. (Models with automatic drive positioner.)
	LIFT STEERING WHEEL ON EXIT	ON/OFF	ON ^{Note}	The steering column automatically tilts up and returns to the original position for exceptional ease of entry and exit. (Models with automatic drive positioner.)
	REMOTE UNLOCK DOOR LOGIC	DR-1ST/ALL	DR-1ST	This key can switch the unlock doors of the 1st unlocking operation as follows: <ul style="list-style-type: none"> ● Only the driver side door⇔All the doors
	HORN CHIRP WITH REMOTE	ON/OFF	ON	This key changes the horn chirp mode occurring when pressing the LOCK button on the keyfob.
	LAMPS FLASH WITH REMOTE	ALL/LOCK/ UNLOCK/OFF	ALL	This key changes the hazard indicator flash mode occurring when pressing the LOCK or UNLOCK button on the keyfob.
	AUTO RE-LOCK TIME	5m/1m/OFF	1m	The length of auto door re-lock time can be set. Select the “Auto Re-Lock timer” key, then move the joystick to adjust the time.
	AUTO HEADLAMP SENSITIVITY	LEVEL 1/2/3/4	LEVEL 2	Automatic light illumination can be set as desired. Select the “Auto Headlamp Sensitivity” key, then move the joystick to the left (lower) or right (higher).
	AUTO HEADLAMP OFF DELAY	OFF/30/45/60/ 90/120/150/ 180 SEC	45 SEC	This key can control how long it takes the automatic turn off timer to extinguish the headlamps in “AUTO” position. Select the “Auto Headlamp Off Delay” key, then move the joystick to the left or right to adjust the timer.
	SPEED SENSING WIPER INTERVAL	ON/OFF	ON	This key turns on and off the driving speed dependent intermittent wiper function.
	CONFIRM RESET SETTINGS	YES/NO	NO	When this key is selected and turned on using the “ENTER” button, all settings mode by PERSONALIZED SETTINGS will return to the initial conditions.

NOTE:

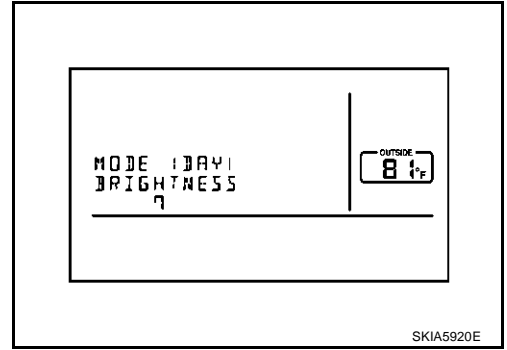
Setting in factory shipment is ON.

INTEGRATED DISPLAY SYSTEM

D/N SCREEN

- Turning on "DAY/NIGHT" switch, DAY MODE or NIGHT MODE is indicated for present mode.
- If press "DAY/NIGHT" again when display adjustment luminance, change DAY-NIGHT (NIGHT-DAY) mode (screen of adjustment luminance).
As follows:

NOW	Change display
DAY	DAY→NIGHT→DAY→.....
NIGHT	NIGHT→DAY→NIGHT→.....



- Press "PREV" or not operate for 10sec. when displayed screen of adjustment luminance, back to default screen (same mode).
- Can adjust luminance by "DISP" switch. Light can be adjusted by pressing "+" (bright) or "-" (dark).
- Adjustment range is a 12 stage (MIN to MAX) and default set value is 10 (DAY) and 4 (NIGHT).

WARNING INDICATIONS

When BCM receives warning signal from some control units or sensors, then combination meter warning lamp is illuminated.

Then BCM sends warning signal to display unit warning indications on the screen.

Warning indicators	Warning lamps in instrument panel	Warning detection and cancel conditions		Cases of malfunction
DOOR OPEN	Door	Detection condition	Vehicle is running [approx. 3.5 km/h (2 MPH) or faster] and door ajar of any of the doors is detected.	Door is open
		Cancel condition	Vehicle is stopped and all the doors close.	

AV COMMUNICATION LINE

Display unit is controlled by the following unit with AV communication line.

- A/C and AV switch

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AV

INTEGRATED DISPLAY SYSTEM

CAN Communication System Description

AKS007Z5

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

INTEGRATED DISPLAY SYSTEM

CAN Communication Unit

AKS007YZ

Body type	Wagon					
	2WD			AWD		
Axle	VQ35DE			VQ35DE/VK45DE		
Engine	VQ35DE			VQ35DE/VK45DE		
Transmission	A/T					
Brake control	VDC					
Navigation system			×			×
Low tire pressure warning system			×			×
ICC system			×			×
Intelligent Key system			×			×
Automatic drive positioner		×	×		×	×
CAN communication unit						
ECM	×	×	×	×	×	×
TCM	×	×	×	×	×	×
Display unit	×	×		×	×	
Display control unit			×			×
Low tire pressure warning control unit			×			×
AWD control unit				×	×	×
ICC unit			×			×
Intelligent Key unit			×			×
Data link connector	×	×	×	×	×	×
BCM	×	×	×	×	×	×
Steering angle sensor	×	×	×	×	×	×
Unified meter and A/C amp.	×	×	×	×	×	×
ICC sensor			×			×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×
Driver seat control unit		×	×		×	×
IPDM E/R	×	×	×	×	×	×
CAN communication type	<u>AV-60. "TYPE 1/TYPE2"</u>		<u>AV-63. "TYPE 3"</u>	<u>AV-66. "TYPE 4/TYPE5"</u>		<u>AV-69. "TYPE 6"</u>

×: Applicable

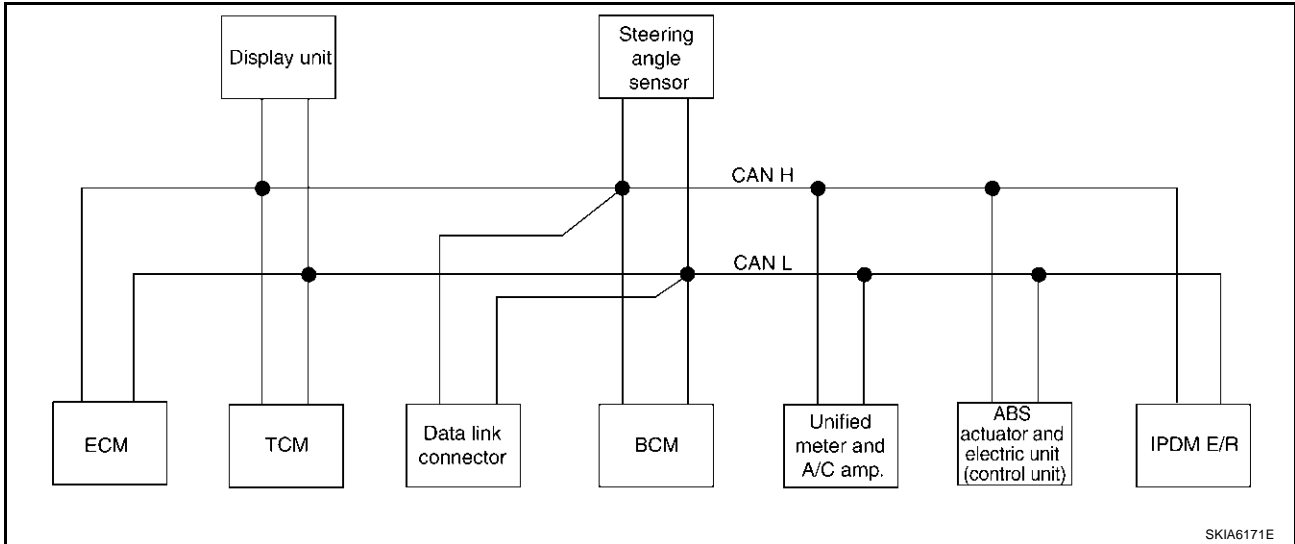
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INTEGRATED DISPLAY SYSTEM

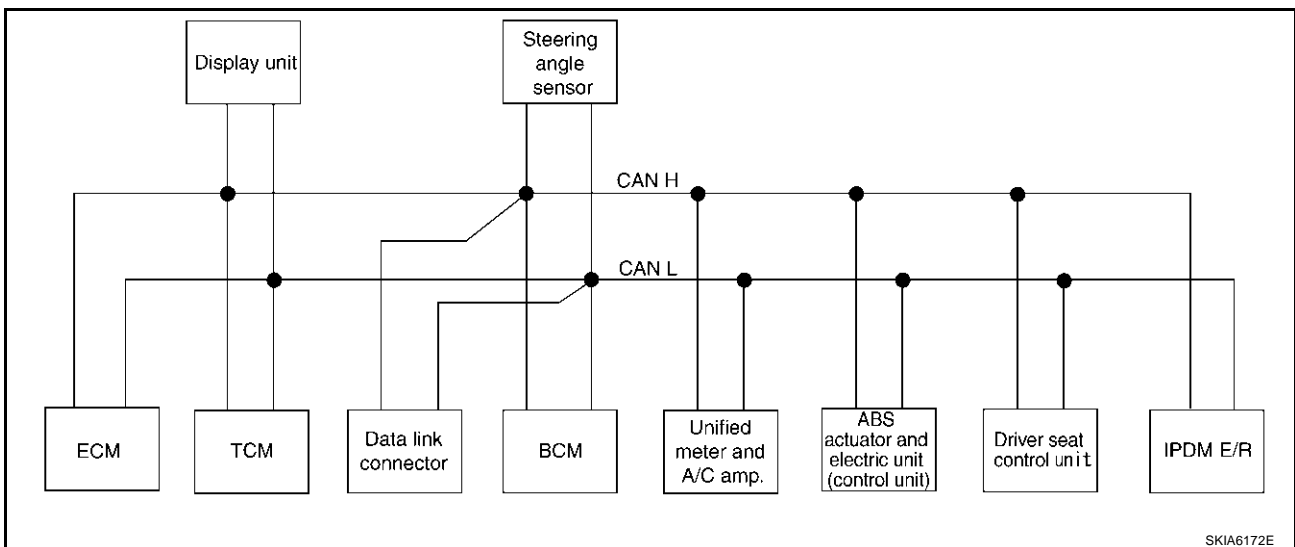
TYPE 1/TYPE2

System Diagram

- Type1



- Type2



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Display unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Engine speed signal	T	R	R			R	R		
Engine status signal	T			R					
Engine coolant temperature signal	T	R				R			
A/T self-diagnosis signal	R	T							
Accelerator pedal position signal	T	R					R		
Closed throttle position signal	T	R							
Wide open throttle position signal	T	R							

INTEGRATED DISPLAY SYSTEM

Signals	ECM	TCM	Display unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Battery voltage signal	T	R							
Key switch signal				T				R	
Ignition switch signal				T				R	R
P range signal		T					R	R	
Stop lamp switch signal		R				T			
ABS operation signal	R						T		
TCS operation signal	R						T		
VDC operation signal	R						T		
Fuel consumption monitor signal	T		R			R			
Input shaft revolution signal	R	T							
Output shaft revolution signal	R	T							
A/C switch signal	R			T					
A/C compressor request signal	T								R
A/C relay status signal	R								T
A/C compressor feedback signal	T					R			
Blower fan motor switch signal	R			T					
A/C control signal			T			R			
			R			T			
Cooling fan speed request signal	T								R
Cooling fan speed signal	R								T
Position light request signal			R	T		R			R
Low beam request signal				T					R
Low beam status signal	R								T
High beam request signal				T		R			R
High beam status signal	R								T
Front fog light request signal				T					R
Day time running light request signal				T		R			
Turn LED burnout status signal				R		T			
Vehicle speed signal						R	T		
	R	R	R	R		T		R	
Sleep wake up signal				T		R		R	R
Door switch signal			R	T		R		R	R
Turn indicator signal				T		R			
Key fob ID signal				T				R	
Key fob door unlock signal				T				R	
Oil pressure switch signal				R					T
				T		R			
Buzzer output signal				T		R			
Fuel level sensor signal	R					T			
Fuel level low warning signal			R			T			

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INTEGRATED DISPLAY SYSTEM

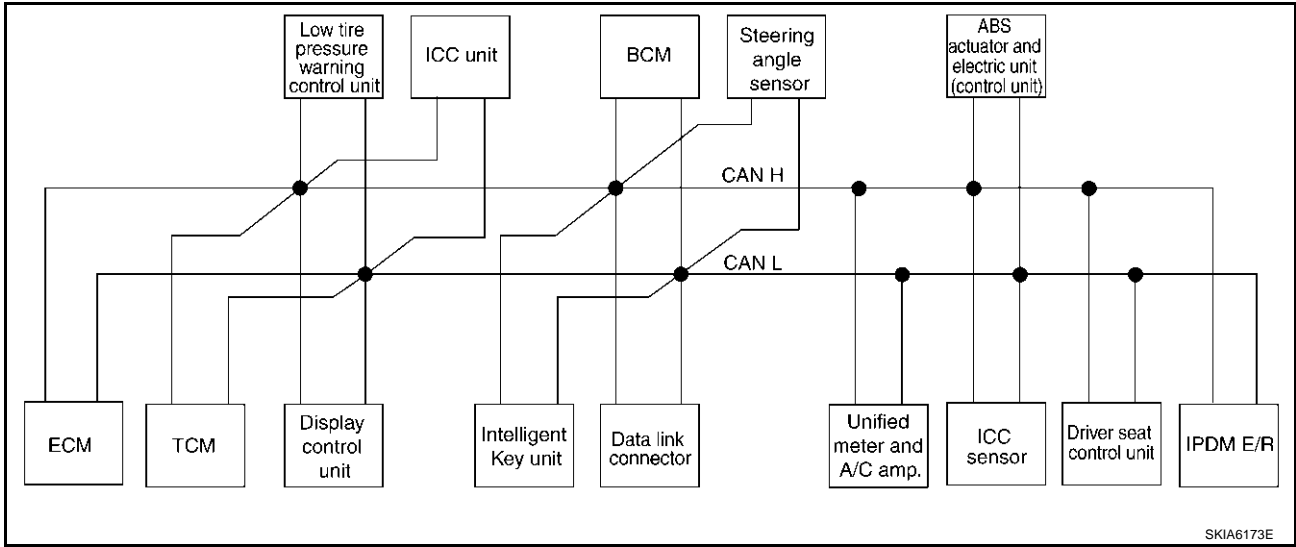
Signals	ECM	TCM	Display unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
ASCD operation signal	T	R							
ASCD OD cancel request	T	R							
Front wiper request signal				T					R
Front wiper stop position signal				R					T
Rear window defogger switch signal				T					R
Rear window defogger control signal	R		R	R					T
Hood switch signal				R					T
Theft warning horn request signal				T					R
Horn chirp signal				T					R
Steering angle sensor signal					T		R		
ABS warning lamp signal						R	T		
VDC OFF indicator lamp signal						R	T		
SLIP indicator lamp signal						R	T		
Brake warning lamp signal						R	T		
System setting signal			T	R				R	
A/T CHECK indicator lamp signal		T				R			
A/T position indicator lamp signal		T				R			
A/T shift schedule change demand signal		R					T		
Manual mode signal		R				T			
Not manual mode signal		R				T			
Manual mode shift up signal		R				T			
Manual mode shift down signal		R				T			
Manual mode indicator signal		T				R			
Distance to empty signal			R			T			
Hand brake switch				R		T			

INTEGRATED DISPLAY SYSTEM

TYPE 3

System Diagram

- Type3



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Engine speed signal	T	R	R		R				R		R		
Engine status signal	T						R						
Engine coolant temperature signal	T	R			R				R				
A/T self-diagnosis signal	R	T											
Accelerator pedal position signal	T	R			R						R		
Closed throttle position signal	T	R			R								
Wide open throttle position signal	T	R											
Battery voltage signal	T	R											
Key switch signal							T					R	
Ignition switch signal							T					R	R
P range signal		T			R						R	R	
Stop lamp switch signal		R							T				
ABS operation signal	R				R						T		
TCS operation signal	R				R						T		
VDC operation signal	R				R						T		
Fuel consumption monitor signal	T		R						R				

INTEGRATED DISPLAY SYSTEM

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Input shaft revolution signal	R	T			R								
Output shaft revolution signal	R	T			R								
A/C switch signal	R						T						
A/C compressor request signal	T												R
A/C relay status signal	R												T
A/C compressor feedback signal	T								R				
Blower fan motor switch signal	R						T						
A/C control signal			T						R				
			R						T				
Cooling fan speed signal	R												T
Position light request signal	R						T		R				R
Low beam request signal							T						R
Low beam status signal	R												T
High beam request signal							T		R				R
High beam status signal	R												T
Front fog light request signal							T						R
Day time running light request signal							T		R				
Turn LED burnout status signal							R		T				
Vehicle speed signal					R				R		T		
	R	R	R	R		R	R		T	R		R	
Sleep wake up signal							T		R			R	R
						T	R						
Door switch signal			R			R	T		R			R	R
Turn indicator signal							T		R				
Key fob ID signal							T					R	
Key fob door unlock signal							T					R	
Oil pressure switch signal							R						T
							T		R				
Buzzer output signal							T		R				
						T			R				
					T				R				

INTEGRATED DISPLAY SYSTEM

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Fuel level sensor signal	R								T				
Fuel level low warning signal			R						T				
ICC operation signal	R				T								
Front wiper request signal					R		T						R
Front wiper stop position signal							R						T
Rear window defogger switch signal							T						R
Rear window defogger control signal	R		R				R						T
Hood switch signal							R						T
Theft warning horn request signal							T						R
Horn chirp signal							T						R
Steering angle sensor signal								T			R		
Tire pressure signal				T					R				
Tire pressure data signal			R	T									
ABS warning lamp signal					R				R		T		
VDC OFF indicator lamp signal					R				R		T		
SLIP indicator lamp signal									R		T		
Brake warning lamp signal									R		T		
System setting signal			T			R						R	
Distance to empty signal			R						T				
Hand brake switch signal							R		T				
Door lock/unlock request signal						T	R						
Door lock/unlock status signal						R	T						
Starter permission signal						T	R						
Back door open request signal						T	R						
Power window open request signal						T	R						
Alarm request signal						T	R						
Key warning signal						T			R				
ICC sensor signal					R					T			
ICC warning lamp signal					T				R				

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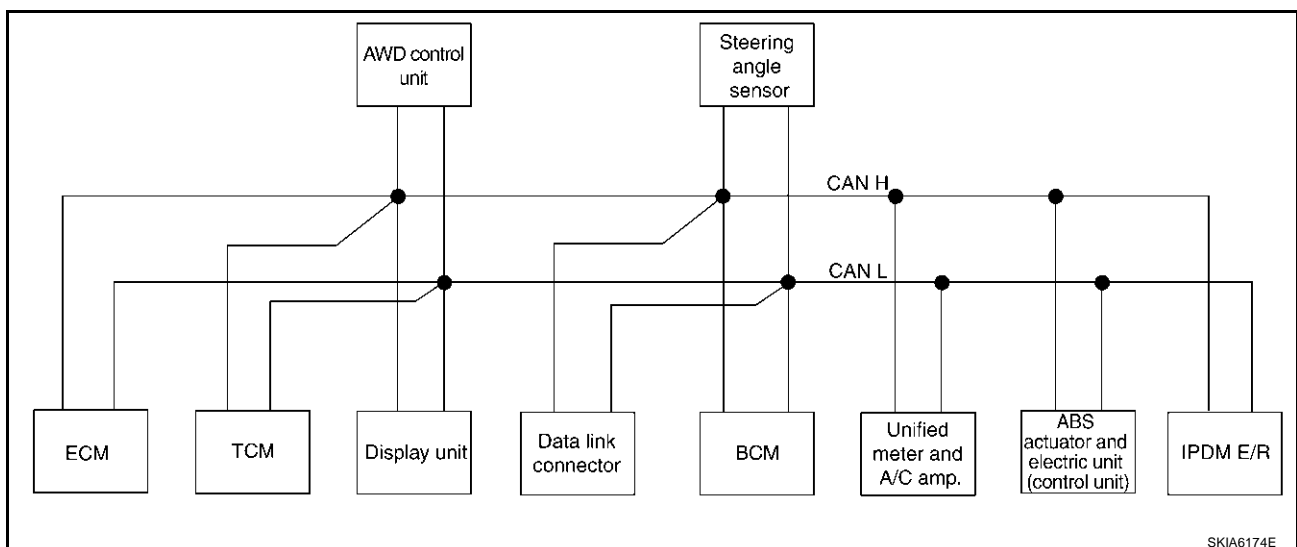
INTEGRATED DISPLAY SYSTEM

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
ICC system display signal					T				R				
Current gear position signal		T			R						R		
Steering switch signal	T				R								
ASCD operation signal	T	R											
ASCD OD cancel request	T	R											
ICC OD cancel request	R	R			T								
A/T CHECK indicator lamp signal		T							R				
A/T position indicator lamp signal		T							R				
A/T shift schedule change demand signal		R									T		
Manual mode signal		R							T				
Not manual mode signal		R							T				
Manual mode shift up signal		R							T				
Manual mode shift down signal		R							T				
Manual mode indicator signal		T			R				R				
Ignition knob switch signal						T	R						

TYPE 4/TYPE5

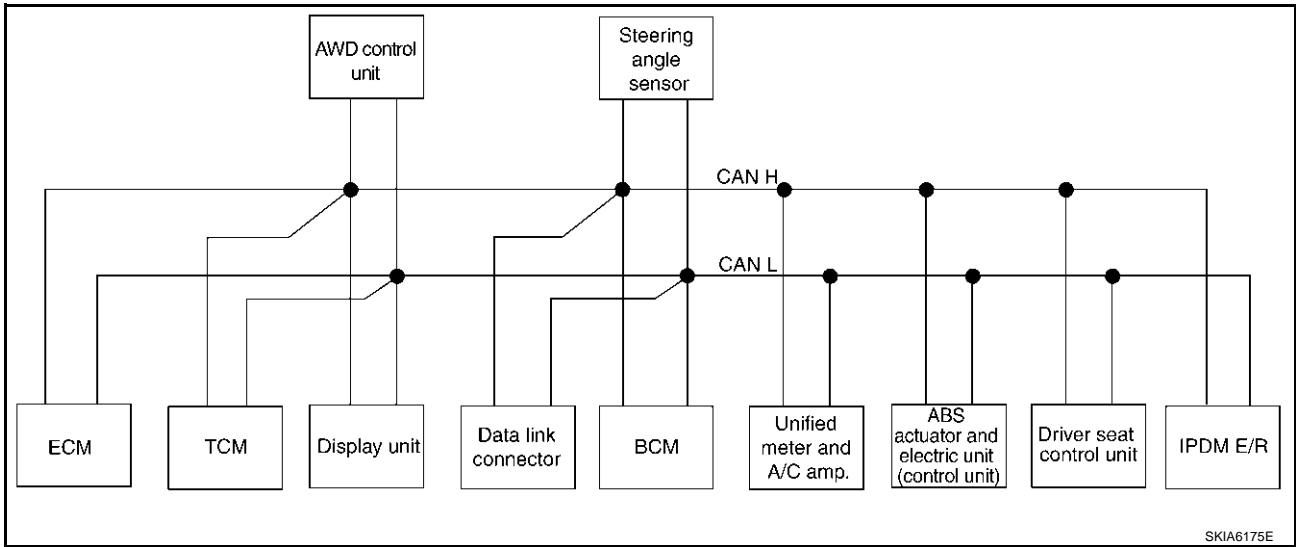
System Diagram

- Type4



INTEGRATED DISPLAY SYSTEM

● Type5



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Display unit	AWD control unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
A/T self-diagnosis signal	R	T								
ABS operation signal	R			R				T		
TCS operation signal	R							T		
VDC operation signal	R			R				T		
Stop lamp switch signal		R		R			T			
Battery voltage signal	T	R								
Key switch signal					T				R	
Ignition switch signal					T				R	R
P range signal		T						R	R	
Closed throttle position signal	T	R								
Wide open throttle position signal	T	R								
Engine speed signal	T	R	R	R			R	R		
Engine status signal	T				R					
Engine coolant temperature signal	T	R					R			
Accelerator pedal position signal	T	R		R				R		
Fuel consumption monitor signal	T		R				R			
Input shaft revolution signal	R	T								
Output shaft revolution signal	R	T								
A/C switch signal	R				T					
A/C compressor request signal	T									R
A/C relay status signal	R									T
A/C compressor feedback signal	T						R			

INTEGRATED DISPLAY SYSTEM

Signals	ECM	TCM	Display unit	AWD control unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Blower fan motor switch signal	R				T					
A/C control signal			T				R			
			R				T			
Cooling fan speed signal	R									T
Position light request signal			R		T		R			R
Low beam request signal					T					R
Low beam status signal	R									T
High beam request signal					T		R			R
High beam status signal	R									T
Front fog light request signal					T					R
Day time running light request signal					T		R			
Turn LED burnout status signal					R		T			
Vehicle speed signal							R	T		
	R	R	R		R		T		R	
Sleep wake up signal					T		R		R	R
Door switch signal			R		T		R		R	R
Turn indicator signal					T		R			
Key fob ID signal					T				R	
Key fob door unlock signal					T				R	
Oil pressure switch signal					R					T
					T		R			
Buzzer output signal					T		R			
Fuel level sensor signal	R						T			
Fuel level low warning signal			R				T			
Front wiper request signal					T					R
Front wiper stop position signal					R					T
Rear window defogger switch signal					T					R
Rear window defogger control signal	R		R		R					T
Hood switch signal					R					T
Theft warning horn request signal					T					R
Horn chirp signal					T					R
Steering angle sensor signal						T		R		
ABS warning lamp signal							R	T		
VDC OFF indicator lamp signal							R	T		
SLIP indicator lamp signal							R	T		
Brake warning lamp signal							R	T		
System setting signal			T		R				R	
AWD warning lamp signal				T			R			

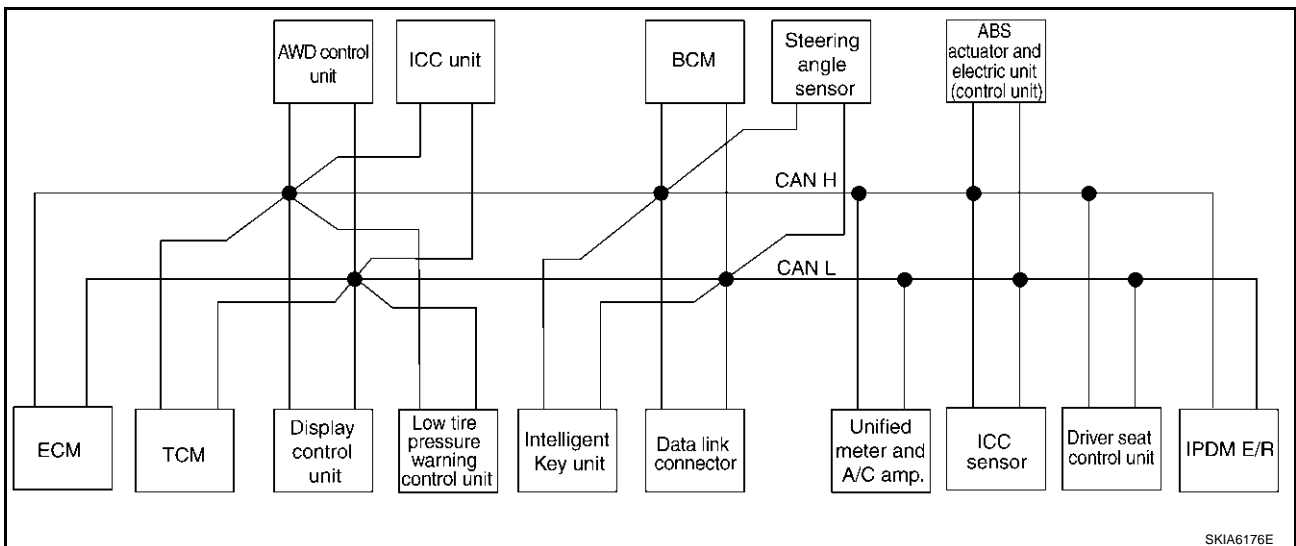
INTEGRATED DISPLAY SYSTEM

Signals	ECM	TCM	Display unit	AWD control unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
AWD lock indicator lamp signal				T			R			
Distance to empty signal			R				T			
Hand brake switch signal				R	R		T			
ASCD operation signal	T	R								
ASCD OD cancel request	T	R								
A/T CHECK indicator lamp signal		T					R			
A/T position indicator lamp signal		T					R			
A/T shift schedule change demand signal		R						T		
Manual mode signal		R					T			
Not manual mode signal		R					T			
Manual mode shift up signal		R					T			
Manual mode shift down signal		R					T			
Manual mode indicator signal		T					R			

TYPE 6

System Diagram

- Type6



AV

INTEGRATED DISPLAY SYSTEM

Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	AWD control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPD M E/R
A/T self-diagnosis signal	R	T												
ABS operation signal	R				R	R						T		
TCS operation signal	R					R						T		
VDC operation signal	R				R	R					R	T		
Stop lamp switch signal		R			R					T				
Battery voltage signal	T	R												
Key switch signal								T					R	
Ignition switch signal								T					R	R
P range signal		T				R						R	R	
Closed throttle position signal	T	R				R								
Wide open throttle position signal	T	R												
Engine speed signal	T	R	R		R	R				R		R		
Engine status signal	T							R						
Engine coolant temperature signal	T	R				R				R				
Accelerator pedal position signal	T	R			R	R						R		
Fuel consumption monitor signal	T		R							R				
A/T self-diagnosis signal	R	T												
Input shaft revolution signal	R	T				R								
Output shaft revolution signal	R	T				R								
A/C switch signal	R							T						
A/C compressor request signal	T													R
A/C relay status signal	R													T
A/C compressor feedback signal	T									R				
Blower fan motor switch signal	R							T						
A/C control signal			T							R				
			R							T				
Cooling fan speed signal	R													T
Position light request signal			R					T		R				R
Low beam request signal								T						R
Low beam status signal	R													T
High beam request signal								T		R				R

INTEGRATED DISPLAY SYSTEM

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	AWD control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPD M E/ R
High beam status signal	R													T
Front fog light request signal								T						R
Day time running light request signal								T		R				
Turn LED burnout status signal								R		T				
Vehicle speed signal						R				R		T		
	R	R	R	R			R	R		T	R		R	
Sleep wake up signal								T		R			R	R
							T	R						
Door switch signal			R				R	T		R			R	R
Key fob ID signal								T					R	
Key fob door unlock signal								T					R	
Oil pressure switch signal								R						T
								T		R				
Buzzer output signal								T		R				
						T				R				
Fuel level sensor signal	R									T				
Fuel level low warning signal			R							T				
ICC operation signal	R					T								
Front wiper request signal						R		T						R
Front wiper stop position signal								R						T
Rear window defogger switch signal								T						R
Rear window defogger control signal	R		R					R						T
Hood switch signal								R						T
Theft warning horn request signal								T						R
Horn chirp signal								T						R
Steering angle sensor signal									T			R		
Tire pressure signal				T						R				
Tire pressure data signal			R	T										
ABS warning lamp signal						R				R		T		
VDC OFF indicator lamp signal						R				R		T		
SLIP indicator lamp signal										R		T		

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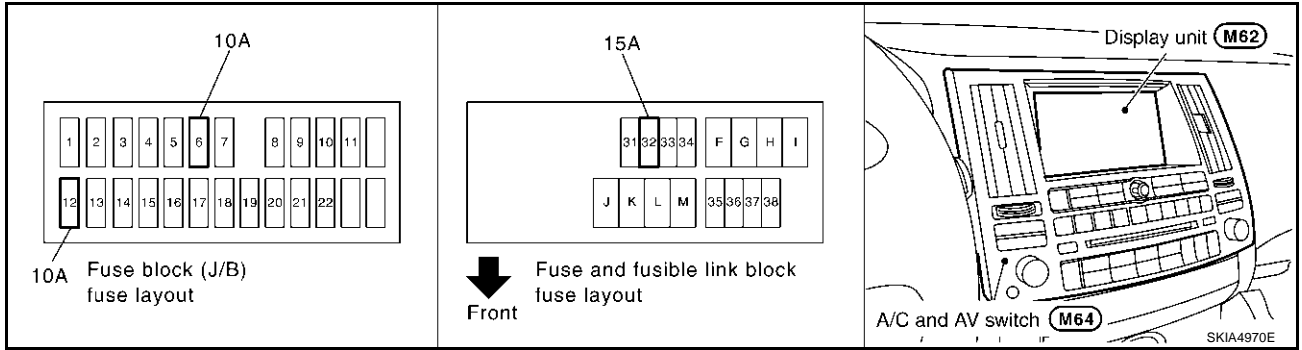
INTEGRATED DISPLAY SYSTEM

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	AWD control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPD M E/R
Brake warning lamp signal										R		T		
System setting signal			T				R						R	
AWD warning lamp signal					T					R				
AWD lock indicator lamp signal					T					R				
Distance to empty signal			R							T				
Hand brake switch signal					R			R		T				
Door lock/unlock request signal							T	R						
Door lock/unlock status signal							R	T						
Starter permission signal							T	R						
Back door open request signal							T	R						
Power window open request signal							T	R						
Alarm request signal							T	R						
Key warning signal							T			R				
ICC sensor signal						R					T			
ICC warning lamp signal						T				R				
ICC system display signal						T				R				
Current gear position signal		T				R						R		
Steering switch signal	T					R								
ASCD operation signal	T	R												
ASCD OD cancel request	T	R												
ICC OD cancel request	R	R				T								
A/T CHECK indicator lamp signal		T								R				
A/T position indicator lamp signal		T								R				
A/T shift schedule change demand signal		R										T		
Manual mode signal		R								T				
Not manual mode signal		R								T				
Manual mode shift up signal		R								T				
Manual mode shift down signal		R								T				
Manual mode indicator signal		T								R				
Ignition knob switch signal							T	R						

INTEGRATED DISPLAY SYSTEM

Component Parts and Harness Connector Location

AKS005U2

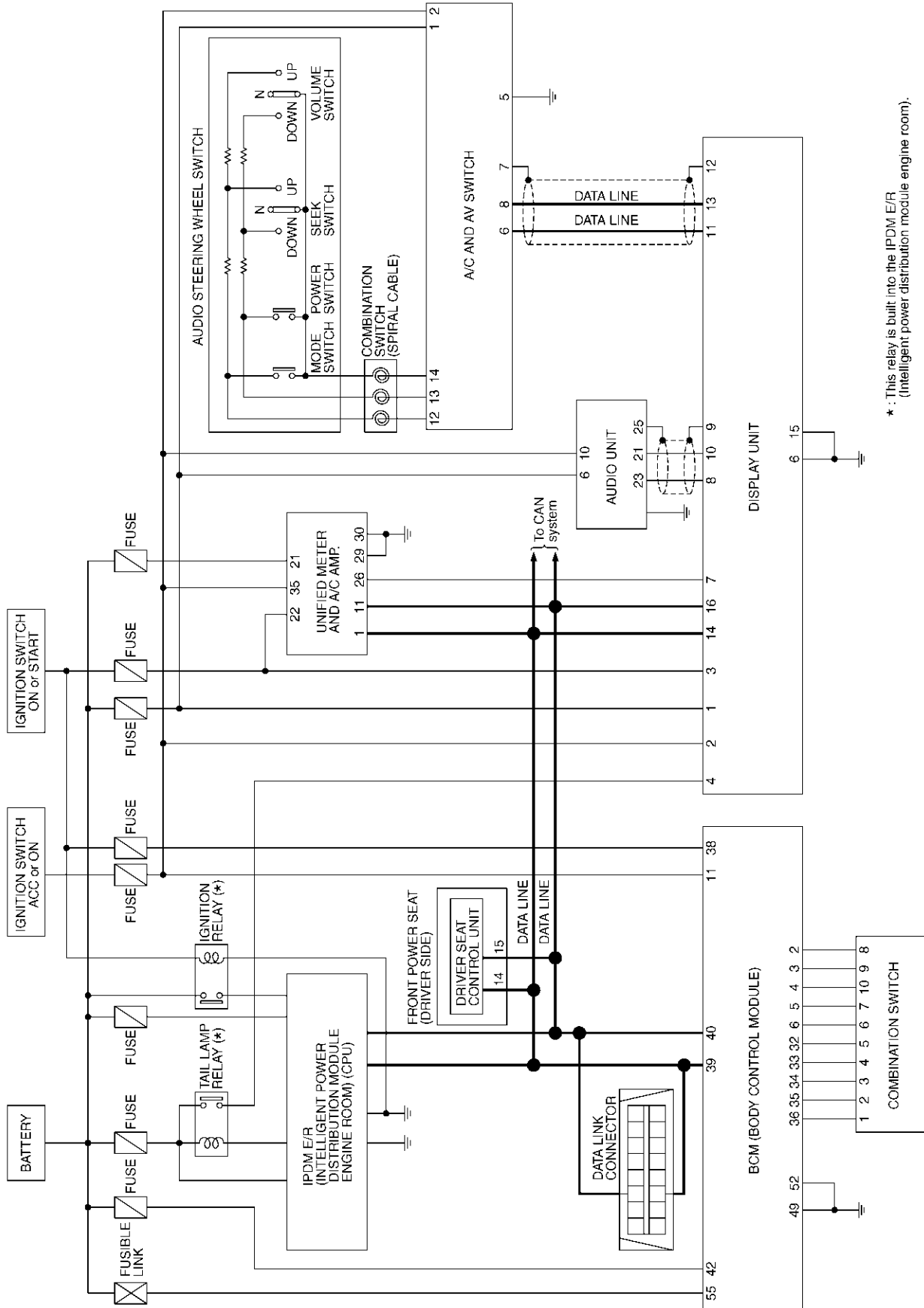


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INTEGRATED DISPLAY SYSTEM

Schematic

AKS005U3



* : This relay is built into the IPDM E/R (Intelligent power distribution module engine room).

TKWH0342E

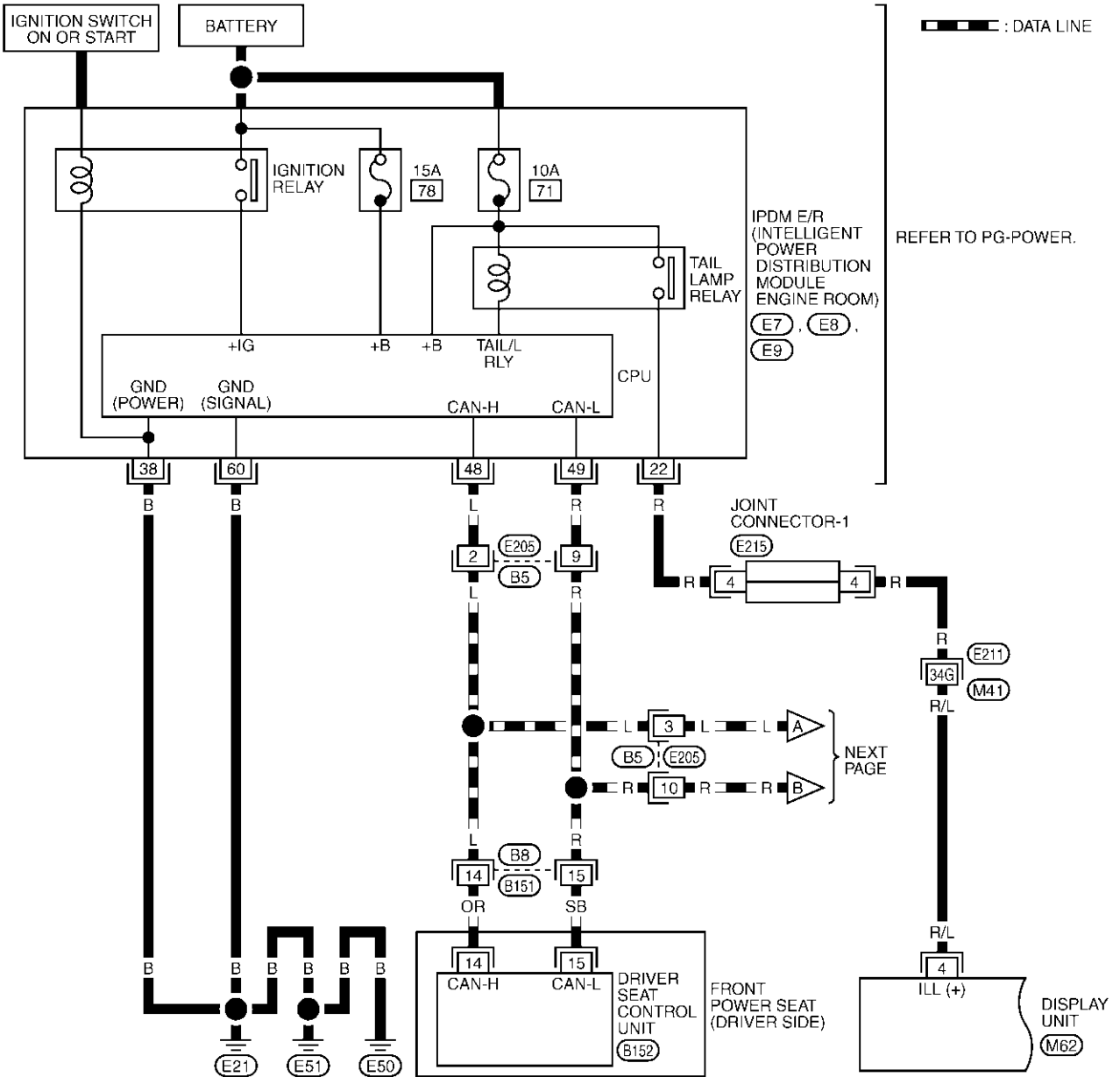
INTEGRATED DISPLAY SYSTEM

Wiring Diagram — INF/D —

AKS005U4

AV-INF/D-01

▬ : DATA LINE



REFER TO PG-POWER.

IPDM E/R
(INTELLIGENT
POWER
DISTRIBUTION
MODULE
ENGINE ROOM)
E7, E8,
E9

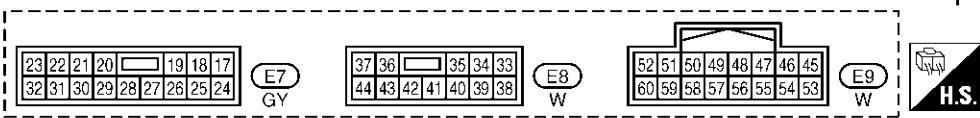
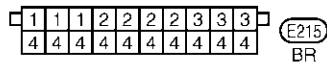
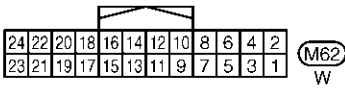
JOINT
CONNECTOR-1
E215

FRONT
SEAT
CONTROL
UNIT
B152

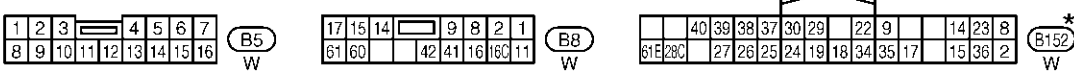
DISPLAY
UNIT
M62

REFER TO THE FOLLOWING.

E211 -SUPER MULTIPLE
JUNCTION (SMJ)



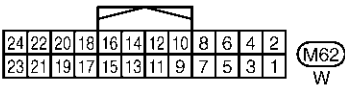
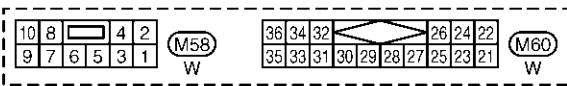
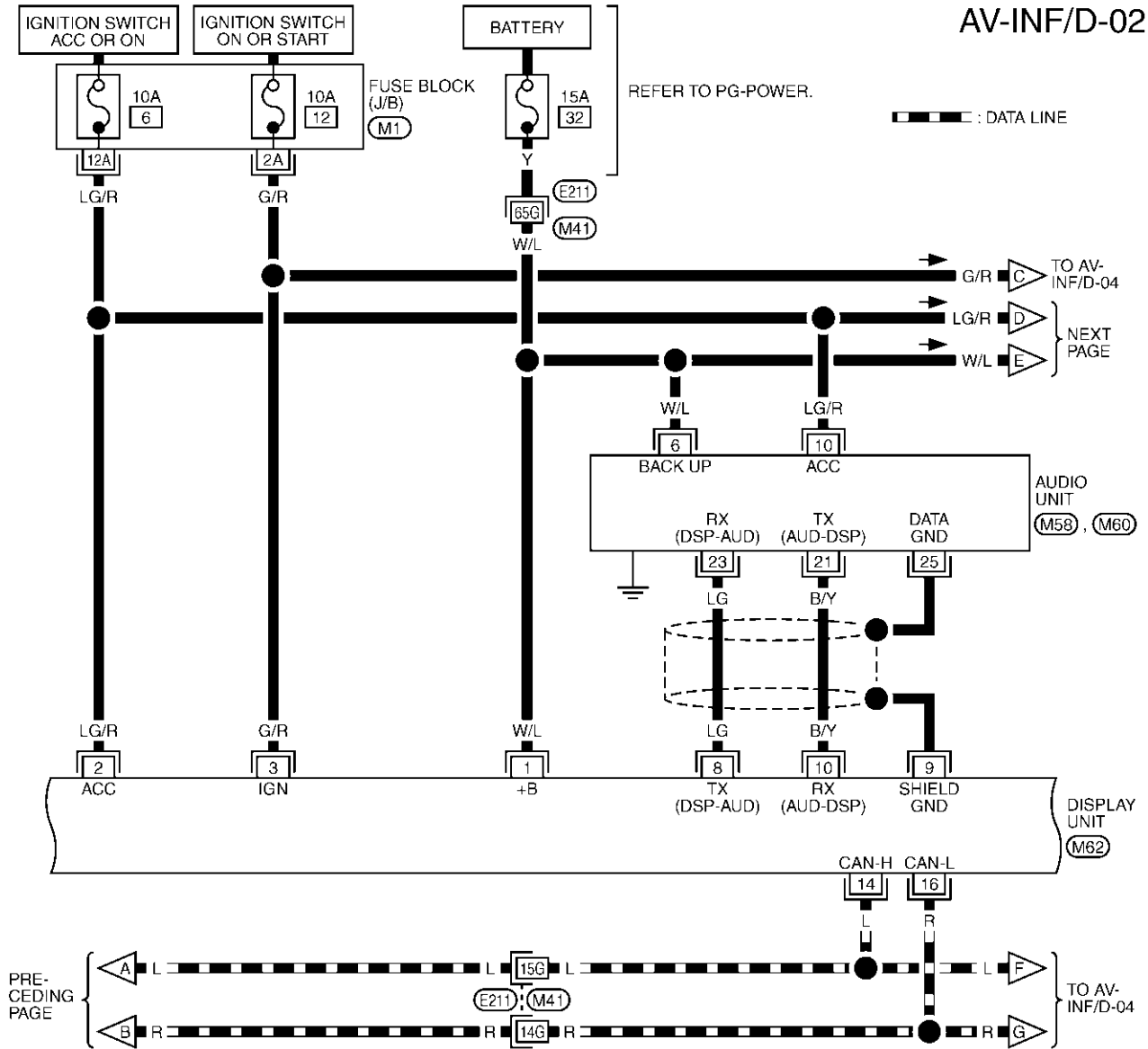
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.



TKWM0580E

INTEGRATED DISPLAY SYSTEM

AV-INF/D-02

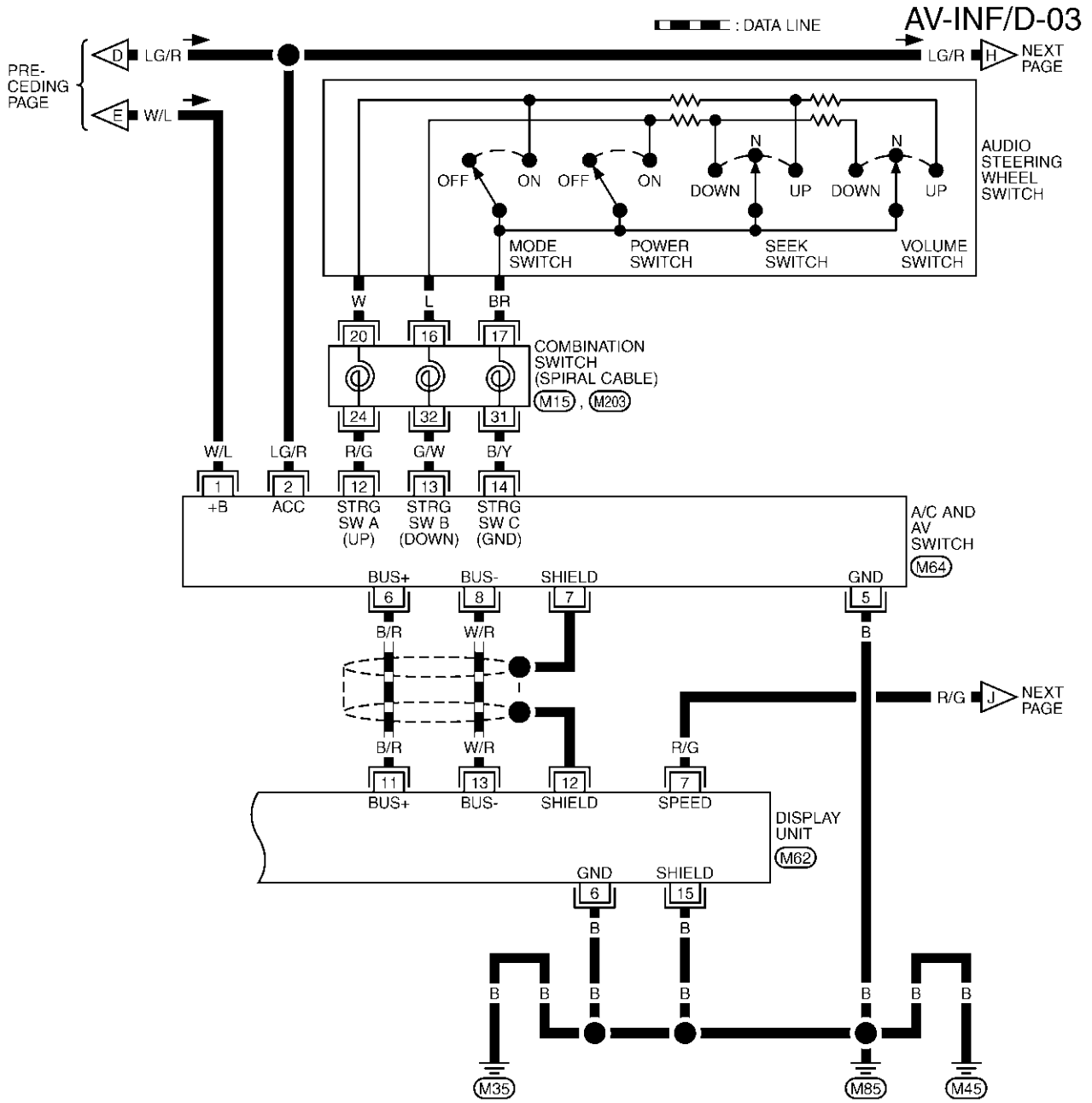


REFER TO THE FOLLOWING.

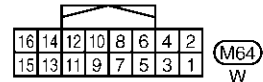
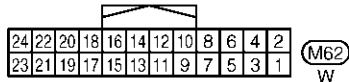
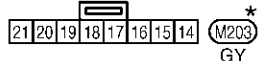
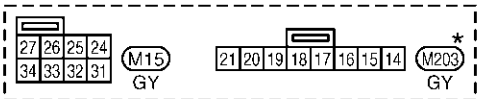
- (E21) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1) -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM0581E

INTEGRATED DISPLAY SYSTEM



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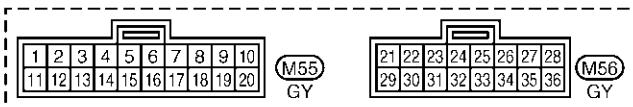
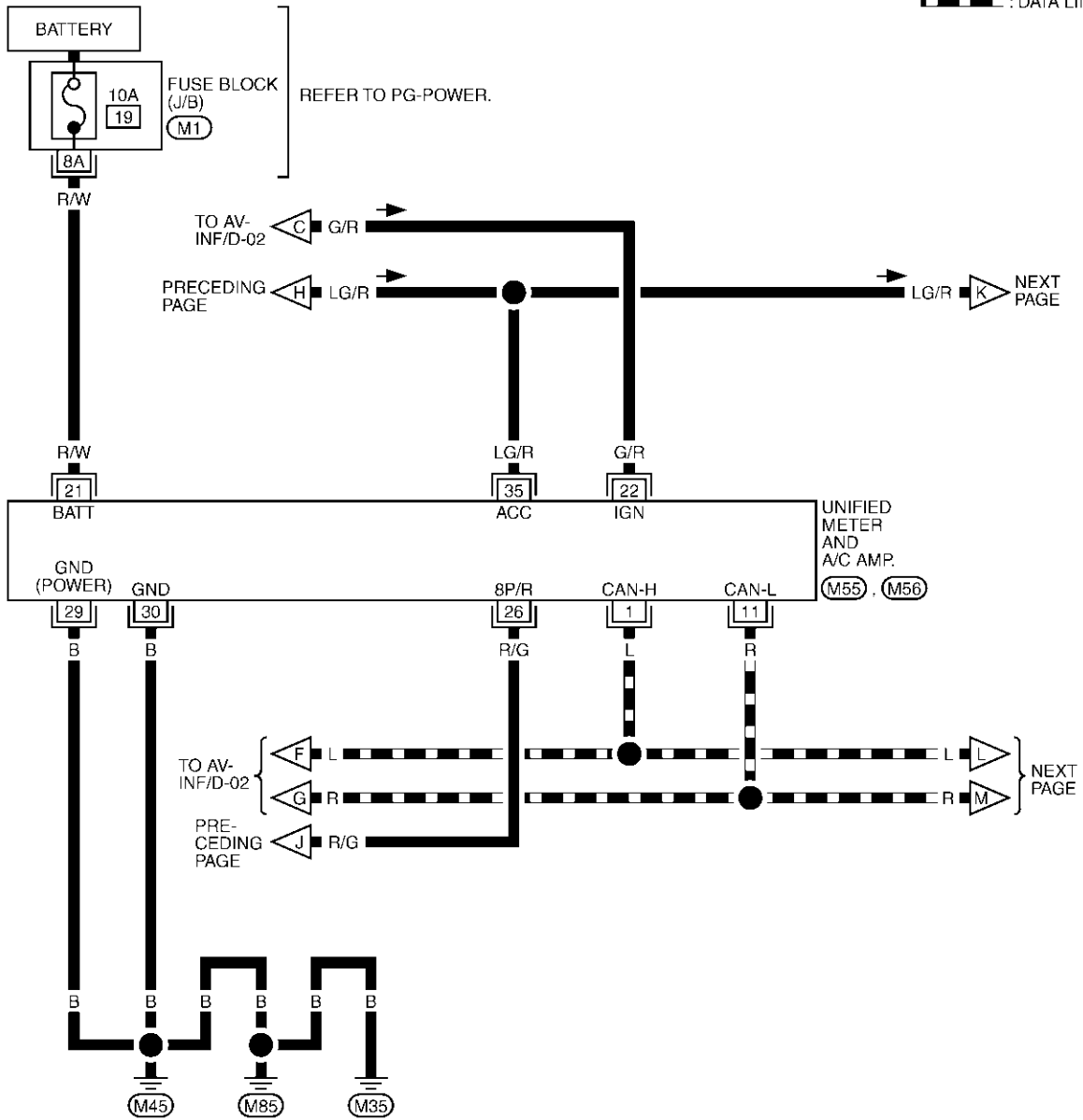
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWM0582E

INTEGRATED DISPLAY SYSTEM

AV-INF/D-04

▬ : DATA LINE

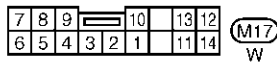
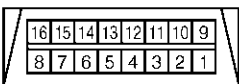
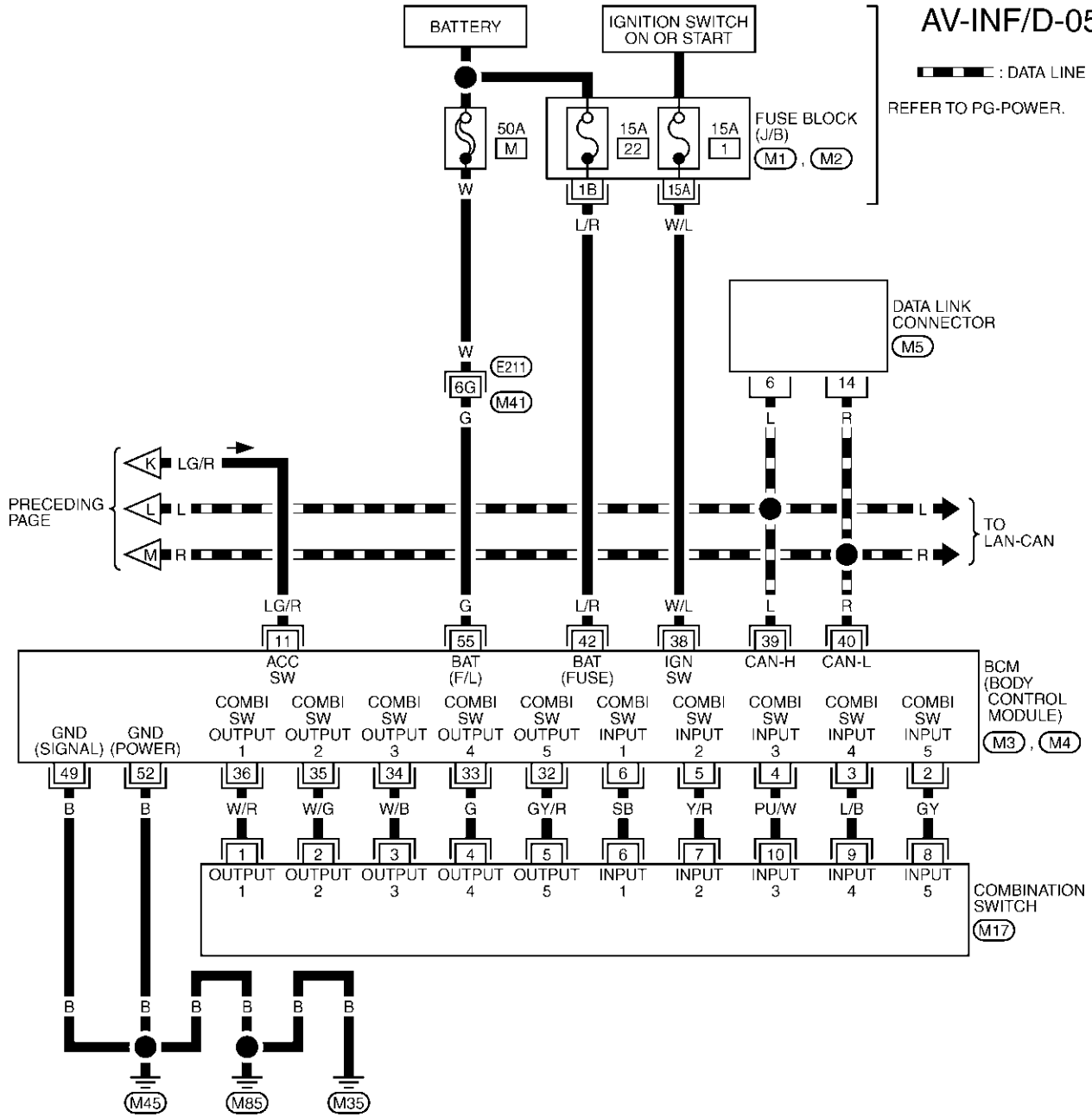


REFER TO THE FOLLOWING.
 (M1) - FUSE BLOCK-JUNCTION BOX (J/B)

TKWM0583E

INTEGRATED DISPLAY SYSTEM

AV-INF/D-05



REFER TO THE FOLLOWING.

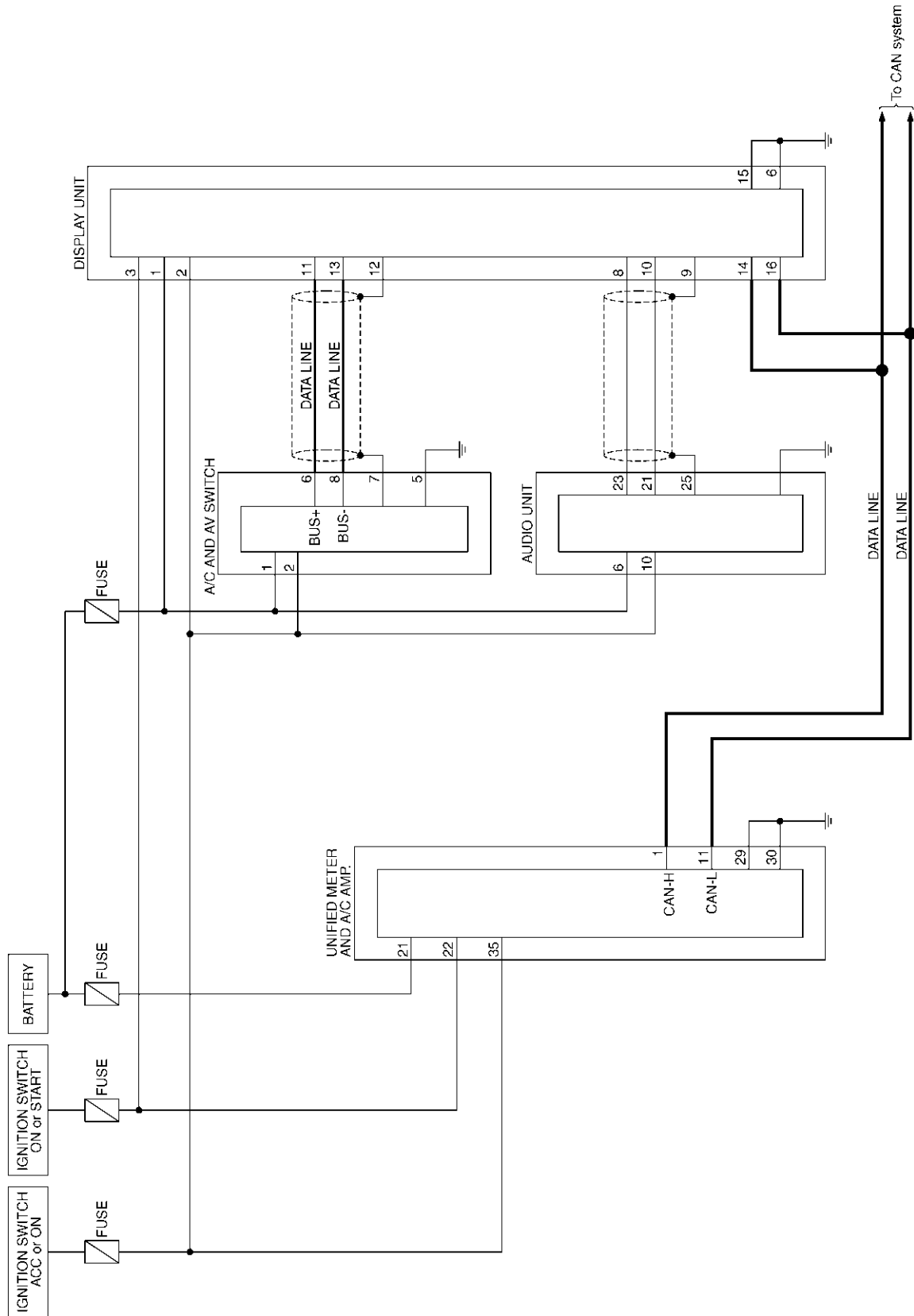
- (E21) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1), (M2) -FUSE BLOCK-JUNCTION BOX (J/B)
- (M3), (M4) -ELECTRICAL UNITS

TKWM0811E

INTEGRATED DISPLAY SYSTEM

Schematic

AKS0069E



TKWM0591E

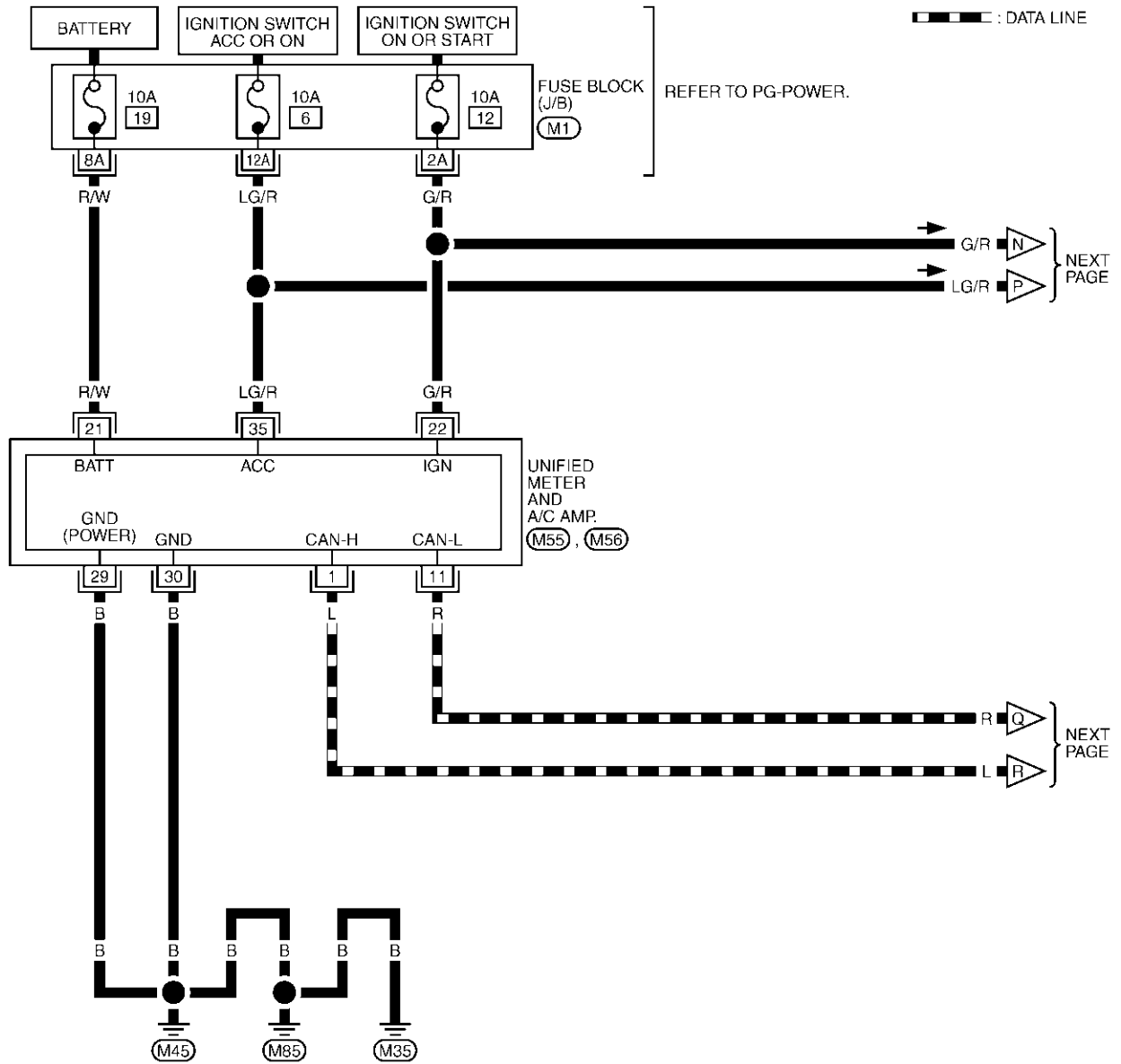
INTEGRATED DISPLAY SYSTEM

Wiring Diagram — COMM —

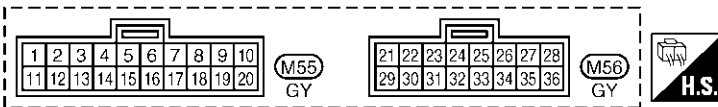
AKS005U5

AV-COMM-06

▬ : DATA LINE



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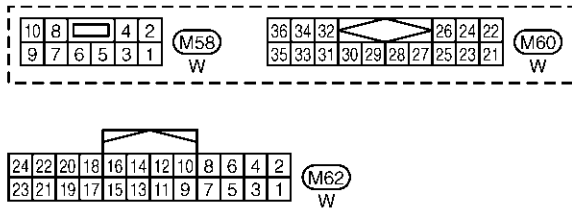
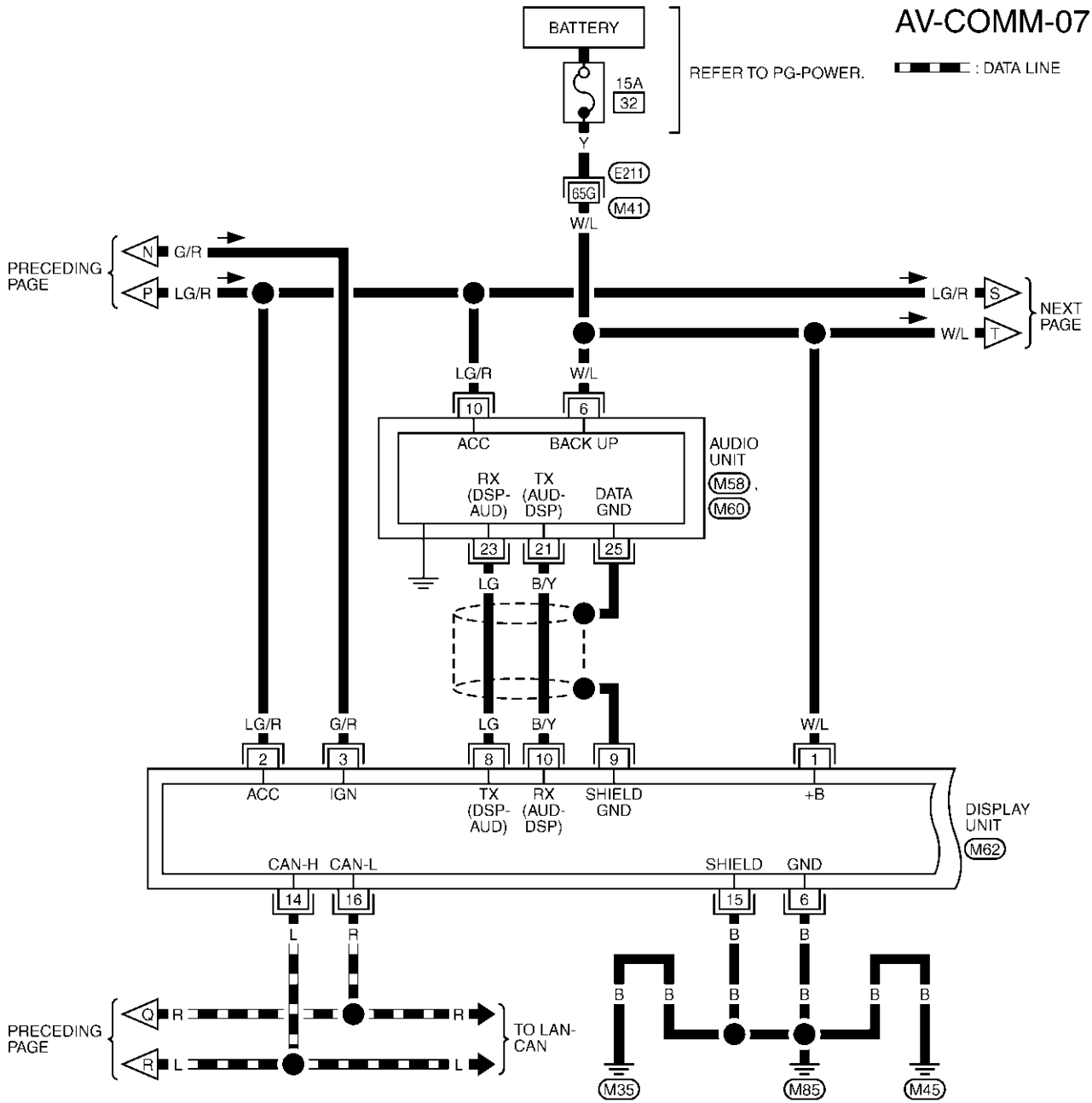
REFER TO THE FOLLOWING.

(M1) - FUSE BLOCK-JUNCTION BOX (J/B)

TKWM0592E

INTEGRATED DISPLAY SYSTEM

AV-COMM-07



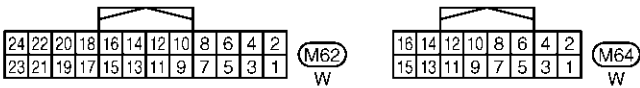
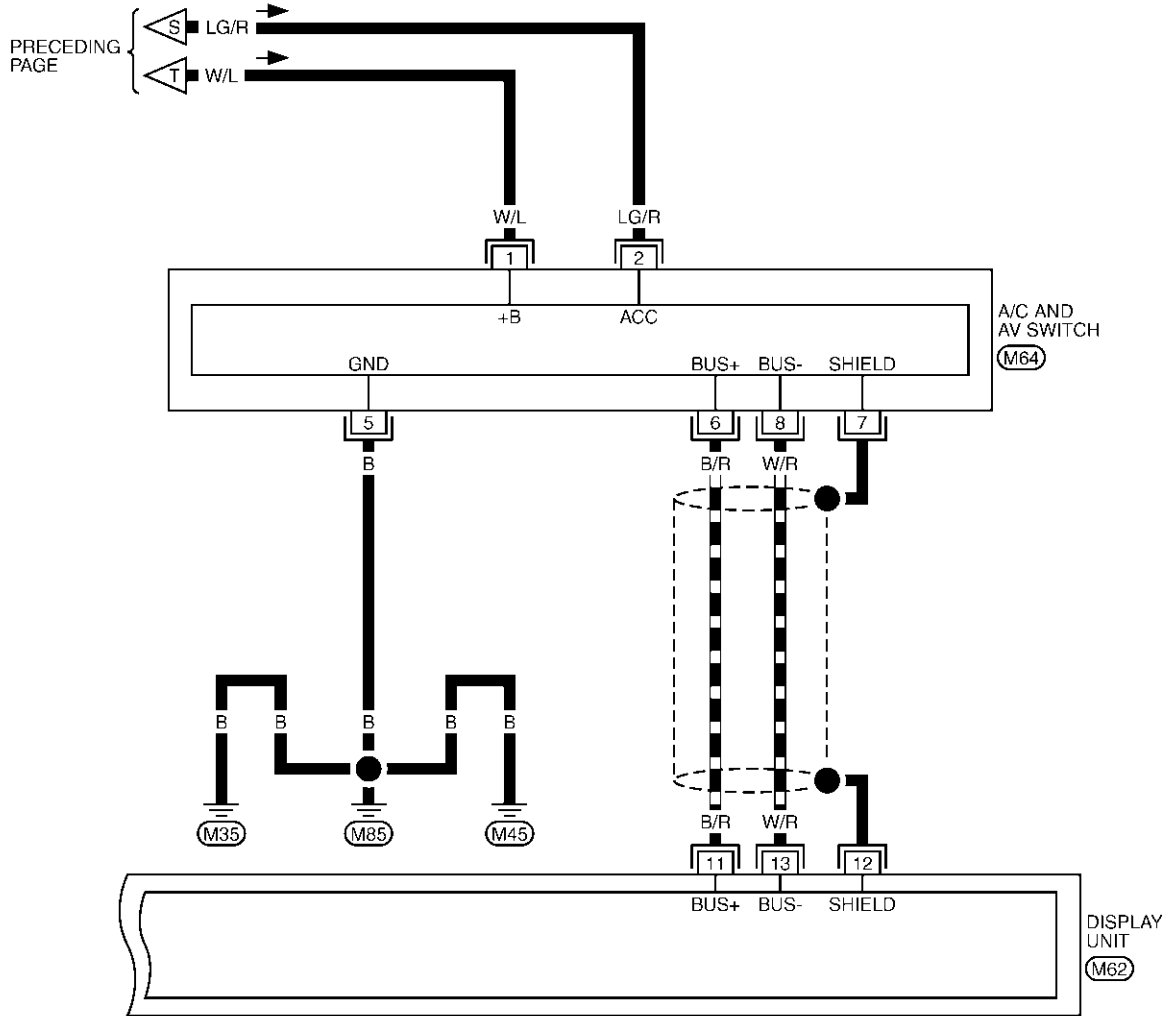
REFER TO THE FOLLOWING.
 (E211) -SUPER MULTIPLE JUNCTION (SMJ)

TKWM0593E

INTEGRATED DISPLAY SYSTEM

AV-COMM-08

▬ : DATA LINE



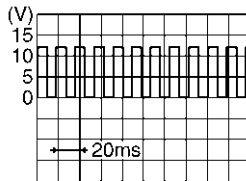
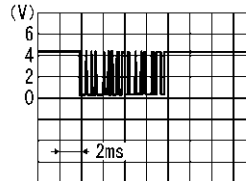
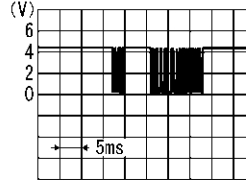
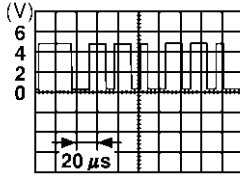
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TKWM0594E

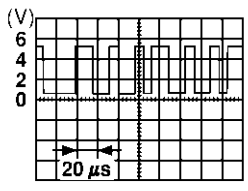
INTEGRATED DISPLAY SYSTEM

Terminals and Reference Value for Display Unit

AKS005U6

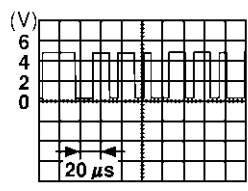
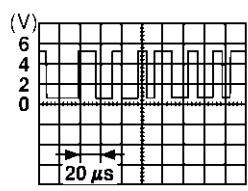
Terminal No. (Wire color)		Item	Signal input/ output	Condition		Voltage	Example of symptom
+	-			Ignition switch	Operation		
1 (W/L)	Ground	Battery power supply	Input	OFF	-	Battery voltage	System does not work properly.
2 (LG/R)	Ground	ACC power supply	Input	ACC	-	Battery voltage	System does not work properly.
3 (G/R)	Ground	Ignition signal	Input	ON	-	Battery voltage	A/C operation is not possible. Vehicle information setting is not possible.
4 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch is ON (1st position).	Approx. 12V	Audio unit illumination does not come on when lighting switch is ON (1st position).
					Lighting switch is OFF.	Approx. 0V	
6 (B)	Ground	Ground	-	ON	-	Approx. 0V	-
7 (R/G)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 <p style="text-align: right; font-size: small;">PKIA1935E</p>	Drive computer item is not displayed correctly.
8 (LG)	Ground	Audio TX	Output	ON	Operate audio volume.	 <p style="text-align: right; font-size: small;">SKIA4402E</p>	Audio does not operate properly.
9	-	Shield ground	-	-	-	-	-
10 (B/Y)	Ground	Audio RX	Input	ON	Operate audio volume.	 <p style="text-align: right; font-size: small;">SKIA4403E</p>	Audio does not operate properly.
11 (B/R)	Ground	Communication signal (+)	Input/output	ON	-	 <p style="text-align: right; font-size: small;">SKIA0175E</p>	System does not work properly.
12	-	Shield ground	-	-	-	-	-

INTEGRATED DISPLAY SYSTEM

Terminal No. (Wire color)		Item	Signal input/output	Condition		Voltage	Example of symptom
+	-			Ignition switch	Operation		
13 (W/R)	Ground	Communication signal (-)	Input/output	ON	-	 SKIA0176E	System does not work properly.
14 (L)	-	CAN-H	-	-	-	-	-
15 (B)	-	Shield ground	-	-	-	-	-
16 (R)	-	CAN-L	-	-	-	-	-

Terminals and Reference Value for A/C and AV Switch

AKS005U7

Terminal No. (Wire color)		Item	Signal input/output	Condition		Voltage	Example of symptom
+	-			Ignition switch	Operation		
1 (W/L)	Ground	Battery power supply	Input	OFF	-	Battery voltage	System does not work properly.
2 (LG/R)	Ground	ACC power supply	Input	ACC	-	Battery voltage	System does not work properly.
5 (B)	Ground	Ground	-	ON	-	Approx. 0V	-
6 (B/R)	Ground	Communication signal (+)	Input/output	ON	-	 SKIA0175E	System does not work properly.
7	-	Shield ground	-	-	-	-	-
8 (W/R)	Ground	Communication signal (-)	Input/output	ON	-	 SKIA0176E	System does not work properly.
12 (R/G)	Ground	Remote controller A	Input	ON	Press MODE switch.	Approx. 0V	Audio steering wheel switches do not function.
					Press SEEK UP switch.	Approx. 1.7V	
					Press VOL UP switch.	Approx. 3.3V	
					Except for above	Approx. 5V	

INTEGRATED DISPLAY SYSTEM

Terminal No. (Wire color)		Item	Signal input/ output	Condition		Voltage	Example of symptom
+	-			Ignition switch	Operation		
13 (G/W)	Ground	Remote con- troller B	Input	ON	Press POWER switch.	Approx. 0V	Audio steering wheel switches do not function.
					Press SEEK DOWN switch.	Approx. 1.7V	
					Press VOL DOWN switch.	Approx. 3.3V	
					Except for above	Approx. 5V	
14 (B/Y)	-	Remote con- troller ground	-	-	-	-	Audio steering wheel switches do not function.

On Board Self-Diagnosis Function DESCRIPTION

AKS005UB

- Diagnosis function consists of the self-diagnosis mode performed automatically.
- Self-diagnosis mode checks for connections between the units constituting this system, analyzes each individual unit at the same time, and displays the results on the LCD screen.

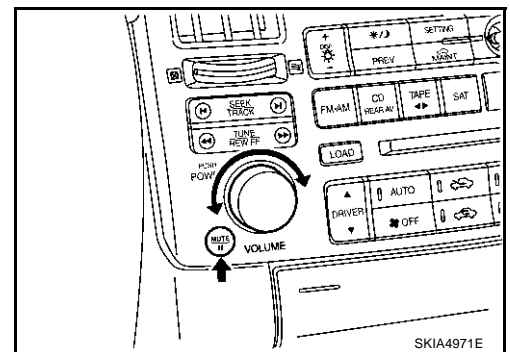
DIAGNOSIS ITEM

Mode	Item	Description	Reference page
Self-diagnosis	NETWORK CHECK	Check network between control unit and switch connected from display unit via communication line.	AV-87. "NETWORK CHECK"
	PARTS CHECK	<ul style="list-style-type: none"> ● Perform diagnosis and setting of display unit. ● Perform self-diagnosis for auto air conditioner system. 	AV-88. "PARTS CHECK"
	VERSION CHECK	Displays version of each unit.	AV-88. "VERSION CHECK"
	CAN DIAG MNTR	Display unit displays CAN communication status.	AV-88. "CAN DIAG MNTR (CAN DIAG MONITOR)"

Self-Diagnosis Mode OPERATION PROCEDURES

AKS005U9

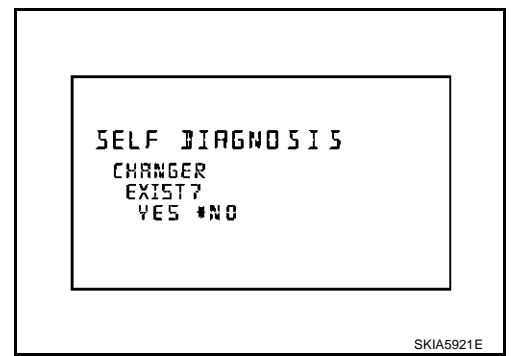
1. Start the engine.
2. Turn the audio system off.
3. While pressing the "MUTE/II" switch, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)



4. Display unit connection check screen.

INTEGRATED DISPLAY SYSTEM

5. Select each connecting unit (CHANGER, SATELLITE RADIO).

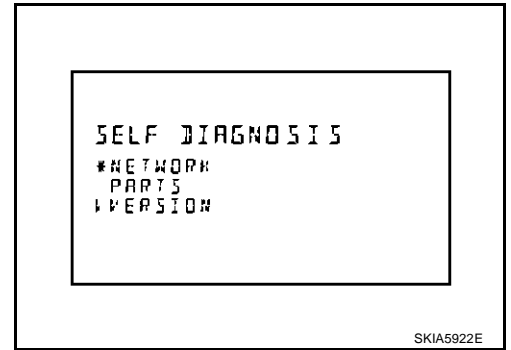


6. Self-diagnosis screen is displayed.

- Using the joystick, select each item, and perform diagnosis.

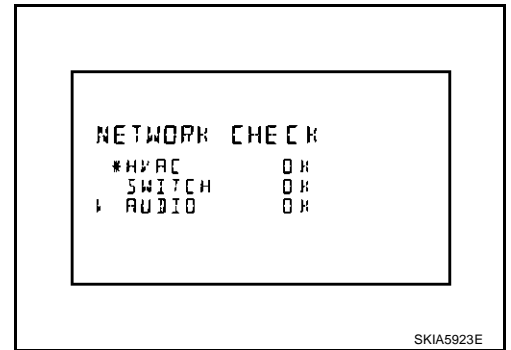
CAUTION:

If self-diagnosis cannot be activated, refer to [AV-90, "Trouble Diagnosis Chart by Symptom"](#).



NETWORK CHECK

Selecting NETWORK CHECK on self-diagnosis screen, display self-diagnostic results.

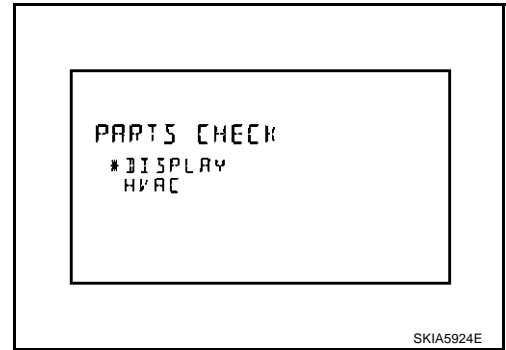


Diagnosis item	Contents	DTC return condition	Reference at error
HVAC	OK/NG	Communication error between unified meter and A/C amp. and display unit.	AV-97, "CAN Communication Line Inspection"
SWITCH	OK/NG	Communication error between A/C and AV switch and display unit.	AV-96, "A/C and AV Switch Does Not Operate"
AUDIO	OK/NG	Communication error between audio and display unit.	AV-94, "Audio Communication Line Inspection"

INTEGRATED DISPLAY SYSTEM

PARTS CHECK

- Selecting PARTS CHECK on self-diagnosis screen, display selection screen.
- Select DISPLAY, indicate DISPLAY DETAIL screen. Display diagnosis and setting can be performed.
- Select HVAC, Indicate HVAC DETAIL screen. Auto air conditioner system self-diagnosis can be performed.

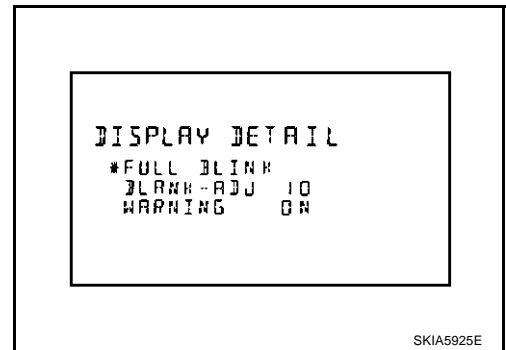


DISPLAY DETAIL SCREEN

Items	Description
FULL BLINK	All display unit segments turn ON.
BLANK-ADJ	Adjust the display time-out for 5 to 15 seconds. (Default is 10 seconds.) ^{Note}
WARNING	Select warning indication ON/OFF. (Default is ON.)

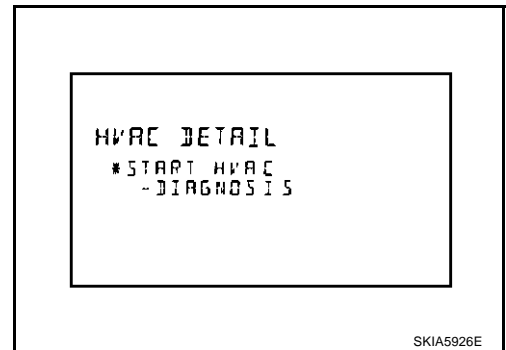
NOTE:

Except an audio screen.



HVAC DETAIL SCREEN

Press the joystick, start auto air conditioner system self-diagnosis. Refer to [ATC-66. "Self-diagnosis Function"](#).



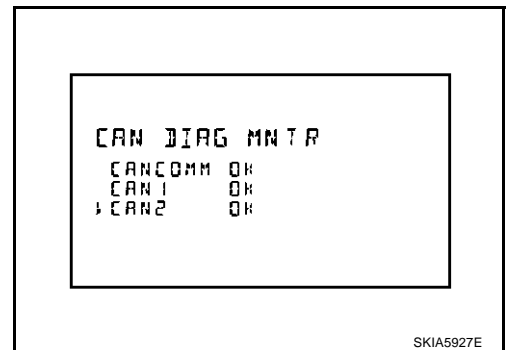
VERSION CHECK

Check ID and version of display, A/C and AV switch, audio, IVCS, changer and Satellite Radio.

CAN DIAG MNTR (CAN DIAG MONITOR)

Display CAN communication status.

Items shown	Contents
CANCOMM	OK/NG
CAN1	OK/UNKWN
CAN2	OK/UNKWN
CAN3	OK/UNKWN
CAN4	OK/UNKWN
CAN5	OK/UNKWN
CAN6	OK/UNKWN
CAN7	OK/UNKWN
CAN8	OK/UNKWN
CAN9	OK/UNKWN



INTEGRATED DISPLAY SYSTEM

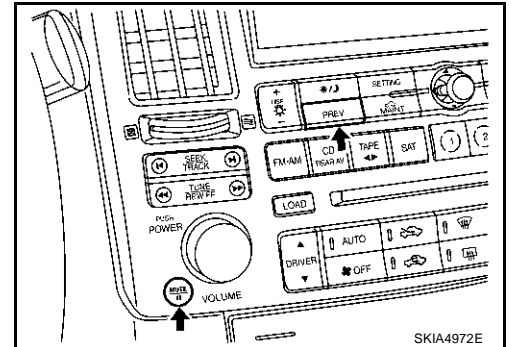
A/C and AV Switch Self-Diagnosis Function

AKS005UA

It can check ON/OFF operation of each switch in the A/C and AV switch and diagnose the input signals to the steering switch (audio).

STARTING THE SELF-DIAGNOSIS MODE

1. Turn ignition switch from OFF to ACC.
2. Within 10 seconds press and hold the switches "MUTE/II" and "PREV" simultaneously for 3 seconds.



DIAGNOSIS FUNCTION

The following are checked:

- All the indicators (LED) in the A/C and AV switch.
- Continuity of the switches by sounding the buzzer when the A/C and AV switch is pressed.
- Continuity of harness between A/C and AV switch and steering switch (audio).

EXITING THE SELF-DIAGNOSIS MODE

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

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INTEGRATED DISPLAY SYSTEM

Trouble Diagnosis Chart by Symptom

AKS00BF5

Symptom	Check item
No screen is shown.	<ul style="list-style-type: none"> ● Display unit power supply and ground circuit. Refer to AV-91, "Power Supply and Ground Circuit Check for Display Unit" . ● Display unit
Screen does not switch to nighttime mode after the lighting switch is turned ON.	<ul style="list-style-type: none"> ● Illumination signal. Refer to AV-93, "Illumination Signal Inspection" . ● Display unit
TRIP and FUEL ECON screen do not appear.	<ul style="list-style-type: none"> ● Ignition signal. Refer to AV-94, "Ignition Signal Inspection" . ● Display unit
<ul style="list-style-type: none"> ● Trip odometer (DIST) is not added up. ● Average vehicle speed (AVG) is not displayed. 	<ul style="list-style-type: none"> ● Vehicle speed signal. Refer to AV-92, "Vehicle Speed Signal Inspection" . ● Display unit
Average fuel consumption (AVG) is not displayed.	<ul style="list-style-type: none"> ● Vehicle speed signal. Refer to AV-92, "Vehicle Speed Signal Inspection" . ● CAN communication line. Refer to AV-97, "CAN Communication Line Inspection" . ● Display unit
Distance to empty (DTE) is not displayed.	<ul style="list-style-type: none"> ● Check if speedometer operates. If it does not operate, go to DI-18, "Vehicle Speed Signal Inspection" . ● Check if fuel gauge operates. If it does not operate, go to DI-22, "Fuel Level Sensor Signal Inspection 1" . ● CAN communication line. Refer to DI-24, "Communication Line Inspection" . ● Display unit
Tire pressure is not displayed.	<ul style="list-style-type: none"> ● Ignition signal. Refer to AV-94, "Ignition Signal Inspection" . ● Low tire pressure warning control unit. Refer to WT-31, "Self-Diagnosis" . ● CAN communication line. Refer to DI-24, "Communication Line Inspection" . ● Display unit
Door warning screen does not appear.	<ul style="list-style-type: none"> ● Ignition signal. Refer to AV-94, "Ignition Signal Inspection" . ● Vehicle speed signal. Refer to AV-92, "Vehicle Speed Signal Inspection" . ● CAN communication line. Refer to AV-97, "CAN Communication Line Inspection" . ● Display unit
A/C and AV switch and all switch operation are not possible. (Do not start self-diagnosis.)	Refer to AV-96, "A/C and AV Switch Does Not Operate" .
Air conditioner operation is not possible.	<ul style="list-style-type: none"> ● A/C and AV switch. Refer to AV-39, "A/C and AV Switch Inspection" . ● CAN communication line. Refer to AV-97, "CAN Communication Line Inspection" .

INTEGRATED DISPLAY SYSTEM

Power Supply and Ground Circuit Check for Display Unit

AKS00AW3

1. CHECK FUSE

Make sure that the following fuses in display unit are not blown.

Unit	Signal	Fuse No.
Display	Battery power supply	32
	Ignition switch ACC or ON	6

OK or NG

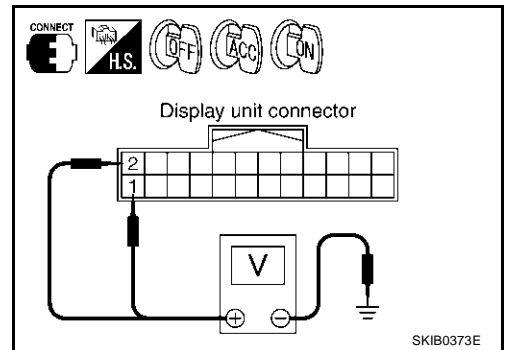
OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between display unit harness connector terminals and ground.

Terminals		Ignition switch position			
(+)		(-)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M62	1 (W/L)	Ground	Battery voltage	Battery voltage	Battery voltage
	2 (LG/R)	Ground	0V	Battery voltage	Battery voltage



OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

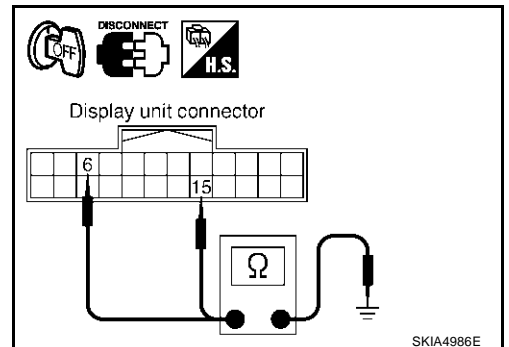
1. Turn ignition switch OFF.
2. Disconnect display unit connector.
3. Check continuity between display unit harness connector M62 terminals 6 (B), 15 (B) and ground.

6, 15 – ground : Continuity should exist.

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



INTEGRATED DISPLAY SYSTEM

Power Supply and Ground Circuit Check for A/C and AV Switch

AKS005UD

1. CHECK FUSE

Check if the following fuses in A/C and AV switch are blown.

Unit	Power source	Fuse No.
A/C and AV switch	Battery	32
	Ignition switch ACC or ON	6

OK or NG

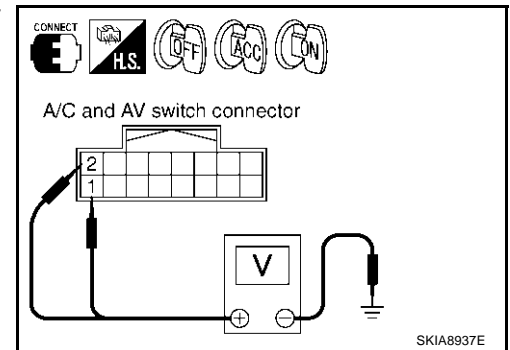
OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

1. Check voltage between A/C and AV switch harness connector terminals and ground.

Terminals		Ignition switch position			
(+)		(-)	OFF	ACC	ON
Connector	Terminal (Wire color)				
M64	1 (W/L)	Ground	Battery voltage	Battery voltage	Battery voltage
	2 (LG/R)	Ground	0V	Battery voltage	Battery voltage



OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

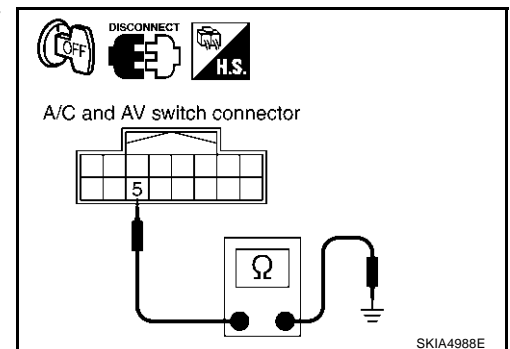
1. Turn ignition switch OFF.
2. Disconnect A/C and AV switch connector.
3. Check continuity between A/C and AV switch harness connector M64 terminal 5 (B) and ground.

5 – Ground : Continuity should exist.

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



Vehicle Speed Signal Inspection

AKS005UE

1. VEHICLE SPEED OPERATION CHECK

Does speedometer is operated normally?

YES or NO

YES >> GO TO 2.

NO >> Check combination meter trouble diagnosis. Refer to [DI-14](#), "[Diagnosis Flow](#)".

INTEGRATED DISPLAY SYSTEM

2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display unit connector and unified meter and A/C amp. connector.
3. Check continuity between display unit harness connector M62 terminal 7 (R/G) and unified meter and A/C amp. harness connector M56 terminal 26 (R/G).

7 – 26 : Continuity should exist.

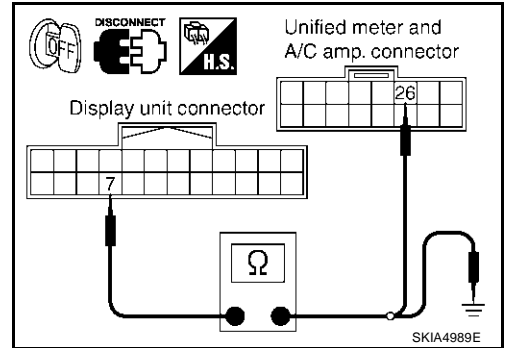
4. Check continuity between display unit harness connector M62 terminal 7 (R/G) and ground.

7 – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 3.

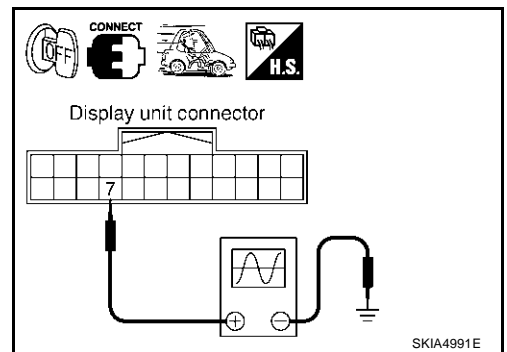
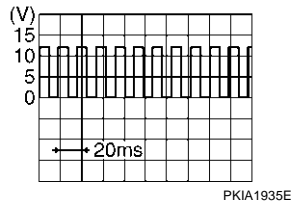
NG >> Repair harness or connector.



3. CHECK VEHICLE SPEED SIGNAL

1. Connect unified meter and A/C amp. connector.
2. Drive vehicle at a constant speed.
3. Check the signal between display unit harness connector M62 terminal 7 (R/G) and ground with CONSULT-II or oscilloscope.

7 – Ground:



OK or NG

OK >> Replace display unit.

NG >> Check unified meter and A/C amp. system, refer to [DI-18, "Vehicle Speed Signal Inspection"](#).

Illumination Signal Inspection

1. CHECK ILLUMINATION SIGNAL

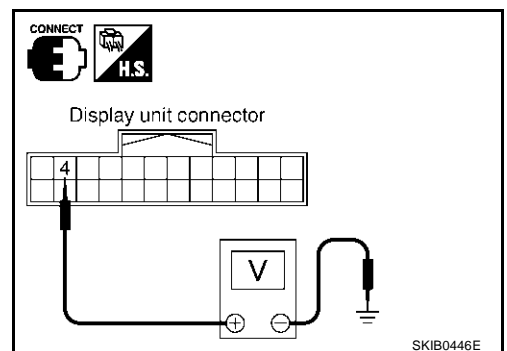
1. Check voltage between display unit and ground.

Terminals			Lighting switch position	
Connector	Terminal (Wire color)	(+)	ON	OFF
		(-)		
M62	4 (R/L)	Ground	Approx. 12V	Approx. 0V

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



INTEGRATED DISPLAY SYSTEM

AKS005UG

Ignition Signal Inspection

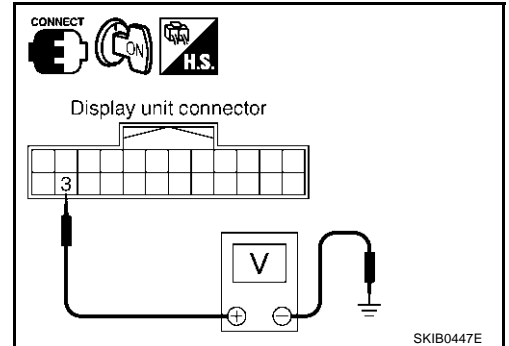
1. CHECK IGNITION SIGNAL

1. Disconnect display unit connector.
2. Turn ignition switch ON.
3. Check voltage between display unit harness connector M62 terminal 3 (G/R) and ground.

3 – Ground : **Battery voltage**

OK or NG

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



SKIB0447E

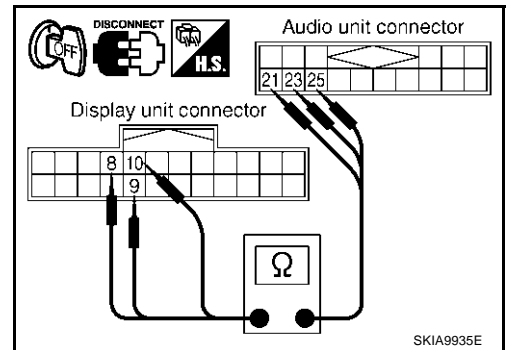
Audio Communication Line Inspection

AKS005UH

1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect audio unit connector and display unit connector.
3. Check continuity between audio unit harness connector terminals and display unit harness connector terminals.

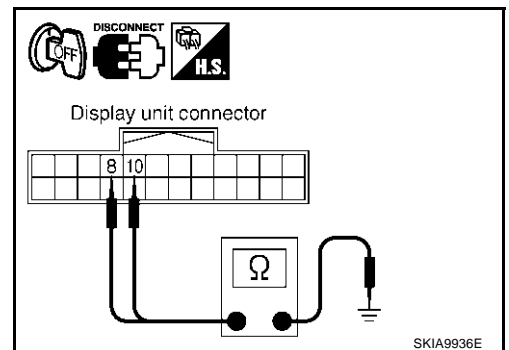
Terminals				Continuity
Display unit		Audio unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M62	8 (LG)	M60	23 (LG)	Yes
	10 (B/Y)		21 (B/Y)	
	9		25	



SKIA9935E

4. Check continuity between display unit harness connector terminals and ground.

Terminals			Continuity
Display unit		Ground	
Connector	Terminal (Wire color)		
M62	8 (LG)	Ground	No
	10 (B/Y)		



SKIA9936E

OK or NG

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

INTEGRATED DISPLAY SYSTEM

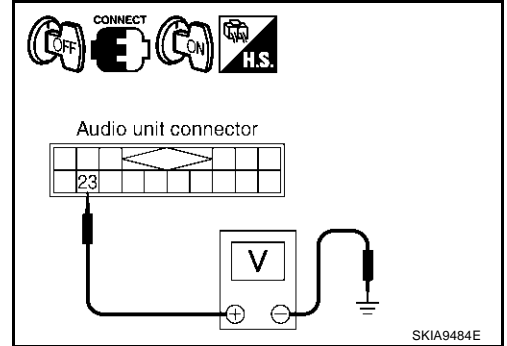
2. CHECK AUDIO UNIT

1. Connect audio unit connector.
2. Turn ignition switch ON.
3. Check voltage between audio unit harness connector M60 terminal 23 (LG) and ground.

23 – Ground : Approx. 4V

OK or NG

- OK >> GO TO 3.
NG >> Replace audio unit.



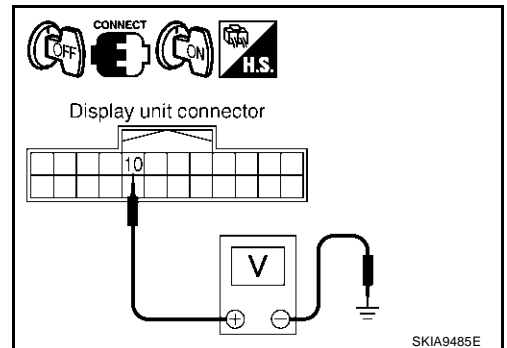
3. CHECK DISPLAY UNIT

1. Turn ignition switch OFF.
2. Disconnect audio unit connector, and connect display unit connector.
3. Turn ignition switch ON.
4. Check voltage between display unit harness connector M62 terminal 10 (B/Y) and ground.

10 – Ground : Approx. 4V

OK or NG

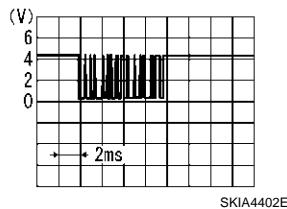
- OK >> GO TO 4.
NG >> Replace display unit.



4. CHECK AUDIO TX COMMUNICATION SIGNAL

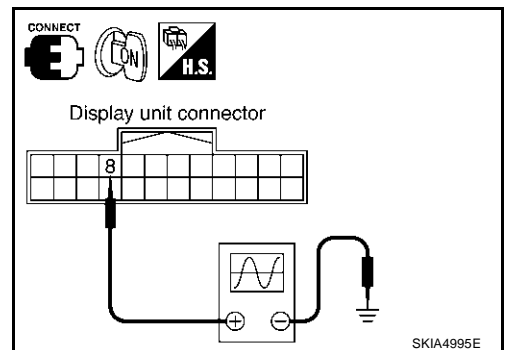
1. Turn ignition switch OFF.
2. Connect audio unit connector.
3. Turn ignition switch ON.
4. Check signal between display unit harness connector M62 terminal 8 (LG) and ground with CONSULT-II or oscilloscope.

8 – Ground:



OK or NG

- OK >> GO TO 5.
NG >> Replace display unit.

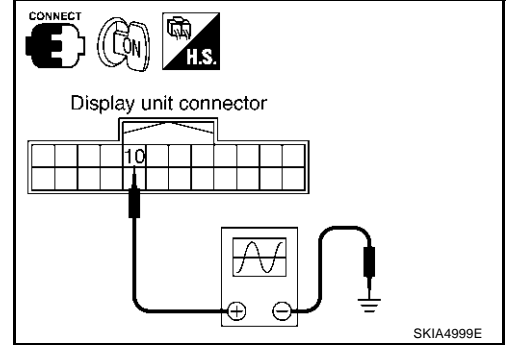
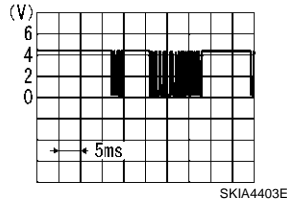


INTEGRATED DISPLAY SYSTEM

5. CHECK AUDIO RX COMMUNICATION SIGNAL

1. Turn ignition switch ON.
2. Check signal between display unit harness connector M62 terminal 10 (B/Y) and ground with CONSULT-II or oscilloscope.

10 – Ground:



OK or NG

- OK >> INSPECTION END
 NG >> Replace audio unit.

A/C and AV Switch Does Not Operate

AKS005UI

1. CHECK A/C AND AV SWITCH

Check A/C and AV switch. Refer to [AV-39, "A/C and AV Switch Inspection"](#).

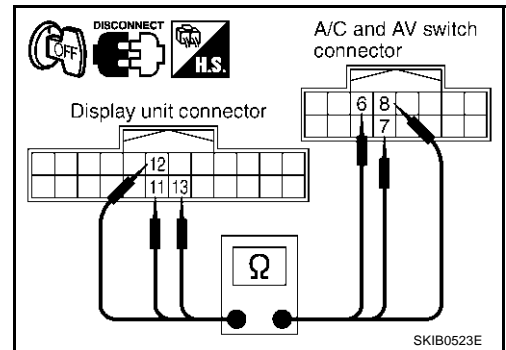
OK or NG

- OK >> GO TO 2.
 NG >> Repair malfunctioning parts.

2. CHECK A/C AND AV SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display unit connector and A/C and AV switch connector.
3. Check continuity between display unit and A/C and AV switch.

Terminals				Continuity
Display unit		A/C and AV switch		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M62	11 (B/R)	M64	6 (B/R)	Yes
	13 (W/R)		8 (W/R)	
	12		7	

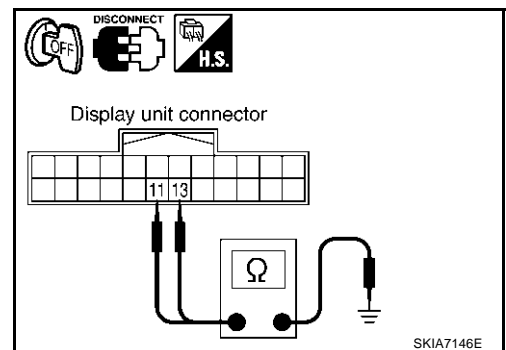


4. Check continuity between display unit and ground.

Terminals			Continuity
Display unit		Ground	
Connector	Terminals		
M62	11 (B/R)	Ground	No
	13 (W/R)		

OK or NG

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



INTEGRATED DISPLAY SYSTEM

3. CHECK AV COMMUNICATION SIGNAL

1. Replace A/C and AV switch.
2. Check A/C and AV switch if it functions normally.

OK or NG

- OK >> INSPECTION END
 NG >> Replace display unit switch.

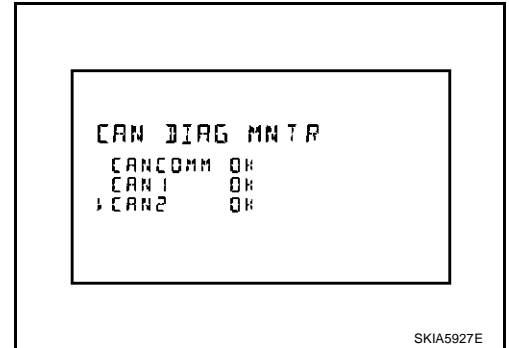
CAN Communication Line Inspection

AKS005UJ

1. CHECK MONITOR DESCRIPTION

1. Start display unit self-diagnosis. Refer to [AV-86, "Self-Diagnosis Mode"](#).
2. Select "CAN DIAG MNTR". Refer to [AV-88, "CAN DIAG MNTR \(CAN DIAG MONITOR\)"](#).

Diagnosis item	Data monitor display description	
	Normal condition	Abnormal condition (example)
CANCOMM	OK	NG
CAN1	OK	UNKWN
CAN2	OK	UNKWN
CAN3	OK	UNKWN
CAN4	OK	UNKWN
CAN5	OK	UNKWN
CAN6	OK	UNKWN
CAN7	OK	UNKWN
CAN8	OK	UNKWN
CAN9	OK	UNKWN



3. Record each item display description (OK/NG/UNKWN) displayed on the following CAN DIAG MONITOR Check Sheet.

CAN DIAG MONITOR Check Sheet

Diagnosis item	Screen display		Diagnosis item	Screen display	
	OK	UNKWN		OK	UNKWN
CANCOMM	OK	UNKWN	CAN5	OK	UNKWN
CAN1	OK	UNKWN	CAN6	OK	UNKWN
CAN2	OK	UNKWN	CAN7	OK	UNKWN
CAN3	OK	UNKWN	CAN8	OK	UNKWN
CAN4	OK	UNKWN	CAN9	OK	UNKWN

>> After filling in CAN DIAG MONITOR Check Sheet, go to [LAN-4, "Precautions When Using CONSULT-II"](#).

Audio Steering Wheel Switch Inspection

AKS00BJV

1. A/C AND AV SWITCH SELF-DIAGNOSIS FUNCTION

1. Start A/C and AV switch self-diagnosis function. Refer to [AV-33, "A/C and AV Switch Self-Diagnosis Function"](#).
2. Operate audio steering wheel switch.

Does the audio steering wheel switch is operated normally?

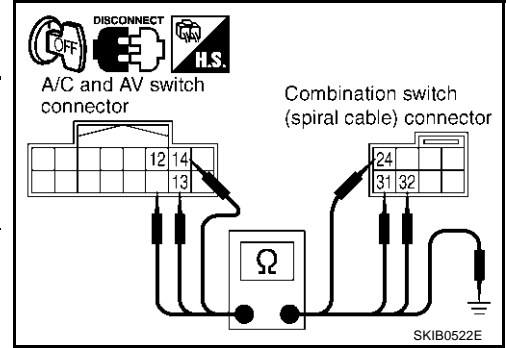
- YES >> INSPECTION END (System is OK)
 NO >> GO TO 2

INTEGRATED DISPLAY SYSTEM

2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect A/C and AV switch connector and spiral cable connector (Vehicle harness side).
3. Check continuity between spiral cable harness connector terminals and A/C and AV switch harness connector terminals.

Terminals				Continuity
Spiral cable		A/C and AV switch		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M15	24 (R/G)	M64	12 (R/G)	Yes
	31 (B/Y)		14 (B/Y)	
	32 (G/W)		13 (G/W)	



4. Check continuity between A/C and AV switch harness connector terminals and ground.

Terminals			Continuity
A/C and AV switch		Ground	
Connector	Terminal (wire color)		
M64	12 (R/G)	Ground	No
	13 (G/W)		
	14 (B/Y)		

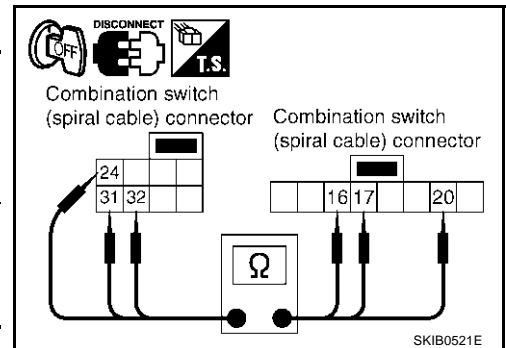
OK or NG

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

3. SPIRAL CABLE CHECK

1. Disconnect spiral cable connector (Audio steering wheel switch harness side).
2. Check continuity between spiral cable connector terminals.

Terminals				Continuity
Spiral cable				
Connector	Terminal (Wire color)	Connector	Terminal	
M15	24	M203	20	Yes
	31		17	
	32		16	



OK or NG

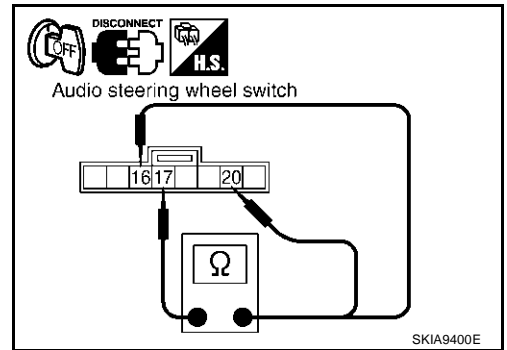
- OK >> GO TO 4
- NG >> Replace spiral cable.

INTEGRATED DISPLAY SYSTEM

4. CHECK AUDIO STEERING WHEEL SWITCH

Check resistance audio steering wheel switch connector M203 terminals.

Terminal (Wire color)	Switch name	Condition	Resistance (Ω)
16 (L)	Power	Depress power switch.	Approx. 0
	Seek down	Depress seek down switch.	Approx. 165
	Volume (down)	Depress volume down switch.	Approx. 652
20 (W)	Mode	Depress mode switch.	Approx. 0
	Seek up	Depress seek up switch.	Approx. 165
	Volume (up)	Depress volume up switch.	Approx. 652



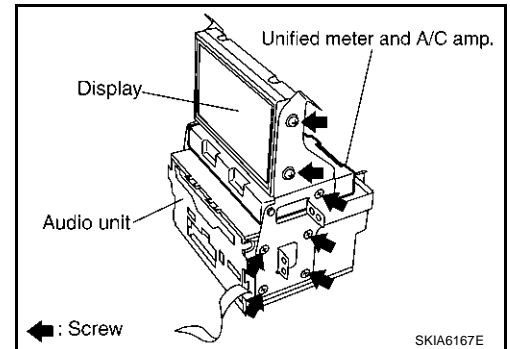
OK or NG

- OK >> Replace A/C and AV switch.
- NG >> Replace audio steering wheel switch.

Removal and Installation of Display

REMOVAL

1. Remove audio unit. Refer to [AV-42, "Removal and Installation of Audio Unit"](#) .
2. Remove screws (4), and remove display.



INSTALLATION

Install in the reverse order of removal.

Removal and Installation of A/C and AV Switch

Refer to [AV-43, "Removal and Installation for A/C and AV Switch"](#) .

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

AV

NAVIGATION SYSTEM

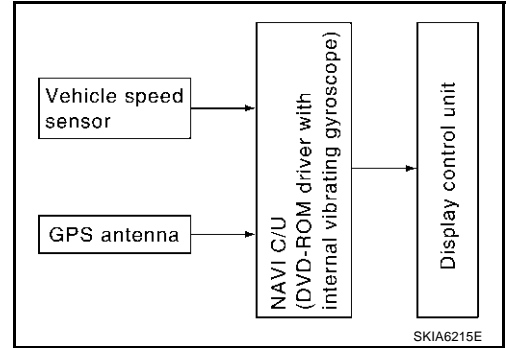
PFP:25915

System Description

AKS00710

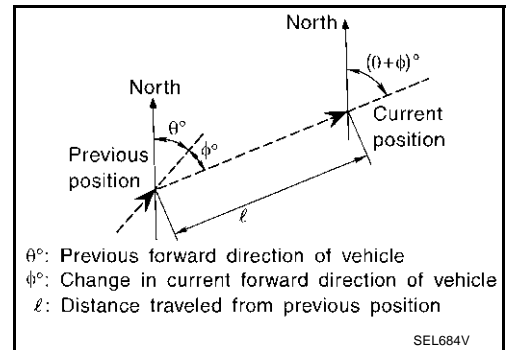
The navigation system periodically calculates the vehicle's current position according to the following three signals: Travel distance of the vehicle as determined by the vehicle speed sensor, turning angle of the vehicle as determined by the gyroscope (angular velocity sensor), and the direction of vehicle travel as determined by the GPS antenna (GPS information).

The current position of the vehicle is then identified by comparing the calculated vehicle position with map data read from the map DVD-ROM, which is stored in the DVD-ROM drive (map-matching), and indicated on the screen with a current-location mark.



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

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



TRAVEL DISTANCE

Travel distance calculations are based on the vehicle speed sensor input signal. Therefore, the calculation may become incorrect as the tires wear down. To prevent this, an automatic distance fine adjustment function has been adopted.

TRAVEL DIRECTION

Change in the travel direction of the vehicle is calculated by a gyroscope (angular velocity sensor) and a GPS antenna (GPS information). As the gyroscope and GPS antenna have both merit and demerit, input signals from them are prioritized in each situation. However, this order of priority may change in accordance with more detailed travel conditions so that the travel direction is detected more accurately.

Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	<ul style="list-style-type: none"> Can detect the vehicle's turning angle quite accurately. 	<ul style="list-style-type: none"> Direction errors may accumulate when the vehicle is driven for long distances without stopping.
GPS antenna (GPS information)	<ul style="list-style-type: none"> Can detect the vehicle's travel direction (North/South/East/West). 	<ul style="list-style-type: none"> Correct direction cannot be detected when the vehicle speed is low.

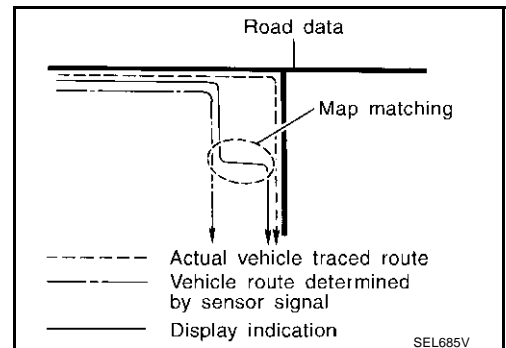
MAP-MATCHING

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

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

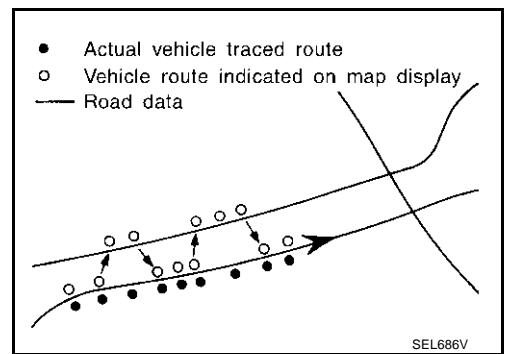
CAUTION:

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

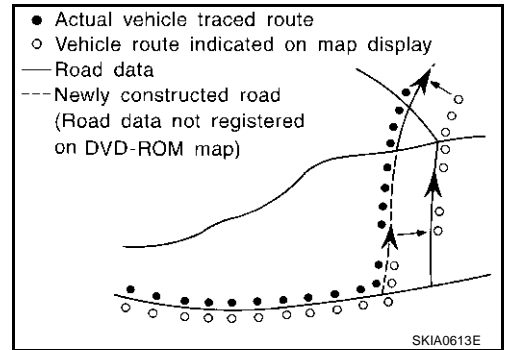


NAVIGATION SYSTEM

- In map-matching, alternative routes to reach the destination will be shown and prioritized, after the road on which the vehicle is currently driven has been judged and the current-location mark has been repositioned.
If there is an error in distance and/or direction, the alternative routes will be shown in different order of priority, and the wrong road can be avoided.
If two roads are running in parallel, they are of the same priority. Therefore, the current-location mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road.



- Map-matching does not function correctly when the road on which the vehicle is driving is new and not recorded in the map DVD-ROM, or when the road pattern stored in the map data and the actual road pattern are different due to repair.
When driving on a road not present in the map, the map-matching function may find another road and position the current-location mark on it. Then, when the correct road is detected, the current-location mark may leap to it.
- Effective range for comparing the vehicle position and travel direction calculated by the distance and direction with the road data read from the map DVD-ROM is limited. Therefore, when there is an excessive gap between the current vehicle position and the position on the map, correction by map-matching is not possible.

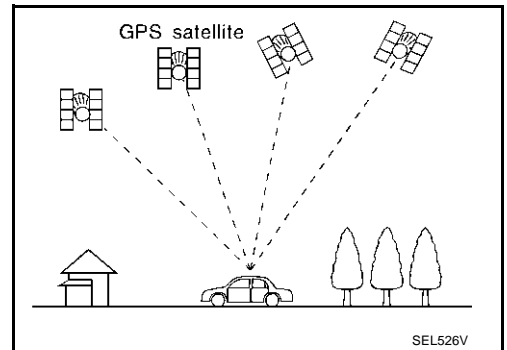


GPS (GLOBAL POSITIONING SYSTEM)

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

Accuracy of the GPS will deteriorate under the following conditions.

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

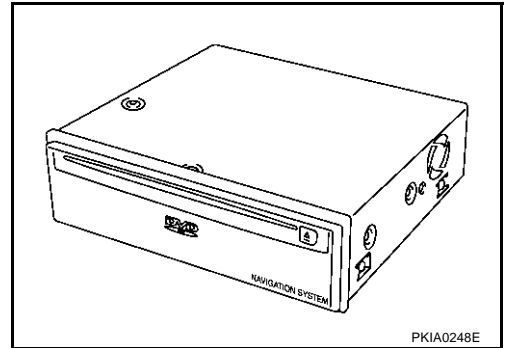


NAVIGATION SYSTEM

COMPONENT DESCRIPTION

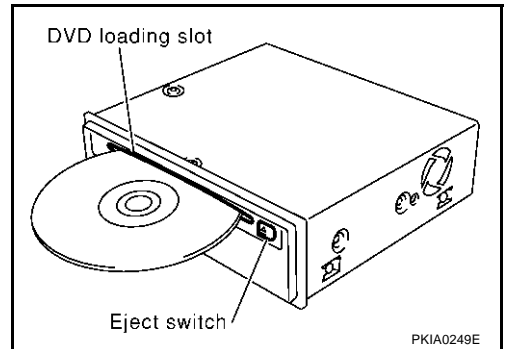
NAVI Control Unit

- The gyro (angular speed sensor) and the DVD-ROM drive are built-in units that control the navigation functions.
- Signals are received from the gyro, the vehicle speed sensor, and the GPS antenna. Vehicle location is determined by combining this data with the data contained in the DVD-ROM map. Locational information is shown on LCD panel.



DVD-ROM Drive

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



Map DVD-ROM

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

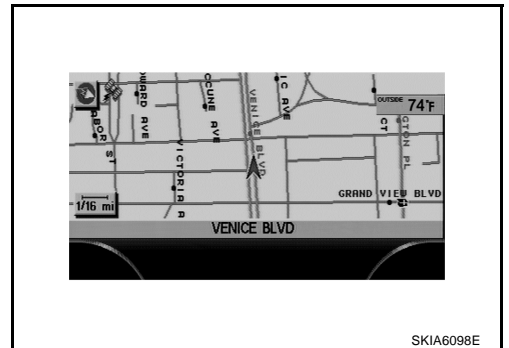
Gyro (Angular Speed Sensor)

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

BIRDVIEW™

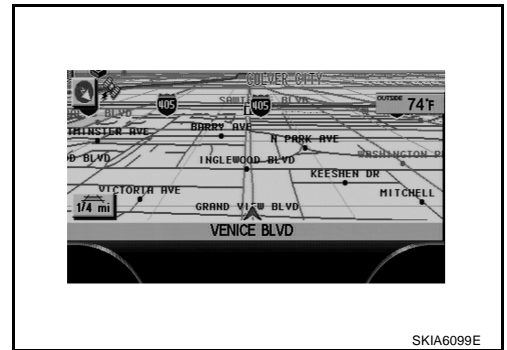
The BIRDVIEW™ provides a detailed and easily seen display of road conditions covering the vehicle's immediate to distant area.

- MAP DISPLAY



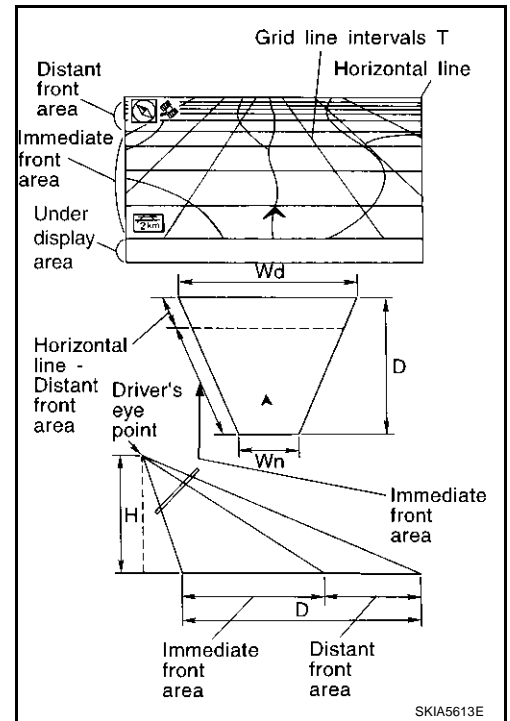
NAVIGATION SYSTEM

- BIRDVIEW™



Description

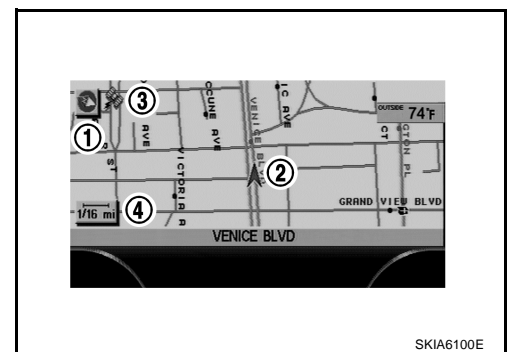
- Display area: Trapezoidal representation showing approximate distances (W_n , D , and W_d).
- Ten horizontal grid lines indicate display width while six vertical grid lines indicate display depth and direction.
- Pushing the “ZOOM IN” button during operation displays the scale change and the view point height on the left side of the screen. The height of the view point increases or decreases when “ZOOM” or “WIDE” is selected with the joystick.



MAP DISPLAY

Function of each icon is as follows:

1. Azimuth indication.
2. Position marker.
 - The tip of the arrow shows the current location. The shaft of the arrow indicates the direction in which the vehicle is traveling.
3. GPS reception signal (indicates current reception conditions).
4. Distance display (shows the distance in a reduced scale).

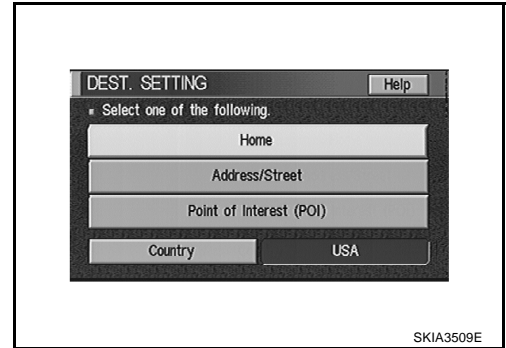


NAVIGATION SYSTEM

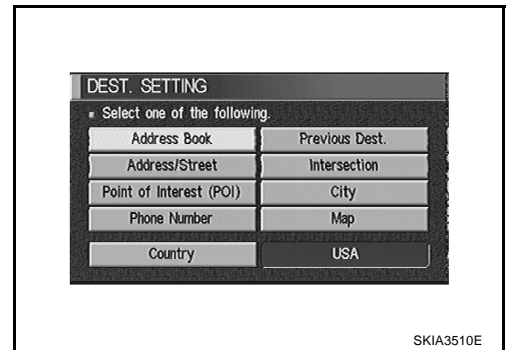
FUNCTION OF CENTER SWITCH

Display with Pushed "DEST" Button

- Easy Mode



- Expert Mode



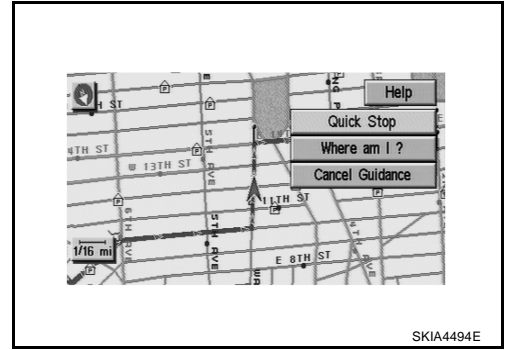
The function of each icon is as follows:

Icon	Mode		Description
	Easy	Expert	
Address Book		×	Favorite place can be saved to memory.
Address/Street	×	×	The destination can be searched from the address.
Point of Interest (POI)	×	×	The destination of favorite facility can be searched.
Previous Dest.		×	The previous ten destinations stored in memory are displayed.
Intersection		×	The destination can be searched from the intersection.
City		×	The destination can be searched from city name.
Map		×	The destination can be searched from the map.
Phone Number		×	When two or more countries are included in one DVD-ROM, the destination can be searched for under the country name.
Home	×		Sets the home as a destination.
Help	×		Explanation of navigational functions appear on the display.
Country	×	×	Select country (USA, CANADA)

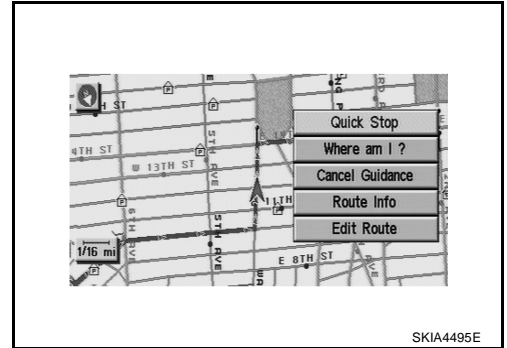
NAVIGATION SYSTEM

Display with Pushed "ROUTE" Button

- Easy Mode



- Expert Mode



The function of each icon is as follows:

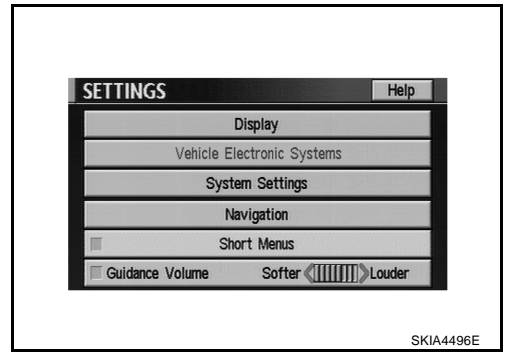
Icon	Mode		Description
	Easy	Expert	
Quick Stop	×	×	The selected facility is set as the destination or waypoint. (Route guidance has been turned OFF or the destination has been reached.)
Where am I?	×	×	Next, current and previous street names can be displayed.
Cancel Guidance	×	×	The following can be set. <ul style="list-style-type: none"> ● All Destinations ● Way point ● Not Cancel
Route Info.*		×	The following can be set. <ul style="list-style-type: none"> ● Complete Route ● Turn List ● Route Simulation (Displayed only when the destination area has been set.)
Edit Route*		×	Change the destination or add the transit points of the route set in the route guide. (Displayed only when the automatic reroute function has been turned OFF and the recommended route is not followed.)
Help	×		Explanation of navigational functions appear on the display.

*: When destinations have been entered, route guidance has been turned OFF or destination has been reached, "Route Info." and "Edit Route" are not displayed.

NAVIGATION SYSTEM

Display with Pushed “SETTING” Button

The function of each icon is as follows:

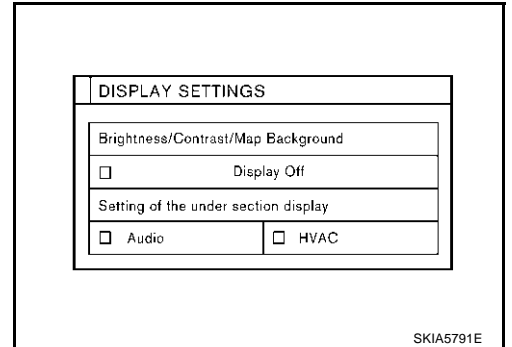


Icon	Description
Display	Settings of display can be performed.
Vehicle Electronic Systems	Settings of vehicle electrical equipment can be performed.
System Settings	Settings of linguistic select , time adjusting and beep sound can be performed.
Navigation	Settings and adjusting of navigation can be performed.
Short Menu	Easy Mode and Expert Easy Mode can be switched.
Guidance Volume	The volume and/or on/off of voice prompt can be controlled by the joystick.
Help (only easy mode)	Explanation of navigational functions appear on the display.

Display Settings

How To Perform Display Setting

1. Start the engine.
2. Push “SETTING” button.
3. Select “Display”.
4. Push “Enter” switch.



Application Items

Icon	Description	Reference page
Brightness/Contrast/Map Background	Brightness, Contrast and Map Background can be set.	AV-106
Display Off	Display sleep mode ON/OFF can be switched.	AV-106
Setting of the under section display	The setting status of A/C or AV can be shown.	AV-106

Brightness/Contrast/Map Back Ground

Select “Brightness/Contrast/Map Background”.

- Brightness, Contrast and Back ground are shown at the lower part of the screen, and it can be set by pushing joystick.

Display Off

Select “Display Off”.

- When setting is turned on (Indicator light ON), the display will be under sleep mode.

Setting of the Under Section Display

Select “Setting of the under section display”.

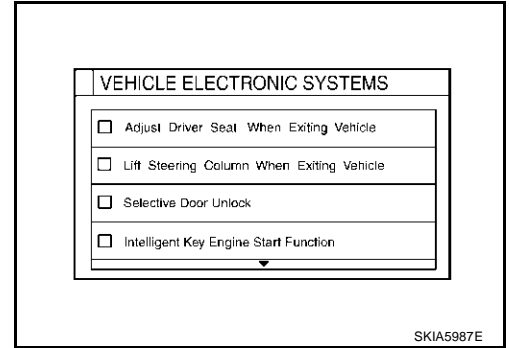
- The setting status that is selected from A/C or AV is shown at the lower part of the screen.

NAVIGATION SYSTEM

Vehicle Electronic Systems

How To Perform Vehicle Electronic Systems

1. Start the engine.
2. Push "SETTING" button.
3. Select "Vehicle Electronic Systems".
4. Push "Enter" switch.



Application Items

Icon	Description	Reference page
Adjust Driver Seat When Exiting Vehicle	The driver's seat automatically moves back and returns to the original position.	AV-107
Lift Steering Column When Exiting Vehicle	This function can be performed to On or Off.	AV-107
Selective Door Unlock	This key can switch the unlock doors of the 1st unlocking operation as follows. <ul style="list-style-type: none"> ● Only the driver side door (On) ⇔ All the doors (Off) 	AV-108
Keyless Remote Response-Horn	This key changes the horn chirp mode occurring when pressing the Lock button on the Intelligent Key or keyfob.	AV-108
Keyless Remote Response-Lights	This key changes the hazard indicator flash mode occurring when pressing the Lock or Unlock button on the Intelligent Key or keyfob.	AV-108
Auto Re-Lock Time	The length of auto door relock time can be set. (Setting value: OFF, 1min or 5min)	AV-108
Sensitivity of Automatic Headlights	Sensitivity of automatic light can be set as desired.	AV-108
Automatic Headlights Off Delay	You can control how long it takes the automatic turn off timer to extinguish the headlights in AUTO position. (Setting value: OFF, 30sec, 45sec, 60sec, 90sec, 120sec, 150sec or 180sec)	AV-108
Speed Dependent wiper	This function can be performed to On or Off.	AV-108
Intelligent Key Lock Response-Sound	The sound pattern of the Intelligent Key operation can be set as desired. (Setting value: OFF, Beeper or Horn chirp)	AV-108
Intelligent Key Unlock Response-Beep Sound	The beep sound when unlocking door with the intelligent key operation can be turned On or Off.	AV-108
Intelligent Key Engine Start Function	This function can be performed to On or Off.	AV-108
Intelligent Key Lock/Unlock Function	The door handle request switch lock/unlock operation with the Intelligent Key can be canceled or activated.	AV-108
Return All Settings to Default	The all settings made by VEHICLE ELECTRONICS will return to default.	AV-108

Adjust Driver Seat When Exiting Vehicle

1. Select "Adjust Driver Seat When Exiting Vehicle".
2. Push "Enter" switch.
 - The indicator light alternately turns on and off each time the "Enter" switch is pressed.

Lift Steering Column When Exiting Vehicle

1. Select "Lift Steering Column When Exiting Vehicle".
2. Push "Enter" switch.
 - The indicator light alternately turns on and off each time the "Enter" switch is pressed.

NAVIGATION SYSTEM

Selective Door Unlock (With Intelligent Key)

1. Select "Selective Door Unlock".
2. Push "Enter" switch.
 - The indicator light alternately turns on and off each time the "Enter" switch is pressed.

Keyless Remote Response -Horn

1. Select "Keyless Remote Response-Horn".
2. Push "Enter" switch.
 - The indicator light alternately turns on and off each time the "Enter" switch is pressed.

Keyless Remote Response -Lights

1. Select "Keyless Remote Response-Light".
2. Push "Enter" switch.

Auto Re-Lock Time

1. Select "Auto Re-Lock Time".
2. Move the joystick and push "Enter" switch to adjust the time.

Sensitivity of Automatic Headlights

1. Select "Sensitivity of Automatic Headlights".
2. Move the joystick to left (lower) or right (higher) and push "Enter" switch.

Automatic Headlights Off Delay

1. Select "Automatic Headlights Off Delay".
2. Move the joystick left or right to adjust the timer and push "Enter" switch.

Speed Dependent Wiper

1. Select "Speed Dependent Wiper".
2. Push "Enter" switch.
 - The indicator light alternately turns on and off each time the "Enter" switch is pressed.

Intelligent Key Lock Response-Sound

1. Select "Intelligent Key Lock Response-Sound".
2. Push "Enter" switch to change the sound pattern.

Intelligent Key Unlock Response-Beep Sound

1. Select "Intelligent Key Unlock Response-Sound".
2. Push "Enter" switch to change the sound pattern.

Intelligent Key Engine Start Function

1. Select "Intelligent Key Engine Start Function".
2. Push "Enter" switch.
 - The indicator light alternately turns on and off each time the "Enter" switch is pressed.

Intelligent Key Lock/Unlock Function

1. Select "Intelligent Key Lock/Unlock".
2. Push "Enter" switch.
 - The indicator light alternately turns on and off each time the "Enter" switch is pressed.

Return All Settings to Default

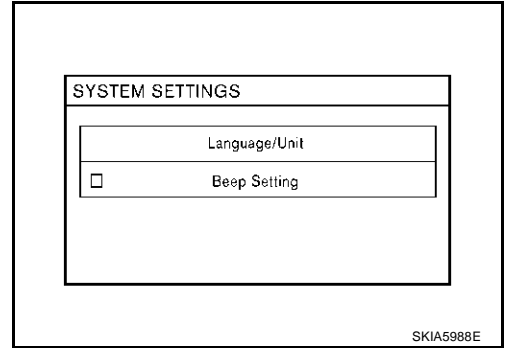
1. Select "Return All Settings to Default".
2. Push "Enter" switch.
 - The indicator light alternately turns on and off each time the "Enter" switch is pressed.

NAVIGATION SYSTEM

System Settings

How To Perform System Settings

1. Start the engine.
2. Push "SETTING" button.
3. Select "System Settings".



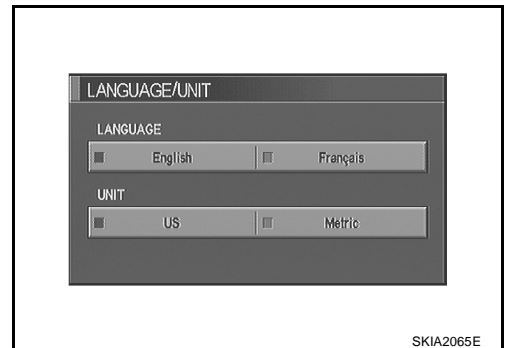
Application Items

Icon	Description	Reference page
Language/Unit	Settings of Language or unit can be performed.	AV-109
Beep Setting	Settings of Beep sound can be performed.	AV-109

Language Setting

Select "Language/Unit".

- Language setting can be switched.
- Unit setting can be changed.



Beep Setting

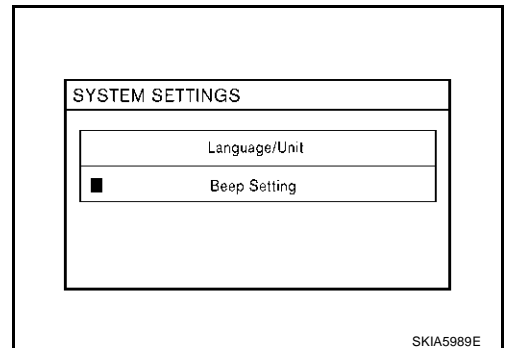
Select "Beep Setting".

- When Beep Setting is on (indicator light on), a beep will sound if the button is pushed.

NOTE:

Items in exception of Beep Setting ON/OFF.

- An error beep.
- An interrupted-screen beep.



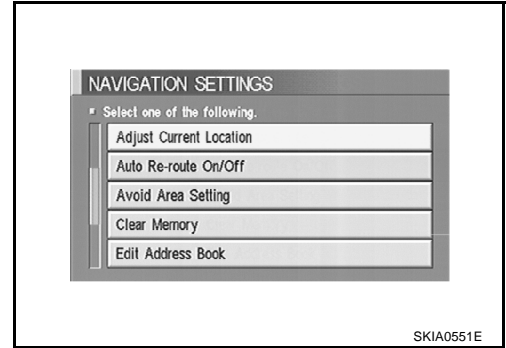
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NAVIGATION SYSTEM

Navigation Settings

How To Perform Navigation Settings

1. Start the engine.
2. Push "SETTING" button.
3. Select "Navigation".

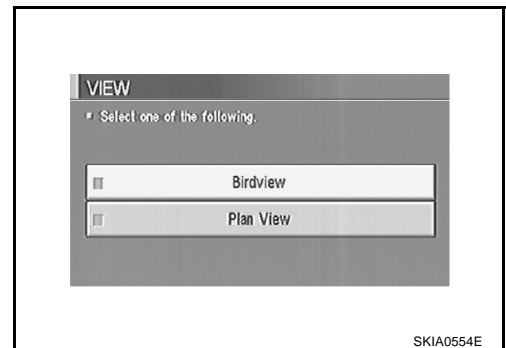


Application Items

Icon	Description	Reference page
View	Map display mode can be switched.	AV-110
Heading	Heading of the map display can be customized for either north heading or the actual driving direction of the vehicle.	AV-111
Nearby Display Icons	Icons of facilities can be displayed. Facilities to be displayed can be selected from the variety selections.	AV-111
Save Current Location	Current vehicle location can be registered in Address Book.	AV-111
Adjust Current Location	Current location of position marker can be adjusted. Direction of position marker also can be calibrated when heading direction of the vehicle on the display is not matched with the actual direction.	AV-111
Auto Re-route On/Off	ON/OFF of Auto Re-route can be switched.	AV-112
Avoid Area Setting	A particular area can be avoided when routing.	AV-112
Clear Memory	Address Book, Previous destination or Avoid area can be deleted.	AV-112
Edit Address Book	Address Book can be edited.	AV-113
GPS Information	The GPS data includes longitude, latitude and altitude (distance above sea level) of the present vehicle position, and current date and time for the area in which the vehicle is being driven. Also indicated are the GPS reception conditions and the GPS satellite position.	AV-113
Quick Stop Customer Setting	One facility of your selection can be added to your quick stop.	AV-113
Set Average Speed for Estimated Journey Time	Average vehicle speed can be set to calibrate estimated journey time for the destination.	AV-113
Tracking On/Off	Tracking to the present vehicle position can be displayed.	AV-114

"VIEW" MODE

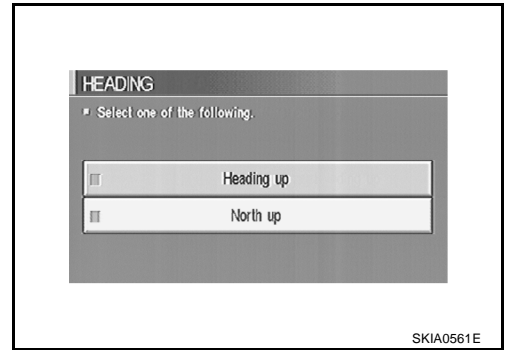
- To open the map screen display with Birdview™, select "Birdview™".
- To open the map screen display with Plan View, select "Plan View".



NAVIGATION SYSTEM

“HEADING” MODE

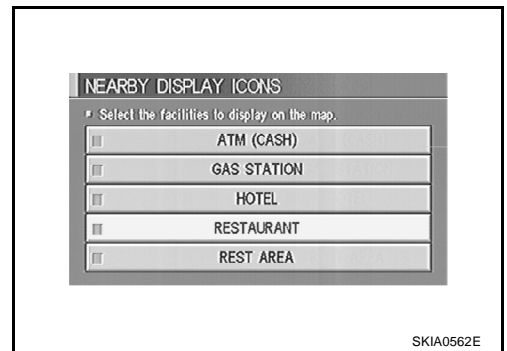
- To display north heading, select “North up”.
- To display the actual driving direction of the vehicle, select “Heading up”.



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“NEARBY DISPLAY ICONS” MODE

- Select an icon to display on the map screen.



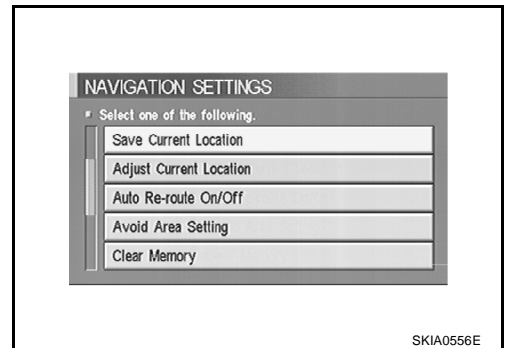
E
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“SAVE CURRENT LOCATION” MODE

- The current vehicle location can be registered in “Address Book”.

NOTE:

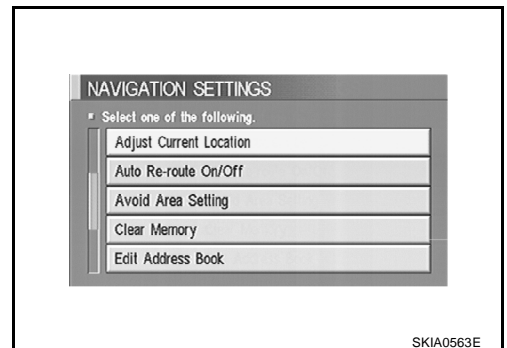
“Address Book” can store 50 items max.



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“ADJUST CURRENT LOCATION” MODE

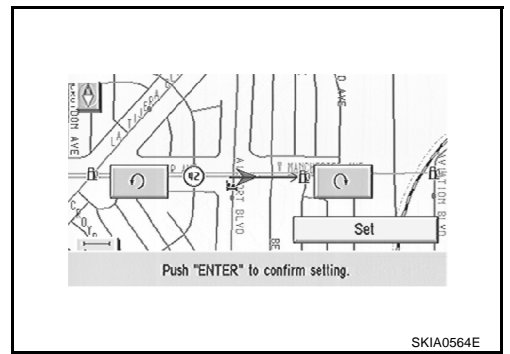
1. Select an icon “right” or “left” to calibrate the heading direction. (Arrow marks will rotate corresponding to the calibration key.)



M

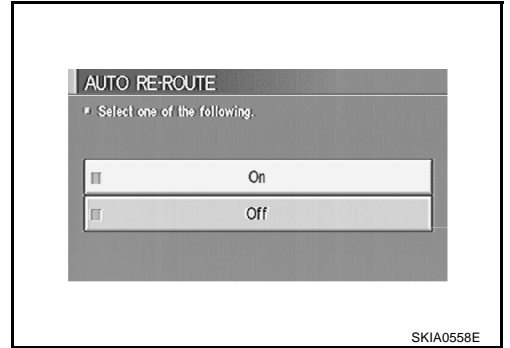
NAVIGATION SYSTEM

2. Select "Set". Then the vehicle mark will be matched to the arrow mark.



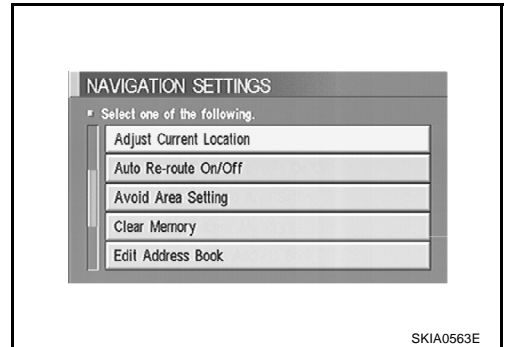
“AUTO RE-ROUTE” MODE

- To activate “AUTO RE-ROUTE” mode, select “On”.
- To inactivate “AUTO RE-ROUTE” mode, select “Off”.



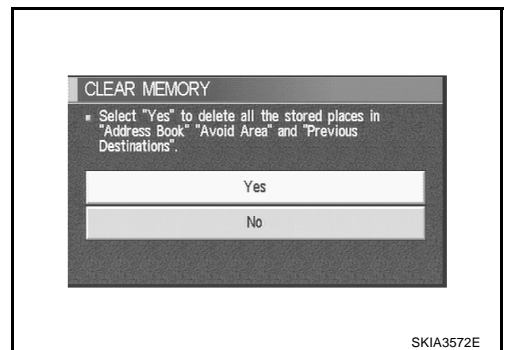
“AVOID AREA SETTING” MODE

- Areas to avoid can be registered.



“CLEAR MEMORY” MODE

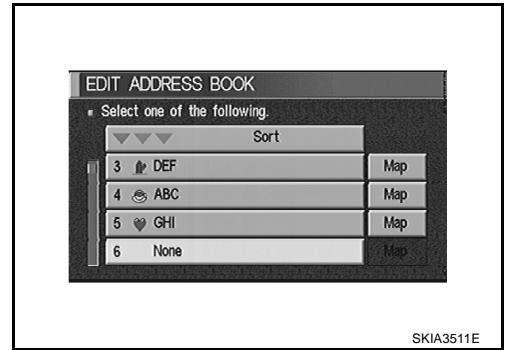
- To delete all the stored places in “Address Book”, “Avoid Area” and “Previous Destinations”, select “Yes”.



NAVIGATION SYSTEM

“EDIT ADDRESS BOOK” MODE

- Edit the items registered in Address Book.



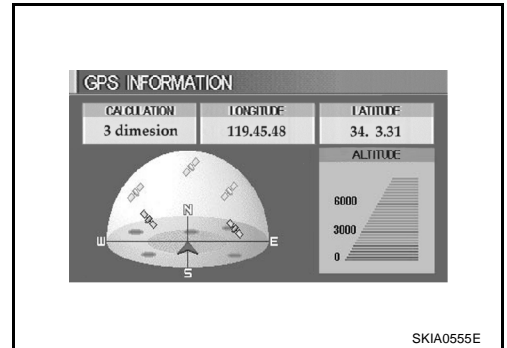
A
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“GPS INFORMATION” MODE

- Latitude, longitude, altitude, receiving state (telemetry), and satellite location are displayed as GPS information.

NOTE:

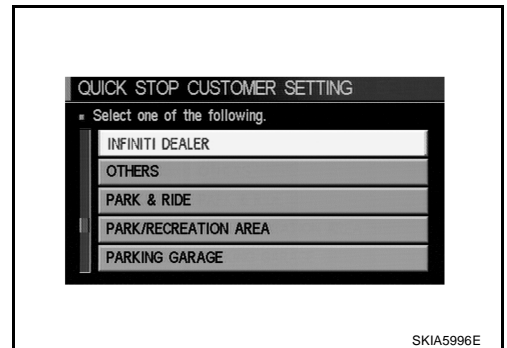
Altitude is displayed only in three-dimensional status.



E
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“QUICK STOP CUSTOMER SETTING” MODE

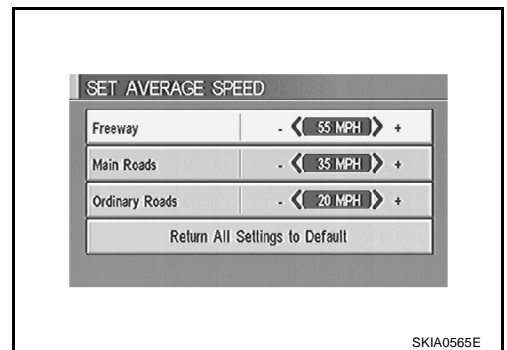
- Select a category for the “Quick Stop” menu.



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“SET AVERAGE SPEED” MODE

- Set the average vehicle speed to calibrate the estimated journey time for the destination.
- Set three items; “Freeway”, “Main Roads”, and “Ordinary Roads”.



M

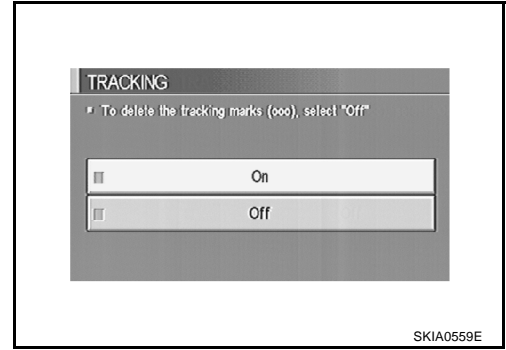
NAVIGATION SYSTEM

“TRACKING” MODE

- To delete the tracking marks on the map, select “Off”.
- To leave the tracking marks on the map, select “On”.

NOTE:

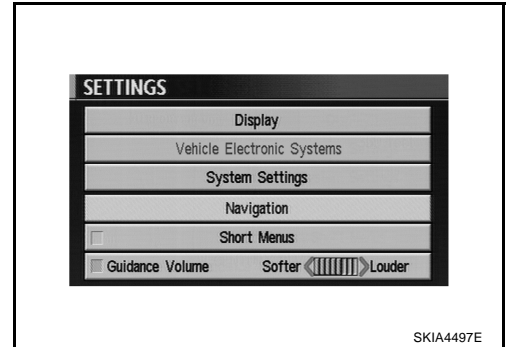
When a trail display is turned OFF, trail data is erased from the memory.



GUIDANCE VOLUME

Description

Following guidance volume setting can be changed.



Activation/Deactivation Setting

- The voice prompt can be turned on/off by pressing the “Guidance Volume” button.

Voice Volume Setting

- Volume of the voice can be controlled by bending the joystick to left/right.

DISPLAY WITH PUSHED “TRIP” BUTTON

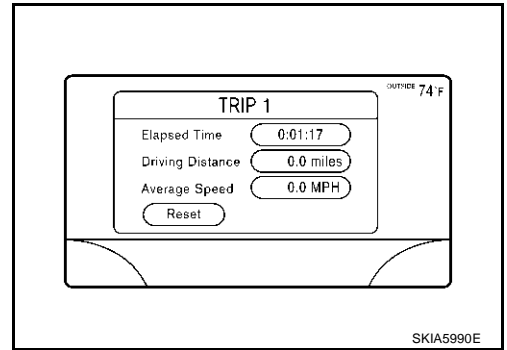
- When the “TRIP” button is pushed, the following models will display on the screen.
- Warning message (if there are any) →TRIP 1→TRIP 2→FUEL ECONOMY→MAINTENANCE→OFF.

Display items	Display/Setting contents		Reference page
Trip 1 or Trip 2	Elapsed Time	Displays driving time with a range of 0000:00:00 to 9999:59:59.	AV-115. "TRIP 1 OR TRIP 2"
	Driving Distance [(km) or (miles)]	Displays driving distance with a range of 00000.0 to 99999.9.	
	Average speed [(km/h) or (MPH)]	Displays average speed with a range of 000.0 to 999.9.	
Fuel Economy	Average Fuel Economy [(MPG) or (l/100km)]	Displays fuel economy with ignition switch ON, average fuel economy each 30 minutes.	AV-115. "FUEL ECONOMY"
	Distance to Empty [(miles) or (km)]	Displays possible driving distance with remaining fuel.	
	Fuel Economy [(MPG) or (1/100 km)]	Displays fuel economy each approx. 100 ms.	
Maintenance	Engine oil	Maintenance intervals of engine oil and setting of oil change cycle.	AV-115. "MAINTENANCE"
	Tire rotation	Maintenance intervals of tire and setting of tire replacement cycle.	
	Tire pressure (If so equipped)	Tire pressure displayed as tire pressure information.	

NAVIGATION SYSTEM

TRIP 1 OR TRIP 2

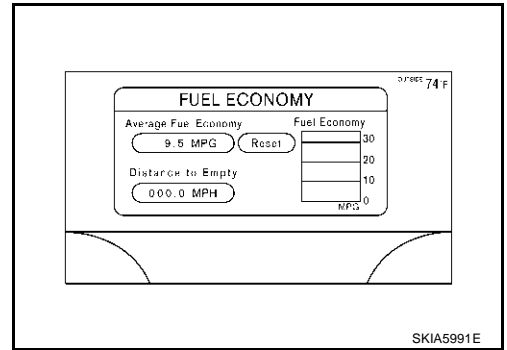
- Elapsed time, Driving distance and Average speed are displayed as Trip 1 information or Trip 2 information.
- The way to reset is by pushing the “Reset” switch or by keeping pushing “TRIP” button more than 1.5 seconds.



A
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FUEL ECONOMY

- Average Fuel Economy, Distance to Empty, Fuel Economy are displayed as Fuel Economy information.
- The way to reset is by pushing the “Reset” switch or by keeping pushing “TRIP” button more than 1.5 seconds.



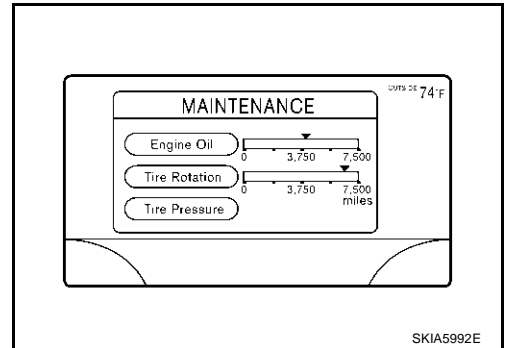
E
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MAINTENANCE

- Engine Oil, Tire Rotation and Tire Pressure are displayed as Maintenance information.

NOTE:

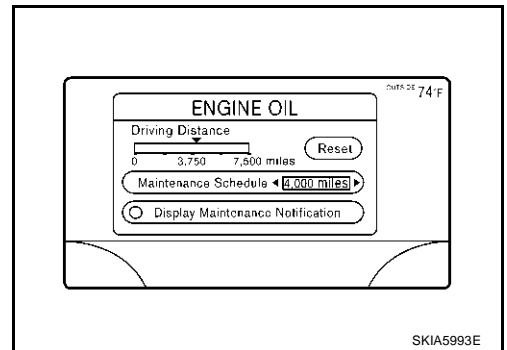
In a case of a vehicle with Low tire pressure warning control unit, “Tire Pressure” switch is displayed.



I
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AV

ENGINE OIL OR TIRE ROTATION

- Possible to set up interval of engine oil and tire rotation by moving joystick right and left.

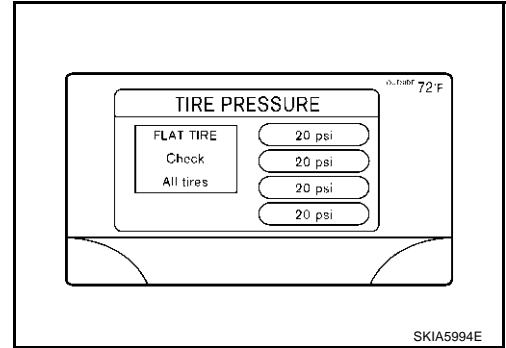


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M

NAVIGATION SYSTEM

TIRE PRESSURE

- Pressure indication in ** psi on the screen indicates that the pressure is being measured. After a few driving trips, the pressures for all four tires will be displayed.
- The order of tire pressure figures displayed on the screen does not correspond with the actual order of the tire position.
- Tire pressure rises and falls depending on the heat caused by the vehicle's traveling condition and the temperature.
- In case of low tire pressure, the low tire pressure warning light will come on and/or a warning is displayed on the screen.
- FLAT TIRE—very low tire air pressure.

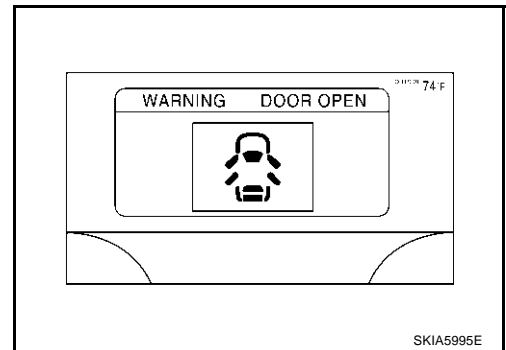


NOTE:

- In a case of FLAT TIRE pressure, interrupt screen is not shown on the display.
- On the screen of TIRE PRESSURE, “FLAT TIRE”, “Check”, “All tire” is displayed.

WARNING INDICATIONS

Warning signal (door switch signal) is received from BCM through CAN communication line.



Warning indicators	Warning lamps in instrument panel	Warning detection and cancel conditions		Cases of malfunction
DOOR OPEN	Door	Detection condition	Vehicle is running [approx. 5km/h (3 MPH) or faster] and door ajar of any of the doors is detected.	Door is open
		Cancel condition	Vehicle is stopped and all the doors lock.	

NAVIGATION SYSTEM

CAN Communication System Description

AKS007Z3

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

CAN Communication Unit

AKS007Z0

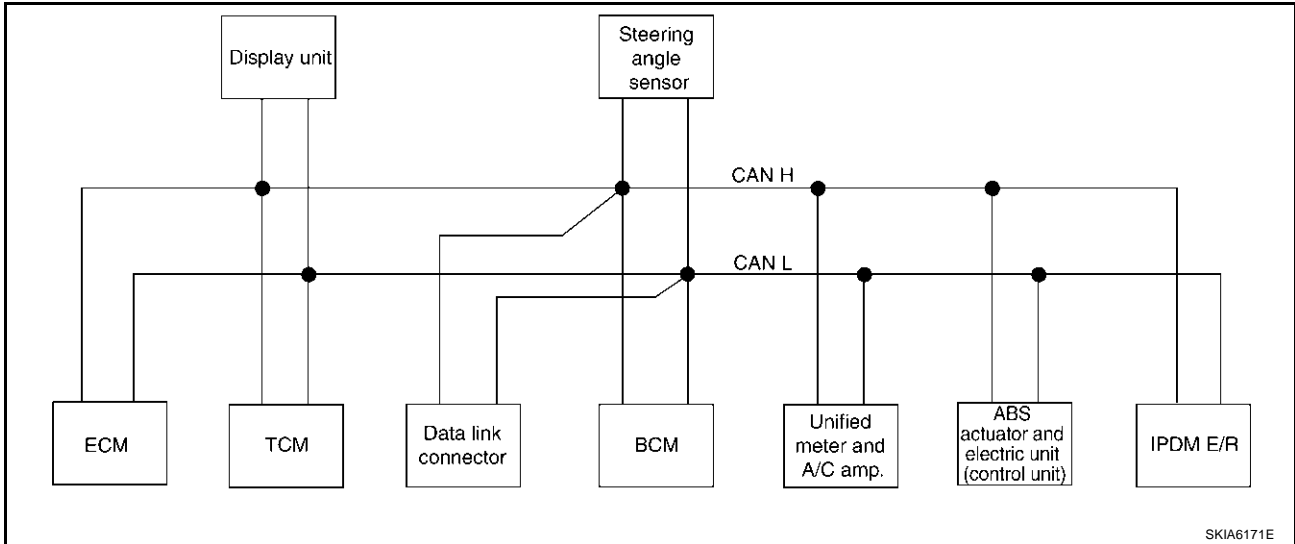
Body type	Wagon					
Axle	2WD			AWD		
Engine	VQ35DE			VQ35DE/VK45DE		
Transmission	A/T					
Brake control	VDC					
Navigation system			×			×
Low tire pressure warning system			×			×
ICC system			×			×
Intelligent Key system			×			×
Automatic drive positioner		×	×		×	×
CAN communication unit						
ECM	×	×	×	×	×	×
TCM	×	×	×	×	×	×
Display unit	×	×		×	×	
Display control unit			×			×
Low tire pressure warning control unit			×			×
AWD control unit				×	×	×
ICC unit			×			×
Intelligent Key unit			×			×
Data link connector	×	×	×	×	×	×
BCM	×	×	×	×	×	×
Steering angle sensor	×	×	×	×	×	×
Unified meter and A/C amp.	×	×	×	×	×	×
ICC sensor			×			×
ABS actuator and electric unit (control unit)	×	×	×	×	×	×
Driver seat control unit		×	×		×	×
IPDM E/R	×	×	×	×	×	×
CAN communication type	<u>AV-118, "TYPE 1/TYPE2"</u>		<u>AV-121, "TYPE 3"</u>	<u>AV-124, "TYPE 4/TYPE5"</u>		<u>AV-127, "TYPE 6"</u>

×: Applicable

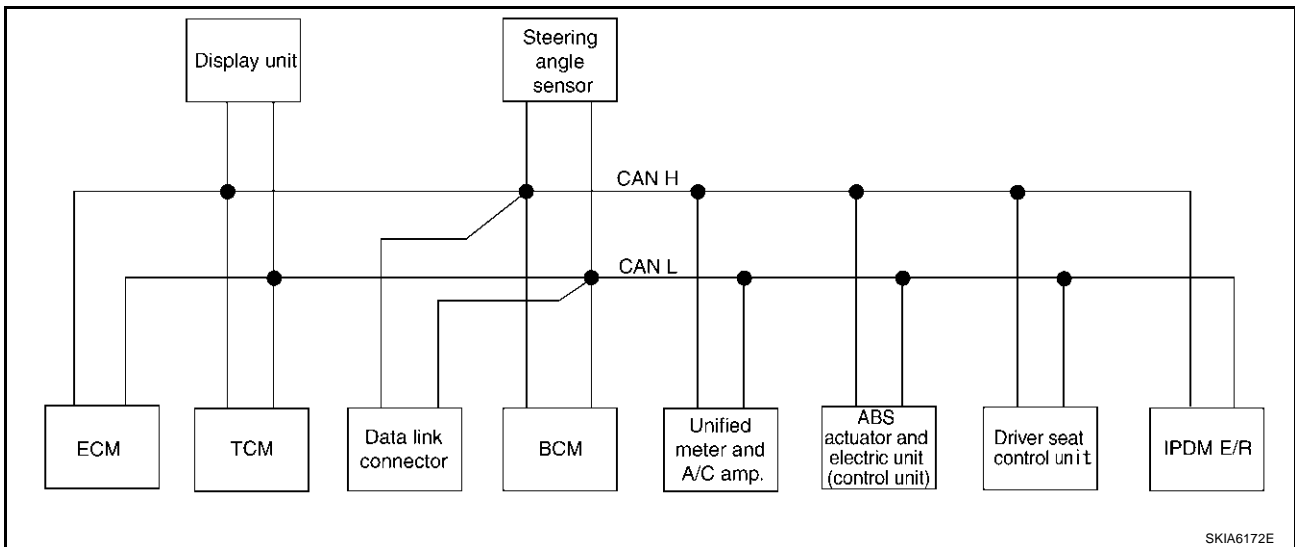
NAVIGATION SYSTEM

TYPE 1/TYPE2 System Diagram

- Type1



- Type2



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Display unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Engine speed signal	T	R	R			R	R		
Engine status signal	T			R					
Engine coolant temperature signal	T	R				R			
A/T self-diagnosis signal	R	T							
Accelerator pedal position signal	T	R					R		
Closed throttle position signal	T	R							
Wide open throttle position signal	T	R							

NAVIGATION SYSTEM

Signals	ECM	TCM	Display unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Battery voltage signal	T	R							
Key switch signal				T				R	
Ignition switch signal				T				R	R
P range signal		T					R	R	
Stop lamp switch signal		R				T			
ABS operation signal	R						T		
TCS operation signal	R						T		
VDC operation signal	R						T		
Fuel consumption monitor signal	T		R			R			
Input shaft revolution signal	R	T							
Output shaft revolution signal	R	T							
A/C switch signal	R			T					
A/C compressor request signal	T								R
A/C relay status signal	R								T
A/C compressor feedback signal	T					R			
Blower fan motor switch signal	R			T					
A/C control signal			T			R			
			R			T			
Cooling fan speed request signal	T								R
Cooling fan speed signal	R								T
Position light request signal			R	T		R			R
Low beam request signal				T					R
Low beam status signal	R								T
High beam request signal				T		R			R
High beam status signal	R								T
Front fog light request signal				T					R
Day time running light request signal				T		R			
Turn LED burnout status signal				R		T			
Vehicle speed signal						R	T		
	R	R	R	R		T		R	
Sleep wake up signal				T		R		R	R
Door switch signal			R	T		R		R	R
Turn indicator signal				T		R			
Key fob ID signal				T				R	
Key fob door unlock signal				T				R	
Oil pressure switch signal				R					T
				T		R			
Buzzer output signal				T		R			
Fuel level sensor signal	R					T			
Fuel level low warning signal			R			T			

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NAVIGATION SYSTEM

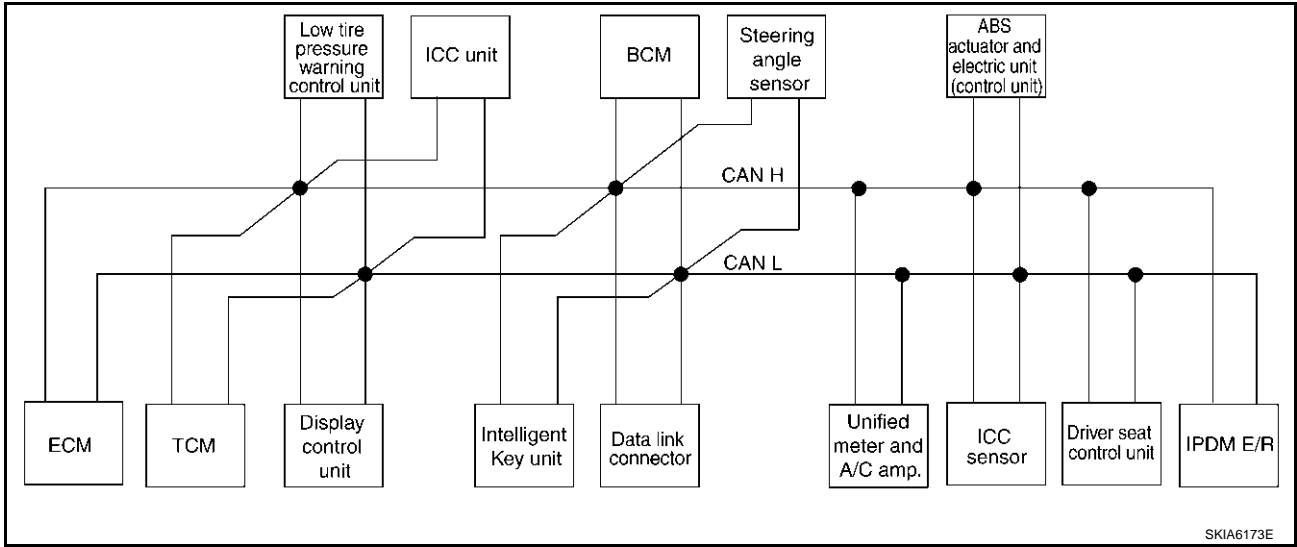
Signals	ECM	TCM	Display unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
ASCD operation signal	T	R							
ASCD OD cancel request	T	R							
Front wiper request signal				T					R
Front wiper stop position signal				R					T
Rear window defogger switch signal				T					R
Rear window defogger control signal	R		R	R					T
Hood switch signal				R					T
Theft warning horn request signal				T					R
Horn chirp signal				T					R
Steering angle sensor signal					T		R		
ABS warning lamp signal						R	T		
VDC OFF indicator lamp signal						R	T		
SLIP indicator lamp signal						R	T		
Brake warning lamp signal						R	T		
System setting signal			T	R				R	
A/T CHECK indicator lamp signal		T				R			
A/T position indicator lamp signal		T				R			
A/T shift schedule change demand signal		R					T		
Manual mode signal		R				T			
Not manual mode signal		R				T			
Manual mode shift up signal		R				T			
Manual mode shift down signal		R				T			
Manual mode indicator signal		T				R			
Distance to empty signal			R			T			
Hand brake switch				R		T			

NAVIGATION SYSTEM

TYPE 3

System Diagram

- Type3



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Engine speed signal	T	R	R		R				R		R		
Engine status signal	T						R						
Engine coolant temperature signal	T	R			R				R				
A/T self-diagnosis signal	R	T											
Accelerator pedal position signal	T	R			R						R		
Closed throttle position signal	T	R			R								
Wide open throttle position signal	T	R											
Battery voltage signal	T	R											
Key switch signal							T					R	
Ignition switch signal							T					R	R
P range signal		T			R						R	R	
Stop lamp switch signal		R							T				
ABS operation signal	R				R						T		
TCS operation signal	R				R						T		
VDC operation signal	R				R						T		
Fuel consumption monitor signal	T		R						R				

NAVIGATION SYSTEM

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Input shaft revolution signal	R	T			R								
Output shaft revolution signal	R	T			R								
A/C switch signal	R						T						
A/C compressor request signal	T												R
A/C relay status signal	R												T
A/C compressor feedback signal	T								R				
Blower fan motor switch signal	R						T						
A/C control signal			T						R				
			R						T				
Cooling fan speed signal	R												T
Position light request signal	R						T		R				R
Low beam request signal							T						R
Low beam status signal	R												T
High beam request signal							T		R				R
High beam status signal	R												T
Front fog light request signal							T						R
Day time running light request signal							T		R				
Turn LED burnout status signal							R		T				
Vehicle speed signal					R				R		T		
	R	R	R	R		R	R		T	R		R	
Sleep wake up signal							T		R			R	R
						T	R						
Door switch signal			R			R	T		R			R	R
Turn indicator signal							T		R				
Key fob ID signal							T					R	
Key fob door unlock signal							T					R	
Oil pressure switch signal							R						T
							T		R				
Buzzer output signal							T		R				
						T			R				
					T				R				

NAVIGATION SYSTEM

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Fuel level sensor signal	R								T				
Fuel level low warning signal			R						T				
ICC operation signal	R				T								
Front wiper request signal					R		T						R
Front wiper stop position signal							R						T
Rear window defogger switch signal							T						R
Rear window defogger control signal	R		R				R						T
Hood switch signal							R						T
Theft warning horn request signal							T						R
Horn chirp signal							T						R
Steering angle sensor signal								T			R		
Tire pressure signal				T					R				
Tire pressure data signal			R	T									
ABS warning lamp signal					R				R		T		
VDC OFF indicator lamp signal					R				R		T		
SLIP indicator lamp signal									R		T		
Brake warning lamp signal									R		T		
System setting signal			T			R						R	
Distance to empty signal			R						T				
Hand brake switch signal							R		T				
Door lock/unlock request signal						T	R						
Door lock/unlock status signal						R	T						
Starter permission signal						T	R						
Back door open request signal						T	R						
Power window open request signal						T	R						
Alarm request signal						T	R						
Key warning signal						T			R				
ICC sensor signal					R					T			
ICC warning lamp signal					T				R				

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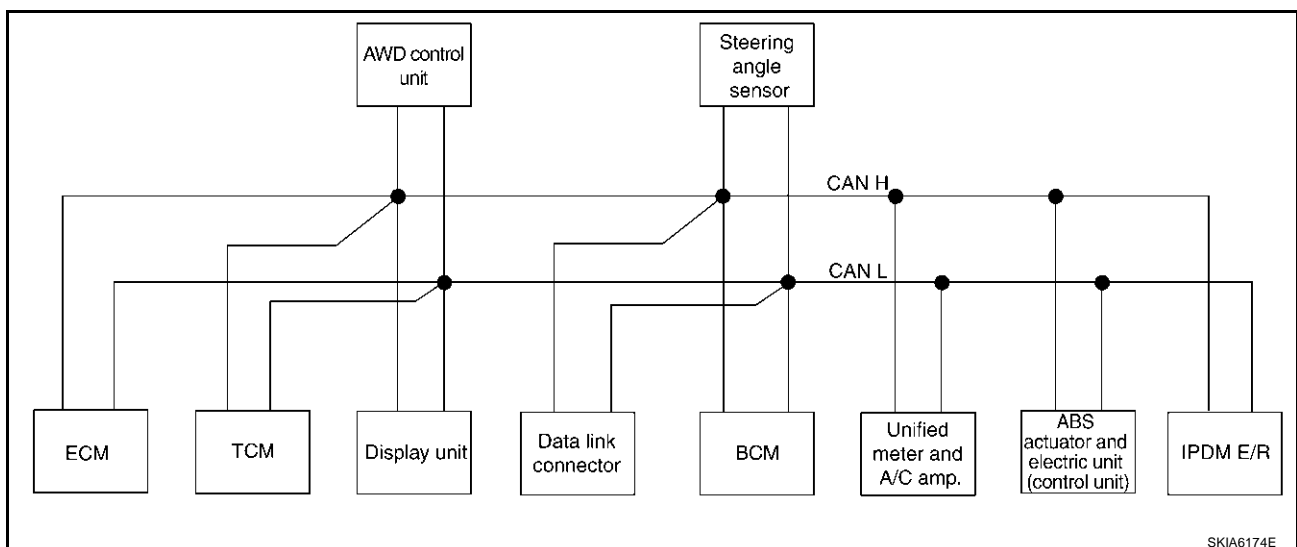
NAVIGATION SYSTEM

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
ICC system display signal					T				R				
Current gear position signal		T			R						R		
Steering switch signal	T				R								
ASCD operation signal	T	R											
ASCD OD cancel request	T	R											
ICC OD cancel request	R	R			T								
A/T CHECK indicator lamp signal		T							R				
A/T position indicator lamp signal		T							R				
A/T shift schedule change demand signal		R									T		
Manual mode signal		R							T				
Not manual mode signal		R							T				
Manual mode shift up signal		R							T				
Manual mode shift down signal		R							T				
Manual mode indicator signal		T			R				R				
Ignition knob switch signal						T	R						

TYPE 4/TYP5

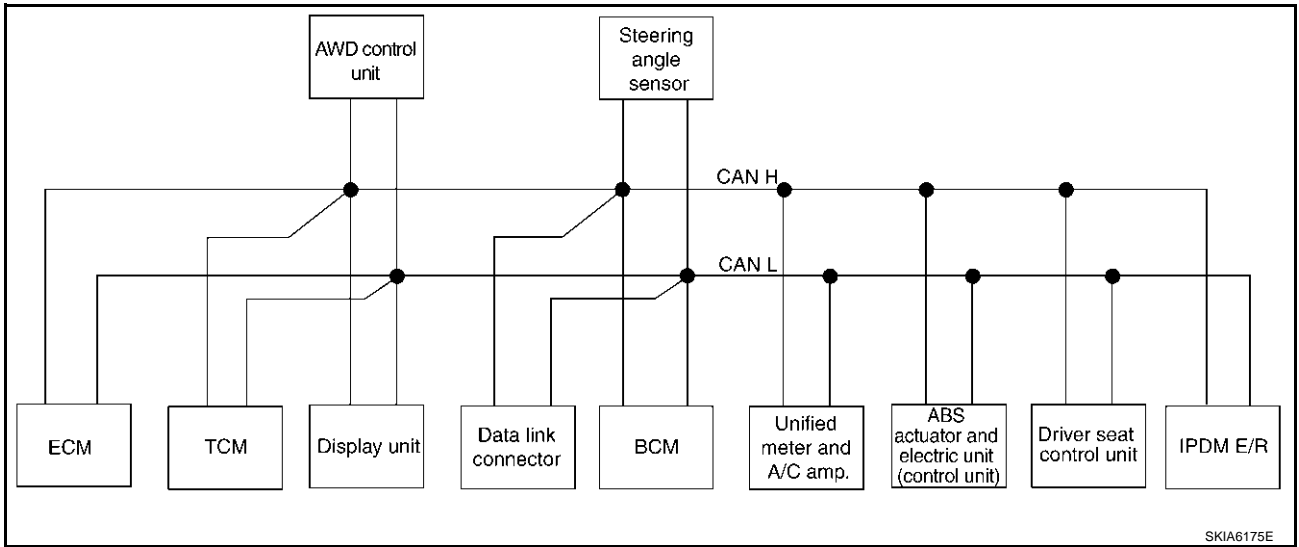
System Diagram

- Type4



NAVIGATION SYSTEM

● Type5



Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Display unit	AWD control unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
A/T self-diagnosis signal	R	T								
ABS operation signal	R			R				T		
TCS operation signal	R							T		
VDC operation signal	R			R				T		
Stop lamp switch signal		R		R			T			
Battery voltage signal	T	R								
Key switch signal					T				R	
Ignition switch signal					T				R	R
P range signal		T						R	R	
Closed throttle position signal	T	R								
Wide open throttle position signal	T	R								
Engine speed signal	T	R	R	R			R	R		
Engine status signal	T				R					
Engine coolant temperature signal	T	R					R			
Accelerator pedal position signal	T	R		R				R		
Fuel consumption monitor signal	T		R				R			
Input shaft revolution signal	R	T								
Output shaft revolution signal	R	T								
A/C switch signal	R				T					
A/C compressor request signal	T									R
A/C relay status signal	R									T
A/C compressor feedback signal	T						R			

NAVIGATION SYSTEM

Signals	ECM	TCM	Display unit	AWD control unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
Blower fan motor switch signal	R				T					
A/C control signal			T				R			
			R				T			
Cooling fan speed signal	R									T
Position light request signal			R		T		R			R
Low beam request signal					T					R
Low beam status signal	R									T
High beam request signal					T		R			R
High beam status signal	R									T
Front fog light request signal					T					R
Day time running light request signal					T		R			
Turn LED burnout status signal					R		T			
Vehicle speed signal							R	T		
	R	R	R		R		T		R	
Sleep wake up signal					T		R		R	R
Door switch signal			R		T		R		R	R
Turn indicator signal					T		R			
Key fob ID signal					T				R	
Key fob door unlock signal					T				R	
Oil pressure switch signal					R					T
					T		R			
Buzzer output signal					T		R			
Fuel level sensor signal	R						T			
Fuel level low warning signal			R				T			
Front wiper request signal					T					R
Front wiper stop position signal					R					T
Rear window defogger switch signal					T					R
Rear window defogger control signal	R		R		R					T
Hood switch signal					R					T
Theft warning horn request signal					T					R
Horn chirp signal					T					R
Steering angle sensor signal						T		R		
ABS warning lamp signal							R	T		
VDC OFF indicator lamp signal							R	T		
SLIP indicator lamp signal							R	T		
Brake warning lamp signal							R	T		
System setting signal			T		R				R	
AWD warning lamp signal				T			R			

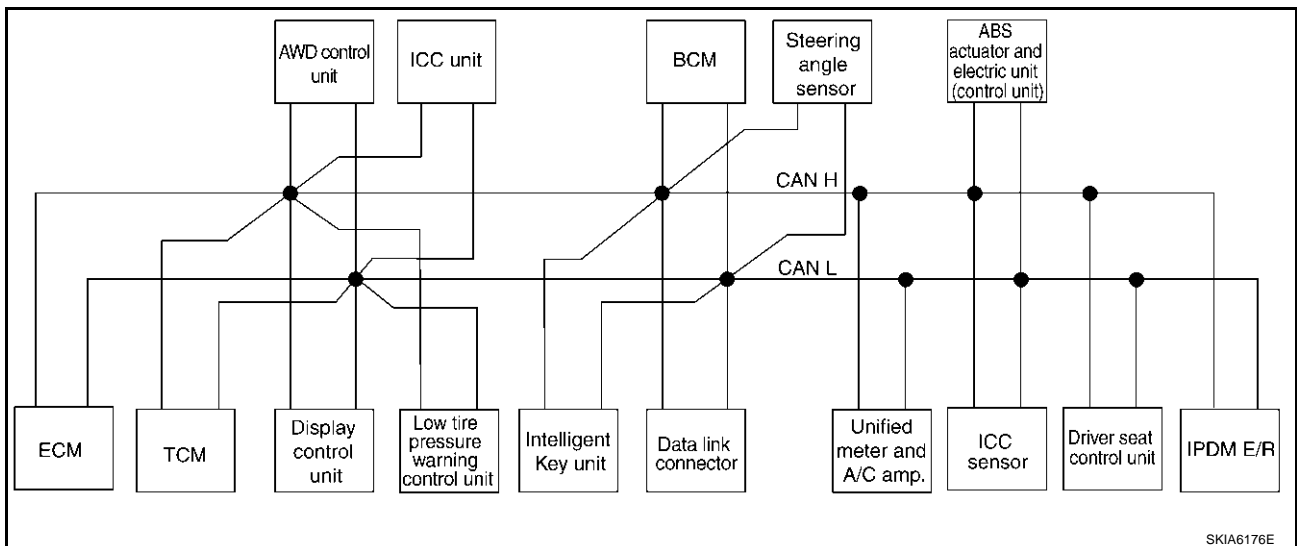
NAVIGATION SYSTEM

Signals	ECM	TCM	Display unit	AWD control unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ABS actuator and electric unit (control unit)	Driver seat control unit	IPDM E/R
AWD lock indicator lamp signal				T			R			
Distance to empty signal			R				T			
Hand brake switch signal				R	R		T			
ASCOD operation signal	T	R								
ASCOD OD cancel request	T	R								
A/T CHECK indicator lamp signal		T					R			
A/T position indicator lamp signal		T					R			
A/T shift schedule change demand signal		R						T		
Manual mode signal		R					T			
Not manual mode signal		R					T			
Manual mode shift up signal		R					T			
Manual mode shift down signal		R					T			
Manual mode indicator signal		T					R			

TYPE 6

System Diagram

- Type6



NAVIGATION SYSTEM

Input/output Signal Chart

T: Transmit R: Receive

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	AWD control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPD M E/R
A/T self-diagnosis signal	R	T												
ABS operation signal	R				R	R						T		
TCS operation signal	R					R						T		
VDC operation signal	R				R	R					R	T		
Stop lamp switch signal		R			R					T				
Battery voltage signal	T	R												
Key switch signal								T					R	
Ignition switch signal								T					R	R
P range signal		T				R						R	R	
Closed throttle position signal	T	R				R								
Wide open throttle position signal	T	R												
Engine speed signal	T	R	R		R	R				R		R		
Engine status signal	T							R						
Engine coolant temperature signal	T	R				R				R				
Accelerator pedal position signal	T	R			R	R						R		
Fuel consumption monitor signal	T		R							R				
A/T self-diagnosis signal	R	T												
Input shaft revolution signal	R	T				R								
Output shaft revolution signal	R	T				R								
A/C switch signal	R							T						
A/C compressor request signal	T													R
A/C relay status signal	R													T
A/C compressor feedback signal	T									R				
Blower fan motor switch signal	R							T						
A/C control signal			T							R				
			R							T				
Cooling fan speed signal	R													T
Position light request signal			R					T		R				R
Low beam request signal								T						R
Low beam status signal	R													T
High beam request signal								T		R				R

NAVIGATION SYSTEM

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	AWD control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPD M E/ R
High beam status signal	R													T
Front fog light request signal								T						R
Day time running light request signal								T		R				
Turn LED burnout status signal								R		T				
Vehicle speed signal						R				R		T		
	R	R	R	R			R	R		T	R		R	
Sleep wake up signal								T		R			R	R
							T	R						
Door switch signal			R				R	T		R			R	R
Key fob ID signal								T					R	
Key fob door unlock signal								T					R	
Oil pressure switch signal								R						T
								T		R				
Buzzer output signal								T		R				
						T				R				
Fuel level sensor signal	R									T				
Fuel level low warning signal			R							T				
ICC operation signal	R					T								
Front wiper request signal						R		T						R
Front wiper stop position signal								R						T
Rear window defogger switch signal								T						R
Rear window defogger control signal	R		R					R						T
Hood switch signal								R						T
Theft warning horn request signal								T						R
Horn chirp signal								T						R
Steering angle sensor signal									T			R		
Tire pressure signal				T						R				
Tire pressure data signal			R	T										
ABS warning lamp signal						R				R		T		
VDC OFF indicator lamp signal						R				R		T		
SLIP indicator lamp signal										R		T		

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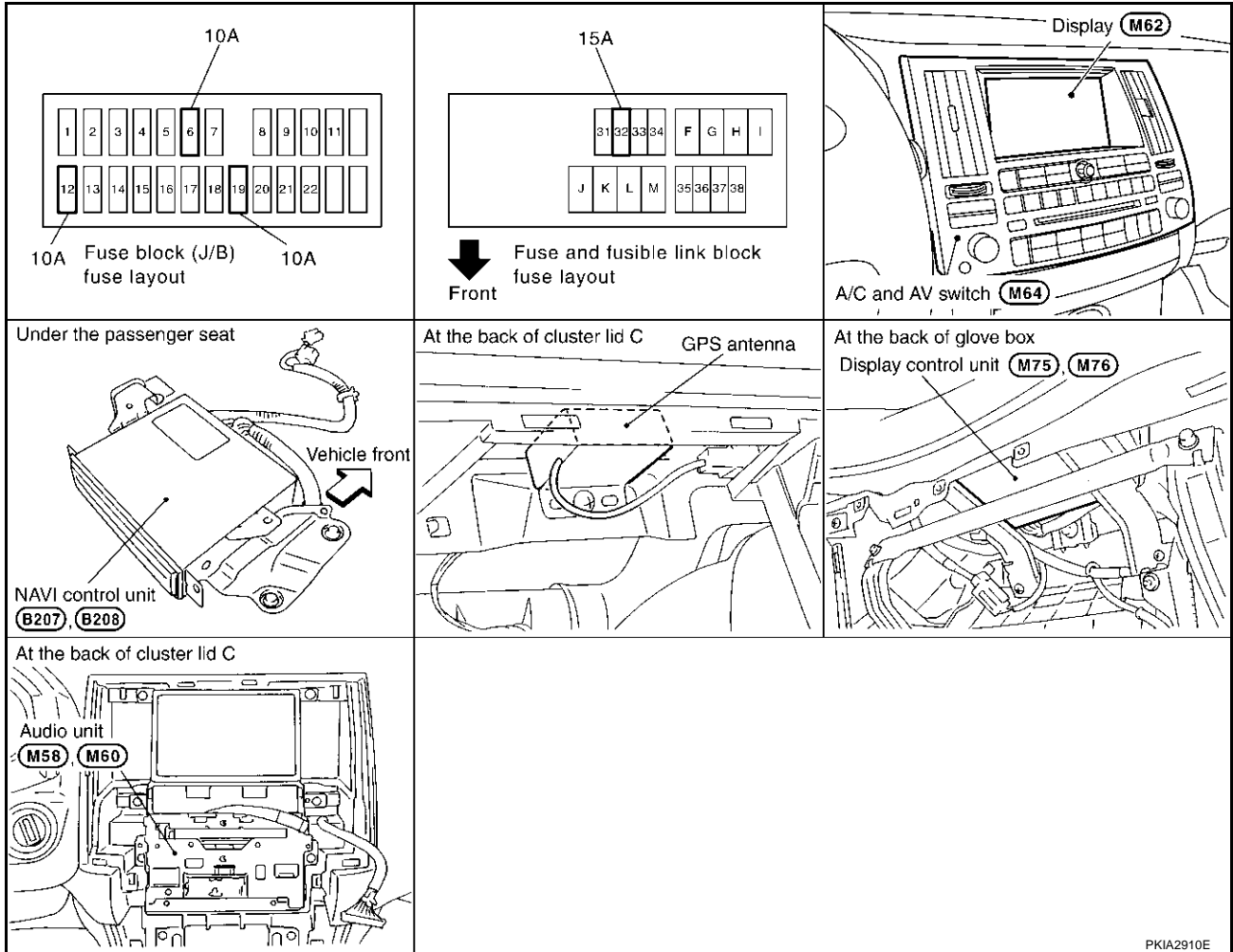
NAVIGATION SYSTEM

Signals	ECM	TCM	Display control unit	Low tire pressure warning control unit	AWD control unit	ICC unit	Intelligent Key unit	BCM	Steering angle sensor	Unified meter and A/C amp.	ICC sensor	ABS actuator and electric unit (control unit)	Driver seat control unit	IPD M E/R
Brake warning lamp signal										R		T		
System setting signal			T				R						R	
AWD warning lamp signal					T					R				
AWD lock indicator lamp signal					T					R				
Distance to empty signal			R							T				
Hand brake switch signal					R			R		T				
Door lock/unlock request signal							T	R						
Door lock/unlock status signal							R	T						
Starter permission signal							T	R						
Back door open request signal							T	R						
Power window open request signal							T	R						
Alarm request signal							T	R						
Key warning signal							T			R				
ICC sensor signal						R					T			
ICC warning lamp signal						T				R				
ICC system display signal						T				R				
Current gear position signal		T				R						R		
Steering switch signal	T					R								
ASCD operation signal	T	R												
ASCD OD cancel request	T	R												
ICC OD cancel request	R	R				T								
A/T CHECK indicator lamp signal		T								R				
A/T position indicator lamp signal		T								R				
A/T shift schedule change demand signal		R										T		
Manual mode signal		R								T				
Not manual mode signal		R								T				
Manual mode shift up signal		R								T				
Manual mode shift down signal		R								T				
Manual mode indicator signal		T								R				
Ignition knob switch signal							T	R						

NAVIGATION SYSTEM

Component Parts Location and Harness Connector Location

AKS0071R



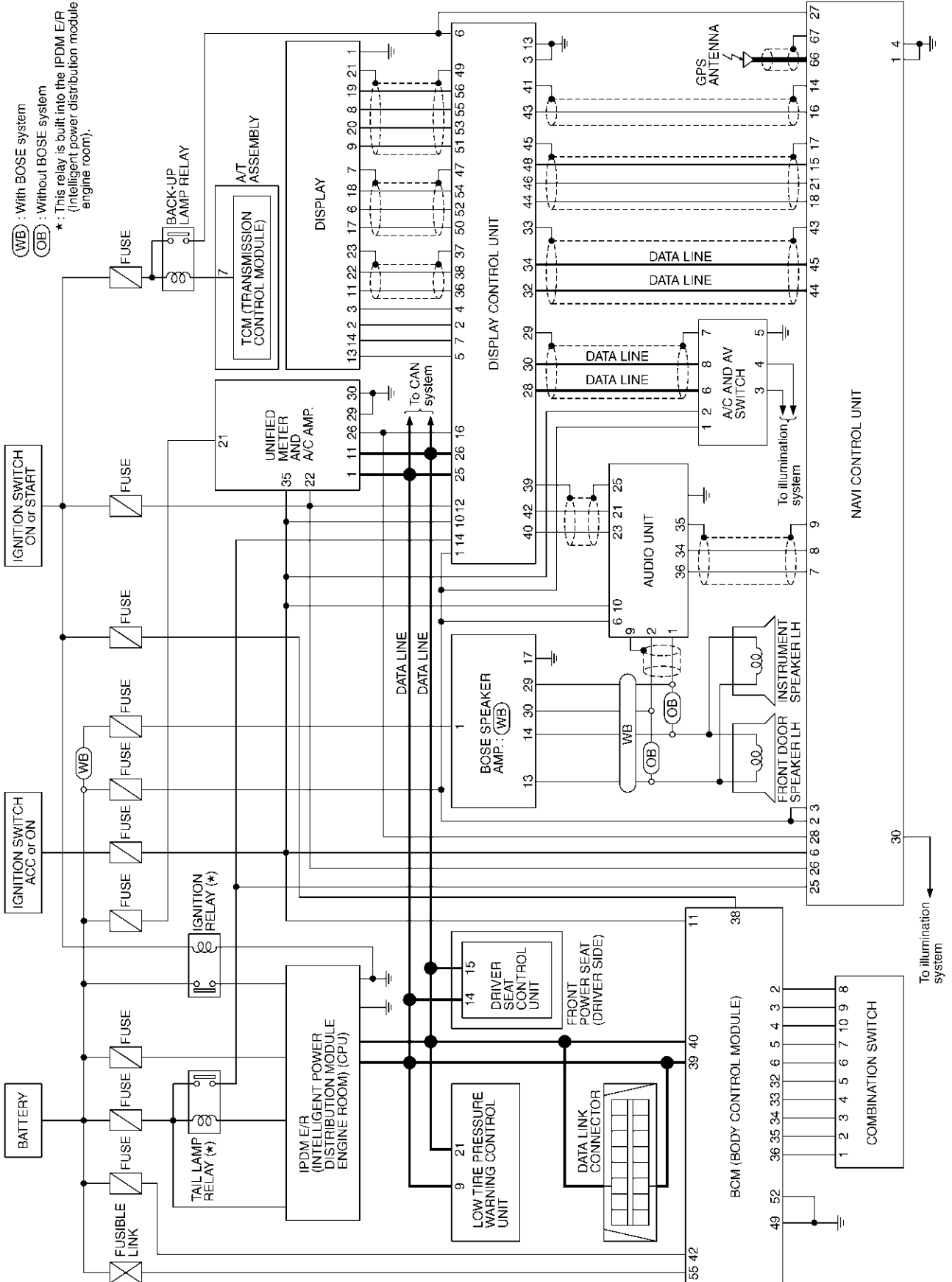
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NAVIGATION SYSTEM

Schematic—NAVI—

AKS0071S



TKWM1256E

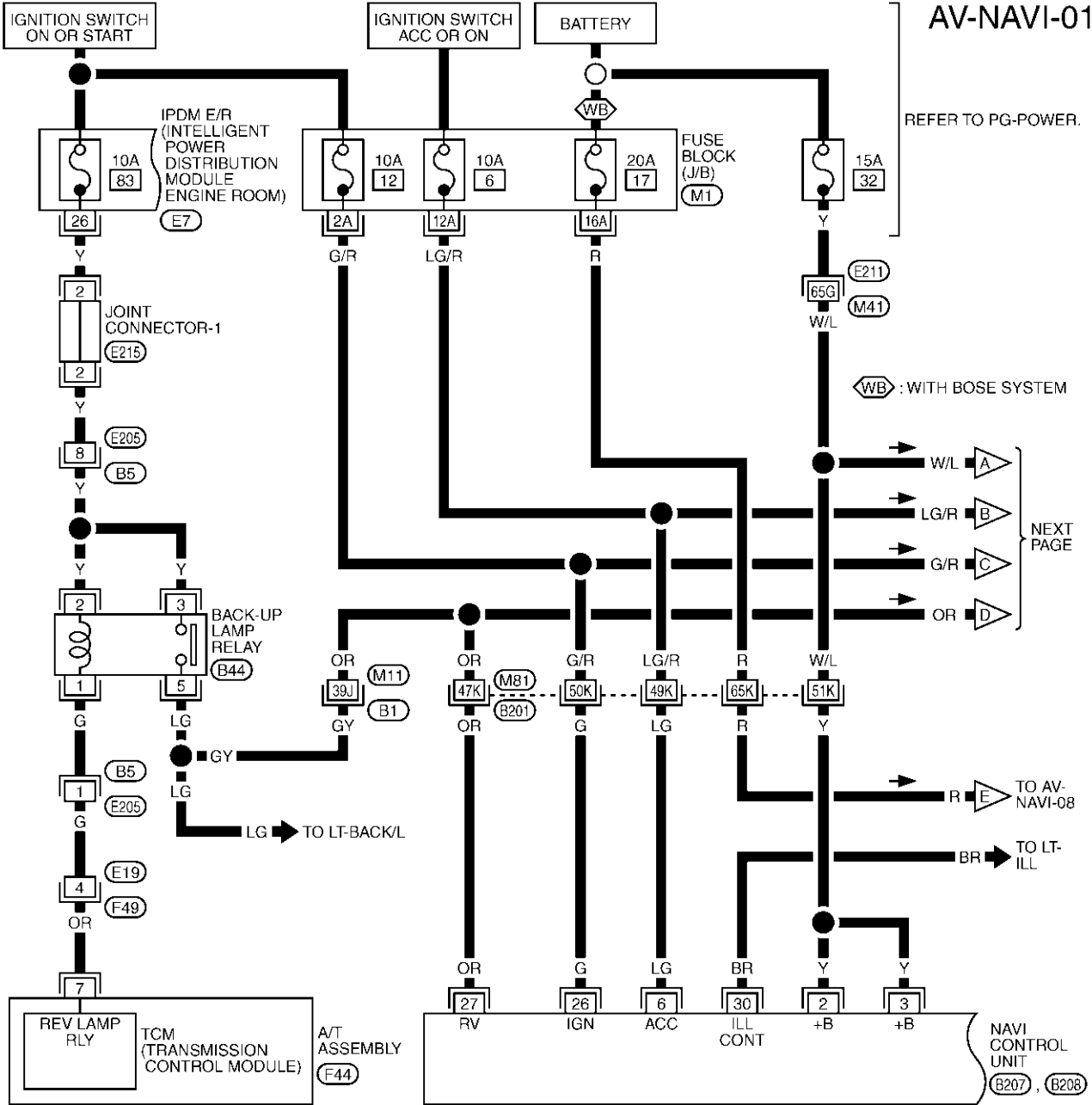
NAVIGATION SYSTEM

Wiring Diagram —NAVI—

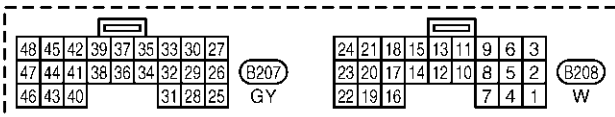
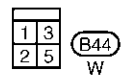
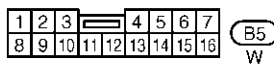
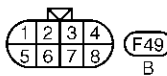
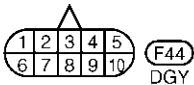
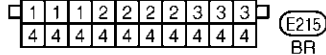
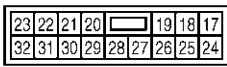
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AV-NAVI-01

REFER TO PG-POWER.



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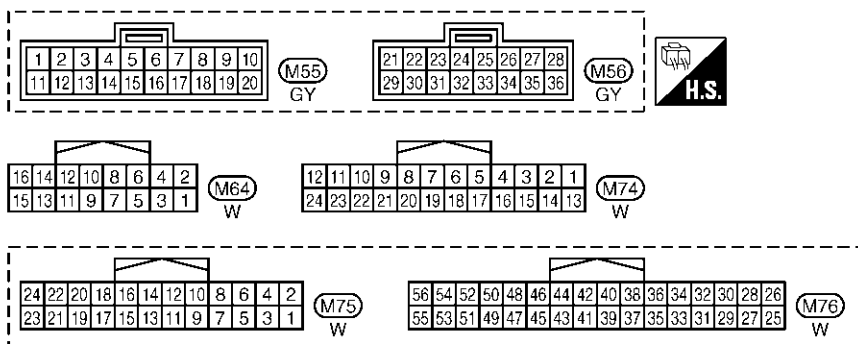
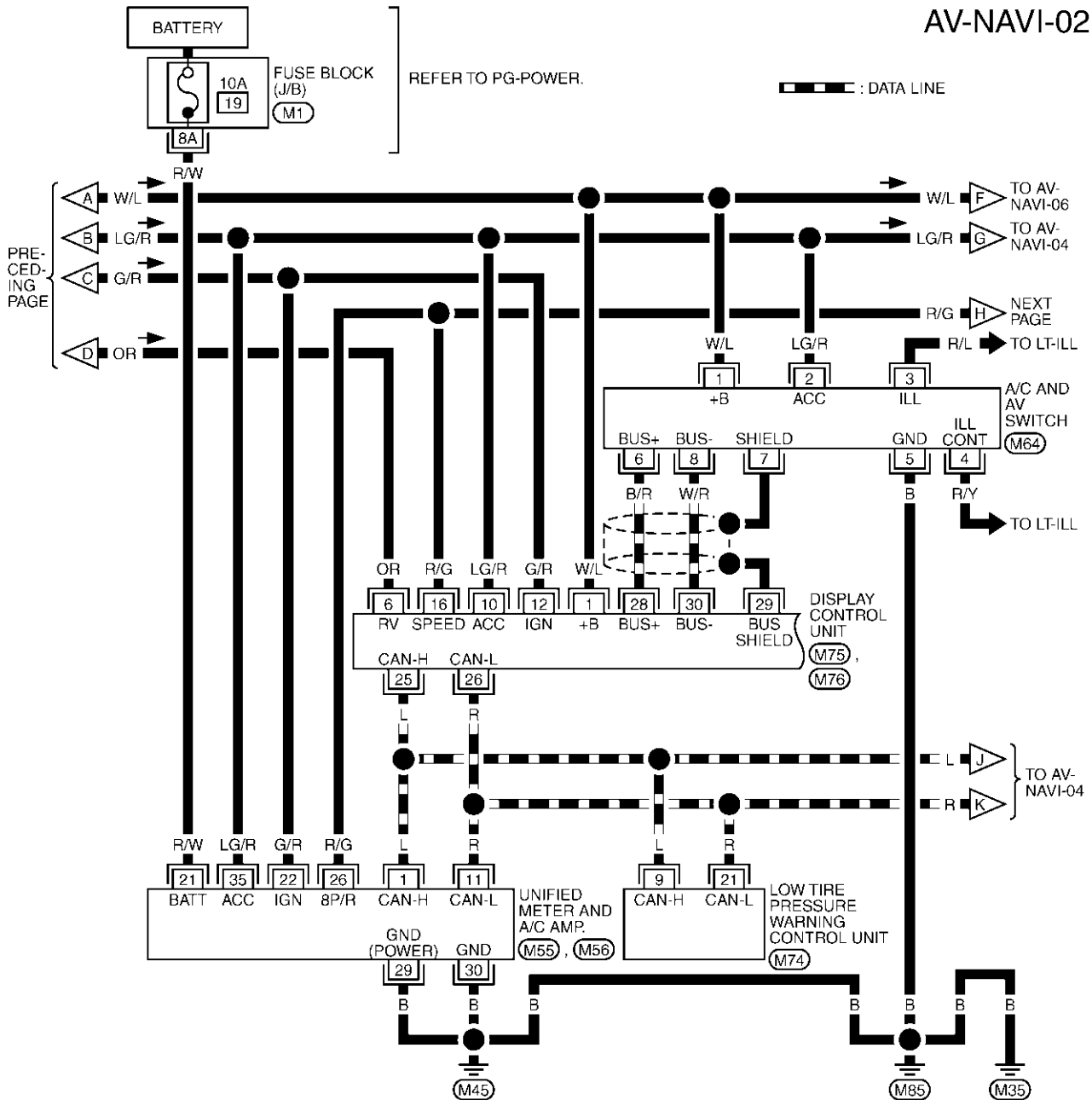
(E211), (B1), (B201) -SUPER MULTIPLE JUNCTION (SMJ)

(M1) -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM1265E

NAVIGATION SYSTEM

AV-NAVI-02

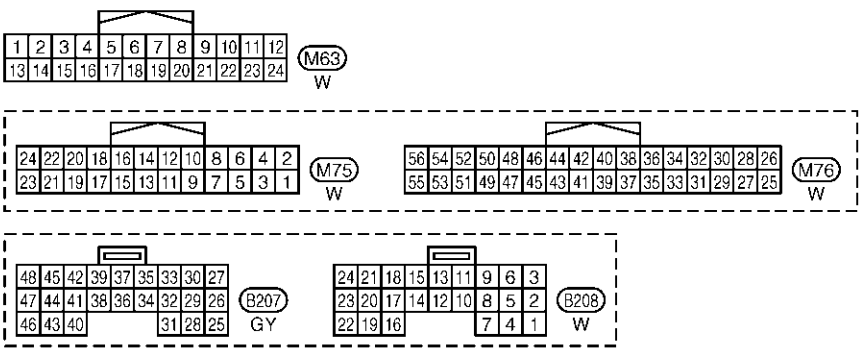
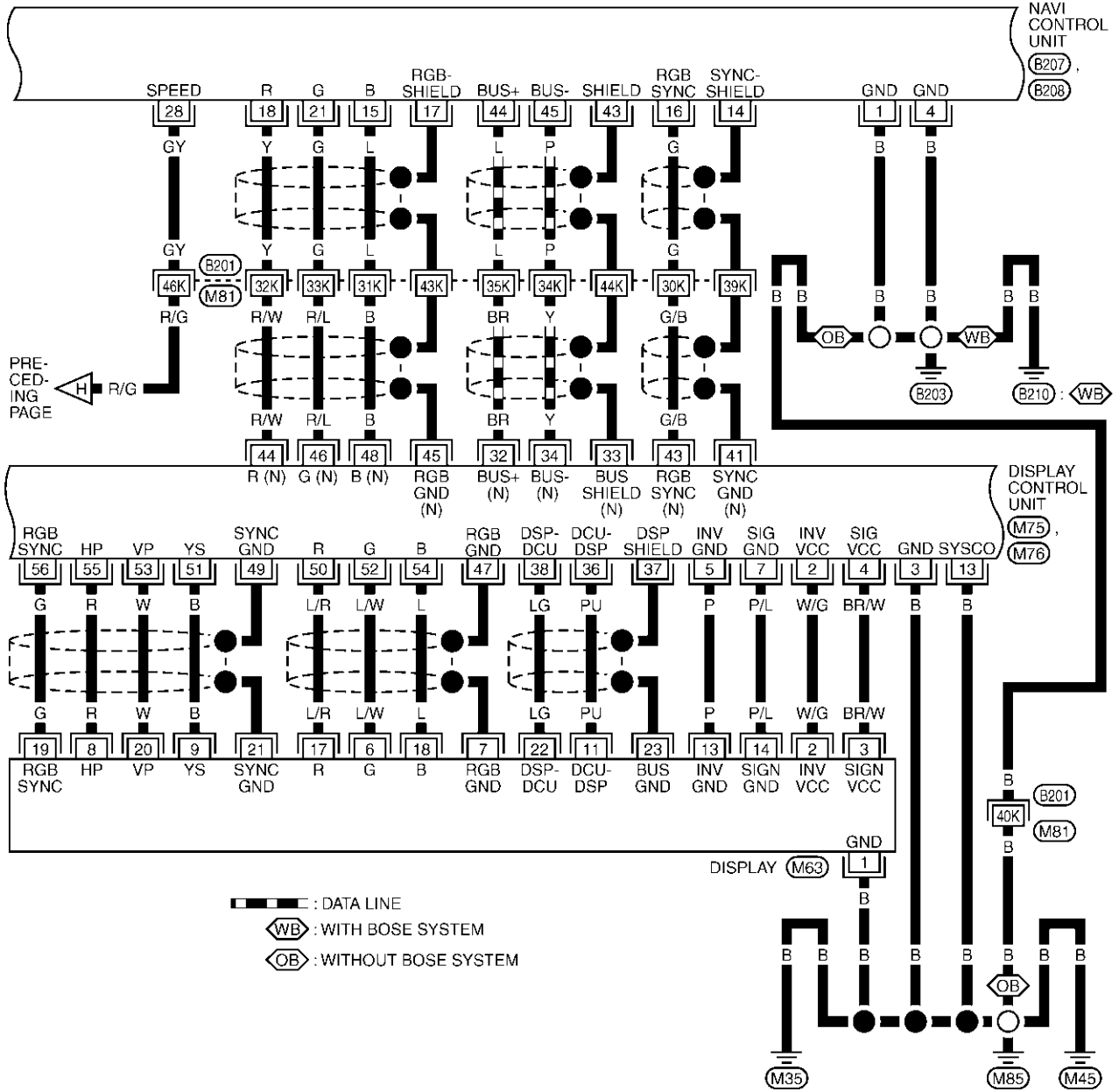


REFER TO THE FOLLOWING.
 (M1) - FUSE BLOCK-JUNCTION BOX (J/B)

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NAVIGATION SYSTEM

AV-NAVI-03

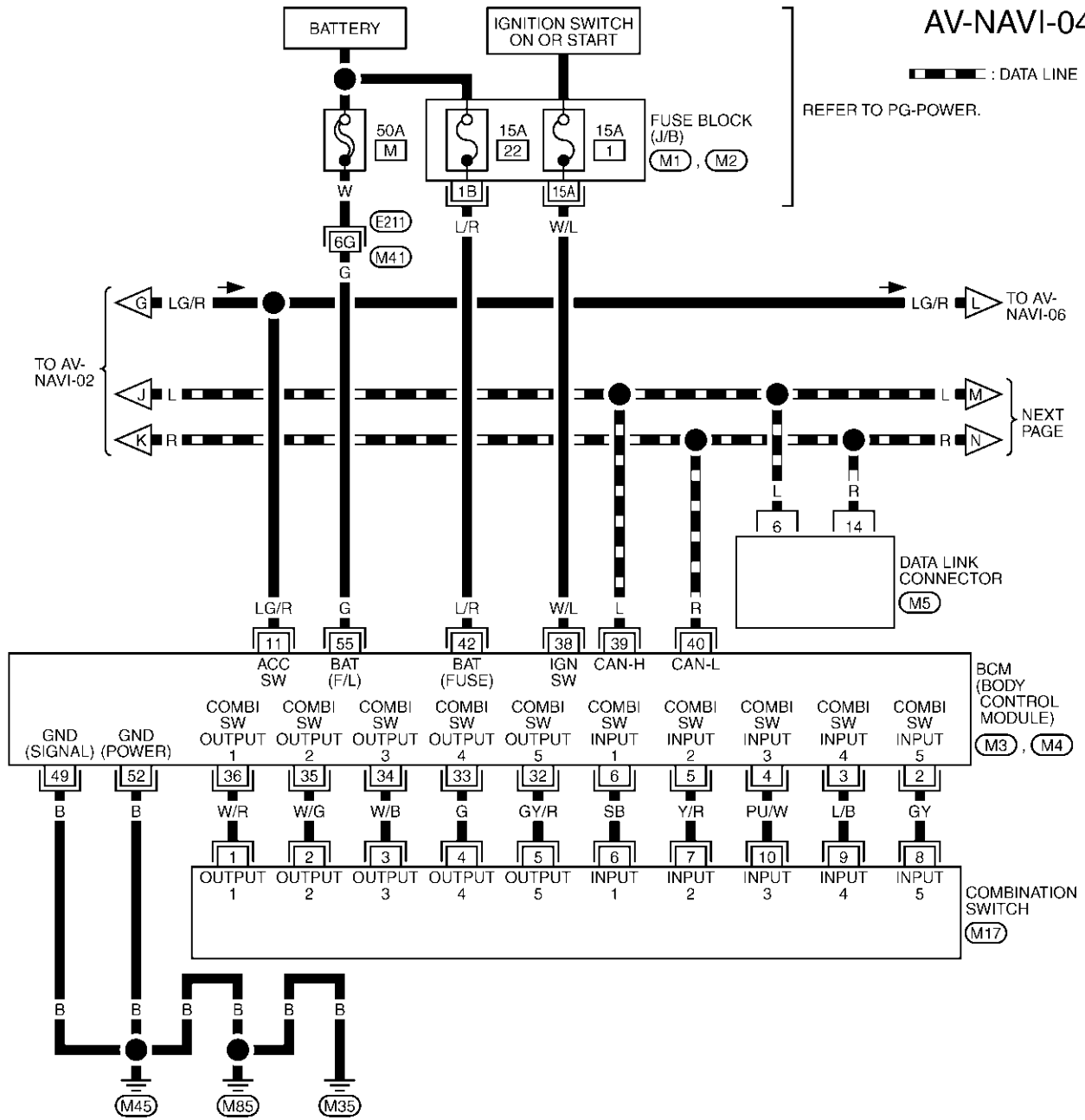


REFER TO THE FOLLOWING.
 (B201) -SUPER MULTIPLE JUNCTION (SMJ)

TKWM1266E

NAVIGATION SYSTEM

AV-NAVI-04



— — — — — : DATA LINE

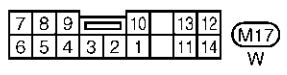
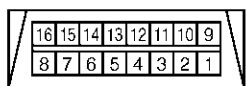
REFER TO PG-POWER.

NEXT PAGE

DATA LINK CONNECTOR (M5)

BCM (BODY CONTROL MODULE) (M3, M4)

COMBINATION SWITCH (M17)

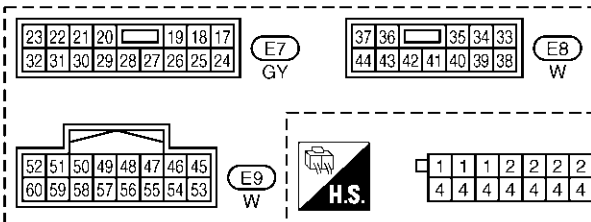
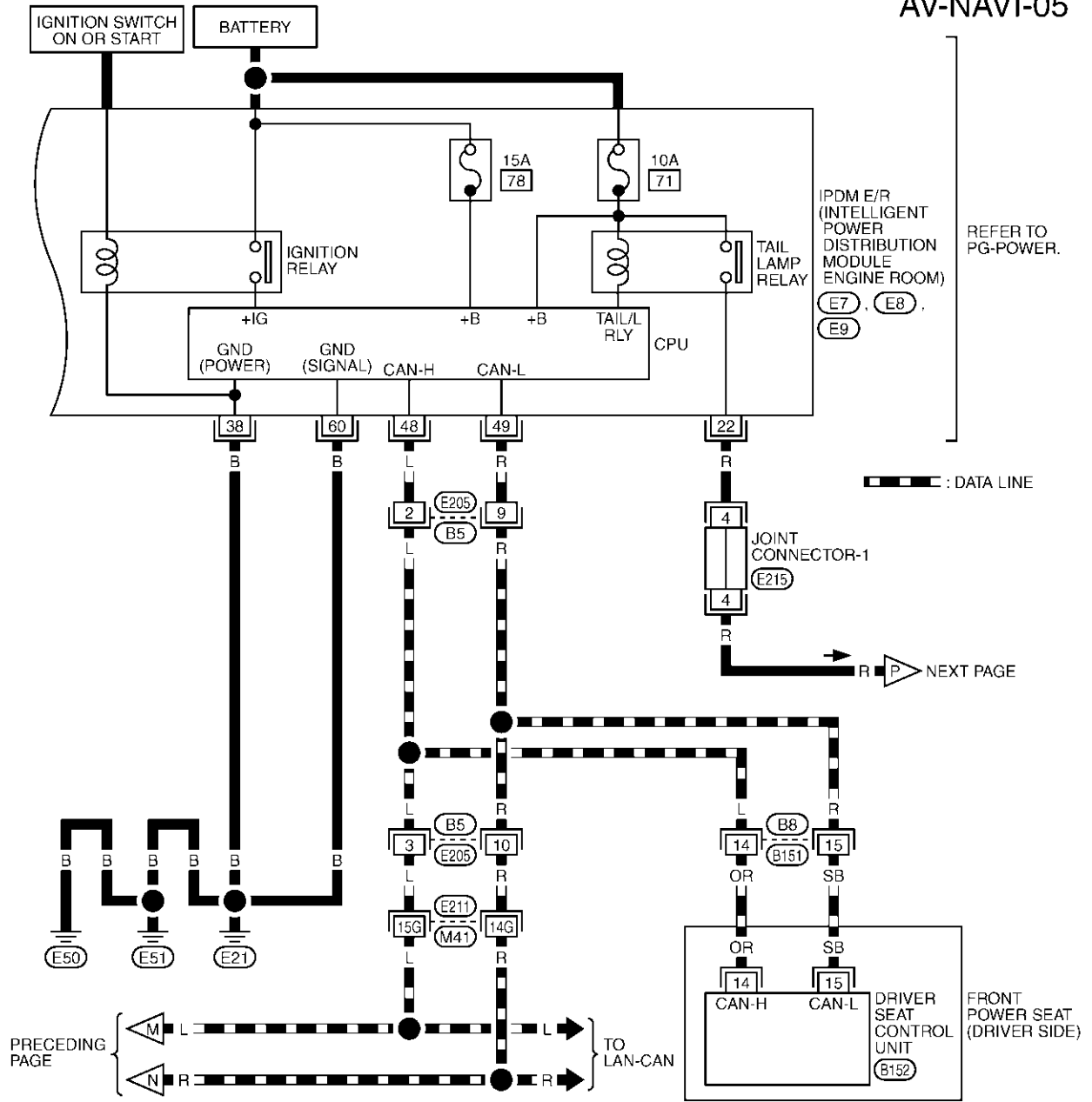


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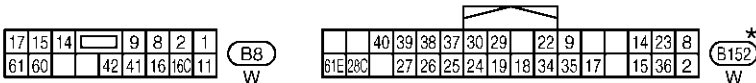
- (E211) -SUPER MULTIPLE JUNCTION (SMJ)
- (M1), (M2) -FUSE BLOCK-JUNCTION BOX (J/B)
- (M3), (M4) -ELECTRICAL UNITS

NAVIGATION SYSTEM

AV-NAVI-05



REFER TO THE FOLLOWING.
 (E21) -SUPER MULTIPLE JUNCTION (SMJ)

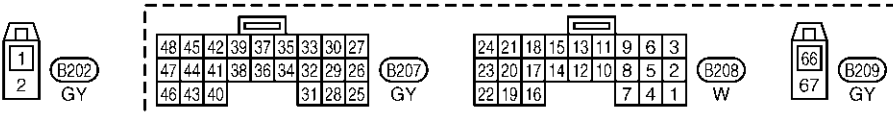
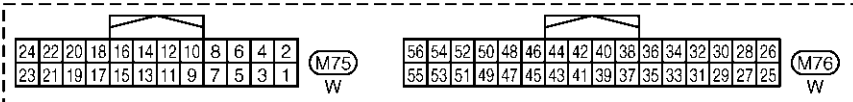
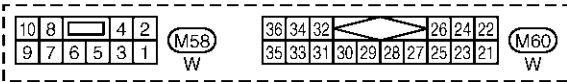
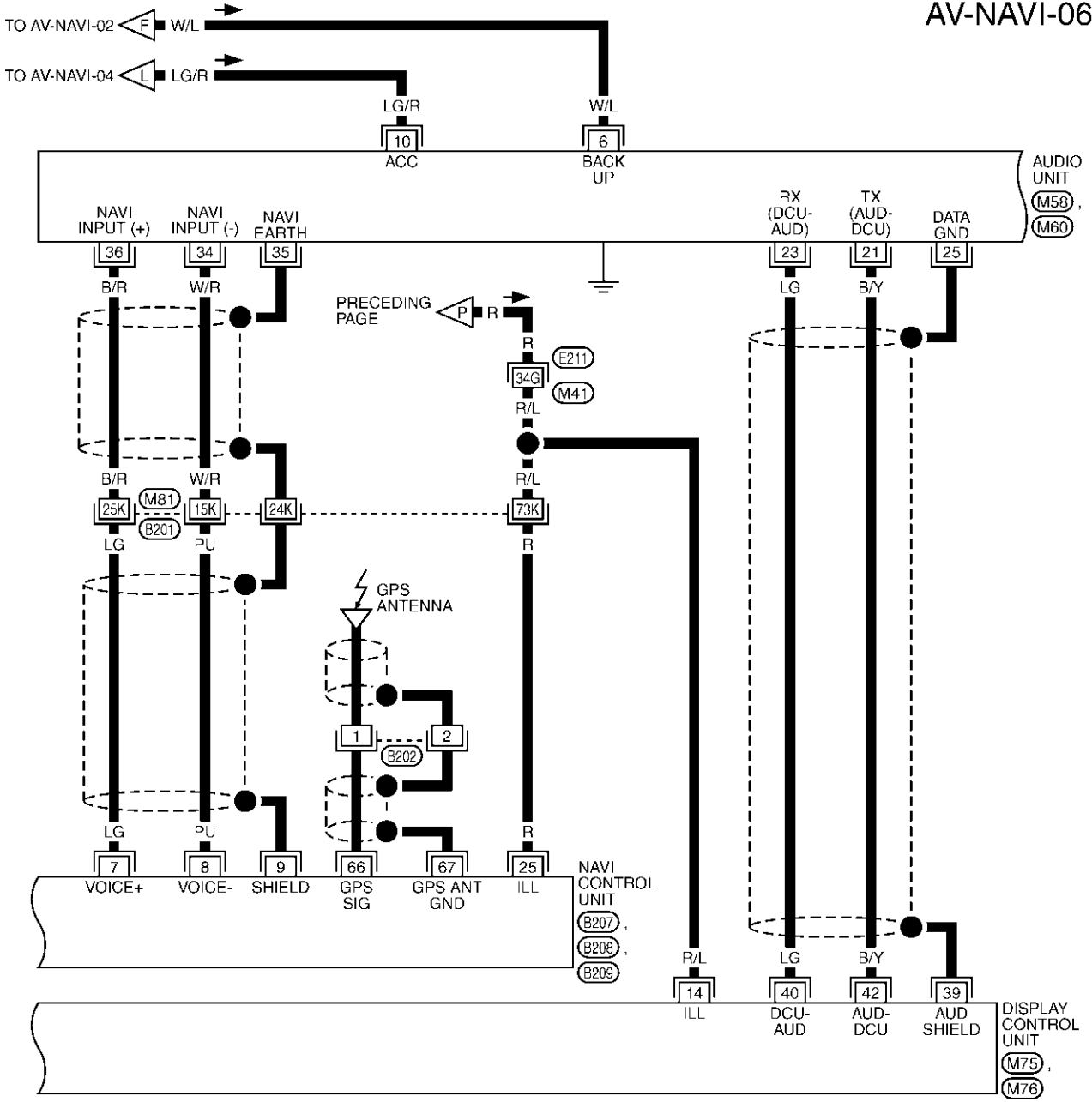


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWM1267E

NAVIGATION SYSTEM

AV-NAVI-06



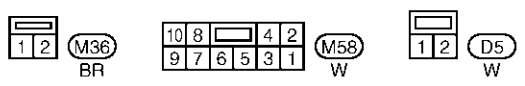
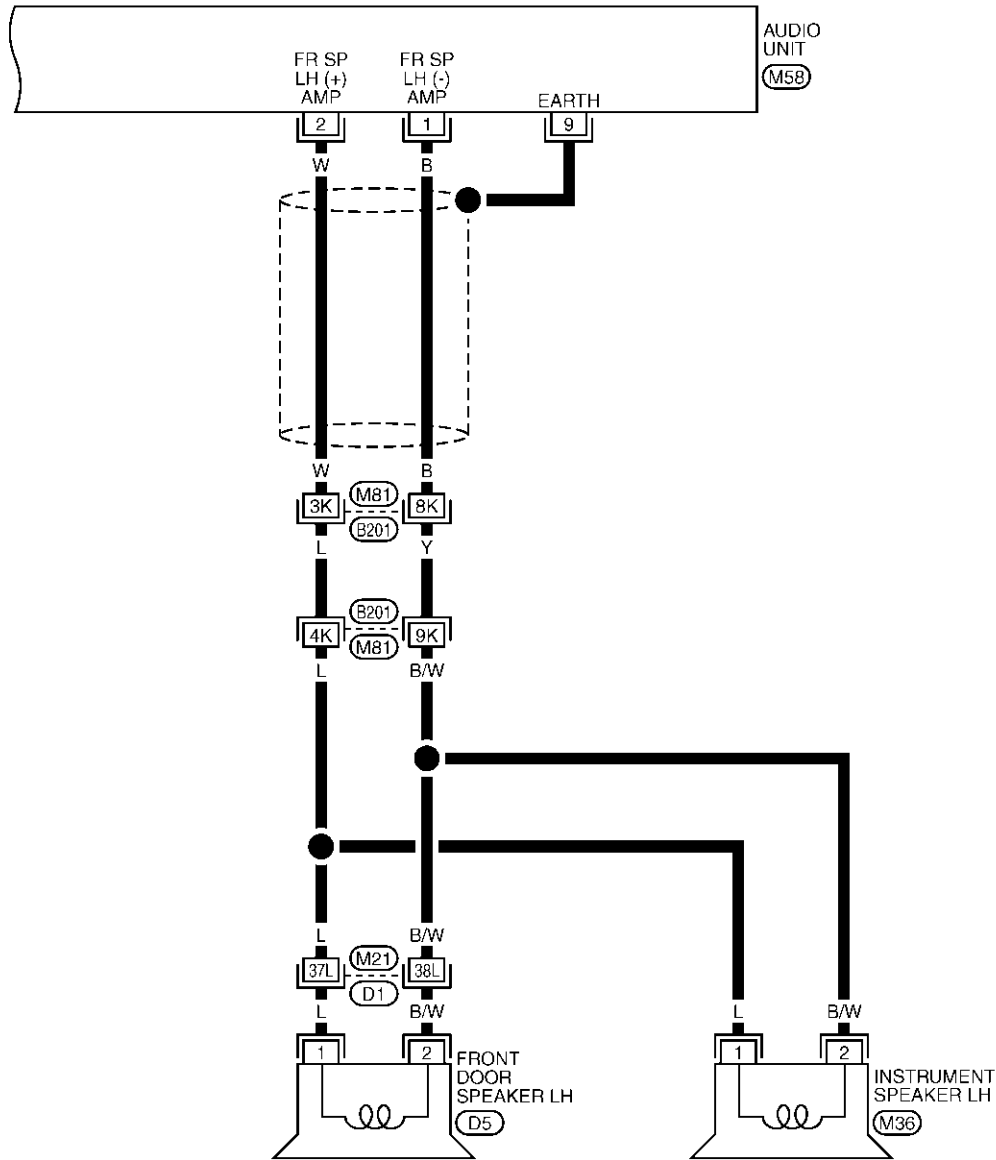
REFER TO THE FOLLOWING.
 (E211), (B201) -SUPER MULTIPLE JUNCTION (SMJ)

TKWM1094E

NAVIGATION SYSTEM

AV-NAVI-07

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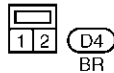
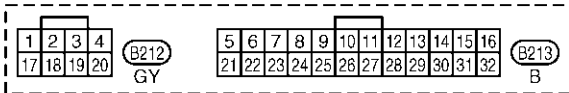
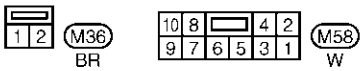
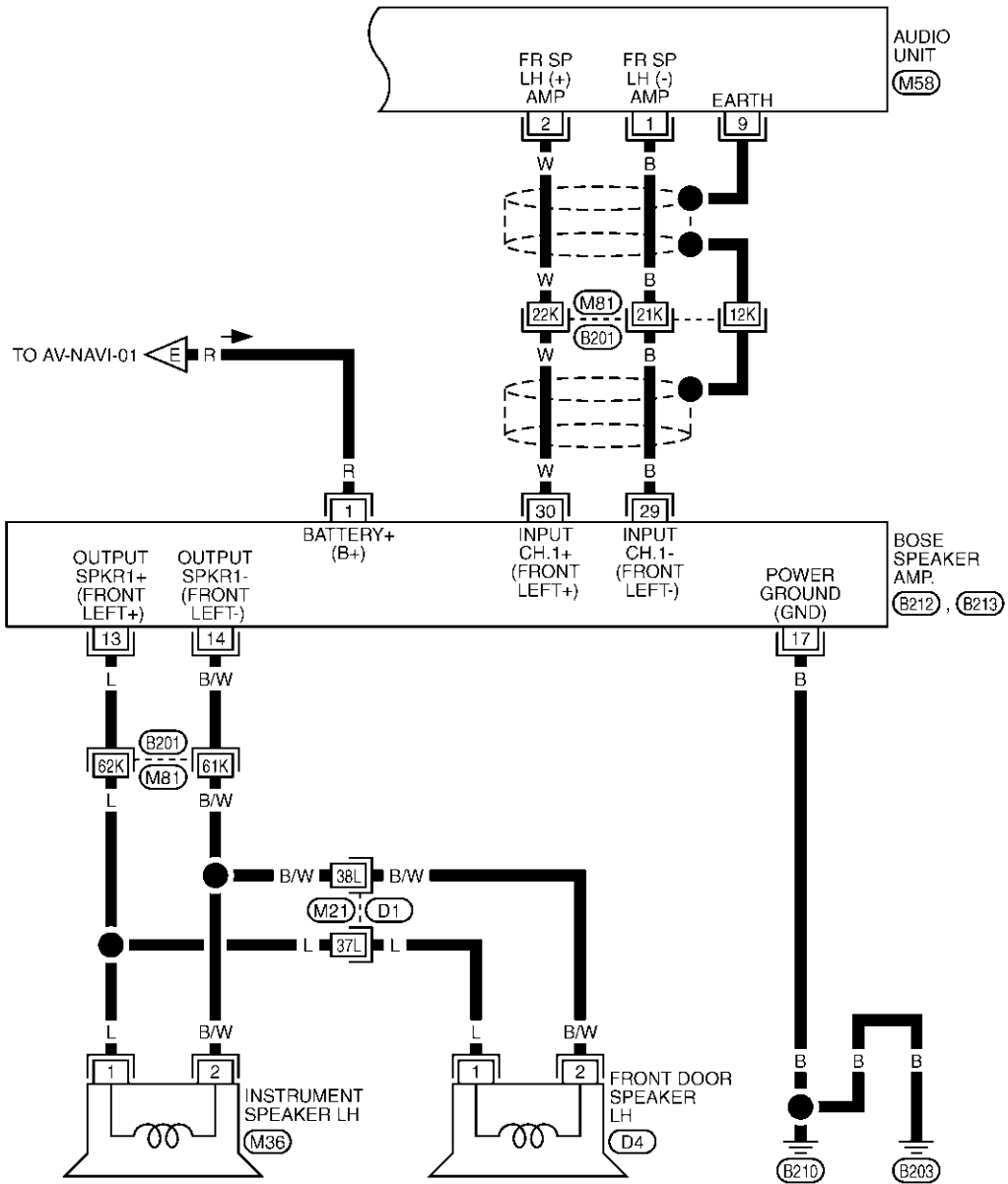


REFER TO THE FOLLOWING.
 (B201), (D1) -SUPER MULTIPLE JUNCTION (SMJ)

TKWH0270E

NAVIGATION SYSTEM

AV-NAVI-08



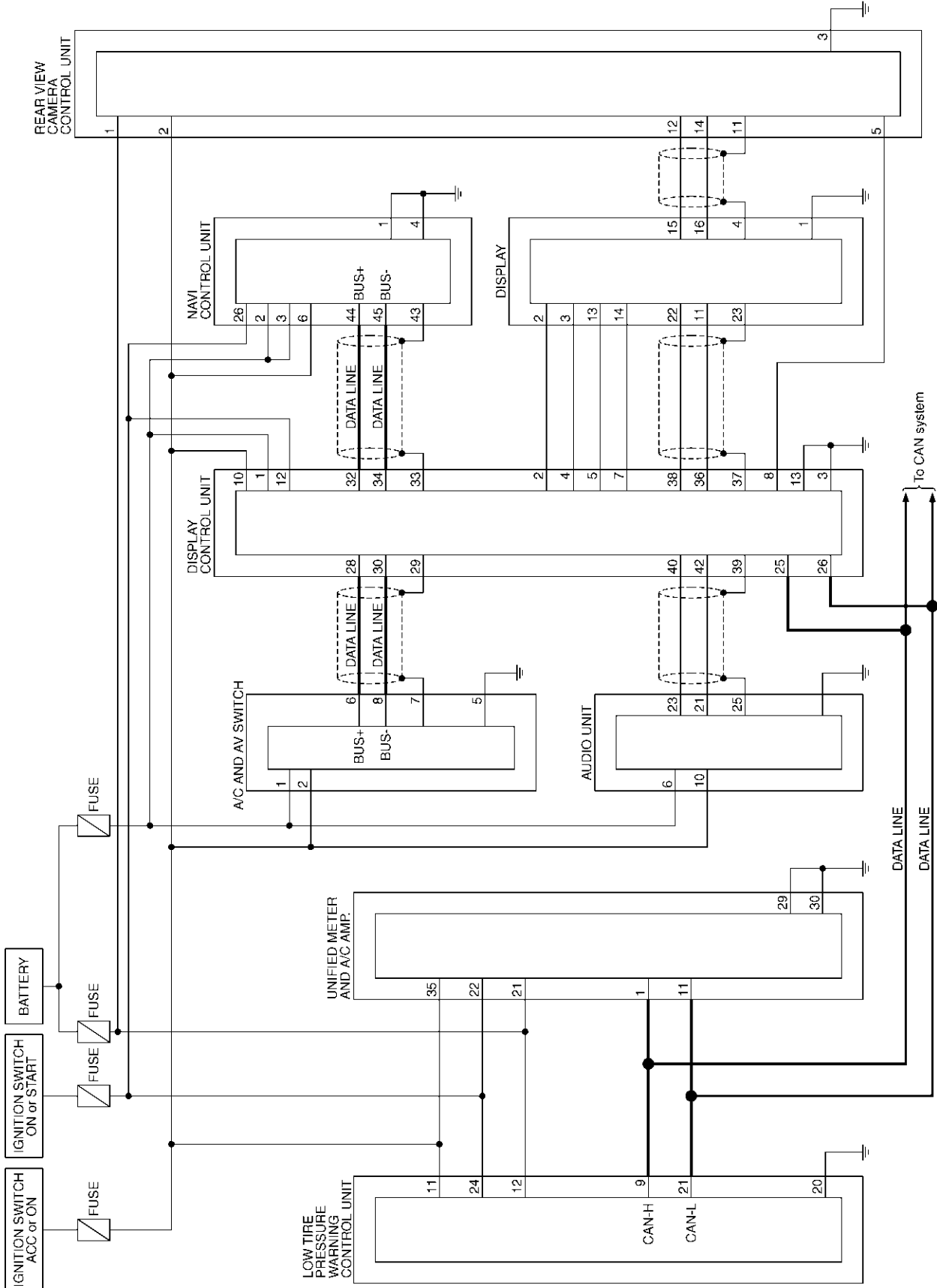
REFER TO THE FOLLOWING.
 (B201), (D1) -SUPER MULTIPLE
 JUNCTION (SMJ)

TKWM0578E

NAVIGATION SYSTEM

Schematic — COMM —

AKS00812



TKWVM0585E

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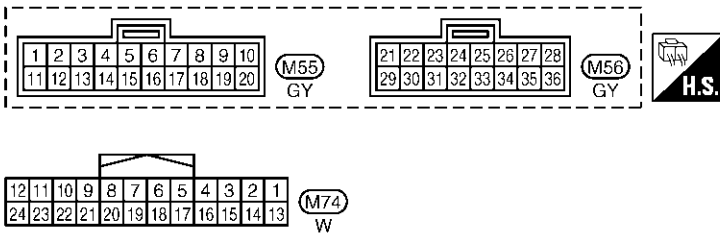
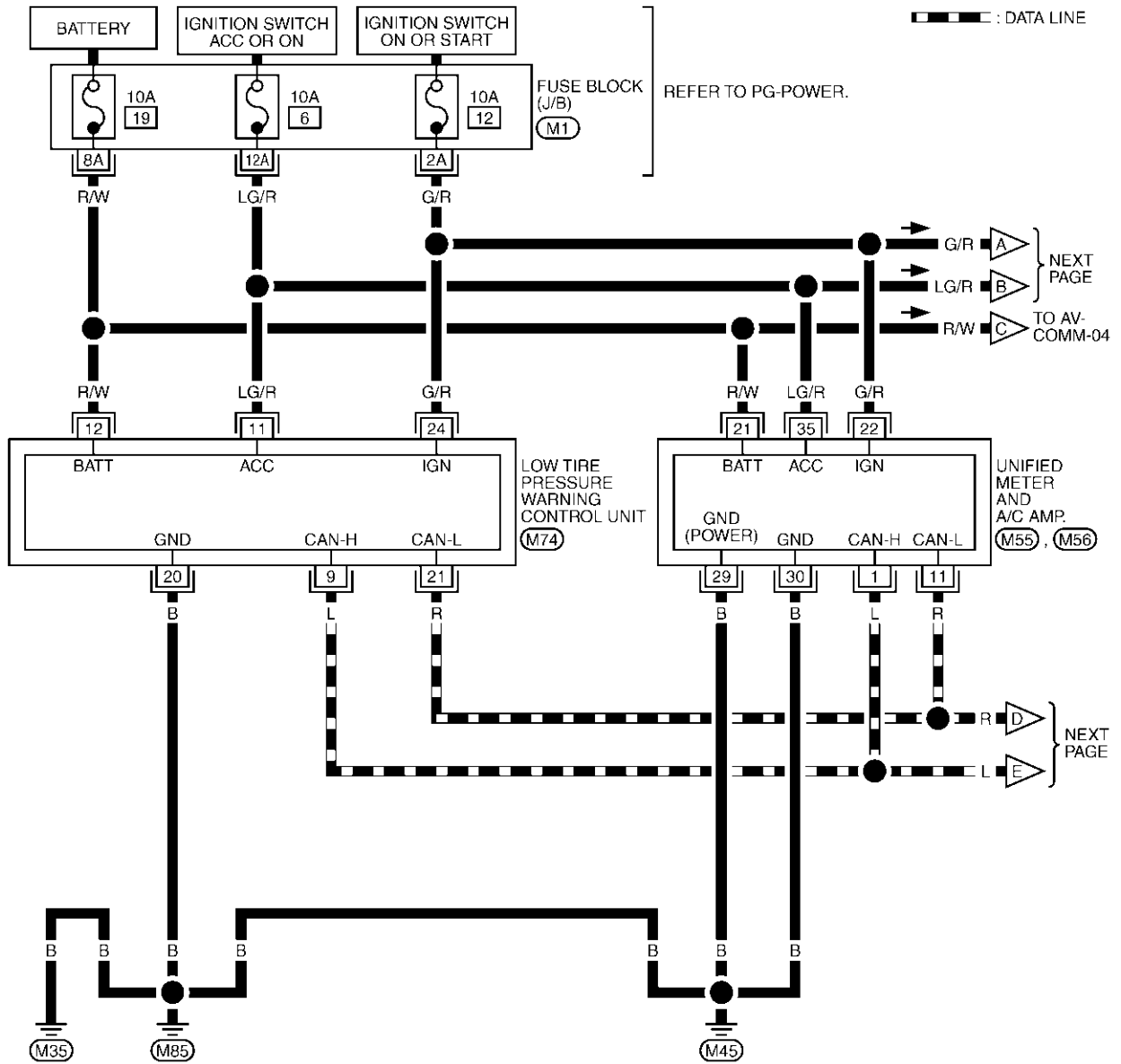
NAVIGATION SYSTEM

Wiring Diagram — COMM —

AKS007IU

AV-COMM-01

▬▬▬▬ : DATA LINE



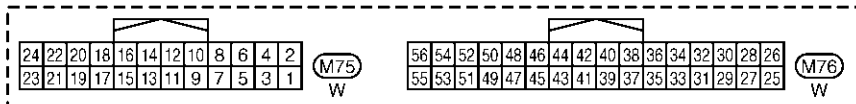
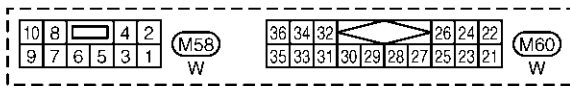
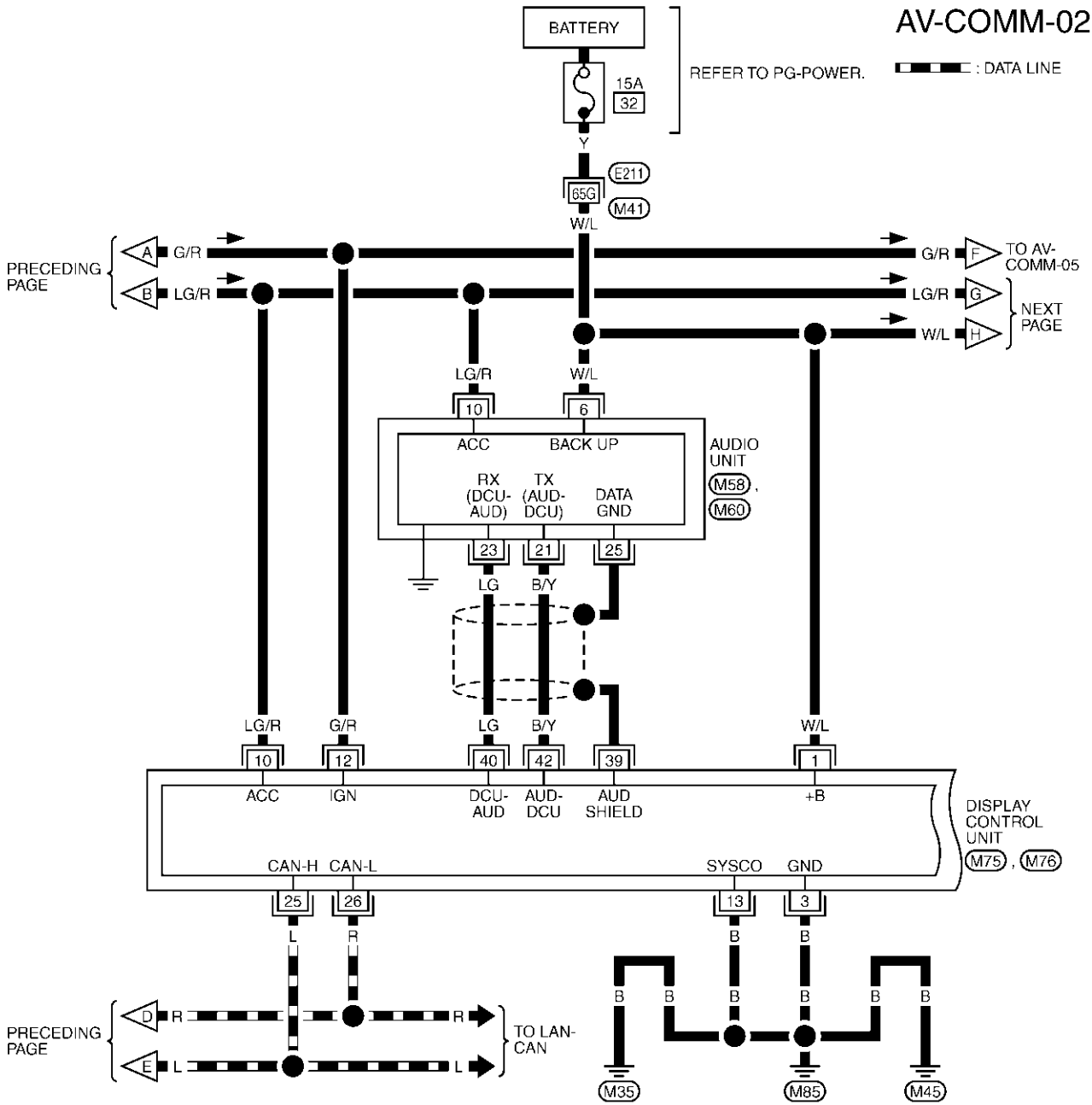
REFER TO THE FOLLOWING.

(M1) - FUSE BLOCK-JUNCTION BOX (J/B)

TKWM0586E

NAVIGATION SYSTEM

AV-COMM-02



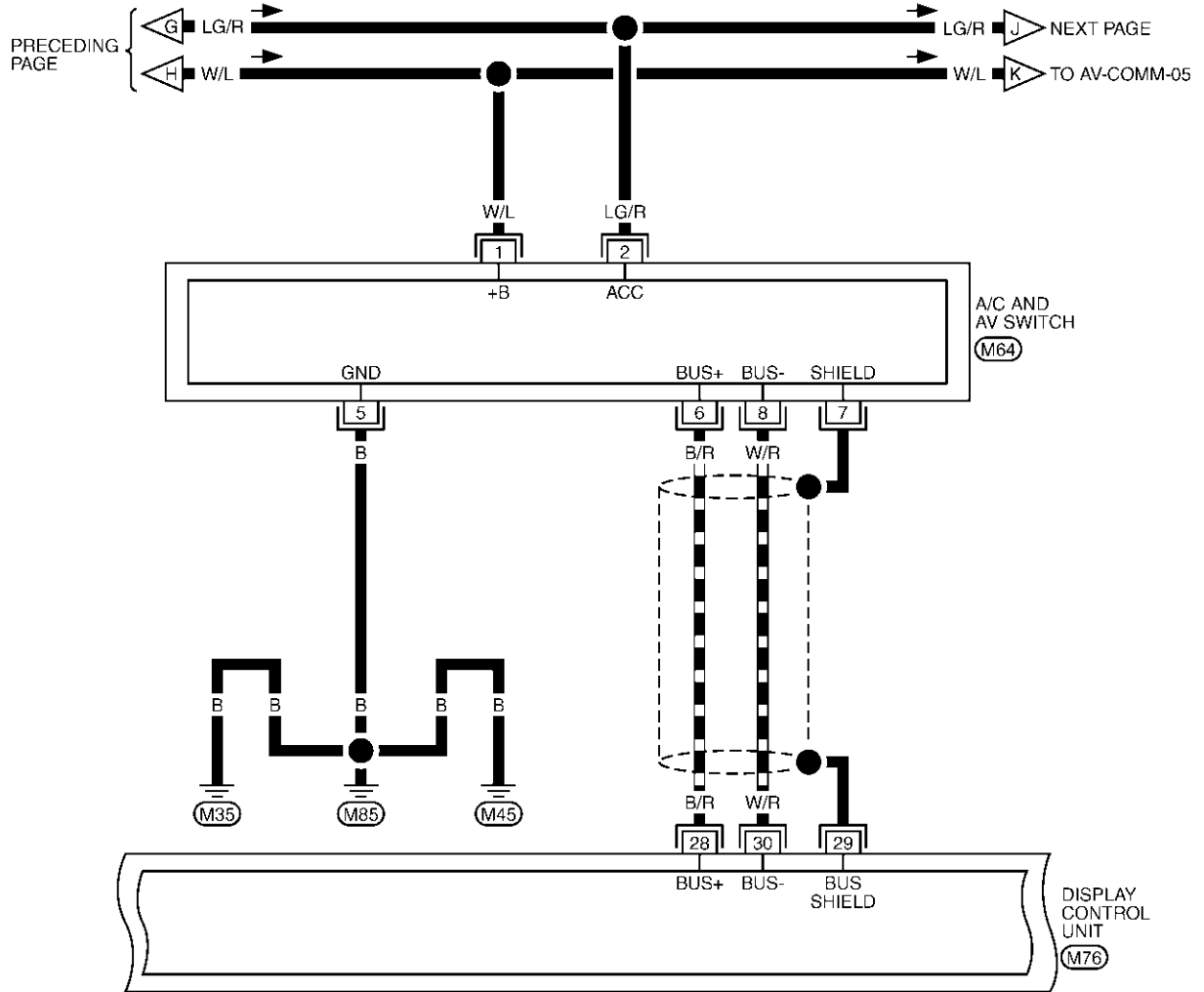
REFER TO THE FOLLOWING.
 (E211) -SUPER MULTIPLE JUNCTION (SMJ)

TKWM0587E

NAVIGATION SYSTEM

AV-COMM-03

▬▬▬▬ : DATA LINE



16	14	12	10	8	6	4	2
15	13	11	9	7	5	3	1

(M64)
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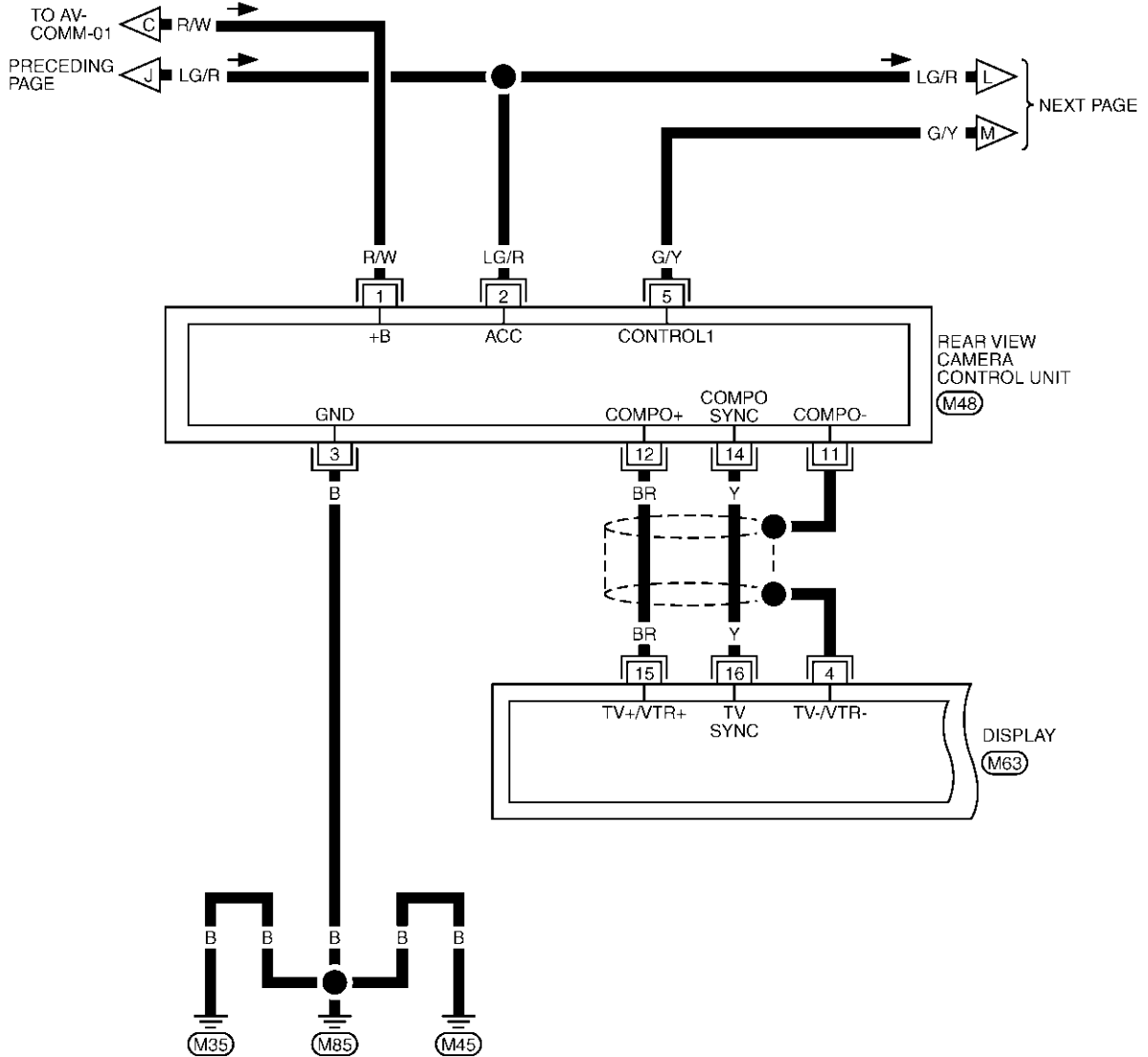
56	54	52	50	48	46	44	42	40	38	36	34	32	30	28	26
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(M76)
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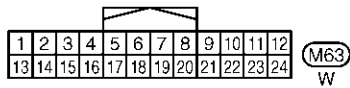
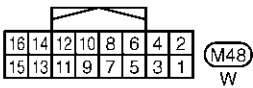
TKWM0588E

NAVIGATION SYSTEM

AV-COMM-04

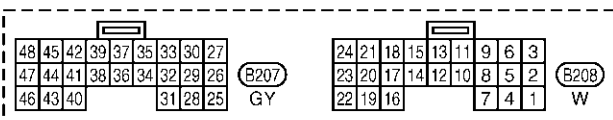
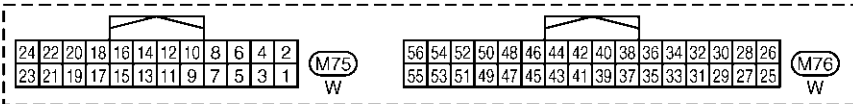
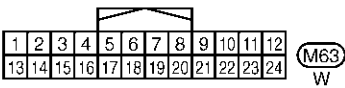
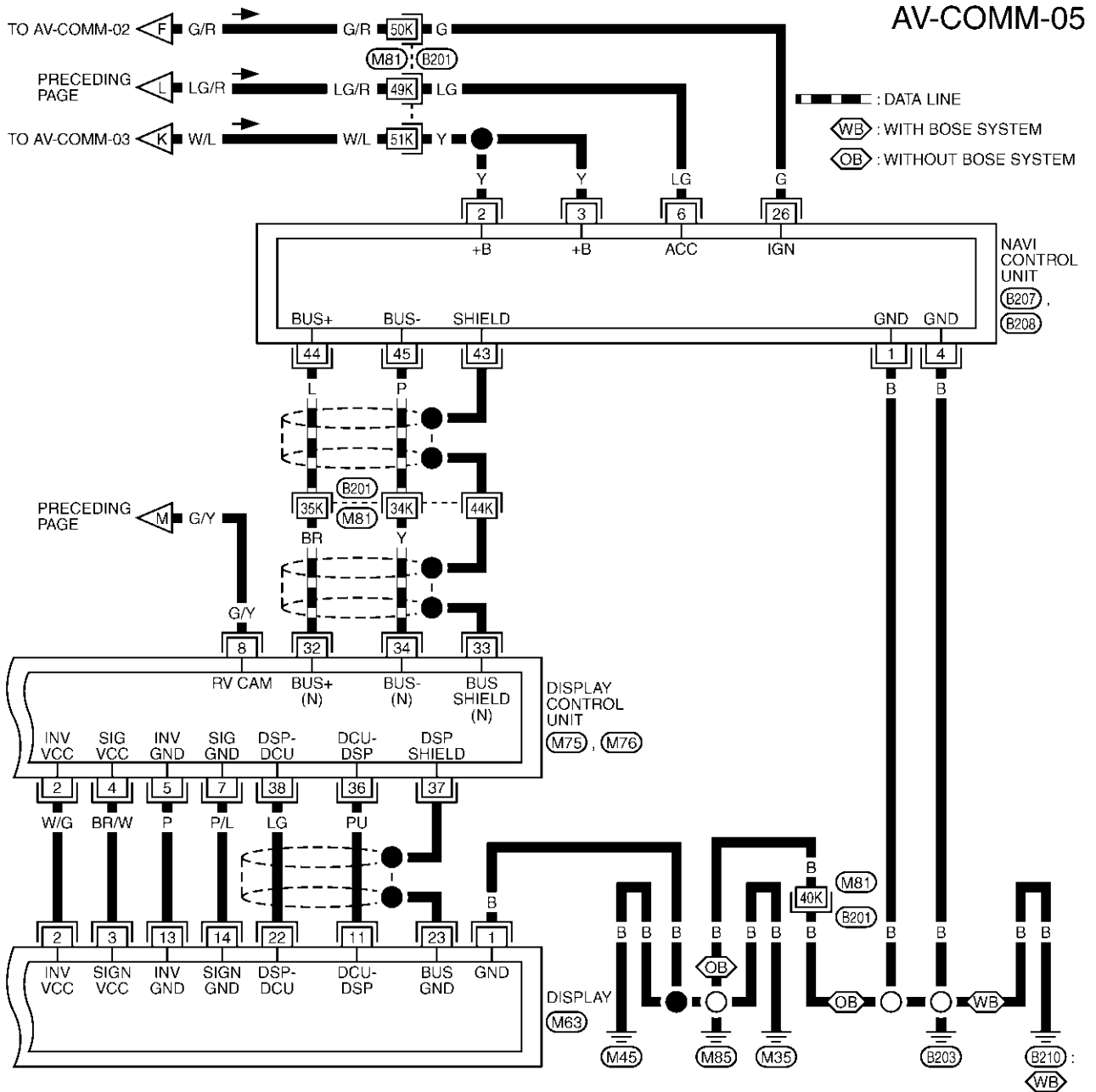


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TKWM0589E

NAVIGATION SYSTEM

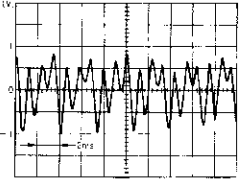
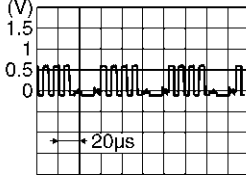
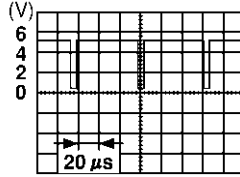

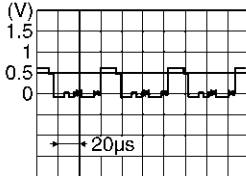


REFER TO THE FOLLOWING.
 (B201) : SUPER MULTIPLE JUNCTION (SMJ)

NAVIGATION SYSTEM

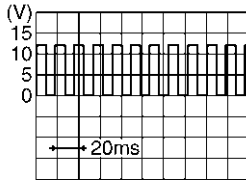
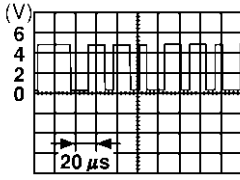
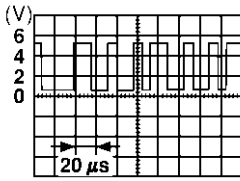
Terminals and Reference Value for NAVI Control unit

AKS007IV

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	-			Igni- tion switch	Operation		
1 (B)	Ground	Ground	-	ON	-	Approx. 0V	-
2 (Y)	Ground	Battery power supply	Input	OFF	-	Battery voltage	System does not work properly.
3 (Y)							
4 (B)	Ground	Ground	-	ON	-	Approx. 0V	-
6 (LG)	Ground	ACC power supply	Input	ACC	-	Battery voltage	System does not work properly.
7 (LG)	8 (PU)	Voice guide signal	Output	ON	Press the "GUIDE/ VOICE" button.	 SKIA0171J	Only route guide and operation guide are not heard.
9	-	Shield ground	-	-	-	-	-
14	-	Shield ground	-	-	-	-	-
15 (L)	17	RGB signal (B: blue)	Output	ON	Select "Display Diagnosis (NAVI)" of CONFIRMATION/ ADJUSTMENT function.	 SKIA4979E	NAVI screen looks yellowish.
16 (G)	14	RGB syn- chronizing signal	Output	ON	Press the "MAP" button.	 SKIA0164E	NAVI screen is rolling.
17	-	Shield ground	-	-	-	-	-
18 (Y)	17	RGB signal (R: red)	Output	ON	Select "Display Diagnosis (NAVI)" of CONFIRMATION/ ADJUSTMENT function.	 SKIA4977E	NAVI screen looks bluish.
21 (G)	17	RGB signal (G: green)	Output	ON	Select "Display Diagnosis (NAVI)" of CONFIRMATION/ ADJUSTMENT function.	 SKIA4978E	NAVI screen looks reddish.

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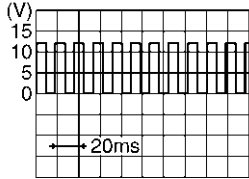
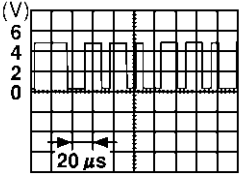
NAVIGATION SYSTEM

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	-			Igni- tion switch	Operation		
25 (R)	Ground	Illumination signal	Input	OFF	Lighting switch is ON	Approx. 12V	NAVI control unit illumination does not change when lighting switch is turned to 1st position.
					Lighting switch is OFF	Approx. 0V	
26 (G)	Ground	Ignition signal	Input	ON	-	Battery voltage	System does not work properly.
27 (OR)	Ground	Reverse signal	Input	ON	Selector lever in R position	Approx. 12V	The navigation current-location mark moves strangely when the vehicle is moving back- wards.
					Selector lever except R position	Approx. 0V	
28 (GY)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 <small>PKIA1935E</small>	Navigation cur- rent-location mark does not indicate the cor- rect position.
30 (BR)	Ground	Illumination control signal	Input	OFF	-	Approx. 0V	-
43	-	Shield ground	-	-	-	-	-
44 (L)	Ground	Communica- tion signal (+)	Input/ output	ON	-	 <small>SKIA0175E</small>	System does not work properly.
45 (P)	Ground	Communica- tion signal (-)	Input/ output	ON	-	 <small>SKIA0176E</small>	System does not work properly.
66	67	GPS signal	Input	ON	Connector is not connected.	Approx. 5V	Navigation sys- tem GPS correc- tion is not possible.

NAVIGATION SYSTEM

Terminals and Reference Value for Display Control unit

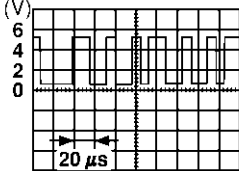
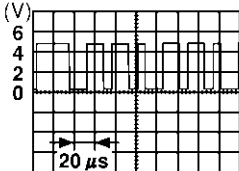
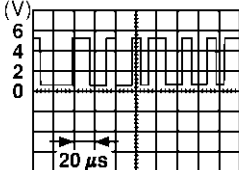

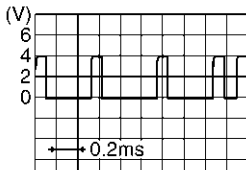
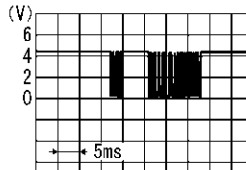
AKS0071W

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	-			Igni- tion switch	Operation		
1 (W/L)	Ground	Battery Power supply	Input	OFF	-	Battery voltage	System does not work properly.
2 (W/G)	Ground	Power Sup- ply (Inverter)	Output	ON	-	Approx. 9V	Screen is not shown
3 (B)	Ground	Ground	-	ON	-	Approx. 0V	-
4 (BR/W)	Ground	Power Sup- ply (Signal)	Output	ON	-	Approx. 9V	Screen is not shown
5 (P)	Ground	(Inverter) Ground	-	ON	-	Approx. 0V	Screen is not shown
6 (OR)	Ground	Reverse signal	Input	ON	Selector lever in R position	Approx. 12V	Impossible to gain direction of vehicle.
					Selector lever except R position	Approx. 0V	
7 (P/L)	Ground	(Signal) Ground	-	ON	-	Approx. 0V	-
10 (LG/R)	Ground	ACC power supply	Input	ACC	-	Battery voltage	System does not work properly.
12 (G/R)	Ground	Ignition signal	Input	ON	-	Battery voltage	A/C operation is not possible. Vehicle informa- tion setting is not possible.
13 (B)	Ground	sysco	-	ON	-	Approx. 0V	-
14 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch is ON.	Approx. 12V	Audio unit illumi- nation does not come on when lighting switch is ON.
					Lighting switch is OFF.	Approx. 0V	
16 (R/G)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 <p style="text-align: right; font-size: small;">PKIA1935E</p>	Value of vehicle information is not accurately displayed.
25 (L)	-	CAN H	-	-	-	-	-
26 (R)	-	CAN L	-	-	-	-	-
28 (B/R)	Ground	Communica- tion signal (+)	Input/ Output	ON	-	 <p style="text-align: right; font-size: small;">SKIA0175E</p>	System does not work properly.
29	-	Shield ground	-	-	-	-	-

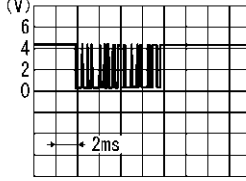
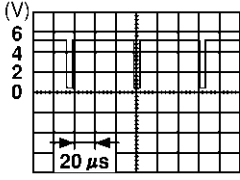

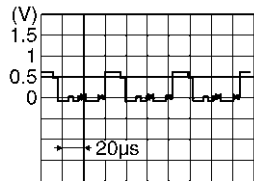
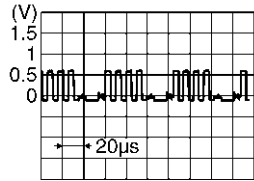
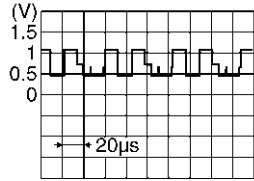
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NAVIGATION SYSTEM

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	-			Igni- tion switch	Operation		
30 (W/R)	Ground	Communica- tion signal (-)	Input/ output	ON	-	 <p style="text-align: right; font-size: small;">SKIA0176E</p>	System does not work properly.
32 (BR)	Ground	Communica- tion signal (+)	Input/ output	ON	-	 <p style="text-align: right; font-size: small;">SKIA0175E</p>	System does not work properly.
33	-	Shield ground	-	-	-	-	-
34 (Y)	Ground	Communica- tion signal (-)	Input/ output	ON	-	 <p style="text-align: right; font-size: small;">SKIA0176E</p>	System does not work properly.
36 (PU)	Ground	Display Com- munication signal (DCU-DSP)	Output	ON	Press the "TRIP" button.	 <p style="text-align: right; font-size: small;">SKIA4364E</p>	Though a screen is displayed, it is impossible to adjust bright- ness.
37	-	Shield ground	-	-	-	-	-
38 (LG)	Ground	Display Com- munication signal (DSP-DCU)	Input	ON	Press the "TRIP" button.	 <p style="text-align: right; font-size: small;">SKIA4363E</p>	Though a screen is displayed, it is impossible to adjust bright- ness.
39	-	Shield ground	-	-	-	-	-
40 (LG)	Ground	Audio RX Communica- tion signal	Input	ON	Operate audio volume.	 <p style="text-align: right; font-size: small;">SKIA4403E</p>	Audio dose not operate properly.

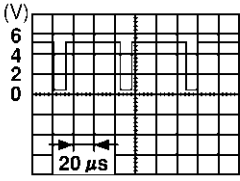
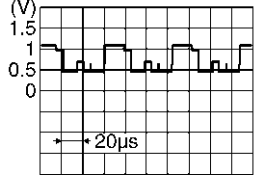
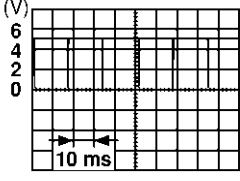
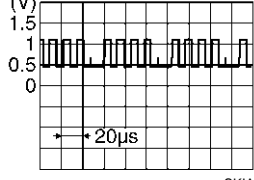
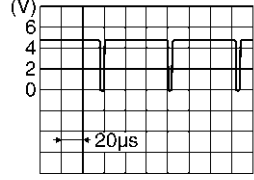
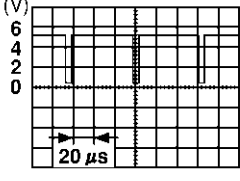
NAVIGATION SYSTEM

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	-			Igni- tion switch	Operation		
41	-	Shield ground	-	-	-	-	-
42 (B/Y)	Ground	Audio TX communica- tion signal	Output	ON	Operate audio volume.	 <p style="text-align: right; font-size: small;">SKIA4402E</p>	Audio dose not operate properly.
43 (G/B)	41	RGB syn- chronizing signal	Input	ON	Press the "MAP" button.	 <p style="text-align: right; font-size: small;">SKIA0164E</p>	NAVI screen is rolling.
44 (R/W)	45	RGB signal (R: red)	Input	ON	Select "Display Diagnosis (NAVI)" of CONFIRMATION/ ADJUSTMENT function.	 <p style="text-align: right; font-size: small;">SKIA4977E</p>	NAVI screen looks bluish.
45	-	Shield ground	-	-	-	-	-
46 (R/L)	45	RGB signal (G: green)	Input	ON	Select "Display Diagnosis (NAVI)" of CONFIRMATION/ ADJUSTMENT function.	 <p style="text-align: right; font-size: small;">SKIA4978E</p>	NAVI screen looks reddish.
47	-	Shield ground	-	-	-	-	-
48 (B)	45	RGB signal (B: blue)	Input	ON	Select "Display Diagnosis (NAVI)" of CONFIRMATION/ ADJUSTMENT function.	 <p style="text-align: right; font-size: small;">SKIA4979E</p>	NAVI screen looks yellowish.
49	-	Shield ground	-	-	-	-	-
50 (L/R)	47	RGB signal (R: red)	Output	ON	Select "Display Diagnosis (DCU)" of CONFIRMATION/ ADJUSTMENT function.	 <p style="text-align: right; font-size: small;">SKIA4980E</p>	RGB screen looks bluish.

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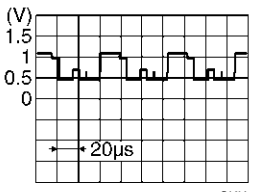
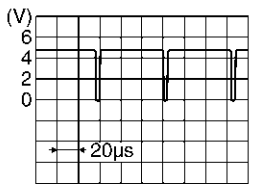
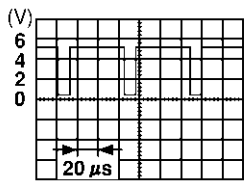
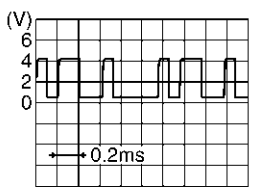
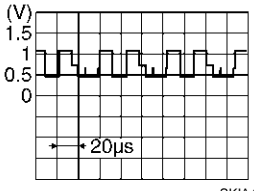
NAVIGATION SYSTEM

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	-			Igni- tion switch	Operation		
51 (B)	49	RGB area (YS) signal	Output	ON	Press the "TRIP" button.	 <p style="text-align: right; font-size: small;">SKIA0162E</p>	RGB screen is not shown.
52 (L/W)	47	RGB signal (G: green)	Output	ON	Select "Display Diagnosis (DCU)" of CONFIRMATION/ ADJUSTMENT function.	 <p style="text-align: right; font-size: small;">SKIA4981E</p>	RGB screen looks reddish.
53 (W)	49	Vertical syn- chronizing (VP) signal	Input	ON	Selector lever in R position.	 <p style="text-align: right; font-size: small;">SKIA0161E</p>	Audio and A/C does not operate properly.
54 (L)	47	RGB signal (B: blue)	Output	ON	Select "Display Diagnosis (DCU)" of CONFIRMATION/ ADJUSTMENT function.	 <p style="text-align: right; font-size: small;">SKIA4982E</p>	RGB screen looks yellowish.
55 (R)	49	Horizontal synchroniz- ing (HP) sig- nal	Input	ON	-	 <p style="text-align: right; font-size: small;">SKIA4983E</p>	Audio and A/C does not operate properly.
56 (G)	49	RGB syn- chronizing signal	Output	ON	Press the "TRIP" button.	 <p style="text-align: right; font-size: small;">SKIA0164E</p>	NAVI screen is rolling.

NAVIGATION SYSTEM

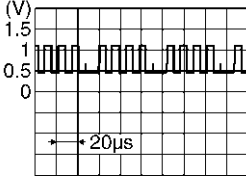
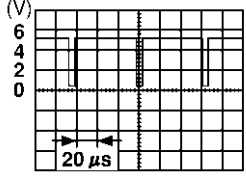
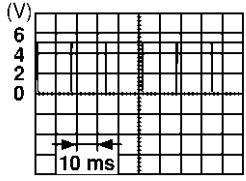
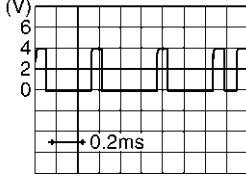
Terminals and Reference Value for Display

AKS0071X

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	-			Ignition switch	Operation		
1 (B)	Ground	Ground	-	ON	-	Approx. 0V	-
2 (W/G)	Ground	Power supply (Inverter)	Input	ON	-	Approx. 9V	Screen is not shown
3 (BR/W)	Ground	Power supply (Signal)	Input	ON	-	Approx. 9V	Screen is not shown
6 (L/W)	7	RGB signal (G: green)	Input	ON	Select "Display Diagnosis (DCU)" of CONFIRMA- TION/ADJUST- MENT function.	 SKIA4981E	RGB screen looks reddish.
7	-	Shield ground	-	-	-	-	-
8 (R)	21	Horizontal syn- chronizing (HP) signal	Output	ON	-	 SKIA4983E	RGB screen is not shown.
9 (B)	21	RGB area (YS) signal	Input	ON	Press the "TRIP" button.	 SKIA0162E	Rear view is not displayed.
11 (PU)	23	Display communi- cation signal (DCU-DSP)	Input	ON	-	 SKIA4364E	Though a screen is dis- played, it is impossible to adjust bright- ness.
13 (P)	Ground	(Inverter) Ground	-	ON	-	Approx. 0V	-
14 (P/L)	Ground	(Signal) Ground	-	ON	-	Approx. 0V	-
17 (L/R)	7	RGB signal (R: red)	Input	ON	Select "Display Diagnosis (DCU)" of CONFIRMA- TION/ADJUST- MENT function.	 SKIA4980E	RGB screen looks bluish.

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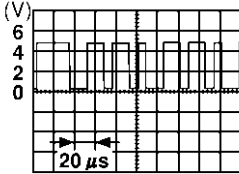
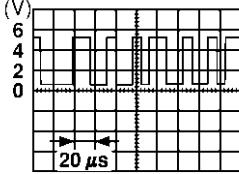
NAVIGATION SYSTEM

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	-			Ignition switch	Operation		
18 (L)	7	RGB signal (B: blue)	Input	ON	Select "Display Diagnosis (DCU)" of CONFIRMA- TION/ADJUST- MENT function.	 <p style="text-align: right; font-size: small;">SKIA4982E</p>	RGB screen looks yellow- ish.
19 (G)	21	RGB synchroniz- ing signal	Input	ON	Press the "TRIP" button.	 <p style="text-align: right; font-size: small;">SKIA0164E</p>	NAVI screen is rolling.
20 (W)	21	Vertical synchro- nizing (VP) signal	Output	ON	Selector lever in R position.	 <p style="text-align: right; font-size: small;">SKIA0161E</p>	Rear view monitor screen is roll- ing.
21	-	Shield ground	-	-	-	-	-
22 (LG)	23	Display communi- cation signal (DSP-DCU)	Output	ON	-	 <p style="text-align: right; font-size: small;">SKIA4363E</p>	Though a screen is dis- played, it is impossible to adjust bright- ness.
23	-	Shield ground	-	-	-	-	-

NAVIGATION SYSTEM

Terminals and Reference Value for A/C and AV Switch

AKS0071Y

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
+	-			Igni- tion switch	Operation		
1 (W/L)	Ground	Battery power	Input	OFF	-	Battery voltage	System does not work properly.
2 (LG/R)	Ground	ACC signal	Input	ACC	-	Battery voltage	System does not work properly.
3 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch is ON.	Approx. 12V	A/C and AV switch illumination does not come on when lighting switch is ON.
					Turn lighting switch OFF.	Approx. 0V	
4 (R/Y)	Ground	Illumination ground	Output	ON	-	Approx. 0V	A/C and AV switch illumination does not come on when lighting switch is ON.
5 (B)	Ground	Ground	-	ON	-	Approx. 0V	-
6 (B/R)	Ground	Communication signal (+)	Input/ Output	ON	-	 <small>SKIA0175E</small>	System does not work properly.
7	-	Shield ground	-	-	-	-	-
8 (W/R)	Ground	Communication signal (-)	Input/ Output	ON	-	 <small>SKIA0176E</small>	System does not work properly.
12 (R/G)	Ground	Remote controller A	Input	ON	Press MODE switch.	Approx. 0V	Steering wheel audio controls do not function
					Press SEEK UP switch.	Approx. 1.7V	
					Press VOL UP switch.	Approx. 3.3V	
					Except for above	Approx. 5V	
13 (G/W)	Ground	Remote controller B	Input	ON	Press POWER switch.	Approx. 0V	Steering wheel audio controls do not function
					Press SEEK DOWN switch.	Approx. 1.7V	
					Press VOL DOWN switch.	Approx. 3.3V	
					Except for above	Approx. 5V	
14 (B/Y)	-	Remote controller ground	-	-	-	-	Steering wheel audio controls do not function.

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NAVIGATION SYSTEM

AKS007IZ

On Board Self-Diagnosis Function DESCRIPTION

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

DIAGNOSIS ITEM

Mode		Description			
Self-diagnosis (DCU)		Display control unit diagnosis			
Self-diagnosis (NAVI)		<ul style="list-style-type: none"> ● NAVI Control unit diagnosis (DVD-ROM drive will not be diagnosed when no map DVD-ROM is in it) ● Analyzes connection between the NAVI control unit and the GPS antenna connection between the NAVI control unit and each unit, and operation of each unit. 			
Confirmation/ Adjustment	Display diagnosis		On display control unit mode, color tone and shading of the screen can be checked by the display of a color bar and a gray scale.		
	Vehicle signals		On display control unit mode, analyzes the following vehicle signals: Vehicle speed signal, light signal ^{NOTE} , ignition switch signal, and reverse signal.		
	Auto Climate Control		A/C self-diagnosis of A/C system.		
	Navigation	Display diagnosis		On NAVI C/U mode, color tone and shading of the screen can be checked by the display of a color bar and a gray scale.	
		Vehicle signals		On NAVI C/U mode, analyzes the following vehicle signals: Vehicle speed signal, light signal, ignition switch signal, and reverse signal.	
		History of Errors		Diagnosis results previously stored in the memory (before turning ignition switch ON) are displayed in this mode. Time and location when/where the errors occurred are also displayed.	
		Navigation	Display Longitude & Latitude		Display the map. Use the joystick to adjust position. Longitude and latitude will be displayed.
			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 immediately restores system accuracy in cases such as when distance calibration is needed because of the use of tire chains in inclement weather.
	Angle adjustment		Corrects difference between actual turning angle of a vehicle and turning angle of the car mark on the display.		
	Initialize Location		This mode is for initializing the current location. Use when the vehicle is transported a long distance on a trailer, etc.		
CAN DIAG SUPPORT MONITOR		Display status of CAN communication.			

NOTE:

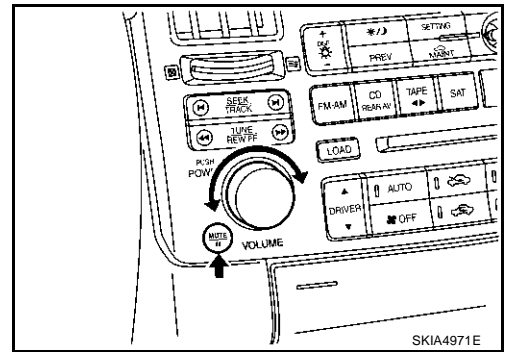
Make the status that is set by D/N function be shown.

NAVIGATION SYSTEM

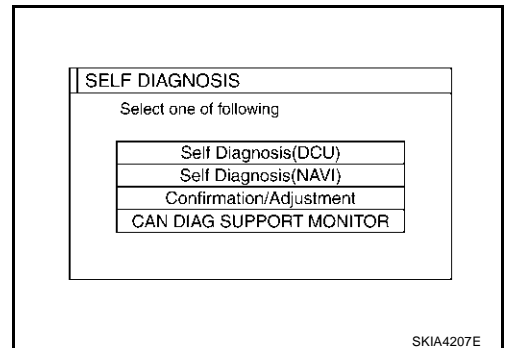
AKS007J0

Self-Diagnosis Mode (DCU) OPERATION PROCEDURE

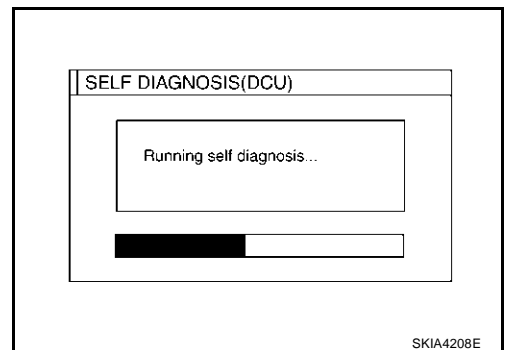
1. Start the engine.
2. Turn the audio system off.
3. While pressing the "MUTE/II" button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
 - Shifting from current screen to previous screen is performed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



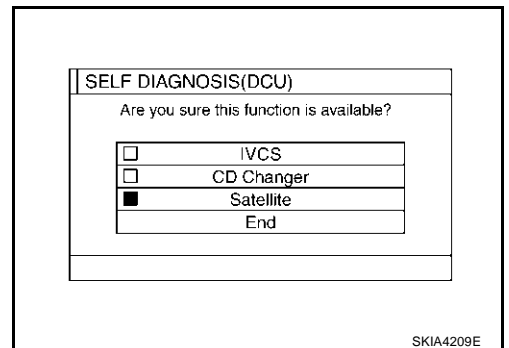
4. The initial trouble diagnosis screen will be shown, and items "Self-Diagnosis (DCU)", "Self-Diagnosis (NAVI)", "Confirmation/Adjustment" and "CAN DIAG SUPPORT MONITOR" will become selective.



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



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



NAVIGATION SYSTEM

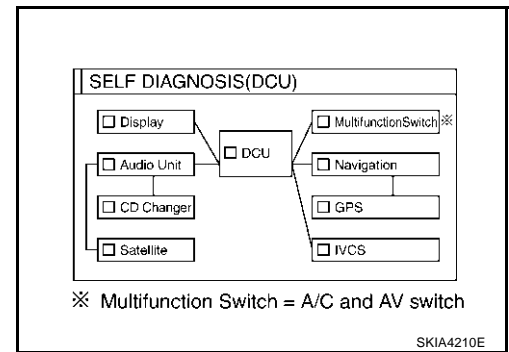
7. On the "SELF DIAGNOSIS" screen, each unit name will be colored according to the diagnosis result, as follows.

Green : No malfunctioning.

Gray : Cannot be judged by self-diagnosis results.

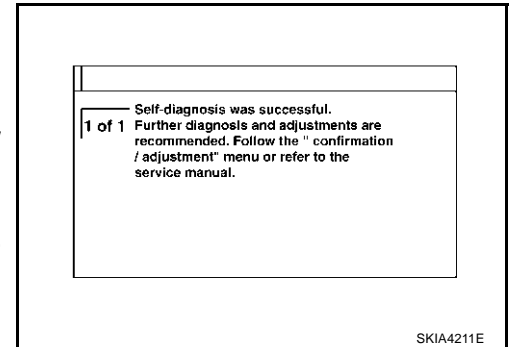
Red : Unit is malfunctioning.

- If several malfunctions are present in a unit, color of its switch on the screen will be either red, or gray, determined by the malfunction of the highest priority.



8. Select a switch on the "SELF DIAGNOSIS" screen and comments for the diagnosis results will be shown.

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



NAVIGATION SYSTEM

SELF-DIAGNOSIS RESULT

Quick reference table

1. Select a malfunctioning diagnosis No. in the diagnosis result quick reference table.
2. Find estimated malfunctioning system in the diagnosis No. table and perform check by referring to [AV-142, "Wiring Diagram — COMM —"](#).
3. Turn the ignition switch OFF and perform self-diagnosis again.

Screen switch						Diagnosis No.
Switch color	DCU*	Display	Audio unit	Navigation	GPS antenna	
Red	×					1
Gray	×	×				2
	×		×			3
	×			×	×	4

*: DCU = Display control unit

CAUTION:

- When A/C and AV switch has a malfunction, you cannot start. Refer to [AV-197, "Unable to Operate All of A/C and AV switch \(Unable to start Self-Diagnosis\)"](#).
- When display has a malfunction, you cannot start. Refer to [AV-193, "Screen is Not Shown"](#).

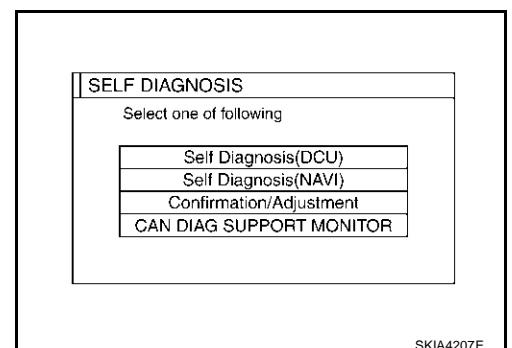
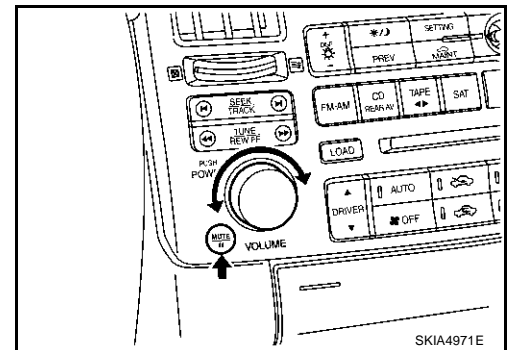
Self-Diagnosis Codes

Diagnosis No.	Possible cause	Reference page
1	Display control unit malfunction	AV-209
2	Display communication line between display control unit and display.	AV-182
3	Audio unit power supply and ground circuit. Audio communication line between display control unit and audio unit.	AV-180
4	NAVI control unit power supply and ground circuit. AV communication line between and display control unit and NAVI control unit.	AV-179

Self-Diagnosis Mode (NAVI)

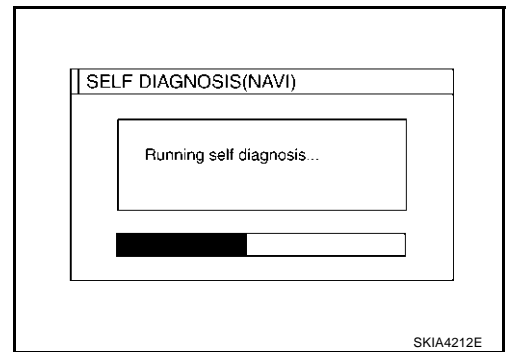
OPERATION PROCEDURE

1. Start the engine.
2. Turn the audio system off.
3. While pressing the "MUTE/II" button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
 - Shifting from current screen to previous screen is performed by pressing "PREV" button.
4. The initial trouble diagnosis screen will be shown, and items "Self-Diagnosis (DCU)", "Self-Diagnosis (NAVI)", "Confirmation/Adjustment" and "CAN DIAG SUPPORT MONITOR" will become selective.



NAVIGATION SYSTEM

5. Perform self-diagnosis by selecting the “Self-diagnosis (NAVI)”.
- Self-diagnosis subdivision screen will be shown and the operation enters the self-diagnosis mode.
 - A bar graph shown below the self-diagnosis subdivision screen indicates progress of the diagnosis.



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

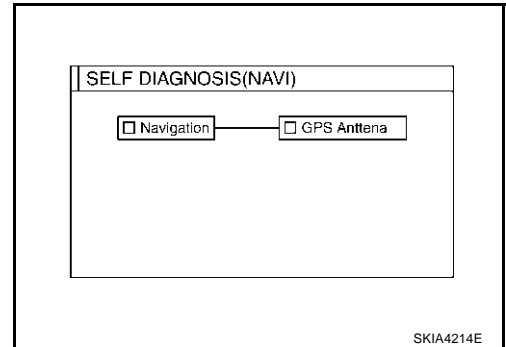
Green : No malfunctioning.

Yellow : Cannot be judged by self-diagnosis results.

Red : Unit is malfunctioning.

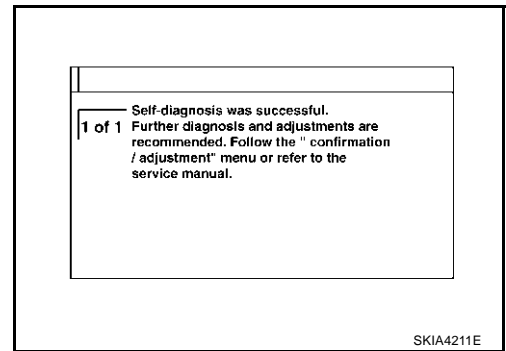
Gray : Diagnosis has not been done.

- If several malfunctions are present in a unit, color of its switch on the screen will be either red, yellow, or gray, determined by the malfunction of the highest priority.



7. Select a switch on the “SELF DIAGNOSIS” screen and comments for the diagnosis results will be shown.

- When the switch is green, the following comment will be shown. “Self-diagnosis was successful. Further diagnosis and adjustments are recommended. Follow the “confirmation and adjustments” menu or refer to the service manual.”.
- When the switch is yellow, the following comment will be shown. “Connection to the following unit is abnormal. See the service manual for further details”.
- When the switch is red, the following comment will be shown. “Center Control Unit is abnormal”.
- When the switch is gray, the following comment will be shown. “Self-diagnosis for DVD-ROM DRIVER of NAVI was not performed because no DVD-ROM was available.”.



NAVIGATION SYSTEM

SELF-DIAGNOSIS RESULT

Quick Reference Table

1. Select an malfunctioning diagnosis number. in the diagnosis result quick reference table.
2. Find estimated malfunctioning system in the diagnosis number. table and perform check by referring to [AV-142, "Wiring Diagram — COMM —"](#) .
3. Turn the ignition switch OFF and perform self-diagnosis again.

Screen switch			Diagnosis No.
Switch color	Navigation*	GPS antenna	
Red	×		1
Gray	×		2
Yellow	×		3
	×		4
	×	×	5

*: Navigation = NAVI control unit

CAUTION:

- When A/C and AV switch has a malfunction, you cannot start. Refer to [AV-197, "Unable to Operate All of A/C and AV switch \(Unable to start Self-Diagnosis\)"](#) .
- When display has a malfunction, you cannot start. Refer to [AV-193, "Screen is Not Shown"](#) .

Self-diagnosis Codes

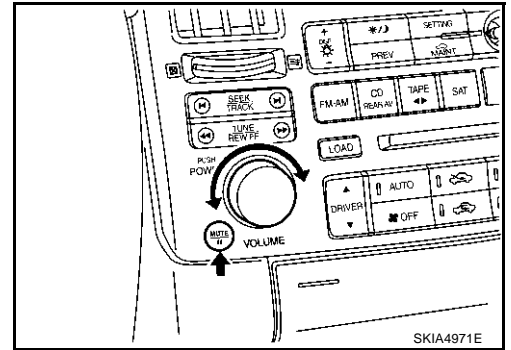
Diagnosis No.	Possible cause	Reference page
1	NAVI control unit malfunction	Refer to AV-208
2	No map DVD-ROM is inserted in the NAVI control unit.	Refer to AV-184
3	When "DVD-ROM error. Please check disc." is shown. 1. Eject map DVD-ROM and check if it is compatible with the system. 2. Check ejected DVD-ROM for dirt, damage, and warpage. 3. If no error is found, insert a known good map DVD-ROM of the same type and perform self-diagnosis again. If same result is shown, the NAVI control unit is malfunctioning. If result is normal, the map DVD-ROM is malfunctioning.	Refer to AV-184
4	If "Error found in DVD-ROM or DVD-ROM driver in control unit. Please perform diagnosis in accordance with service manual" is shown, carry out same inspection as diagnosis No. 3.	Refer to AV-184
5	GPS antenna system 1. Visually check for a broken wire in the GPS antenna coaxial cable. 2. Disconnect GPS antenna connector, and make sure approximately 5V is supplied from the NAVI control unit. If not, the NAVI control unit is malfunctioning. If 5V is supplied, replace the GPS antenna. If the connection is still malfunction after the replacement of the GPS antenna, the NAVI control unit is malfunctioning.	Refer to AV-185

NAVIGATION SYSTEM

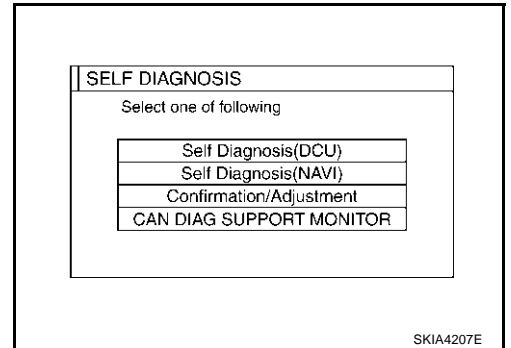
AKS007J2

Confirmation/Adjustment Mode OPERATION PROCEDURE

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



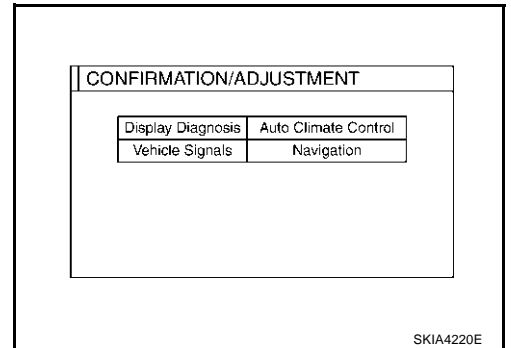
4. The initial trouble diagnosis screen will be shown, and items "Self-Diagnosis (DCU)", "Self-Diagnosis (NAVI)", "Confirmation/Adjustment" and "CAN DIAG SUPPORT MONITOR" will become selective.



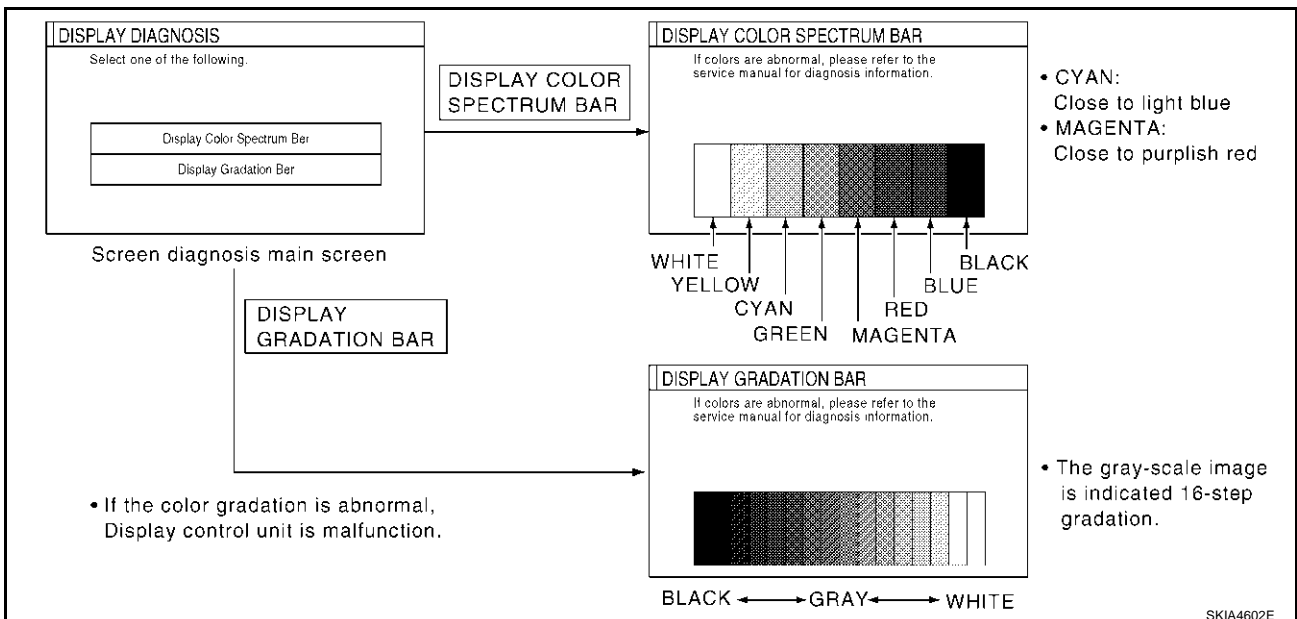
5. When "Confirmation/Adjustment" is selected on the initial trouble diagnosis screen, the operation will enter the CONFIRMATION/ADJUSTMENT mode. In this mode, check and adjustment of each item will become possible.

6. The initial trouble diagnosis screen will be shown, and items "Display Diagnosis", "Vehicle Signals", "Auto Climate Control" and "Navigation" will become selective.

7. Select each switch on "CONFIRMATION/ADJUSTMENT" screen to display the relevant diagnosis screen.



DISPLAY DIAGNOSIS



NAVIGATION SYSTEM

- When RGB signal error occurred in the RGB system, tone of the color bar will change as follows.
 - R (red) signal error** : Screen looks bluish
 - G (green) signal error** : Screen looks reddish
 - B (blue) signal error** : Screen looks yellowish
- When the color of the screen looks unusual, refer to [AV-188, "Color of RGB Image is Not Proper \(All screens Looks Bluish\)"](#) ,[AV-189, "Color of RGB Image is Not Proper \(All Screens Looks Reddish\)"](#) and [AV-190, "Color of RGB Image is Not Proper \(All Screens Looks Yellowish\)"](#) .

VEHICLE SIGNALS

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

CAUTION:

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

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

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

VEHICLE SIGNALS	
Vehicle Speed	ON
IGN	ON
Reverse	OFF
Light	OFF

SKIA5628E

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

- If vehicle speed is NG, refer to [AV-176, "Vehicle Speed Signal Check for Display Control Unit"](#) .
- If light is NG, refer to [AV-178, "Illumination Signal Check for Display Control Unit"](#) .
- If IGN is NG, refer to [AV-178, "Ignition Signal Check for Display Control Unit"](#) .
- If reverse is NG, refer to [AV-179, "Reverse Signal Check for Display Control Unit"](#) .

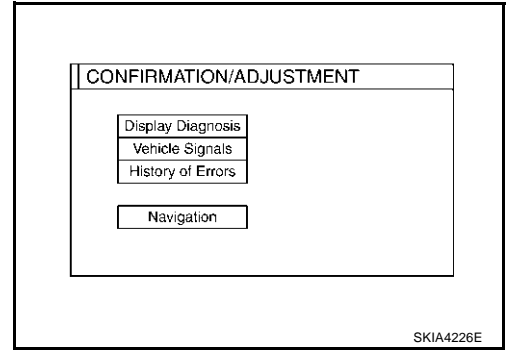
AUTO CLIMATE CONTROL

- Refer to ATC Automatic Air Conditioner [ATC-66, "Self-diagnosis Function"](#) for details.

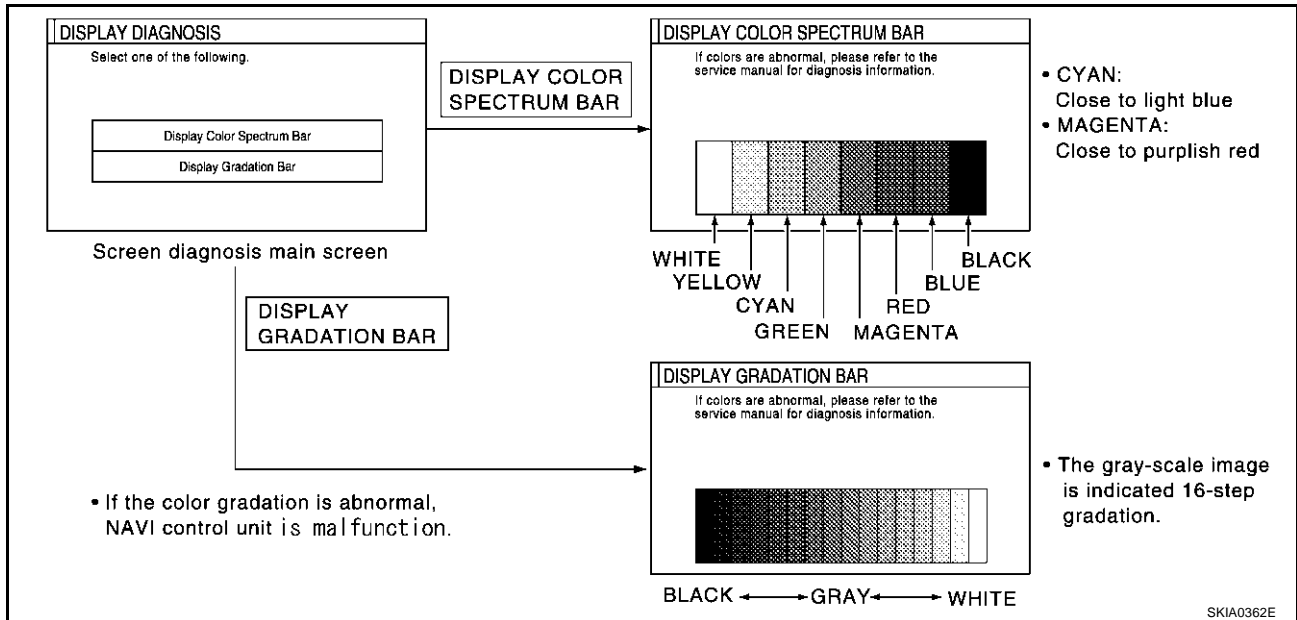
NAVIGATION SYSTEM

NAVIGATION

1. The initial trouble diagnosis screen will be shown, and items "Display Diagnosis", "Vehicle Signals", "History of Errors" and "Navigation" will become selective.
2. Select each switch on "CONFIRMATION/ADJUSTMENT" screen to display the relevant diagnosis screen.



DISPLAY DIAGNOSIS



- When RGB signal error occurred in the RGB system, tone of the color bar will change as follows.
 - R (red) signal error** : Screen looks bluish
 - G (green) signal error** : Screen looks reddish
 - B (blue) signal error** : Screen looks yellowish
- When the color of the screen looks unusual, refer to [AV-185, "Color of RGB Image is Not Proper \(NAVI Screen Looks Bluish\)"](#), [AV-186, "Color of RGB Image is Not Proper \(NAVI Screen Looks Reddish\)"](#) and [AV-187, "Color of RGB Image is Not Proper \(NAVI Screen Looks Yellowish\)"](#).

NAVIGATION SYSTEM

VEHICLE SIGNALS

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

CAUTION:

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

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

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

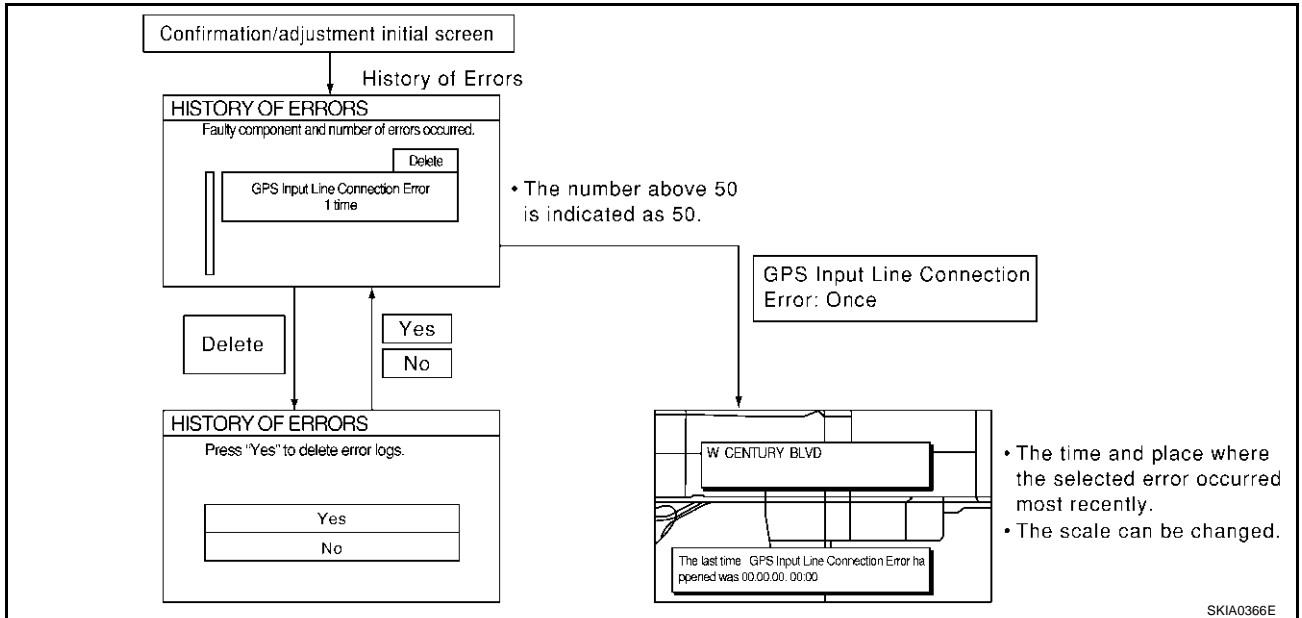
VEHICLE SIGNALS	
Vehicle Speed	ON
IGN	ON
Reverse	OFF
Light	OFF

SKIA5628E

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

- If vehicle speed is NG, refer to [AV-175, "Vehicle Speed Signal Check for NAVI Control Unit"](#) .
- If light is NG, refer to [AV-177, "Illumination Signal Check for NAVI Control Unit"](#) .
- If IGN is NG, refer to [AV-178, "Ignition Signal Check for NAVI Control Unit"](#) .
- If reverse is NG, refer to [AV-178, "Reverse Signal Check for NAVI Control Unit"](#) .

HISTORY OF ERRORS



NAVIGATION SYSTEM

DIAGNOSIS BY HISTORY OF ERRORS

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

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

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

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

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

Error item	Possible causes	Example of symptom
	Action/symptom	
Gyro sensor disconnected	Communications malfunction between NAVI control unit and internal gyro	<ul style="list-style-type: none"> ● Navigation location detection performance has deteriorated. (Angular velocity cannot be detected.)
	<ul style="list-style-type: none"> ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference. 	
GPS disconnected	Communication error between NAVI control unit and internal GPS substrate	<ul style="list-style-type: none"> ● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
	<ul style="list-style-type: none"> ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference. 	
GPS transmission cable malfunction	Malfunctioning transmission wires to NAVI control unit and internal GPS substrate	<ul style="list-style-type: none"> ● During self-diagnosis, GPS diagnosis is not performed.
	<ul style="list-style-type: none"> ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference. 	
GPS input line connection error	Malfunctioning receiving wires to NAVI control unit and internal GPS substrate	<ul style="list-style-type: none"> ● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
	<ul style="list-style-type: none"> ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference. 	
GPS TCX0 over GPS TCX0 under	Oscillating frequency of the GPS substrate frequency synchronizing oscillation circuit exceeded (or below) the specification	<ul style="list-style-type: none"> ● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
	<ul style="list-style-type: none"> ● Perform self-diagnosis. ● When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference, or the control unit may have been subjected to excessively high or low temperatures. 	

NAVIGATION SYSTEM

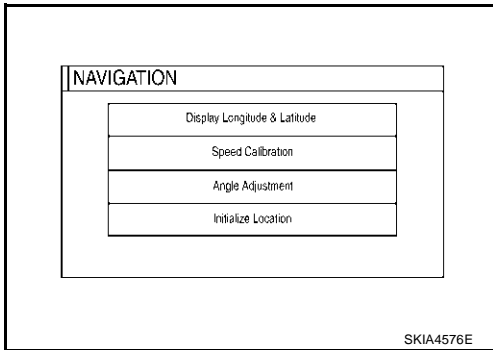
Error item	Possible causes	Example of symptom
	Action/symptom	
GPS ROM malfunction GPS RAM malfunction	Contents of ROM (or RAM) in GPS substrate are malfunctioning.	<ul style="list-style-type: none"> Location detection accuracy of the navigation system will deteriorate, depending on the error area in the memory, because GPS cannot make correct positioning. (Location correction using GPS is not performed.)
	<ul style="list-style-type: none"> Perform self-diagnosis. When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference. 	
GPS RTC malfunction	Clock IC in GPS substrate is malfunctioning.	<ul style="list-style-type: none"> Correct time may not be displayed. After the power is turned on, the system always takes some time until GPS positioning becomes possible. (The GPS receiver starts positioning without re-collecting the whole satellite information when it judged the data stored in the receiver is correct.) Correct time of error occurrence may not be stored in the "History of Errors".
	<ul style="list-style-type: none"> Perform self-diagnosis. When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference. 	
GPS antenna disconnected	Malfunctioning connection between GPS substrate in NAVI control unit and GPS antenna.	<ul style="list-style-type: none"> Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) GPS receiving status remains gray.
	<ul style="list-style-type: none"> Perform self-diagnosis. When connection between NAVI control unit and GPS antenna is judged normal by self-diagnosis, the symptom may be intermittent, caused by impact or vibration. 	
Low voltage of GPS	The power voltage supplied to the GPS circuit board has decreased.	<ul style="list-style-type: none"> Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) GPS receiving status remains gray.
	<ul style="list-style-type: none"> Perform self-diagnosis. When connection between NAVI control unit and GPS antenna is judged normal by self-diagnosis, the symptom may be intermittent, caused by impact or vibration. 	
DVD-ROM Malfunction DVD-ROM Read error DVD-ROM Response Error	Malfunctioning NAVI control unit	-
	Dedicated map DVD-ROM is in the system, but the data cannot be read.	<ul style="list-style-type: none"> The map of a particular location cannot be displayed. Specific guidance information cannot be displayed. Map display is slow. Guidance information display is slow. System has been affected by vibration.
	<ul style="list-style-type: none"> Is map DVD-ROM damaged, warped, or dirty? <ul style="list-style-type: none"> If damaged or warped, the map DVD-ROM is malfunctioning. If dirty, wipe the DVD-ROM clean with a soft cloth. Perform self-diagnosis. When NAVI control unit is judged normal by self-diagnosis, the symptom is judged intermittent, caused by vibration. 	

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NAVIGATION

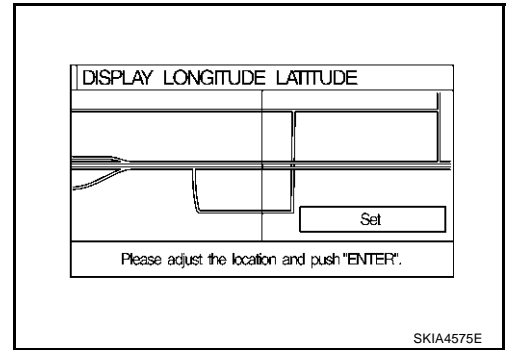
- The initial trouble diagnosis screen will be shown, and items "Display Longitude & Latitude", "Speed Calibration", "Angle Adjustment" and "Initialize Location" will become selective.
- Select each switch on "NAVIGATION" screen to display the relevant diagnosis screen.



NAVIGATION SYSTEM

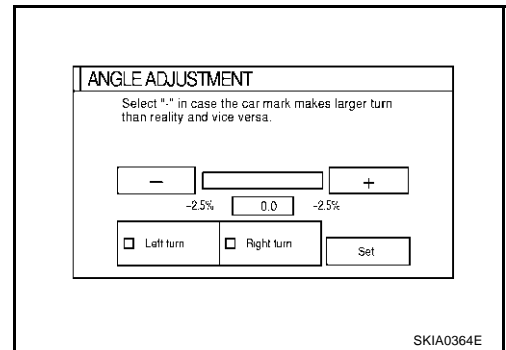
Display Longitude & Latitude

- Able to confirm/adjust longitude and latitude.



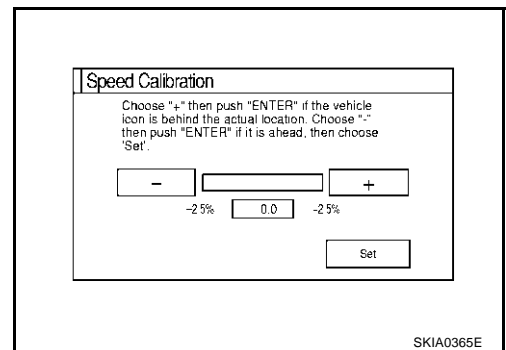
Angle Adjustment

- Adjusts turning angle output detected by the gyroscope.



Speed Calibration

- During normal driving, distance error caused by tire wear and tire pressure change is automatically adjusted for by the automatic distance correction function. This function, on the other hand, is for immediate adjustment, in cases such as driving with tire chain fitted on tires.



Initialize Location

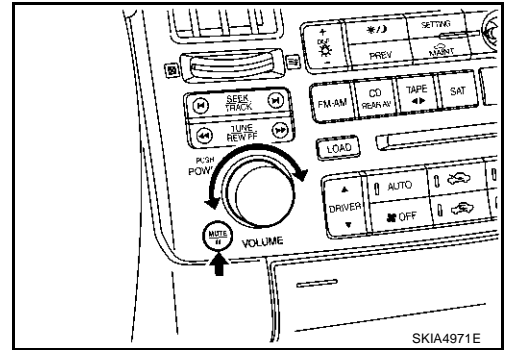
- This mode is for initializing the current location.

NAVIGATION SYSTEM

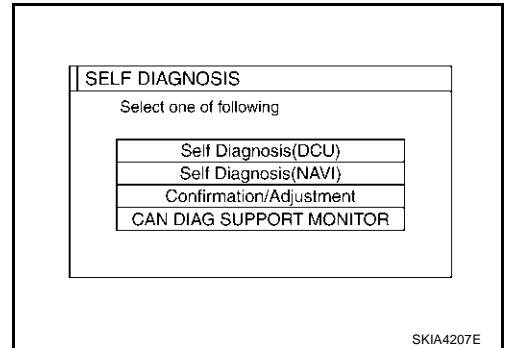
AKS007J3

CAN DIAG Support Monitor OPERATION PROCEDURE

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

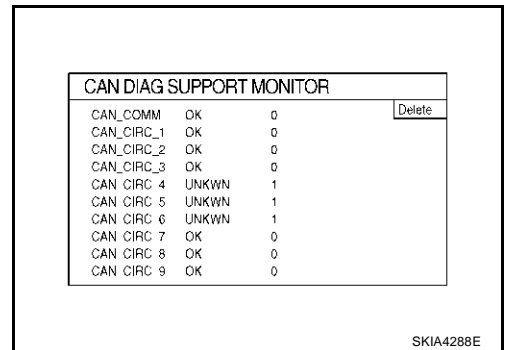


4. The initial trouble diagnosis screen will be shown, and items "Self-Diagnosis (DCU)", "Self-Diagnosis (NAVI)", "Confirmation/Adjustment" and "CAN DIAG SUPPORT MONITOR" will become selective.
5. Select "CAN DIAG SUPPORT MONITOR".



6. Display status of CAN communication.

Item	Content	Error counter (Reference value)
CANCOMM	OK/NG	0-50
CAN_CIRC_1	OK/UNKWN	0-50
CAN_CIRC_2	OK/UNKWN	0-50
CAN_CIRC_3	OK/UNKWN	0-50
CAN_CIRC_4	OK/UNKWN	0-50
CAN_CIRC_5	OK/UNKWN	0-50
CAN_CIRC_6	OK/UNKWN	0-50
CAN_CIRC_7	OK/UNKWN	0-50
CAN_CIRC_8	OK/UNKWN	0-50
CAN_CIRC_9	OK/UNKWN	0-50



NOTE:

Counter shows the status of CAN communication.

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NAVIGATION SYSTEM

A/C and AV Switch Self-Diagnosis Function

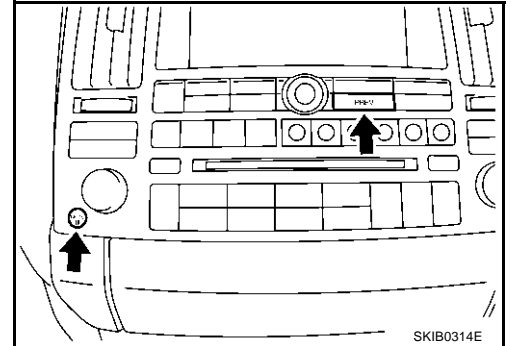
AKS007J4

DESCRIPTION

It can check ON/OFF operation of each switch in the A/C and AV switch and diagnose the input signals to the steering switch (audio).

Starting the SELF-DIAGNOSIS MODE

1. Turn ignition switch from OFF to ACC.
2. Within 10 seconds press and hold the witches "MUTE/II " and "PREV" simultaneously for 3 seconds.



Diagnosis Function

- It can illuminate all the indicators (LED) in the A/C and AV switch.
- It can check for continuity of the switches by sounding the buzzer when the A/C and AV switch is pressed.
- It can check for continuity of harness between A/C and AV switch and steering switch (audio).

NOTE:

- Indicators (LED) of REC/FRE switch change to "FRE" → "REC" → "FRE" every time the REC/FRE switch is pushed. (These two do not turn on at a time.)
- Impossible to check rear window defogger switch operation (No beep sound even under normal status).

Exiting the SELF-DIAGNOSIS MODE

- Turn ignition switch OFF.

NAVIGATION SYSTEM

Power Supply and Ground Circuit Check for NAVI Control Unit

AKS007J5

1. CHECK FUSE

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

Unit	Signal	Fuse No.
NAVI control unit	Battery power supply	32
	ACC power supply	6

OK or NG

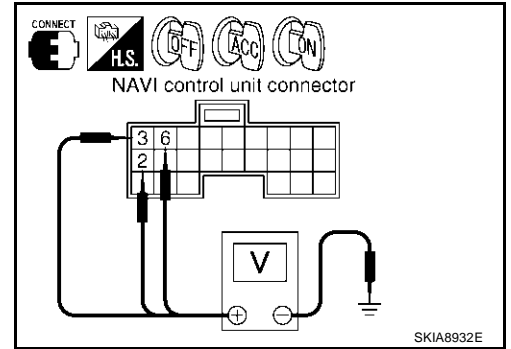
OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

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

Terminals		(-)	Ignition switch position		
(+) (+)			OFF	ACC	ON
Connector	Terminal (Wire color)				
B208	2 (Y), 3 (Y)	Ground	Battery voltage	Battery voltage	Battery voltage
	6 (LG)		0V	Battery voltage	Battery voltage



OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

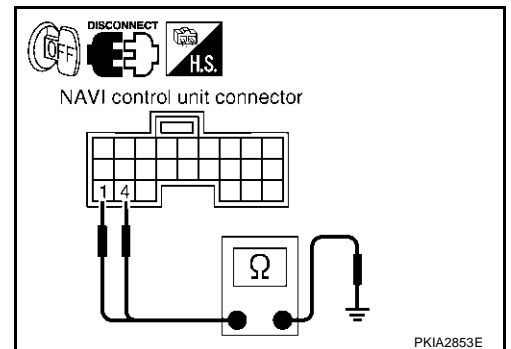
- Turn ignition switch OFF.
- Disconnect NAVI control unit connector.
- Check continuity between NAVI control unit harness connector B208 terminals 1 (B), 4 (B) and ground.

1, 4 – Ground : Continuity should exist.

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



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NAVIGATION SYSTEM

Power Supply and Ground Circuit Check for Display Control Unit

AKS007J6

1. CHECK FUSE

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

Unit	Signal	Fuse No.
Display control unit	Battery power supply	32
	ACC power supply	6

OK or NG

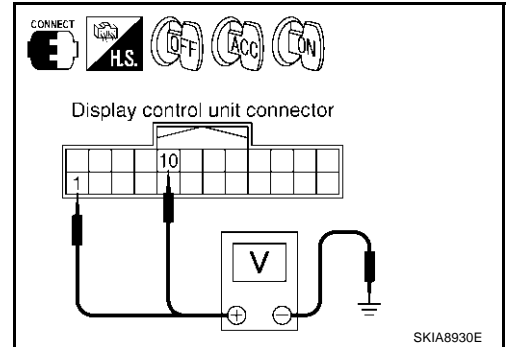
OK >> GO TO 2.

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

2. CHECK POWER SUPPLY CIRCUIT

- Check voltage between display control unit harness connector terminals and ground.

Terminals		(-)	Ignition switch position		
(+)			OFF	ACC	ON
Connector	Terminal (Wire color)	Ground	Battery voltage	Battery voltage	Battery voltage
M75	1 (W/L)		0V	Battery voltage	Battery voltage
	10 (LG/R)				



OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

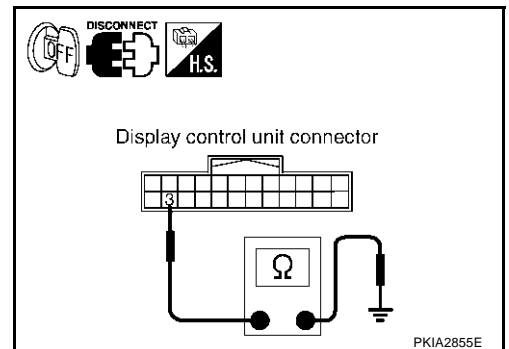
- Turn ignition switch OFF.
- Disconnect display control unit.
- Check continuity between display control unit harness connector M75 terminal 3 (B) and ground.

3 – Ground : Continuity should exist.

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



Power Supply and Ground Circuit Check for Display

1. CHECK DISPLAY CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check display control unit power supply and ground circuit. Refer to [AV-149, "Terminals and Reference Value for Display Control unit"](#).

OK or NG

- OK >> GO TO 2.
- NG >> Repair malfunctioning parts.

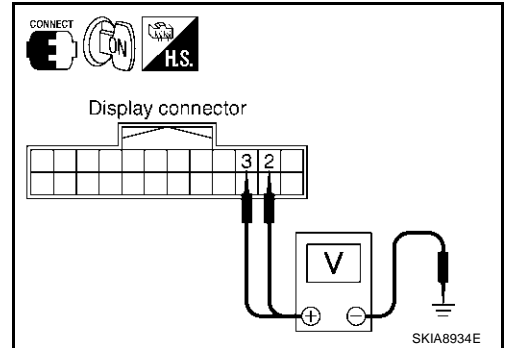
2. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between display unit harness connector M63 terminals 2 (W/G), 3 (BR/W) and ground.

2, 3 – Ground : Approx. 9V

OK or NG

- OK >> GO TO 4.
- NG >> GO TO 3.



3. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display connector and display control unit connector.
3. Check continuity between display harness connector M63 terminals 2 (W/G), 3 (BR/W) and display control unit harness connector M75 terminals 2 (W/G), 4 (BR/W).

2 – 2 : Continuity should exist.

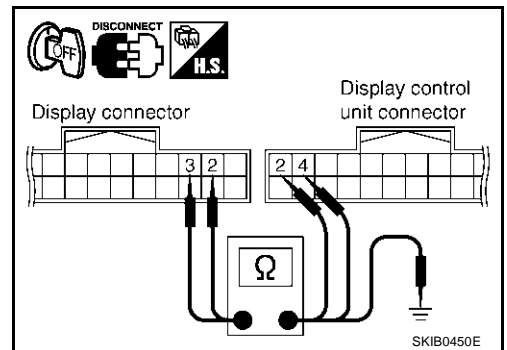
3 – 4 : Continuity should exist.

4. Check continuity between display harness connector M63 terminals 2 (W/G), 3 and ground.

2, 3 – Ground : Continuity should not exist.

OK or NG

- OK >> Replace display control unit.
- NG >> Repair harness or connector.



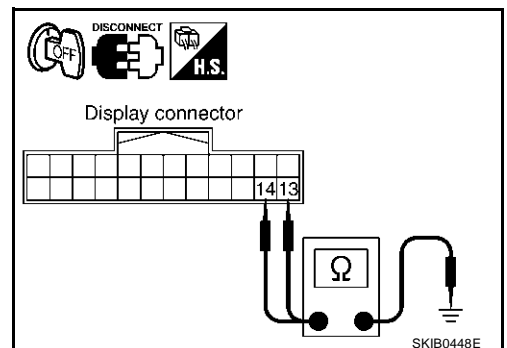
4. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display connector.
3. Check continuity between display harness connector M63 terminal 13 (P), 14 (P/L) and ground.

13, 14 – Ground : Continuity should exist.

OK or NG

- OK >> GO TO 6.
- NG >> GO TO 5.



NAVIGATION SYSTEM

5. CHECK HARNESS

1. Disconnect display control unit connector.
2. Check continuity between display harness connector M63 terminals 13 (P), 14 (P/L) and display control unit harness connector M75 terminals 5 (P), 7 (P/L).

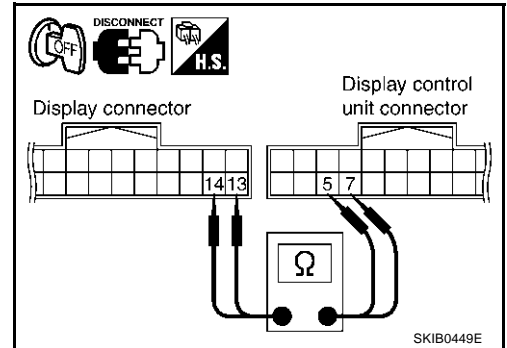
13 – 5 : Continuity should exist.

14 – 7 : Continuity should exist.

OK or NG

OK >> Replace display control unit.

NG >> Repair harness or connector.



6. CHECK GROUND CIRCUIT

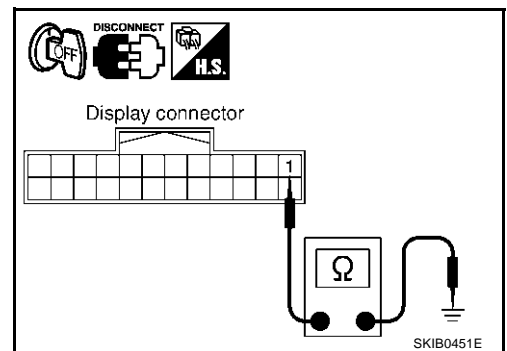
Check continuity between display harness connector M63 terminal 1 (B) and ground.

1 – Ground : Continuity should exist.

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



NAVIGATION SYSTEM

Power Supply and Ground Circuit Check for A/C and AV Switch

AKS007J8

1. CHECK FUSE

Make sure that the following fuses of the A/C and AV switch are not blown.

Unit	Signal	Fuse No.
A/C and AV switch	Battery power supply	32
	ACC power supply	6

OK or NG

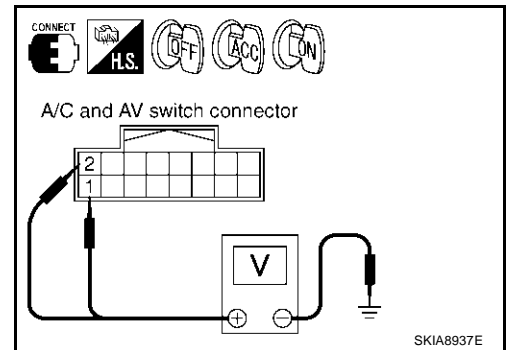
OK >> GO TO 2.

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

- Check voltage between AC and AV switch harness connector terminals and ground as follows.

Terminals		(-)	Ignition switch position		
(+)			OFF	ACC	ON
Connector	Terminal (Wire color)				
M64	1 (W/L)	Ground	Battery voltage	Battery voltage	Battery voltage
	2 (LG/R)		0V	Battery voltage	Battery voltage



OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

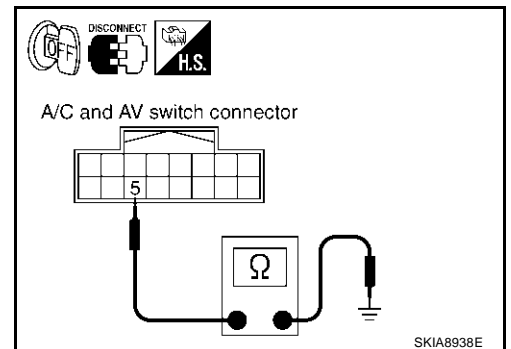
- Turn ignition switch OFF.
- Disconnect A/C and AV switch connector.
- Check continuity between A/C and AV switch harness connector M64 terminals 5 (B) and ground.

5 – Ground : Continuity should exist.

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



Vehicle Speed Signal Check for NAVI Control Unit

AKS007J9

1. VEHICLE SPEED OPERATION CHECK

Does speedmeter is operated normally?

YES or NO

YES >> GO TO 2.

NO >> Check combination meter trouble diagnosis. Refer to [DI-14](#), "[Diagnosis Flow](#)".

NAVIGATION SYSTEM

2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector and unified meter and A/C amp. connector.
3. Check continuity between NAVI control unit harness connector B207 terminal 28 (GY) and unified meter and A/C amp. harness connector M56 terminal 26 (R/G).

28 – 26 : Continuity should exist.

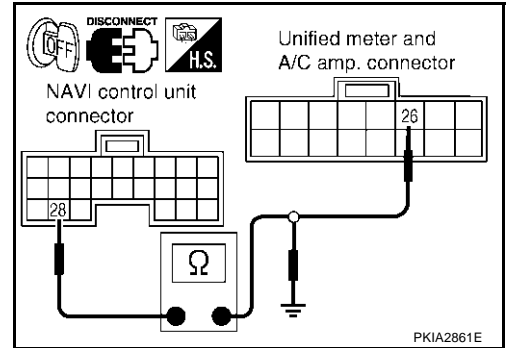
4. Check continuity between NAVI control unit harness connector B207 terminal 28 (GY) and ground.

28 – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



3. CHECK VEHICLE SPEED SIGNAL

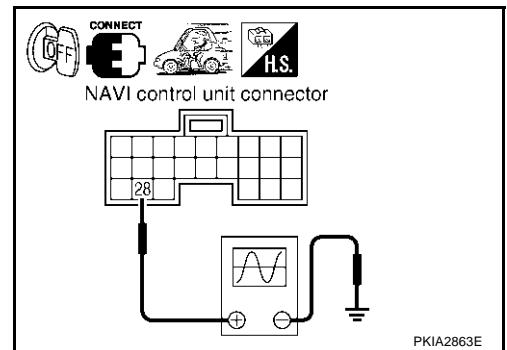
1. Connect unified meter and A/C amp. connector.
2. Start engine.
3. Drive vehicle at a constant speed.
4. Check signal between NAVI control unit harness connector B207 terminal 28 (GY) and ground with CONSULT-II or oscilloscope.

28 – Ground : Refer to [AV-147, "Terminals and Reference Value for NAVI Control unit"](#) .

OK or NG

OK >> INSPECTION END

NG >> Check combination meter system. Refer to [DI-18, "Vehicle Speed Signal Inspection"](#) .



Vehicle Speed Signal Check for Display Control Unit

1. VEHICLE SPEED OPERATION CHECK

Does speedmeter is operated normally?

YES or NO

YES >> GO TO 2.

NO >> Check combination meter trouble diagnosis. Refer to [DI-14, "Diagnosis Flow"](#) .

NAVIGATION SYSTEM

2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit connector and combination unified meter and A/C amp. connector.
3. Check continuity between display control unit harness connector M75 terminal 16 (R/G) and unified meter and A/C amp. harness connector M56 terminal 26 (R/G).

16 – 26 : Continuity should exist.

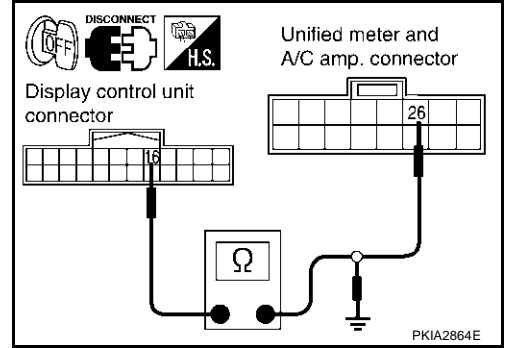
4. Check continuity between display control unit harness connector M75 terminal 16 (R/G) and ground.

16 – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



3. CHECK VEHICLE SPEED SIGNAL

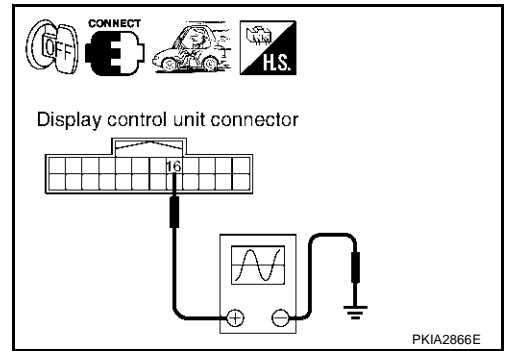
1. Connect unified meter and A/C amp. connector.
2. Start the engine.
3. Drive vehicle at a constant speed.
4. Check signal between display control unit harness connector M75 terminal 16 (R/G) and ground with CONSULT-II or oscilloscope.

16 – Ground : Refer to [AV-149, "Terminals and Reference Value for Display Control unit"](#) .

OK or NG

OK >> INSPECTION END

NG >> Check unified meter and A/C amp. system. Refer to [DI-18, "Vehicle Speed Signal Inspection"](#) .



Illumination Signal Check for NAVI Control Unit

1. CHECK ILLUMINATION SIGNAL

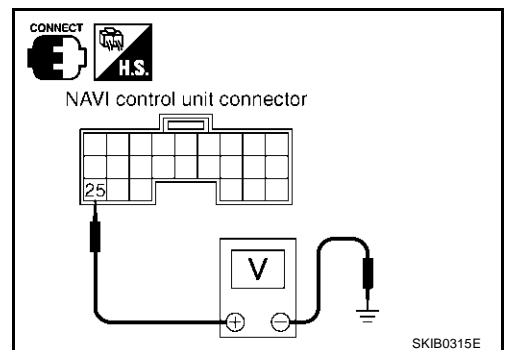
1. Check voltage between NAVI control unit harness connector terminals and ground.

Terminals			Condition	Voltage
(+)		(-)		
Connector	Terminal (Wire color)			
M63	25 (R/L)	Ground	Lighting switch is ON	Approx. 12V
			Lighting switch is OFF	Approx. 0V

OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.



NAVIGATION SYSTEM

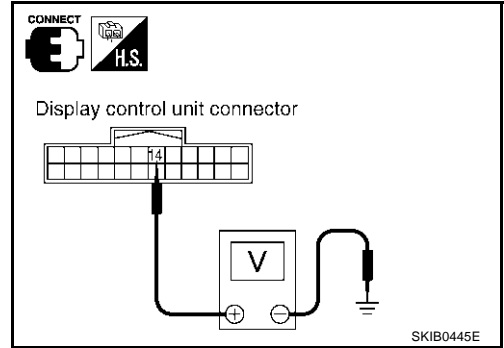
Illumination Signal Check for Display Control Unit

AKS007JC

1. CHECK ILLUMINATION SIGNAL

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

Terminals		Condition	Voltage
(+)	(-)		
Connector	Terminal (Wire color)		
M75	14 (R/L)	Lighting switch is ON	Approx. 12V
		Lighting switch IS OFF	Approx. 0V



OK or NG

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

Ignition Signal Check for NAVI Control Unit

AKS007JD

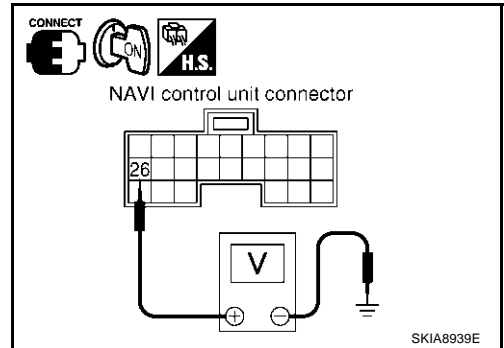
1. CHECK IGNITION SIGNAL

1. Turn ignition switch ON.
2. Check voltage between NAVI control unit harness connector B207 terminal 26 (G) and ground.

26 – Ground : Battery voltage

OK or NG

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



Ignition Signal Check for Display Control Unit

AKS007JE

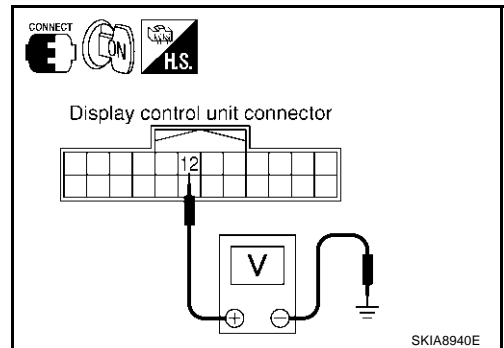
1. CHECK IGNITION SIGNAL

1. Turn ignition switch ON.
2. Check voltage between display control unit harness connector M75 terminal 12 (G/R) and ground.

12 – Ground : Battery voltage

OK or NG

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



Reverse Signal Check for NAVI Control Unit

AKS007JF

1. CHECK REVERSE LAMP

1. Turn ignition switch ON.
2. Selector lever into R-position.

Does "R" in the shift position indicator come on?

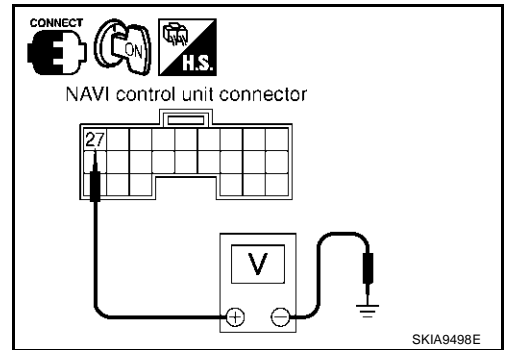
- YES >> GO TO 2.
 NO >> Check back-up lamp system. Refer to [LT-194, "BACK-UP LAMP"](#).

NAVIGATION SYSTEM

2. CHECK REVERSE SIGNAL

1. With the selector lever in R-position, check voltage between NAVI control unit and ground.

Terminals		(-)	Condition		Voltage
(+)					
Connector	Terminal (Wire color)		Select lever		
B207	27 (OR)	Ground	R-position	Approx. 12V	
			Except R-position	Approx. 0V	



OK or NG

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

Reverse Signal Check for Display Control Unit

AKS007JG

1. CHECK REVERSE LAMP

1. Turn ignition switch ON.
2. Selector lever into R-position.

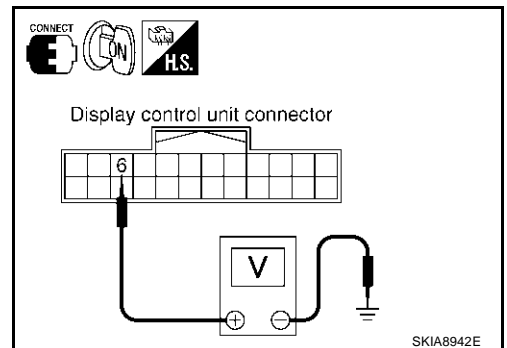
Does "R" in the shift position indicator come on?

- YES >> GO TO 2.
 NO >> Check back-up lamp system. Refer to [LT-194, "BACK-UP LAMP"](#).

2. CHECK REVERSE SIGNAL

1. With the selector lever in R-position, check voltage between display control unit and ground.

Terminals		(-)	Condition		Voltage
(+)					
Connector	Terminal (Wire color)		Select lever		
M75	6 (OR)	Ground	R-position	Approx. 12V	
			Except R-position	Approx. 0V	



OK or NG

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

When Malfunctioning Connection Between Display Control Unit and NAVI Control Unit

AKS007JH

1. CHECK NAVI CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

1. Check NAVI control unit power supply and ground circuit. Refer to [AV-171, "Power Supply and Ground Circuit Check for NAVI Control Unit"](#).

OK or NG

- OK >> GO TO 2.
 NG >> Repair malfunctioning parts.

NAVIGATION SYSTEM

2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector and display control unit connector.
3. Check continuity between NAVI control unit harness connector B207 terminals 44 (L), 45(P) and display control unit harness connector M76 terminals 32 (BR), 34 (Y).

44 – 32 : Continuity should exist.

45 – 34 : Continuity should exist.

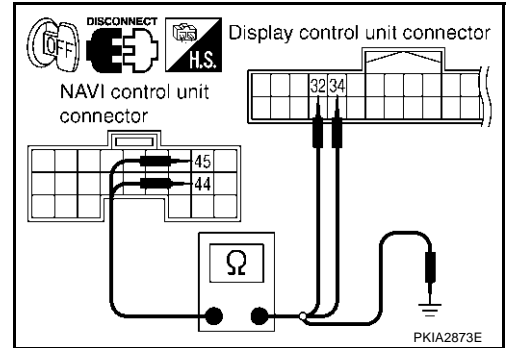
4. Check continuity between NAVI control unit harness connector B207 terminals 44 (L), 45 (P) and ground.

44, 45 – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



3. SELF-DIAGNOSIS OF DCU

1. Replace NAVI control unit.
2. Connect NAVI control unit connector and display control unit connector.
3. Turn ignition switch ON.
4. Start self-diagnosis of DCU, and check the self-diagnosis result.

OK or NG

OK >> INSPECTION END.

NG >> Replace display control unit.

When Malfunctioning Connection Between Display Control Unit and Audio Unit

AKS007JI

1. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check audio unit power supply and ground circuit. Refer to [AV-37, "Power Supply Circuit Inspection"](#).

OK or NG

OK >> GO TO 2.

NG >> Repair malfunctioning parts.

2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect audio unit connector and display control unit connector.
3. Check continuity between display control unit harness connector M76 terminals 40 (LG), 42 (B/Y) and audio unit harness connector M60 terminals 23 (LG), 21 (B/Y).

40 – 23 : Continuity should exist.

42 – 21 : Continuity should exist.

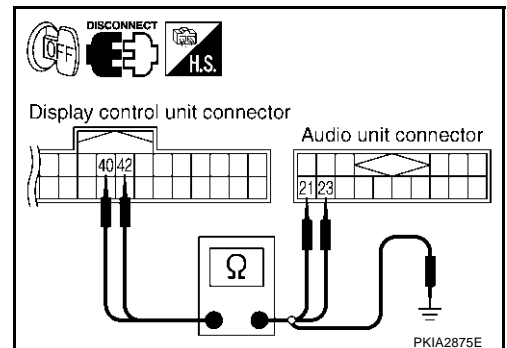
4. Check continuity between display control unit harness connector M76 terminals 40 (LG), 42 (B/Y) and ground.

40, 42 – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness or connector.



NAVIGATION SYSTEM

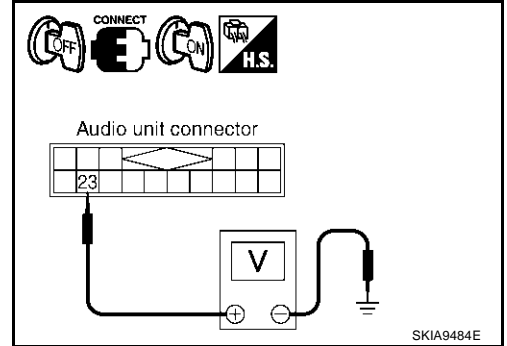
3. CHECK AUDIO UNIT

1. Connect audio unit connector.
2. Turn ignition switch ON.
3. Check voltage between audio unit harness connector M60 terminal 23 (LG) and ground.

23 – Ground : Approx. 4 V

OK or NG

- OK >> GO TO 4.
NG >> Replace audio unit.



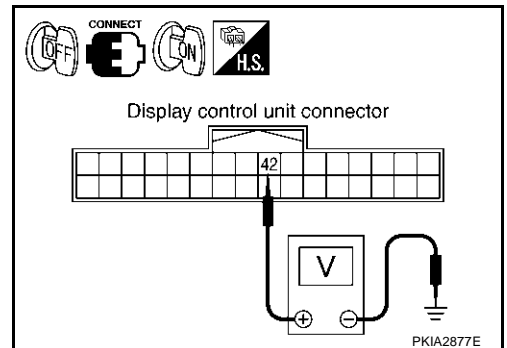
4. CHECK DISPLAY CONTROL UNIT

1. Turn ignition switch OFF.
2. Disconnect audio unit connector, and connect display control unit connector.
3. Turn ignition switch ON.
4. Check voltage between display control unit harness connector M76 terminal 42 (B/Y) and ground.

42 – ground : Approx. 4 V

OK or NG

- OK >> GO TO 5.
NG >> Replace display control unit.



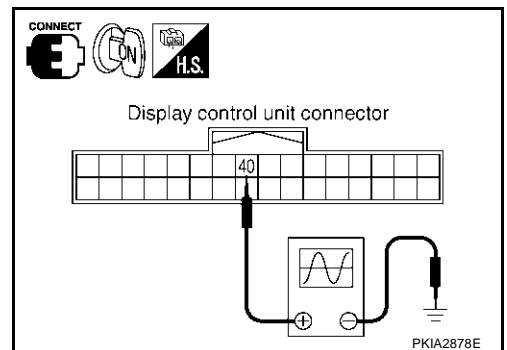
5. CHECK COMMUNICATION SIGNAL (DCU-ADU)

1. Turn ignition switch OFF.
2. Connect audio unit connector.
3. Turn ignition switch ON.
4. Check signal between display control unit harness connector M76 terminal 40 (LG) and ground with CONSULT-II or oscilloscope.

40 – Ground : Refer to [AV-149, "Terminals and Reference Value for Display Control unit"](#) .

OK or NG

- OK >> GO TO 6.
NG >> Replace display control unit.



NAVIGATION SYSTEM

6. CHECK COMMUNICATION SIGNAL (AUD-DCU)

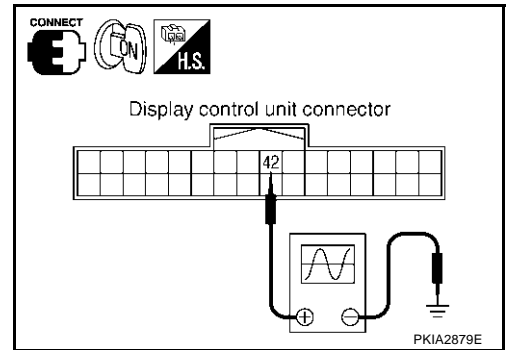
1. Check signal between display control unit harness connector M76 terminal 42 (B/Y) and ground with CONSULT-II or oscilloscope.

42 – Ground

: Refer to [AV-149](#), "[Terminals and Reference Value for Display Control unit](#)".

OK or NG

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



When Malfunctioning Connection Between Display Control Unit and Display

AKS007JJ

1. CHECK HARNESS

1. Disconnect display connector and display control unit connector.
2. Check continuity between display control unit harness connector M76 terminals 36 (PU), 38 (LG) and Display harness connector M63 terminals 11 (PU), 22 (LG).

36 – 11

: Continuity should exist.

38 – 22

: Continuity should exist.

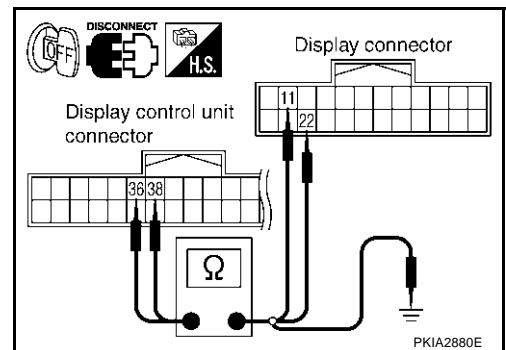
3. Check continuity between display control unit harness connector M76 terminals 36 (PU), 38 (LG) and ground.

36, 38 – Ground

: Continuity should not exist.

OK or NG

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



2. CHECK DISPLAY

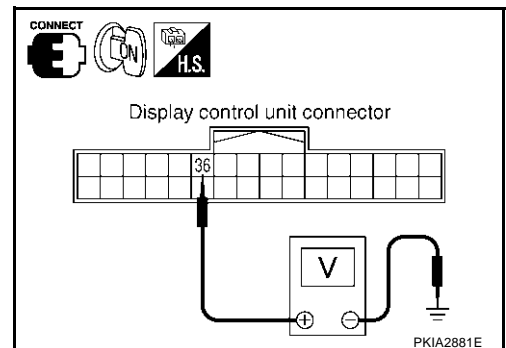
1. Connect display connector.
2. Turn ignition switch ON.
3. Check voltage between display control unit harness connector M76 terminal 36 (PU) and ground.

36 – Ground

: Approx. 4V

OK or NG

- OK >> GO TO 3.
NG >> Replace display.



NAVIGATION SYSTEM

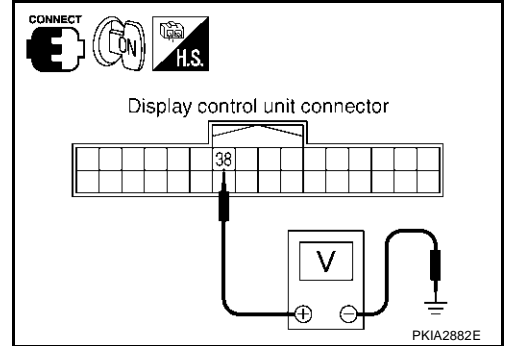
3. CHECK DISPLAY CONTROL UNIT

1. Turn ignition switch OFF.
2. Disconnect display connector, and connect display control unit connector.
3. Check voltage between display control unit harness connector M76 terminal 38 (LG) and ground.

38 – Ground : **Approx. 4V**

OK or NG

- OK >> GO TO 4.
NG >> Replace display control unit.



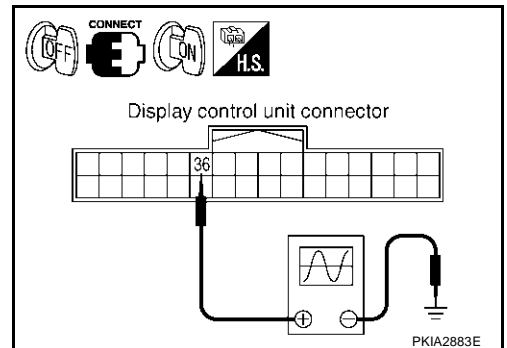
4. CHECK COMMUNICATION SIGNAL (DCU–DSP)

1. Turn ignition switch OFF.
2. Connect display connector.
3. Turn ignition switch ON.
4. Check signal between display control unit harness connector M76 terminal 36 (PU) and ground with CONSULT-II or oscilloscope.

36 – Ground : **Refer to AV-149, "Terminals and Reference Value for Display Control unit" .**

OK or NG

- OK >> GO TO 5.
NG >> Replace display control unit.



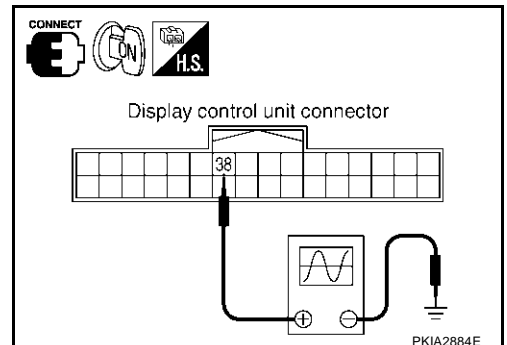
5. CHECK COMMUNICATION SIGNAL (DSP–DCU)

Check signal between display control unit harness connector M76 terminal 38 (LG) and ground with CONSULT-II or oscilloscope.

38 – Ground : **Refer to AV-149, "Terminals and Reference Value for Display Control unit" .**

OK or NG

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



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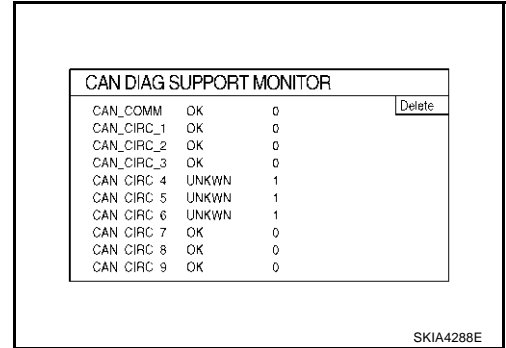
CAN Communication Line Check

AKS007JL

1. CHECK MONITOR DESCRIPTION

1. Start display control unit self-diagnosis. Refer to [AV-157, "Self-Diagnosis Mode \(DCU\)"](#)
2. Select "CAN DIAG SUPPORT MONITOR". Refer to [AV-169, "CAN DIAG Support Monitor"](#) .

Item	content		Error counter (Reference value)
	Normal condition	Error (Example)	
CANCOMM	OK	NG	0-50
CAN_CIRC_1	OK	UNKWN	0-50
CAN_CIRC_2	OK	UNKWN	0-50
CAN_CIRC_3	OK	UNKWN	0-50
CAN_CIRC_4	OK	UNKWN	0-50
CAN_CIRC_5	OK	UNKWN	0-50
CAN_CIRC_6	OK	UNKWN	0-50
CAN_CIRC_7	OK	UNKWN	0-50
CAN_CIRC_8	OK	UNKWN	0-50
CAN_CIRC_9	OK	UNKWN	0-50



3. Record each item display description (OK/NG/UNKWN) displayed on the following CAN DIAG SUPPORT MONITOR Check Sheet.

CAN DIAG SUPPORT MONITOR Check Sheet

Diagnosis item	Screen display		Diagnosis item	Screen display	
CANCOMM	OK	NG	CAN_CIRC_5	OK	UNKWN
CAN_CIRC_1	OK	UNKWN	CAN_CIRC_6	OK	UNKWN
CAN_CIRC_2	OK	UNKWN	CAN_CIRC_7	OK	UNKWN
CAN_CIRC_3	OK	UNKWN	CAN_CIRC_8	OK	UNKWN
CAN_CIRC_4	OK	UNKWN	CAN_CIRC_9	OK	UNKWN

>> After filling in CAN DIAG SUPPORT MONITOR Check Sheet. Go to [LAN-4, "Precautions When Using CONSULT-II"](#) .

If NAVI Control Unit Detects That DVD-ROM Map is not Inserted

AKS007JM

1. CHECK DVD-ROM

Make sure identified DVD-ROM map is inserted.

OK or NG

- OK >> Replace NAVI control unit.
- NG >> Insert identified DVD-ROM map.

If NAVI Control Unit Detects that Inserted DVD-ROM Map Malfunctioning or if it is Impossible to Load Data from DVD-ROM Map

AKS007JN

1. CHECK 1: DVD-ROM

Remove inserted DVD-ROM map to make sure it is identified.

OK or NG

- OK >> GO TO 2.
- NG >> Replace identified DVD-ROM map.

NAVIGATION SYSTEM

2. CHECK 2: DVD-ROM

Check removed DVD-ROM that there are dirt, scratch and warp.

OK or NG

- OK >> GO TO 3.
- NG >> Replace DVD-ROM map.

3. CHECK 3: DVD-ROM

Insert same DVD-ROM to make sure same diagnosis result is found as last self-diagnosis.

OK or NG

- OK >> Replace NAVI control unit.
- NG >> Replace DVD-ROM map.

If Connection Between NAVI Control Unit and GPS Antenna is Malfunctioning

AKS007J0

1. CHECK GPS ANTENNA

Check cable for GPS antenna by watching out to see that cable is malfunctioning.

OK or NG

- OK >> GO TO 2.
- NG >> Replace GPS antenna.

2. CHECK BY REPLACEMENT OF GPS ANTENNA

Replace other functional GPS antenna to try self-diagnosis again.

Result of self-diagnosis; Found same result?

- YES >> Replace NAVI control unit.
- NO >> Replace GPS antenna.

Color of RGB Image is Not Proper (NAVI Screen Looks Bluish)

AKS007J0

1. CHECK RGB HARNESS

1. Disconnect NAVI control unit connector and display control unit connector.
2. Check continuity between NAVI control unit harness connector terminals and display control unit harness connector terminals.

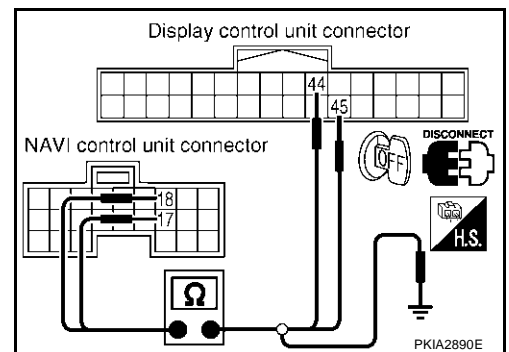
Terminals				Continuity
NAVI control unit		Display control unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
B208	18 (Y)	M76	44 (R/W)	Yes
	17		45	

3. Check continuity between NAVI control unit harness connector terminals and ground.

Terminals			Continuity
NAVI control unit		Ground	
Connector	Terminal (Wire color)		
B208	18 (Y)		No
	17		

OK or NG

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



NAVIGATION SYSTEM

2. CHECK RGB SIGNAL

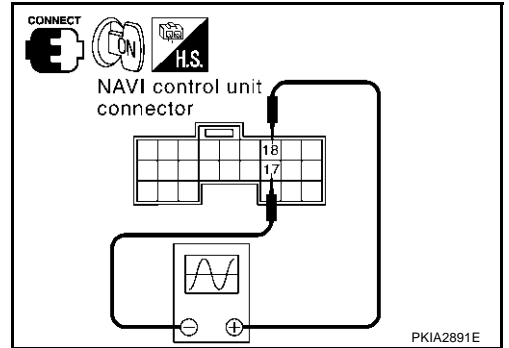
1. Connect NAVI control unit connector and display control unit connector.
2. Turn ignition switch ON.
3. Display "Color bar" by "CONFIRMATION/ADJUSTMENT" mode.
4. Check signal between NAVI control unit harness connector B208 terminal 18 (Y) and 17 with CONSULT-II or oscilloscope.

18 (Y) - 17

: Refer to [AV-147, "Terminals and Reference Value for NAVI Control unit"](#) .

OK or NG

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



Color of RGB Image is Not Proper (NAVI Screen Looks Reddish)

AKS007JR

1. CHECK RGB HARNESS

1. Disconnect NAVI control unit connector and display control unit connector.
2. Check continuity between NAVI control unit harness connector terminals and display control unit harness connector terminals.

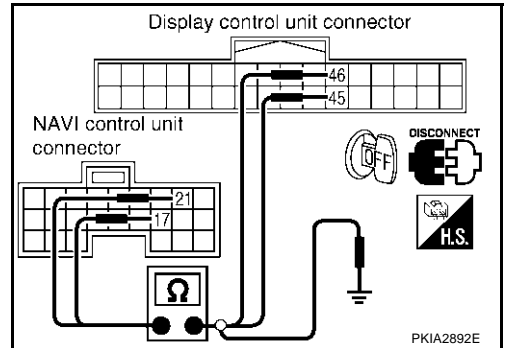
Terminals				Continuity
NAVI control unit		Display control unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
B208	21 (G)	M76	46 (R/L)	Yes
	17		45	

4. Check continuity between NAVI control unit harness connector terminals and ground.

Terminals			Continuity
NAVI control unit		Ground	
Connector	Terminal (Wire color)		
B208	21 (G)		No
	17		

OK or NG

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



NAVIGATION SYSTEM

2. CHECK RGB SIGNAL

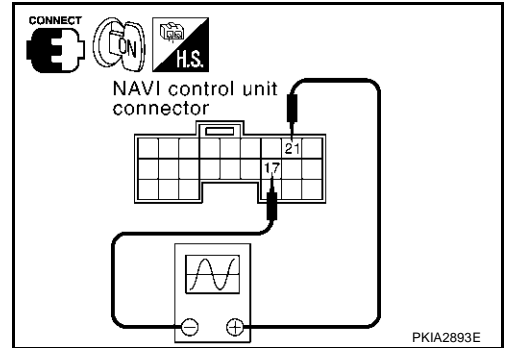
1. Connect NAVI control unit connector and display control unit connector.
2. Turn ignition switch ON.
3. Display "Color bar" by "CONFIRMATION/ADJUSTMENT" mode.
4. Check signal between NAVI control unit harness connector M208 terminal 21 (G) and 17 with CONSULT-II or oscilloscope.

21 – 17

: Refer to AV-147, "Terminals and Reference Value for NAVI Control unit" .

OK or NG

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



Color of RGB Image is Not Proper (NAVI Screen Looks Yellowish)

AKS007JS

1. CHECK RGB HARNESS

1. Disconnect NAVI control unit connector and display control unit connector.
2. Check continuity between NAVI control unit harness connector terminals and display control unit harness connector terminals.

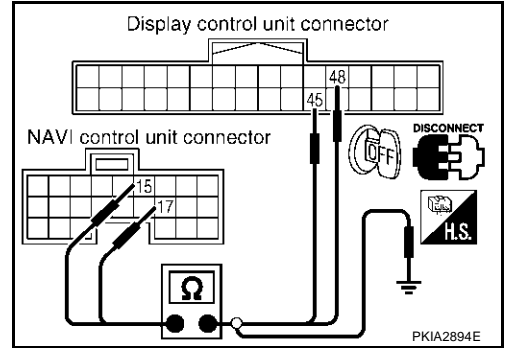
Terminals				Continuity
NAVI control unit		Display control unit		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
B208	15 (L)	M76	48 (B)	Yes
	17		45	

3. Check continuity between NAVI control unit harness connector terminals and ground.

Terminals			Continuity
NAVI control unit		Ground	
Connector	Termianls (Wire color)		
B208	15 (L)		No
	17		

OK or NG

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



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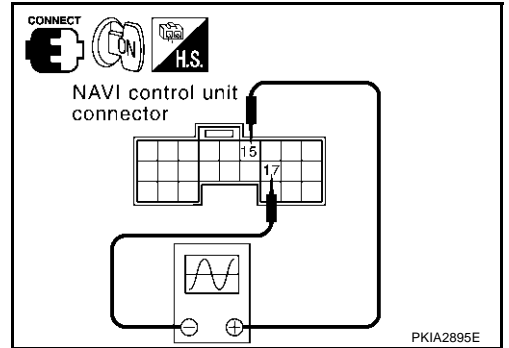
NAVIGATION SYSTEM

2. CHECK RGB SIGNAL

1. Connect NAVI control unit connector and display control unit connector.
2. Turn ignition switch ON.
3. Display "Color bar" by "CONFIRMATION/ADJUSTMENT" mode.
4. Check signal between NAVI control unit harness connector M208 terminal 15 (L) and 17 with CONSULT-II or oscilloscope.

15 – 17

: Refer to [AV-147, "Terminals and Reference Value for NAVI Control unit"](#) .



OK or NG

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

Color of RGB Image is Not Proper (All screens Looks Bluish)

AKS007JT

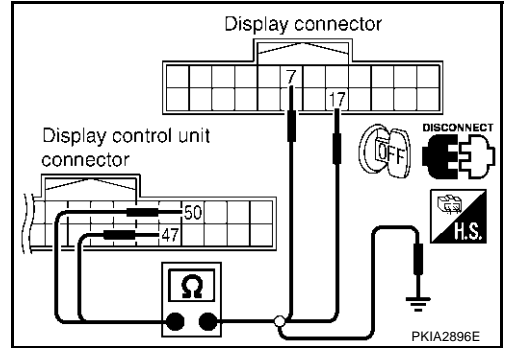
1. CHECK RGB HARNESS

1. Disconnect display control unit connector and display connector.
2. Check continuity between display control unit harness connector terminals and display harness connector terminals.

Terminals				Continuity
Display control unit		Display		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M76	50 (L/R)	M63	17 (L/R)	Yes
	47		7	

3. Check continuity between display control unit harness connector terminals and ground.

Terminals			Continuity
Display control unit		Ground	
Connector	Terminal (Wire color)		
M76	50 (L/R)		No
	47		



OK or NG

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

NAVIGATION SYSTEM

2. CHECK RGB SIGNAL

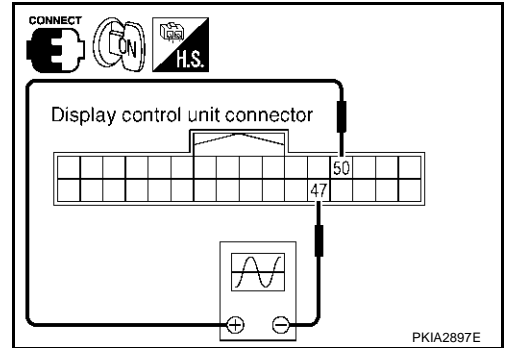
1. Connect display control unit connector and display connector.
2. Turn ignition switch ON.
3. Display "Color bar" by "CONFIRMATION/ADJUSTMENT" mode.
4. Check signal between display control unit harness connector M76 terminals 50 (L/R) and 47 with CONSULT-II or oscilloscope.

50 – 47

: Refer to [AV-149](#), "Terminals and Reference Value for Display Control unit" .

OK or NG

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



Color of RGB Image is Not Proper (All Screens Looks Reddish)

AKS007JU

1. CHECK RGB HARNESS

1. Disconnect display control unit connector and display connector.
2. Check continuity between display control unit harness connector terminals and display control unit harness connector terminals.

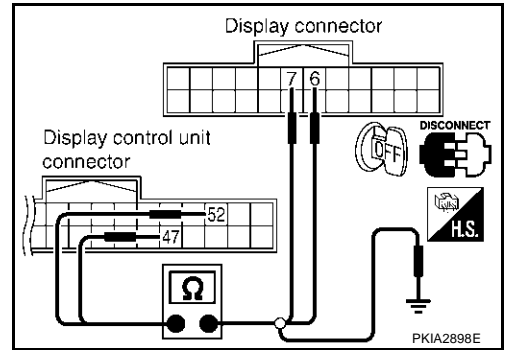
Terminals				Continuity
Display control unit		Display		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M76	52 (L/W)	M63	6 (L/W)	Yes
	47		7	

3. Check continuity between display control unit harness connector terminals and ground.

Terminals			Continuity
Display control unit		Ground	
Connector	Terminal		
M76	52 (L/W)		No
	47		

OK or NG

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



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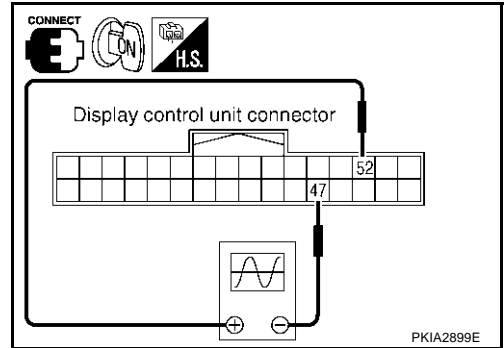
NAVIGATION SYSTEM

2. CHECK RGB SIGNAL

1. Connect display control unit connector and display connector.
2. Turn ignition switch ON.
3. Display "Color bar" by "CONFIRMATION/ADJUSTMENT" mode.
4. Check signal between display control unit harness connector M76 terminal 52 (L/W) and 47 with CONSULT-II or oscilloscope.

52 – 47

: Refer to AV-149, "Terminals and Reference Value for Display Control unit" .



OK or NG

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

Color of RGB Image is Not Proper (All Screens Looks Yellowish)

AKS007JV

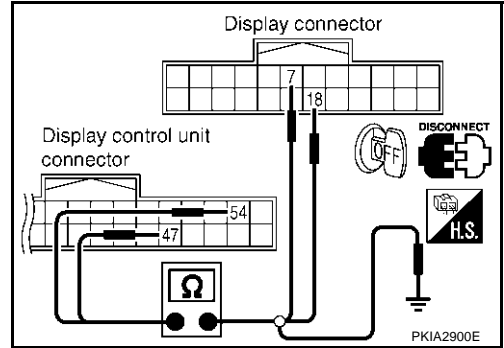
1. CHECK RGB HARNESS

1. Disconnect display control unit connector and display connector.
2. Check continuity between display control unit harness connector terminals and display harness connector terminals.

Terminals				Continuity
Display control unit		Display		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M76	54 (L)	M63	18 (L)	Yes
	47		7	

3. Check continuity between display control unit harness connector terminals and ground.

Terminals			Continuity
Display control unit		Ground	
Connector	Terminal (Wire color)		
M76	54 (L)	Ground	No
	47		



OK or NG

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

NAVIGATION SYSTEM

2. CHECK RGB SIGNAL

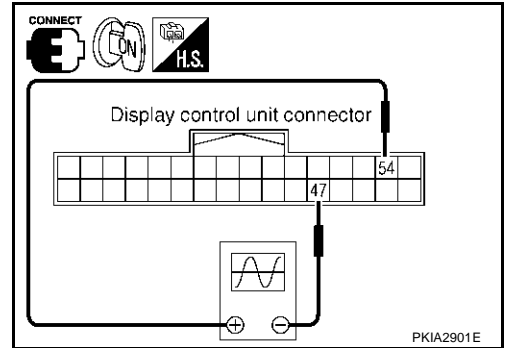
1. Connect display control unit connector and display connector.
2. Turn ignition switch ON.
3. Display "Color bar" by "CONFIRMATION/ADJUSTMENT" mode.
4. Check signal between display control unit harness connector M76 terminal 54 (L) and 47 with CONSULT-II or oscilloscope.

54 – 47

: Refer to [AV-149, "Terminals and Reference Value for Display Control unit"](#) .

OK or NG

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



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NAVIGATION SYSTEM

AKS007JW

NAVI Screen is Rolling

1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector and display control unit connector.
3. Check continuity between NAVI control unit harness connector B208 terminals 16 (G), 14 and display control unit harness connector M76 terminals 43 (G/B), 41.

16 – 43 : **Continuity should exist.**

14 – 41 : **Continuity should exist.**

4. Check continuity between NAVI control unit harness connector B208 terminals 16 (G), 14 and ground.

16, 14 – Ground : **Continuity should not exist.**

OK or NG

OK >> GO TO 2.

NG >> Repair harness or connector.

2. CHECK RGB SYNCHRONIZING SIGNAL

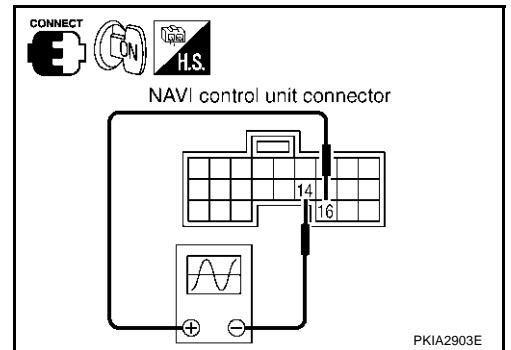
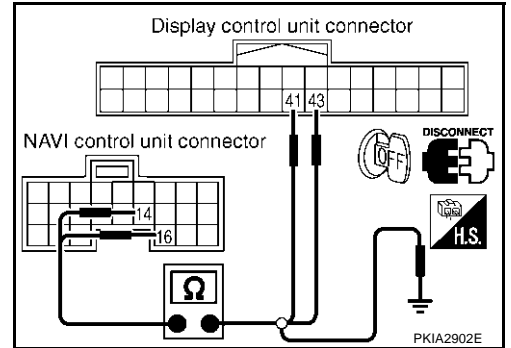
1. Connect NAVI control unit connector and display control unit connector.
2. Turn ignition switch ON.
3. Check signal between NAVI control unit connector B208 terminals 16 (G) and 14 with CONSULT-II or oscilloscope.

16 – 14 : **Refer to [AV-147](#), "Terminals and Reference Value for NAVI Control unit" .**

OK or NG

OK >> Replace display control unit.

NG >> Replace NAVI control unit.



NAVIGATION SYSTEM

AKS007JY

Guide Sound is Not Heard

1. CHECK VOICE GUIDE SETTING

- While driving in the dark pink route, voice guide does not operate. (note)
- Is volume setting not switched ON?

NOTE:

Voice guide is only available at intersections that satisfy certain conditions (indicated by ● on the map). Therefore, guidance may not be given even when the route on the map changes direction.

YES or NO

- YES >> GO TO 2.
NO >> Switch the setting ON and turn the volume up.

2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector and audio unit connector.
3. Check continuity between NAVI control unit harness connector B208 terminals 7 (LG), 8 (PU) and audio unit harness connector M60 terminals 36 (B/R), 34 (W/R).

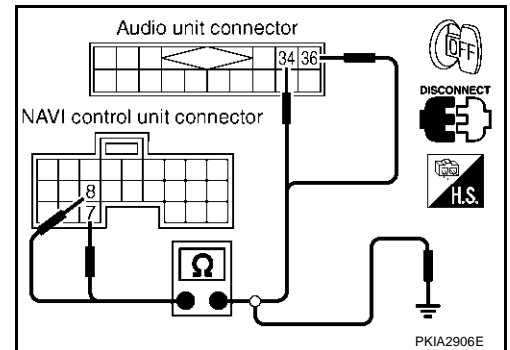
7 – 36 : Continuity should exist.
8 – 34 : Continuity should exist.

4. Check continuity between NAVI control unit harness connector B208 terminals 7 (LG), 8 (PU) and ground.

7, 8 – Ground : Continuity should not exist.

Ok or NG

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



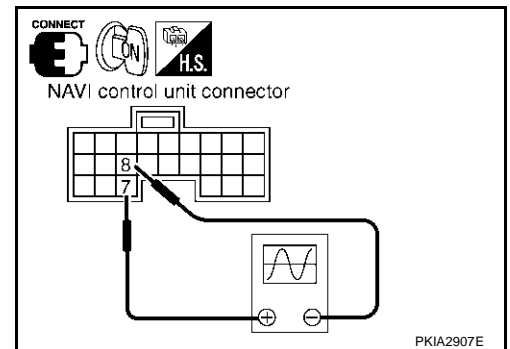
3. CHECK VOICE GUIDE

1. Connect NAVI control unit connector and audio unit connector.
2. Turn ignition switch ON.
3. Check signal between NAVI control unit harness connector B208 terminal 7 (LG) and 8 (PU) with CONSULT-II or oscilloscope.

7 – 8 : Refer to [AV-147, "Terminals and Reference Value for NAVI Control unit"](#) .

OK or NG

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



Screen is Not Shown

AKS007JZ

1. CHECK DISPLAY POWER SUPPLY AND GROUND CIRCUIT

Check display power supply and ground circuit. Refer to [AV-173, "Power Supply and Ground Circuit Check for Display"](#) .

OK or NG

- OK >> Replace display.
NG >> Repair malfunctioning parts.

NAVIGATION SYSTEM

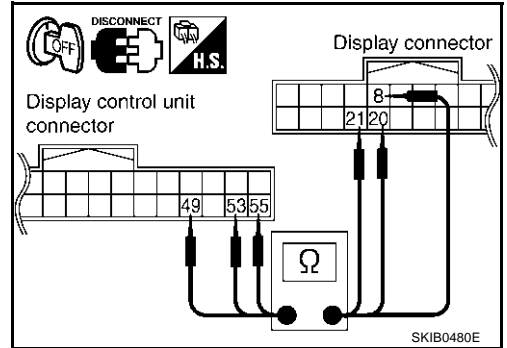
Operating Screen for Audio and A/C is Not Displayed When Showing NAVI Screen

AKS00BJX

1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit connector and display connector.
3. Check continuity between display control unit harness connector terminals and display harness connector terminals.

Terminals				Continuity
Display control unit		Display		
Connector	Terminal (Wire color)	Connector	Terminal (Wire color)	
M76	49	M63	21	Yes
	53 (W)		20 (W)	
	55 (R)		8 (R)	

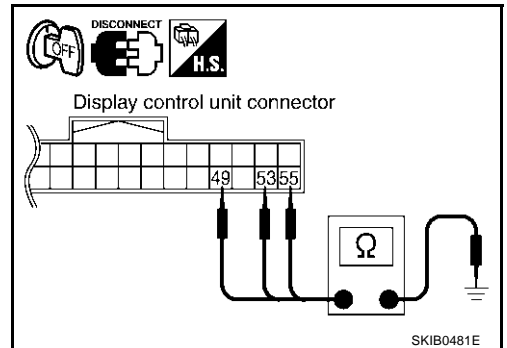


4. Check continuity between display control unit harness connector M76 terminals 49, 53 (W), 55 (R) and ground.

49, 53, 55 – Ground : Continuity should not exist.

OK or NG

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



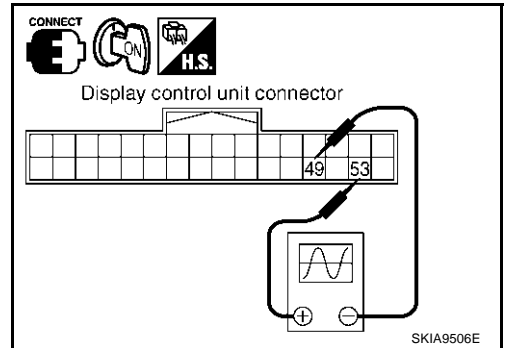
2. CHECK VERTICAL SYNCHRONIZING SIGNAL

1. Connect display control unit connector and display connector.
2. Turn ignition switch ON.
3. Check signal between display control unit harness connector M76 terminals 53 (W) and 49 with CONSULT-II or oscilloscope.

53 – 49 : Refer to AV-149, "Terminals and Reference Value for Display Control unit" .

OK or NG

- OK >> GO TO 3.
 NG >> Replace display.



NAVIGATION SYSTEM

3. CHECK HORIZONTAL SYNCHRONIZING SIGNAL

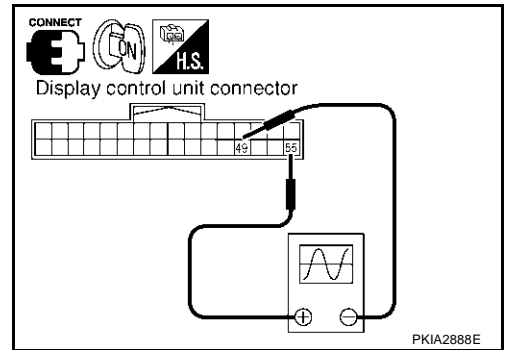
1. Check signal between display control unit harness connector M76 terminals 55 (R) and 49 with CONSULT-II or oscilloscope.

55 – 49

: Refer to [AV-149, "Terminals and Reference Value for Display Control unit"](#) .

OK or NG

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



TRIP, FUEL ECON and MAINTENANCE Screens are Not Shown

AKS007K2

1. CHECK IGNITION SIGNAL

Check ignition signal. Refer to [AV-178, "Ignition Signal Check for Display Control Unit"](#) .

OK or NG

- OK >> GO TO 2.
- NG >> Repair malfunctioning parts.

2. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check power supply circuit for display. Refer to [AV-173, "Power Supply and Ground Circuit Check for Display"](#) .

OK or NG

- OK >> GO TO 3.
- NG >> Repair malfunctioning parts.

3. CHECK COMMUNICATION LINE

Check display communication line. Refer to [AV-182, "When Malfunctioning Connection Between Display Control Unit and Display"](#) .

OK or NG

- OK >> Replace display.
- NG >> Check the malfunctioning parts.

Average Fuel Economy Displayed is Not Shown ("****" is Shown)

AKS00AVD

1. CHECK VEHICLE SPEED SIGNAL

Check vehicle speed signal. Refer to [AV-176, "Vehicle Speed Signal Check for Display Control Unit"](#) .

OK or NG

- OK >> GO TO 2.
- NG >> Repair malfunctioning parts.

2. CHECK CAN COMMUNICATION LINE

Check CAN communication line. Refer to [AV-184, "CAN Communication Line Check"](#) .

OK or NG

- OK >> GO TO 3.
- NG >> After filling out CAN DIAG SUPPORT MONITOR check sheet, GO TO [LAN-4, "Precautions When Using CONSULT-II"](#) .

NAVIGATION SYSTEM

3. CHECK COMMUNICATION LINE

Check display communication line. Refer to [AV-182, "When Malfunctioning Connection Between Display Control Unit and Display"](#) .

OK or NG

- OK >> Replace display.
- NG >> Repair malfunctioning parts.

Driving Distance or Average Speed is Not Shown ("****" is Shown)

AKS00AVE

1. CHECK IGNITION SIGNAL FOR DISPLAY CONTROL UNIT

Check ignition signal for display control unit. Refer to [AV-178, "Ignition Signal Check for Display Control Unit"](#) .

OK or NG

- OK >> GO TO 2.
- NG >> Repair malfunctioning parts.

2. CHECK VEHICLE SPEED SIGNAL FOR DISPLAY CONTROL UNIT

Check vehicle speed signal for display control unit. Refer to [AV-176, "Vehicle Speed Signal Check for Display Control Unit"](#) .

OK or NG

- OK >> Replace display control unit.
- NG >> Repair malfunctioning parts.

WARNING DOOR OPEN Screen is Not Shown

AKS007K6

1. CHECK IGNITION SIGNAL FOR DISPLAY CONTROL UNIT

Check ignition signal for display control unit. Refer to [AV-178, "Ignition Signal Check for Display Control Unit"](#) .

OK or NG

- OK >> GO TO 2.
- NG >> Repair malfunctioning parts.

2. CHECK VEHICLE SPEED SIGNAL FOR DISPLAY CONTROL UNIT

Check vehicle speed signal for display control unit. Refer to [AV-176, "Vehicle Speed Signal Check for Display Control Unit"](#) .

OK or NG

- OK >> GO TO 2.
- NG >> Repair malfunctioning parts.

3. CHECK CAN COMMUNICATION LINE

Check CAN communication line. Refer to [AV-184, "CAN Communication Line Check"](#) .

OK or NG

- OK >> GO TO 3.
- NG >> After filling out CAN DIAG SUPPORT MONITOR check sheet, GO TO [LAN-4, "Precautions When Using CONSULT-II"](#) .

TIRE PRESSURE Screen is not Shown

AKS007K7

1. CHECK LOW TIRE PRESSURE WARNING CONTROL UNIT

Check low tire pressure warning control unit. Refer to [WT-31, "Self-Diagnosis"](#) .

OK or NG

- OK >> GO TO 2.
- NG >> Repair malfunctioning parts.

NAVIGATION SYSTEM

2. CHECK IGNITION SIGNAL FOR DISPLAY CONTROL UNIT

Check ignition signal for display control unit. Refer to [AV-178, "Ignition Signal Check for Display Control Unit"](#) .

OK or NG

- OK >> GO TO 3.
- NG >> Repair malfunctioning parts.

3. CHECK CAN COMMUNICATION LINE

Check CAN communication line. Refer to [AV-184, "CAN Communication Line Check"](#) .

OK or NG

- OK >> GO TO 3.
- NG >> After filling out CAN DIAG SUPPORT MONITOR check sheet, GO TO [LAN-4, "Precautions When Using CONSULT-II"](#) .

Unable to Operate All of A/C and AV switch (Unable to start Self-Diagnosis) AKS007K8

1. A/C AND AV SWITCH SELF-DIAGNOSIS

Start A/C and AV switch self-diagnosis. Refer to [AV-170, "A/C and AV Switch Self-Diagnosis Function"](#) .

OK or NG

- OK >> GO TO 3.
- NG >> GO TO 2.

2. CHECK A/C AND AV SWITCH POWER SUPPLY AND GROUND CIRCUIT

Check A/C and AV switch power supply and ground circuit. Refer to [AV-175, "Power Supply and Ground Circuit Check for A/C and AV Switch"](#) .

OK or NG

- OK >> Replace A/C and AV switch.
- NG >> Repair malfunctioning parts.

3. CHECK DISPLAY CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check display control unit power supply and ground circuit. Refer to [AV-172, "Power Supply and Ground Circuit Check for Display Control Unit"](#) .

OK or NG

- OK >> GO TO 4.
- NG >> Repair malfunctioning parts.

4. CHECK A/C AND AV SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display control unit connector and A/C and AV switch connector.
3. Check continuity between display control unit harness connector M76 terminals 28 (B/R), 30 (W/R) and A/C and AV switch harness connector M64 terminals 6 (B/R), 8 (W/R).

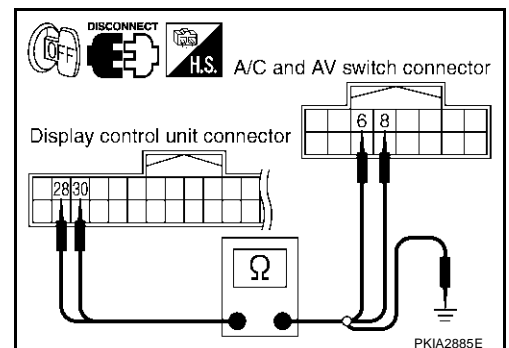
28 – 6 : Continuity should exist.

30 – 8 : Continuity should exist.

4. Check continuity between display control unit connector M76 terminals 28 (B/R), 30 (W/R) and ground.

OK or NG

- OK >> GO TO 5.
- NG >> Repair harness or connector.



5. CHECK A/C AND AV SWITCH CIRCUIT

1. Replace A/C and AV switch.
2. Connect display control unit connector and A/C and AV switch connector.
3. Turn ignition switch ON.
4. Start self-diagnosis of DCU, and check the self-diagnosis result.

OK or NG

- OK >> INSPECTION END
NG >> Replace display control unit.

Position of Current-Location Mark is Not Correct

AKS007KE

1. SELF-DIAGNOSIS

“Self-diagnosis mode” of the self-diagnosis function. Refer to [AV-159, "Self-Diagnosis Mode \(NAVI\)"](#).

OK or NG

- OK >> GO TO 2.
NG >> Repair malfunctioning parts.

2. HISTORY OF ERRORS DIAGNOSIS

Was any error stored in [AV-165, "HISTORY OF ERRORS"](#) of the CONFIRMATION/ADJUSTMENT mode?

YES or NO

- YES >> [AV-166, "DIAGNOSIS BY HISTORY OF ERRORS"](#).
NO >> [AV-198, "Driving Test"](#).

Driving Test

AKS007KG

1. DRIVING TEST 1

1. Scroll the map screen to display the area to make correction. Press “ENTER” and select “CURRENT LOCATION CORRECTION”.
2. Correct direction of the vehicle mark.
3. Perform the distance correction of the CONFIRMATION/ADJUSTMENT mode.
Note: Normally, adjustment is not necessary because this system has automatic distance correction function. However, when a tire chain is fitted, adjustment in accordance with the tire diameter ratio must be made.
4. Are symptoms malfunctioning to the [AV-199, "Example of Symptoms Judged Not Malfunction"](#) present after driving the vehicle?

YES or NO

- YES >> Limit of the location detection capacity of the navigation system.
NO >> GO TO 2.

2. DRIVING TEST 2

Did any malfunction occur when the proper test in the following test patterns is performed?

- Test pattern
Driving test finds the difference between the symptoms monitored with and without each sensor.
- Test pattern 1: Test method with no GPS location correction
Disconnect GPS antenna connector (GT5) connected to the NAVI control unit. Accurately adjust the current location and the direction, then drive the vehicle.
- Test pattern 2: Test method with no map-matching
Accurately adjust the current location and the direction. Eject the map DVD-ROM from the NAVI control unit with ignition switch turned to OFF, then drive the vehicle. After driving, insert the map DVD-ROM back

NAVIGATION SYSTEM

in the unit, display the track of the vehicle on the map screen and compare it with the actual road configuration.

- Sample tests
 - <To determine if the current-location mark skips at the same position, if so, whether it is caused by map-matching or by GPS>
Perform test pattern 1.
 - <To determine if the pattern of streets displayed is correct or not>;
Perform test pattern 1 & 2.
Compare the track of the vehicle on the map screen and the actual road configuration. For fairly accurate tracking, plotting shall be made every several hundred meters.
 - <When the distance is adjusted accurately>;
Perform test pattern 1 & 2.
Drive on a road of which distance is accurately known (by utilizing distance posts on a highway). Calculate the rate of change (increased/decreased) of the distance by comparing with the actual distance.
Correction = 1 - A/B
A: Distance shown on the screen
B: Actual distance

YES or NO

- YES >> ● If adjustment is insufficient, perform adjustment again.
- If any error is found in the map, please let us know.
 - Replace NAVI control unit.
- NO >> Limit of the location detection capacity of the navigation system.

Example of Symptoms Judged Not Malfunction BASIC OPERATION

AKS007KH

Symptom	Cause	Remedy
No image is shown.	Display brightness adjustment is set fully to DARK side.	Adjust the display brightness.
No guide sound is heard. Audio guide volume is too low or too high.	Volume control is set to OFF, MIN or MAX.	Adjust the audio guide volume.
	Audio guidance is not available while the vehicle is driving on a dark pink route.	System is not malfunction.
Screen is too dark. Motion of the image is too slow.	Temperature inside the vehicle is low.	Wait until the temperature inside the vehicle reaches the proper temperature.
Small black or bright spots appear on the screen.	Symptom peculiar to a liquid crystal display.	System is not malfunction.

VEHICLE MARK

Symptom	Cause	Remedy
Map screen and BIRDVIEW™ Name of the place vary with the screen.	Some thinning of the character data is done to prevent the display becoming to complex. In some cases and in some locations, the display contents may differ. The same place name, street name, etc. may not be displayed every time on account of the data processing.	System is not malfunction.
Vehicle mark is not positioned correctly.	Vehicle is transferred by ferry or by towing after its ignition switch is turned to OFF.	Drive the vehicle for a while in the GPS satellite signal receiving condition.
Screen will not switch to nighttime mode after the lighting switch is turned ON.	The daytime screen is selected by the "SWITCH SCREENS" when the last time the screen dimming setting is done. Switching between daytime/nighttime screen may be inhibited by the automatic illumination adjustment function.	Perform screen dimming and select the nighttime screen by "SWITCH SCREENS".
Map screen will not scroll in accordance with the vehicle travel.	Current location is not displayed.	Press "MAP" button to display the current location.
Vehicle mark will not be shown.	Current location is not displayed.	Press "MAP" button to display the current location.

NAVIGATION SYSTEM

Symptom	Cause	Remedy
Accuracy indicator (GPS satellite mark) on the map screen stays gray.	GPS satellite signal is intercepted because the vehicle is in or behind a building.	Move the vehicle out to an open space.
	GPS satellite signal cannot be received because an obstacle is placed on top of the display.	Do not place anything in the center on top of the display.
	GPS satellites are located badly.	Wait until the location becomes better.
Vehicle location accuracy is low.	Accuracy indicator (GPS satellite mark) on the map screen stays gray.	Current location is not determined.
	Vehicle speed setting by the vehicle speed pulse has been deviated (advanced or retarded) from the actual vehicle speed because tire chain is fitted or the system has been used on another vehicle.	Drive the vehicle for a while [for approx. 30 minutes at approx. 30 km/h (19 MPH)] and the deviation will be automatically adjusted. If advancement or retard still occur, perform the distance adjustment by CONFIRMATION/ADJUSTMENT mode of diagnosis function.
	Map data has error or omission. (Vehicle mark is always deviated to the same position.)	As a rule, an updated map DVD-ROM will be released once a year.

DESTINATION, PASSING POINTS, AND MENU ITEMS CANNOT BE SELECTED/SET

Symptom	Cause	Remedy
Destination cannot be set.	Destination to be set is on an expressway.	Set the destination on an ordinary road.
Passing point is not searched when re-searching the route.	The vehicle has already passed the passing point, or the system judged so.	To include the passing points that have been passed into the route again, set the route again.
Route information will not be displayed.	Route searching has not been done.	Set the destination and perform route searching.
	Vehicle mark is not on the recommended route.	Drive on the recommended route.
	Route guide is turned OFF.	Turn route guide ON.
	Route information is not available on the dark pink route.	System is not malfunction.
After the route searching, no guide sign will appear as the vehicle goes near the entrance/exit to the toll road.	Vehicle mark is not on the recommended route. (On the display, only guide signs related to the recommended route will be shown.)	Drive on the recommended route.
Automatic route searching is not possible.	Vehicle is driving on a highway (gray route), or no recommended route is available.	Drive on a road to be searched. Or re-search the route manually. In this case, however, the whole route will be searched.
Performed automatic detour search (or detour search). However, the result is the same as that of the previous search.	Performed search with every conditions considered. However, the result is the same as that of the previous search.	System is not malfunction.
Passing points cannot be set.	More than five passing points were set.	Passing points can be set up to five. To stop at more than five points, perform sharing in several steps.
When setting the route, the starting point cannot be selected.	The current vehicle location is always set as the starting point of a route.	System is not malfunction.
Some menu items cannot be selected.	The vehicle is being driven.	Stop the vehicle at a safe place and then operate the system.

NAVIGATION SYSTEM

VOICE GUIDE

Symptom	Cause	Remedy
Voice guide will not operate.	Note: Voice guide is only available at intersections that satisfy certain conditions (indicated by ● on the map). Therefore, guidance may not be given even when the route on the map changes direction.	System is not malfunction.
	The vehicle is not on the recommended route.	Return to the recommended route or re-search the route.
	Voice guide is turned OFF.	Turn voice guide ON.
	Route guide is turned OFF.	Turn route guide ON.
Voice guide does not match the actual road pattern.	Voice guide may vary with the direction to which the vehicle is turn and the connection of the road to other roads.	Drive in conformity to the actual traffic rules.

ROUTE SEARCH

Symptom	Cause	Remedy
No route is shown.	No road to be searched is found around the destination.	Find wider road (orange road or wider) nearby and reset the destination and passing points onto it. Take care of the traveling direction when there are separate up and down roads.
	Starting point and the destination are too close.	Set the destination at more distant point.
	Conditional traffic regulation (day of the week/ time of the day) is set at the area around the current location or the destination.	Turn the time-regulating search conditions OFF. Turn "Avoid regulation time" in the search conditions OFF.
Indicated route is intermittent.	In some areas, highways (gray routes) are not used for the search ^(Note) Therefore, the route to the current location or the passing points may be intermittent.	System is not malfunction.
When the vehicle has passed the recommended route, it is deleted from the screen.	A recommended route is controlled by each section. When the vehicle has passed the passing point 1, then the map data from the starting point up to the passing point 1 will be deleted. (The data may remain undeleted in some area.)	System is not malfunction.
Detouring route is recommended.	In some areas, highways (gray routes) are not used for the search. (Note). Therefore, detour route may be recommended.	Set the route closer to the basic route (gray route).
	A detour route may be shown when some traffic regulation (one-way traffic, etc.) is set at the area around the starting point or the destination.	Slightly move the starting point or the destination, or set the passing point on the route of your choice.
	In the area where highways (gray routes) are used for the search, left turn has priority around the current location and the destination (passing points). For this reason, the recommended route may be detouring.	System is not malfunction.
Landmarks on the map do not match the actual ones.	This can be happen due to omission or error in the map data.	As a rule, an updated map DVD-ROM will be released once a year. Wait until the latest map has become available.
Recommended route is far from the starting point, passing points, and destination.	Starting point, passing points, and destination of the route guide were set far from the desired points because route searching data around these area were not stored.	Reset the destination onto the road nearby. If this road is one of the highways (gray routes), an ordinary road nearby may be displayed as the recommended route.

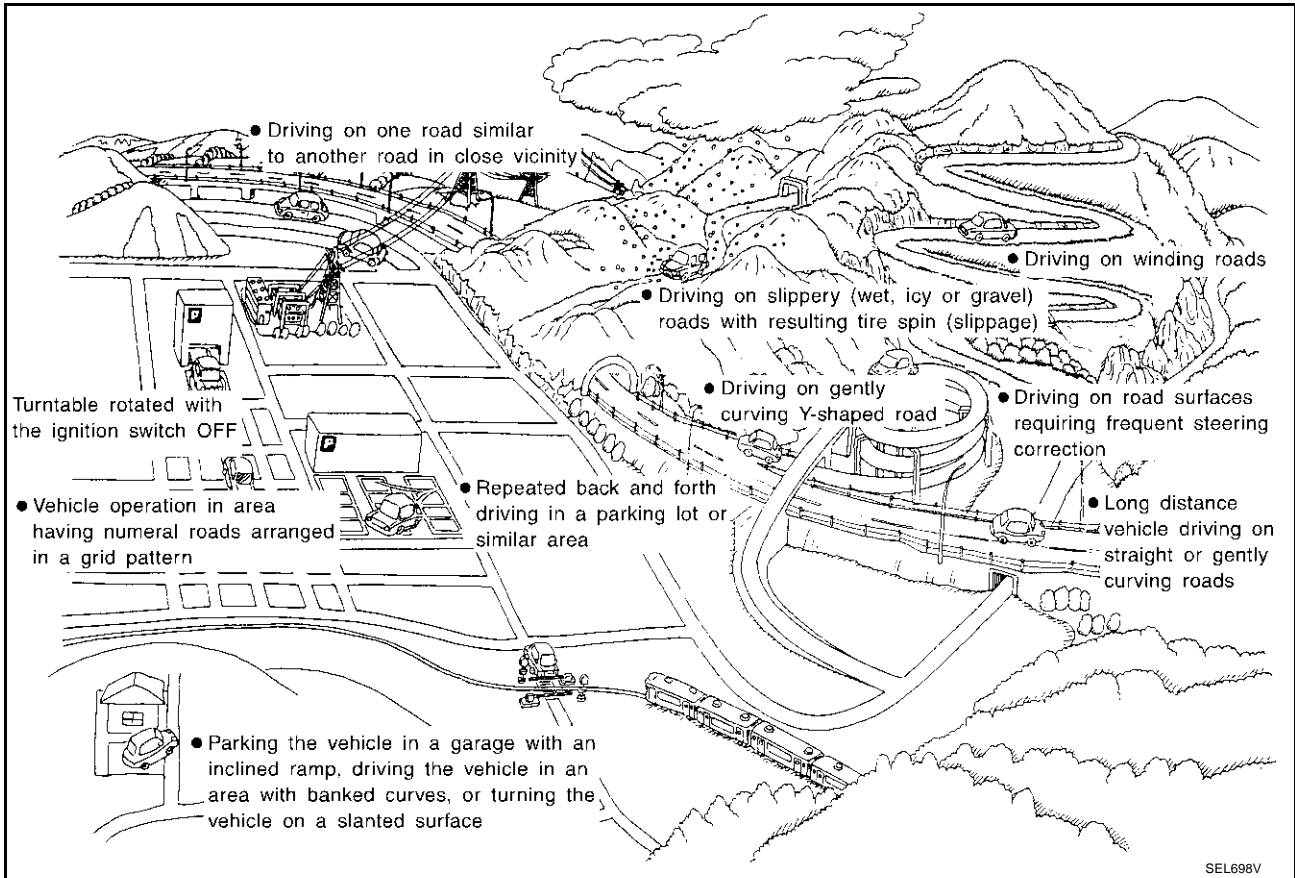
NOTE:

Except for the ordinance-designated cities and the prefectural capitals (Malfunctioning areas may be changed in the updated map disc.)

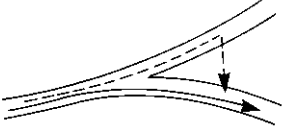
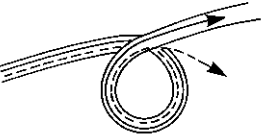
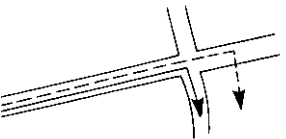
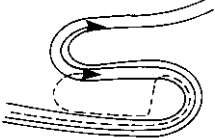
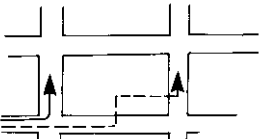

NAVIGATION SYSTEM

EXAMPLES OF CURRENT-LOCATION MARK DISPLACEMENT

Vehicle's travel amount is calculated by reading its travel distance and turning angle. Therefore, if the vehicle is driven in the following manner, an error will occur in the vehicle's current location display. If correct location has not been restored after driving the vehicle for a while, perform location correction.

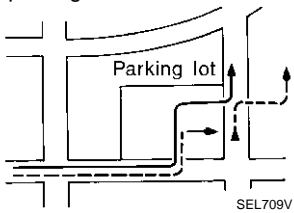
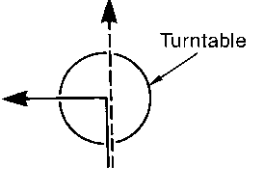
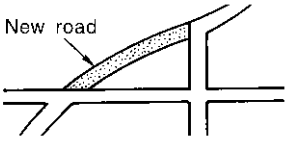



NAVIGATION SYSTEM

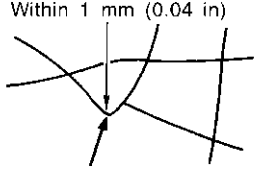
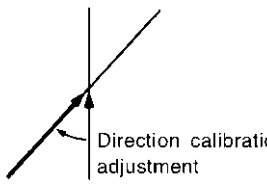
Cause (condition)	–: While driving ooo: Display	Driving condition	Remarks (correction, etc.)	
Road configuration	Y-intersections	 <p style="text-align: center; font-size: small;">ELK0192D</p>	At a Y intersection or similar gradual division of roads, error the direction of travel deduced by the sensor may result in the current-location mark appearing on the wrong road.	<p>If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.</p>
	Spiral roads	 <p style="text-align: center; font-size: small;">ELK0193D</p>	When driving on a large, continuous spiral road (such as loop bridge), turning angle error is accumulated and the vehicle mark may deviate from the correct location.	
	Straight roads	 <p style="text-align: center; font-size: small;">ELK0194D</p>	When driving on a long, straight road and slow curve without stopping, map-matching does not work effectively enough and distance errors may accumulate. As a result, the vehicle mark may deviate from the correct location when the vehicle turned at a corner.	
	Zigzag roads	 <p style="text-align: center; font-size: small;">ELK0195D</p>	When driving on a zigzag road, the map may be matched to other roads in the similar direction nearby at every turn, and the vehicle mark may deviate from the correct location.	
	Roads laid out in a grid pattern	 <p style="text-align: center; font-size: small;">ELK0196D</p>	When driving at where roads are laid out in a grid pattern, where many roads are running in the similar direction nearby, the map may be matched to them by mistake and the vehicle mark may deviate from the correct location.	
	Parallel roads	 <p style="text-align: center; font-size: small;">ELK0197D</p>	When two roads are running in parallel (such as highway and sideway), the map may be matched to the other road by mistake and the vehicle mark may deviate from the correct location.	

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NAVIGATION SYSTEM

	Cause (condition) -: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
Place	In a parking lot  SEL709V	When driving in a parking lot, or other location where there are no roads on the map, matching may place the vehicle mark on a nearby road. When the vehicle returns to the road, the vehicle mark may have deviated from the correct location. When driving in circle or turning the steering wheel repeatedly, direction errors accumulate, and the vehicle mark may deviate from the correct location.	If after travelling about 10km (6miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
	Turn table  SEL710V	When the ignition switch is OFF, the navigation system cannot get the signal from the gyroscope (angular speed sensor). Therefore, the displayed direction may be wrong and the correct road may not be easily returned to after rotating the vehicle on a turn table with the ignition OFF.	
	Slippery roads	On snow, wet roads, gravel, or other roads where tires may slip easily, accumulated mileage errors may cause the vehicle mark to deviate from the correct road.	
	Slopes	When parking in sloped garages, when travelling on banked roads, or in other cases where the vehicle turns when tilted, an error in the turning angle will occur, and the vehicle mark may deviate from the road.	
Map data	Road not displayed on the map screen  SEL699V	When driving on new roads or other roads not displayed on the map screen, map matching does not function correctly and matches the location to a nearby road. When the vehicle returns to a road which is on the map, the vehicle mark may deviate from the correct road.	
	Different road pattern (Changed due to repair)  ELK0201D	If the road pattern stored in the map data and the actual road pattern are different, map matching does not function correctly and matches the location to a nearby road. The vehicle mark may deviate from the correct road.	
Vehicle	Use of tire chains	When tire chains are used, the mileage is not correctly detected, and the vehicle mark may deviate from the correct road.	Drive the vehicle for a while. If the distance is still deviated, adjust it by using the distance adjustment function. (If the tire chain is removed, recover the original value.)

NAVIGATION SYSTEM

Cause (condition) -: While driving ooo: Display	Driving condition	Remarks (correction, etc.)
Precautions for driving	Just after the engine is started	If the vehicle is driven off just after the engine is started when the gyroscope (angular speed sensor) correction is not completed, the vehicle can lose its direction and may have deviated from the correct location.
	Continuous driving without stopping	When driving long distances without stopping, direction errors may accumulate, and the current-location mark may deviate from the correct road.
	Abusive driving	Spinning the wheels or engaging in other kinds of abusive driving may result in the system being unable perform correct detection, and may cause the vehicle mark to deviate from the correct road.
How to correct location	Position correction accuracy Within 1 mm (0.04 in)  <small>SEL701V</small>	If the accuracy of location settings is poor, accuracy may be reduced when the correct road cannot be found, particularly in places where there are many roads. Enter in the road displayed on the screen with an accuracy of approx. 1mm. Caution: Whenever possible, use detailed map for the correction.
	Direction when location is corrected  <small>SEL702V</small>	If the accuracy of location settings during correction is poor, accuracy may be reduced afterwards. Perform direction correction.

CURRENT LOCATION MARK SHOWS A POSITION WHICH IS COMPLETELY WRONG

In the following cases, the current-location mark may appear on completely different position in the map depending on the GPS satellite signal receiving conditions. In this case, perform location correction and direction correction.

- When location correction has not been done
 - If the receiving conditions of the GPS satellite signal is poor, if the current-location mark becomes out of place, it may move to a completely different location and not come back if location correction is not done. The position will be corrected if the GPS signal can be received.
- When the vehicle has traveled by ferry, or when the vehicle has been being towed
 - Because calculation of the current location cannot be done when travelling with the ignition OFF, for example when traveling by ferry or when being towed, the location before travel is displayed. If the precise location can be detected with GPS, the location will be corrected.

CURRENT-LOCATION MARK JUMPS

In the following cases, the current-location mark may appear to jump as a result of automatic correction of the current location.

- When map matching has been done
 - If the current location and the current-location mark are different when map matching is done, the current-location mark may seem to jump. At this time, the location may be "corrected" to the wrong road or to a location which is not on a road.
- When GPS location correction has been done
 - If the current location and the current-location mark are different when the location is corrected using GPS measurements, the current-location mark may seem to jump. At this time, the location may be "corrected" to a location which is not on a road.

NAVIGATION SYSTEM

CURRENT LOCATION MARK IS IN A RIVER OR SEA

The navigation system moves the current-location mark with no distinction between land and rivers or sea. If the location mark is somehow out of place, it may appear that the vehicle is driving in a river or the sea.

WHEN DRIVING ON SAME ROAD, SOMETIMES CURRENT-LOCATION MARK IS IN RIGHT PLACE AND SOMETIMES IT IS WRONG PLACE

The conditions of the GPS antenna (GPS data) and gyroscope (angular speed sensor) change gradually. Depending on the road traveled and the operation of the steering wheel, the location detection results will be different. Therefore, even on a road on which the location has never been wrong, conditions may cause the vehicle mark to deviate.

LOCATION CORRECTION BY MAP-MATCHING IS SLOW

- The map matching function needs to refer to the data of the surrounding area. It is necessary to drive some distance for the function to work.
- Because map matching operates on this principle, when there are many roads running in similar directions in the surrounding area, no matching determination may be made. The location may not be corrected until some special feature is found.

ALTHOUGH GPS RECEIVING DISPLAY IS GREEN, VEHICLE MARK DOES NOT RETURN TO CORRECT LOCATION

- The GPS accuracy has an error of approximately 10 m (30 ft). In some cases the current-location mark may not be on the correct street, even when GPS location-correction is done.
- The navigation system compares the results of GPS location detection with the results from map-matching location detection. The one which is determined to have higher accuracy is used.
- GPS location correction may not be performed when the vehicle is stopped.

NAME OF CURRENT PLACE IS NOT DISPLAYED

The current place name may not be displayed if there are no place names displayed on the map screen.

CONTENTS OF DISPLAY DIFFER FOR BIRDVIEW™ AND THE (FLAT) MAP SCREEN

Difference of the BIRDVIEW™ screen from the flat map screen are as follows.

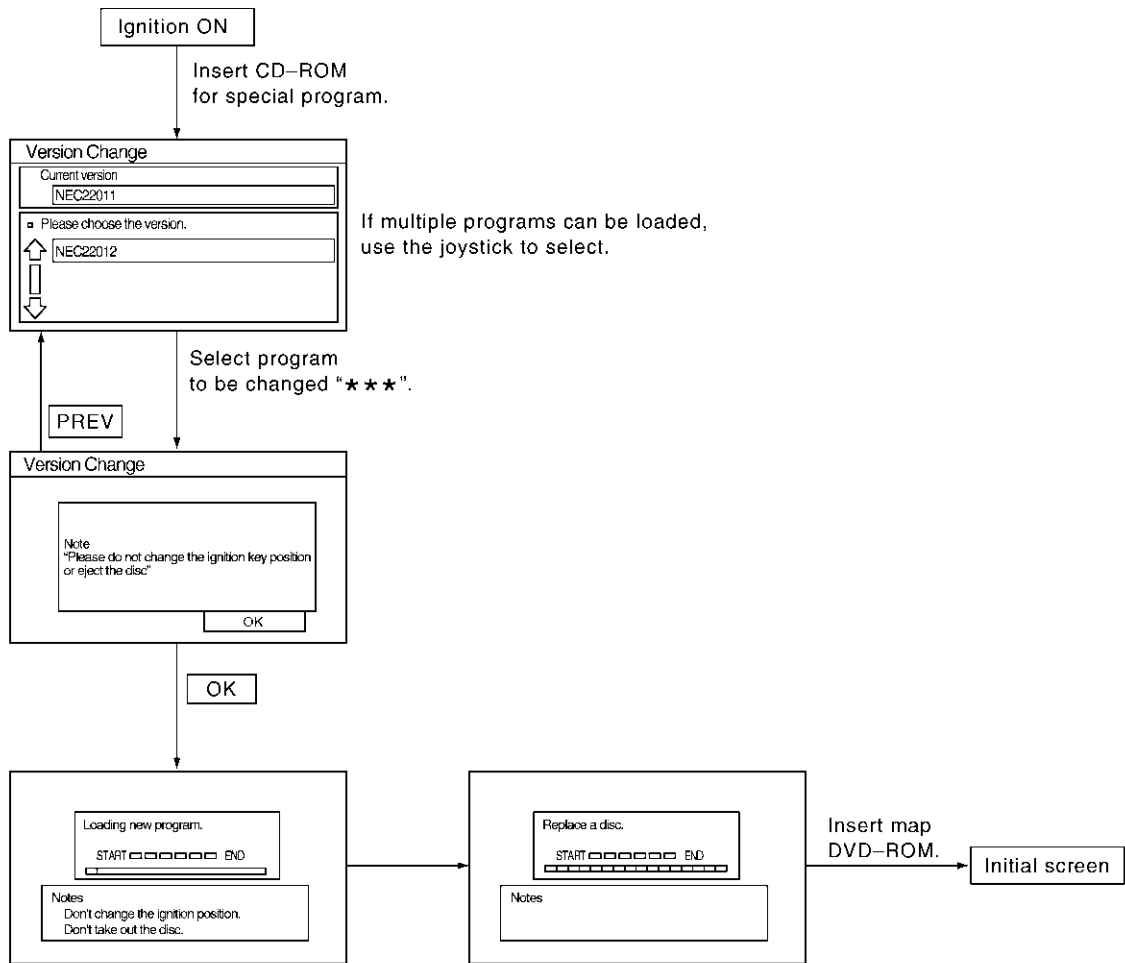
- The current place name displays names which are primarily in the direction of vehicle travel.
- The amount of time before the vehicle travel or turn angle is updated on the screen is longer than for the (flat) map display.
- The conditions for display of place names, roads, and other data are different for nearby areas and for more distant areas.
- Some thinning of the character data is done to prevent the display becoming too complex. In some cases and in some locations, the display contents may differ.
- The same place name, street name, etc. may be displayed multiple times.

NAVIGATION SYSTEM

Program Loading of NAVI Control Unit

AKS007KI

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NOTE: Always load a program with the engine running.

SKIA0389E

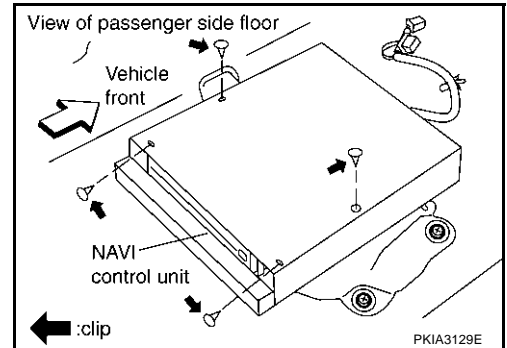
NAVIGATION SYSTEM

Removal and Installation of NAVI control Unit

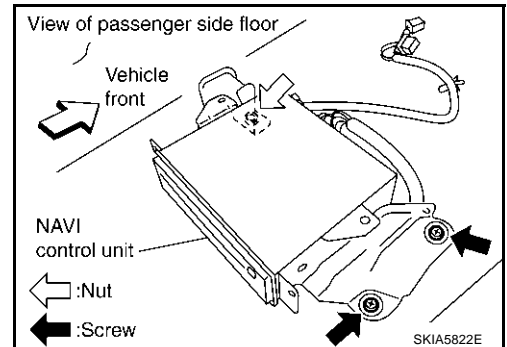
AKS00709

REMOVAL

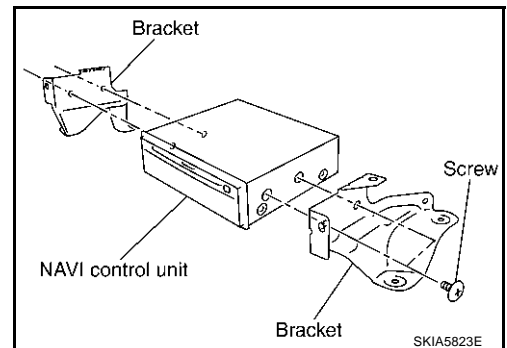
1. Remove passenger side seat. Refer to [SE-117, "Removal and Installation"](#)
2. Remove clips (4), and remove NAVI control unit cover.



3. Remove screws (2) and nut (1) with power tool, and remove NAVI control unit.



4. Remove screws (4) with power tool and remove bracket.



INSTALLATION

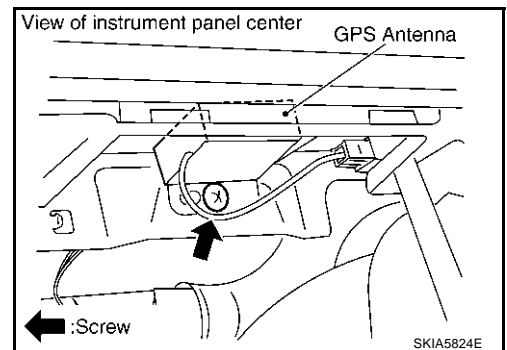
Install in the reverse order of removal.

Removal and Installation of GPS Antenna

AKS0070A

REMOVAL

1. Remove audio unit. Refer to [AV-42, "Removal and Installation of Audio Unit"](#) .
2. Remove screw (1) and remove GPS antenna.



INSTALLATION

Install in the reverse order of removal.

NAVIGATION SYSTEM

Removal and Installation of A/C and AV Switch

AKS0070B

For A/C and AV switch removal and installation procedures, refer to [AV-43, "Removal and Installation for A/C and AV Switch"](#) .

Removal and Installation of Display Unit

AKS0070C

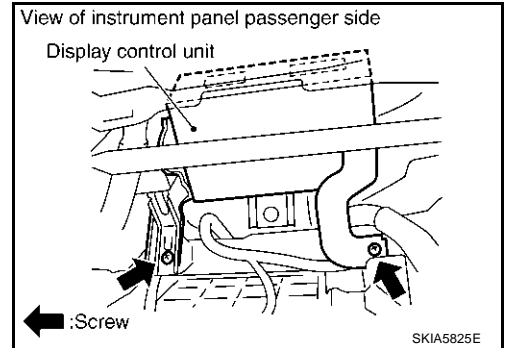
For display unit removal and installation procedures, refer to [AV-42, "Removal and Installation of Audio Unit"](#) .

Removal and Installation of Display Control Unit

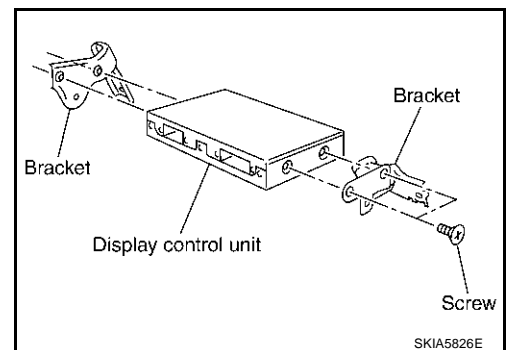
AKS0070D

REMOVAL

1. Remove instrument passenger lower panel. Refer to [IP-13, "\(J\) Instrument Passenger Lower Panel"](#) .
2. Remove screws (2) with power tool and remove display control unit.



3. Remove screws (4) with power tool and remove bracket.



INSTALLATION

Install in the reverse order of removal.

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INFINITI MOBILE ENTERTAINMENT SYSTEM

PFP:28184

System Description

AKS007WH

Refer to Owner's Manual for mobile entertainment system operating instructions.

Power is supplied at all times

- through 15A fuse (No. 32, located in the fuse and fusible link block)
- to DVD player terminal 16
- through DVD player terminals 31 and 32
- to DVD display terminals 15 and 16.

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

- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to DVD player terminal 15
- through DVD player terminal 21
- to DVD display terminal 5.

Ground is supplied

- to DVD player terminal 22
- through body ground B15 and B45
- to DVD player terminals 19, 27
- through DVD display terminals 6, 10 and 12.

When DVD player power switch is ON, power is supplied

- through DVD player terminal 9
- to audio unit terminal 38
- through audio unit terminal 40
- to DVD player terminal 11.

When DVD player power switch is ON, DVD sound signals are supplied

- through DVD player terminals 17, 18, and 20
- to DVD display terminals 1, 2 and 4.

DVD sound can be heard by the head phone.

When rear AV switch is ON, audio signals are supplied

- through DVD player terminals 1, 2, 3, and 4
- to audio unit terminals 37, 39, 42, and 43.

DVD sound can be heard from the speaker.

When DVD player power switch is ON, video signals are supplied

- through DVD player terminals 23 and 24
- to DVD display terminals 7 and 8.

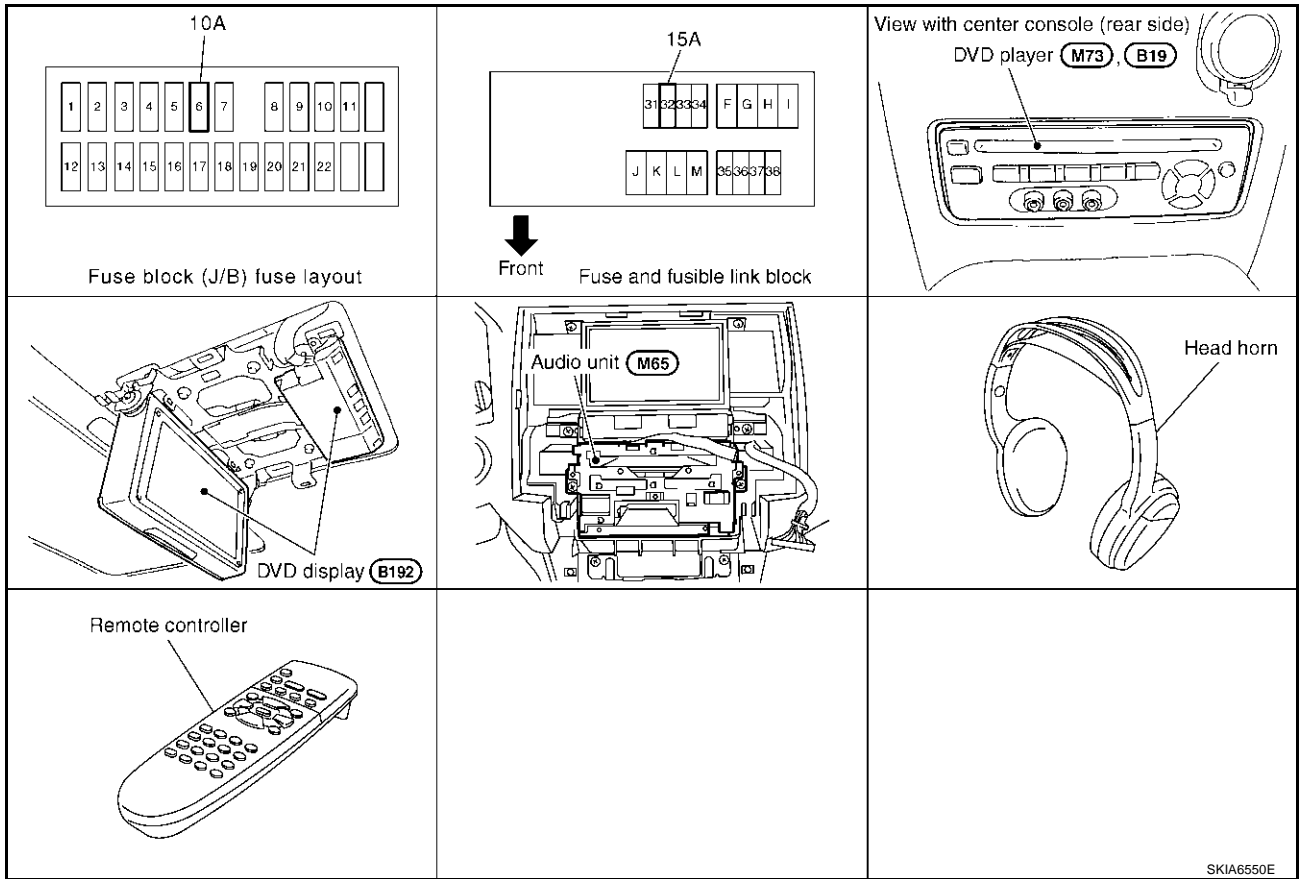
When remote controller is operated, operation signals are supplied

- through DVD display terminal 14
- to DVD player terminal 30
- through DVD player terminal 29
- to DVD display terminal 13.

INFINITI MOBILE ENTERTAINMENT SYSTEM

Component Parts and Harness Connector Location

AKS007WG



SKIA6550E

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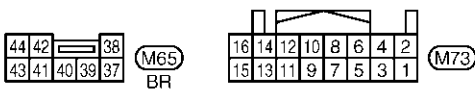
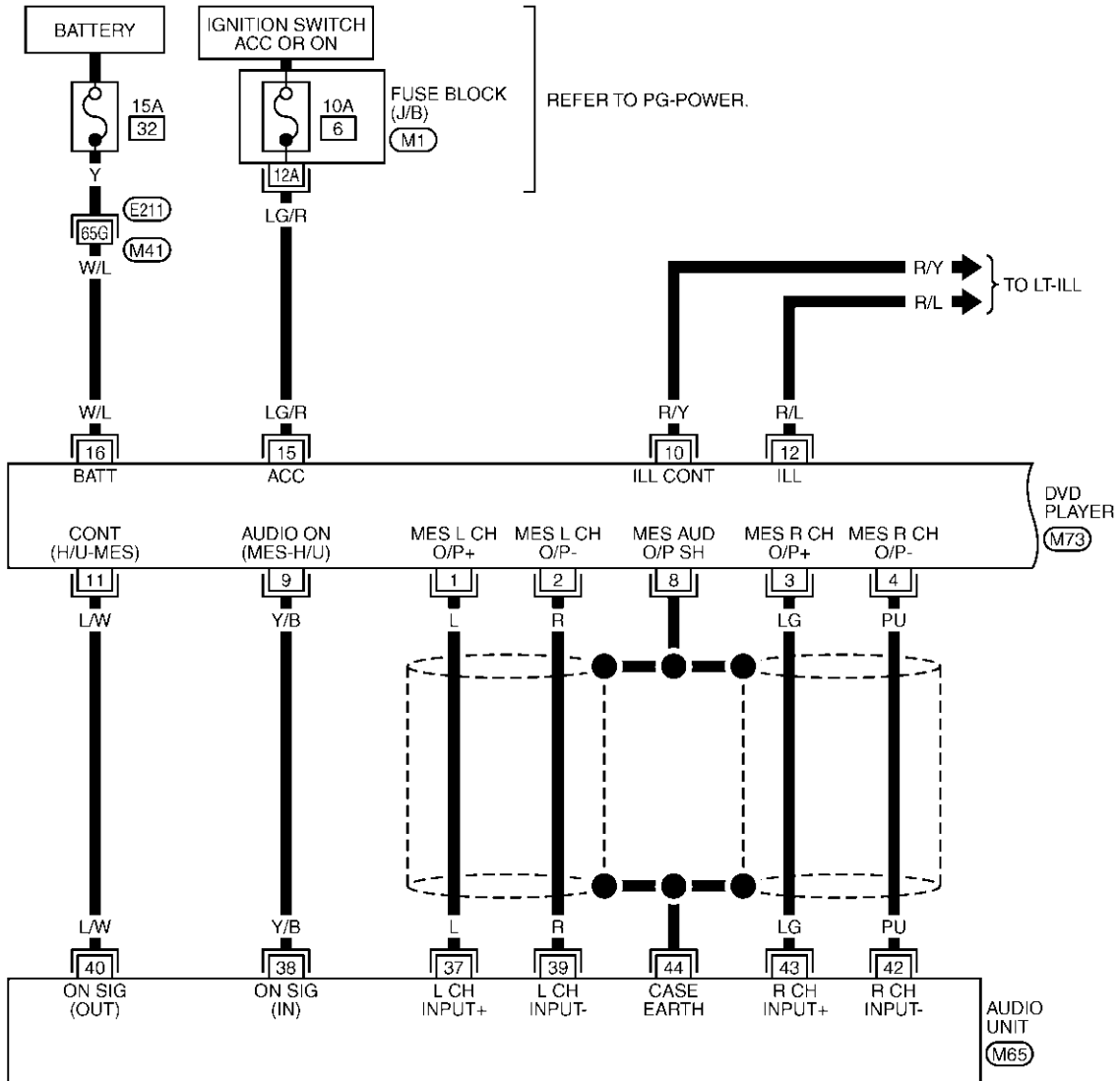
AV

INFINITI MOBILE ENTERTAINMENT SYSTEM

Wiring Diagram – MES –

AKS007WI

AV-MES-01



REFER TO THE FOLLOWING.

(E21) -SUPER MULTIPLE JUNCTION (SMJ)

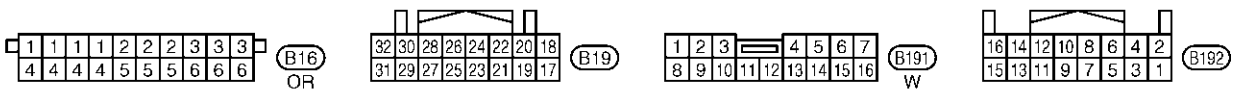
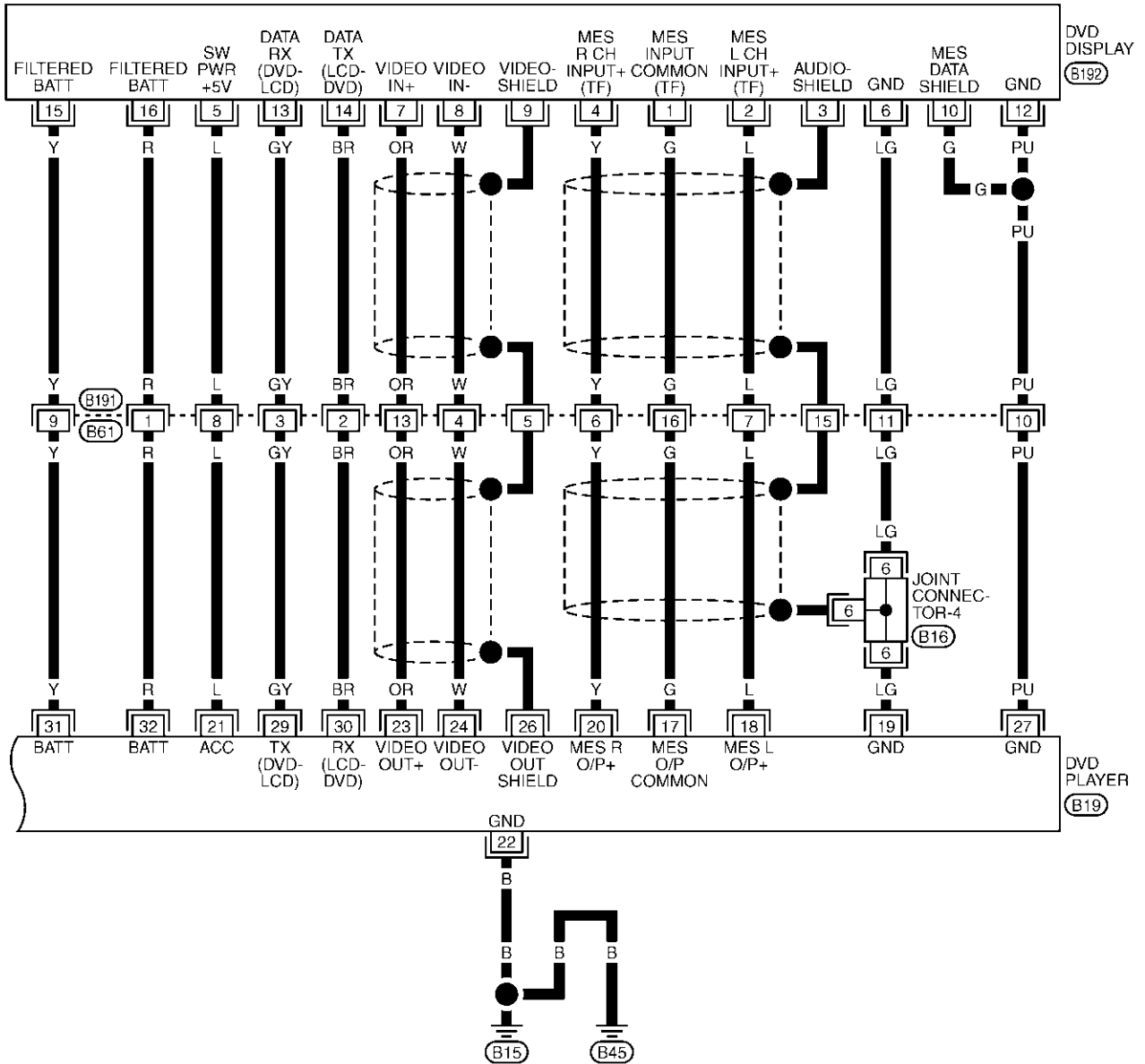
(M1) -FUSE BLOCK-JUNCTION BOX (J/B)

TKWM0595E

INFINITI MOBILE ENTERTAINMENT SYSTEM

AV-MES-02

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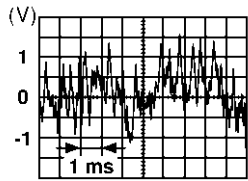
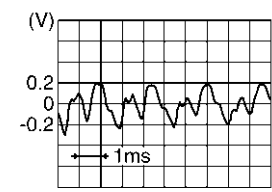
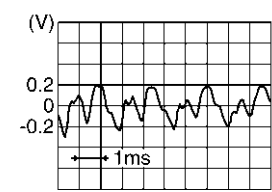


TKWM0596E

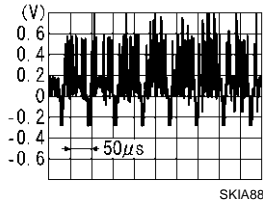
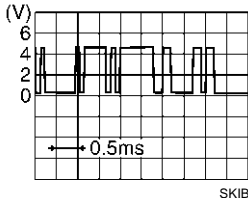
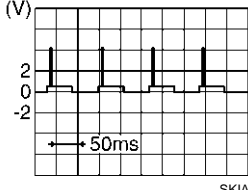
INFINITI MOBILE ENTERTAINMENT SYSTEM

Terminals and Reference Value for DVD Player

AKS00BMK

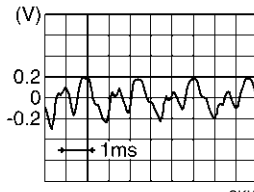
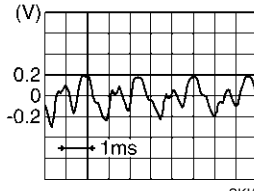
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symp- tom
(+)	(-)			Ignition switch	Operation		
1 (L)	2 (R)	MES output signal (LH)	Output	ACC	Rear AV switch is ON		No sound from speaker LH
3 (LG)	4 (PU)	MES output signal (RH)					No sound from speaker RH
8	-	Shield	-	-	-	-	-
9 (Y/B)	Ground	Audio ON signal (MES - H/U)	Output	ACC	Push "POWER" switch of DVD player	Approx. 5V	System dose not work properly
10 (R/Y)	Ground	Illumination control signal	Input	OFF	Illumination con- trol switch is oper- ated by lighting switch in 1st posi- tion.	Changes between approx. 0 and approx. 12V.	DVD player illumi- nation does not come on then light- ing switch is ON
11 (L/W)	Ground	Control sig- nal (H/U - MES)	Input	ACC	Push "POWER" switch of DVD player	Approx. 5V	System dose not work properly
12 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch is ON (1st position).	Approx. 12V	DVD player illumi- nation dose not come on then light- ing switch is ON
					Lighting switch OFF.	Approx. 0V	
15 (LG/R)	Ground	ACC power supply	Input	ACC	-	Battery voltage	System does not work properly
16 (W/L)	Ground	Battery power supply	Input	OFF	-	Battery voltage	System dose not work properly
17 (G)	19 (LG)	MES output signal (Com- mon)	Output	ACC	Play CD or DVD video	Approx. 0V	-
18 (L)	19 (LG)	MES output signal (L+)	Output	ACC	Play CD or DVD video		No sound from head phone LH
19 (LG)	Ground	Ground	-	ON	-	Approx. 0V	-
20 (Y)	19 (LG)	MES output signal (R+)	Output	ACC	Play CD or DVD video		No sound from head phone RH
21 (L)	Ground	ACC power supply	Output	ACC	-	Approx. 5V	Display does not work properly
22 (B)	Ground	Ground	-	ON	-	Approx. 0V	-

INFINITI MOBILE ENTERTAINMENT SYSTEM

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symp- tom
(+)	(-)			Ignition switch	Operation		
23 (OR)	24 (W)	VIDEO out- put signal	Output	ACC	Play DVD video		No picture
26	Ground	Shield (Video)	-	ON	-	Approx. 0V	-
27 (PU)	Ground	Ground	-	ON	-	Approx. 0V	-
29 (GY)	Ground	DVD commu- nication sig- nal TX (DVD - LCD)	Output	ACC	Push "POWER" switch of DVD player		Display does not work properly
30 (BR)	Ground	DVD commu- nication sig- nal RX (LCD - DVD)	Input	ACC	Push "POWER" switch of DVD player		Remote controler is not work
31 (Y) 32 (R)	Ground	Battery power supply	Output	-	-	Battery voltage	Display dose not work properly

Terminals and Reference Value for DVD Display

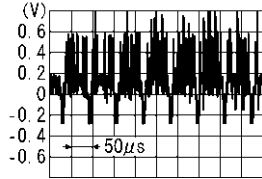

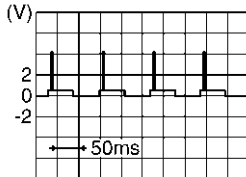
AKS00BML

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(-)			Ignition switch	Operation		
1 (G)	3	MES input signal (com- mon)	Input	ACC	Play CD or DVD video	Approx. 0V	-
2 (L)	3	MES input signal (L+)	Input	ACC	Play CD or DVD video		No sound from head phone LH
3	Ground	Shield	-	ON	-	Approx. 0V	-
4 (Y)	3	MES input signal (R+)	Input	ACC	Play cd or DVD video		No sound from head phone RH

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INFINITI MOBILE ENTERTAINMENT SYSTEM

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value	Example of symptom
(+)	(-)			Ignition switch	Operation		
5 (L)	Ground	Switch power	Input	ACC	–	Approx. 5V	Display does not work properly
6 (LG)	Ground	Ground	–	ON	–	Approx. 0V	–
7 (OR)	8 (W)	VIDEO input signal	Input	ACC	Play DVD video	 <small>SKIA8863J</small>	No picture
9	Ground	Shield (Video)	–	ON	–	Approx. 0V	–
10 (G)	Ground	Shield (MES data)	–	ON	–	Approx. 0V	–
12 (PU)	Ground	Ground	–	ON	–	Approx. 0V	–
13 (GY)	10 (G)	DVD commu- nication sig- nal RX (DVD - LCD)	Input	ACC	Push "POWER" switch of DVD player	 <small>SKIB0322E</small>	Display does not work properly
14 (BR)	10 (G)	DVD commu- nication sig- nal TX (LCD - DVD)	Output	ACC	Push "POWER" switch of DVD player	 <small>SKIA5832E</small>	Remote con- troller is not work
15 (Y) 16 (R)	Ground	Battery power supply	Input	OFF	–	Battery voltage	Display dose not work properly

INFINITI MOBILE ENTERTAINMENT SYSTEM

AKS00AVI

DVD Player Is Not Work

1. CHECK FUSE

Make sure that the following fuse of the DVD player are not blown.

Unit	Signal	Fuse NO.
DVD player	Battery power supply	32
	ACC power supply	6

OK or NG

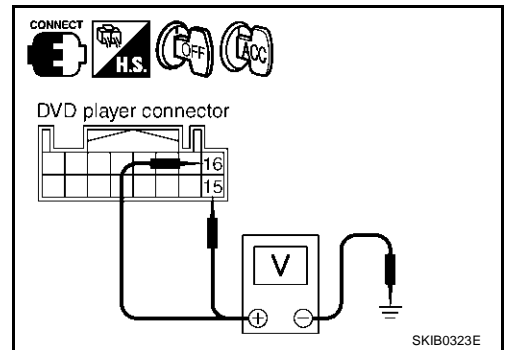
OK >> GO TO 2

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

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between DVD player harness connector terminals and ground.

Terminals		(-)	Condition	Voltage
(+)	Connector			
16 (W/L)	M73	Ground	Ignition switch OFF	Battery voltage
15 (LG/R)			Ignition switch ACC	Battery voltage



OK or NG

OK >> GO TO 3

NG >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

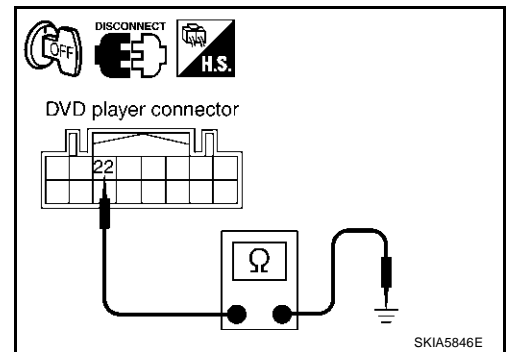
- Turn ignition switch OFF.
- Disconnect DVD player connector.
- Check continuity between the following DVD player harness connector B19 terminal 22 (B) and ground.

22 – Ground : Continuity should exist.

OK or NG

OK >> GO TO 4.

NG >> Repair harness or connector.



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INFINITI MOBILE ENTERTAINMENT SYSTEM

4. CHECK HARNESS

1. Disconnect audio unit connector.
2. Check continuity between DVD player harness connector M73 terminals 9 (Y/B), 11 (L/W) and audio unit harness connector M65 terminals 38 (Y/B), 40 (L/W).

9 – 38 : Continuity should exist.

11 – 40 : Continuity should exist.

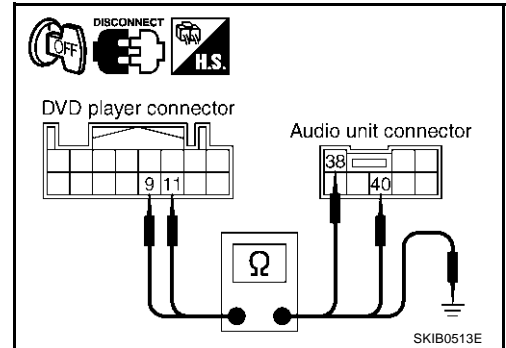
3. Check continuity between DVD player harness connector M73 terminal 9 (Y/B), 11 (L/W) and ground.

9, 11 – Ground : Continuity should not exist.

OK or NG

OK >> GO TO 5

NG >> Repair harness or connector.



5. CHECK CONTROL SIGNAL

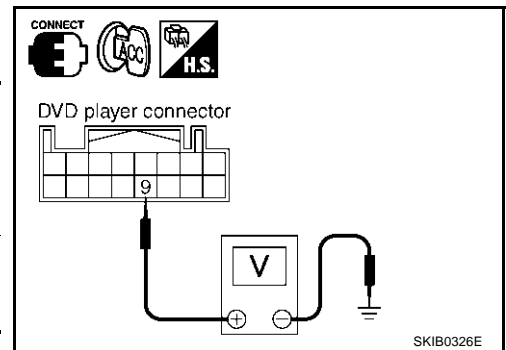
1. Connect DVD player connector and audio unit connector.
2. Turn ignition switch ACC.
3. Check voltage between DVD player harness connector M73 terminal 9 (Y/B) and ground.

Terminals		(-)	Condition	Voltage
(+) Connector				
Terminal (Wire color)				
M73	9 (Y/B)	Ground	Push "power" switch of DVD-player	Approx. 5V

OK or NG

OK >> GO TO 6

NG >> Replace DVD player.



6. CHECK CONTROL SIGNAL

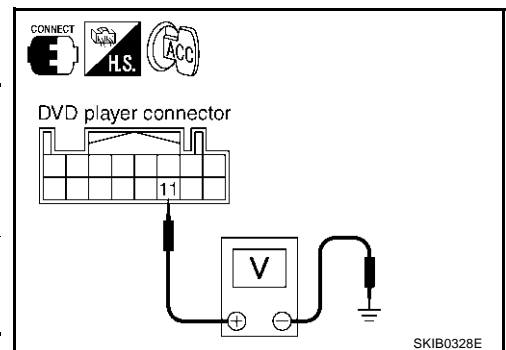
1. Check voltage between DVD player harness connector M73 terminal 11 (L/W) and ground.

Terminals		(-)	Condition	Voltage
(+) Connector				
Terminal (Wire color)				
M73	11 (L/W)	Ground	Push "power" switch of DVD player	Approx. 5V

OK or NG

OK >> Replace DVD player.

NG >> Replace audio unit.



INFINITI MOBILE ENTERTAINMENT SYSTEM

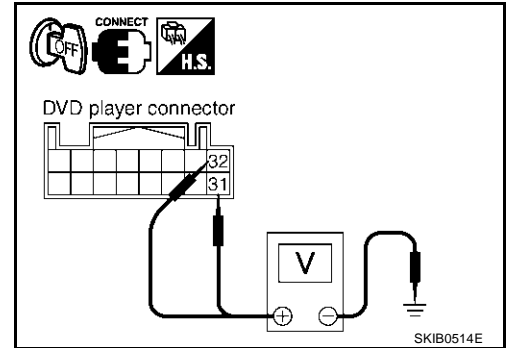
Screen Is Not Shown (While Sounds Come Out of an Audio Speaker, Did not do of a Head Phone)

AKS00AVJ

1. CHECK POWER SUPPLY CIRCUIT

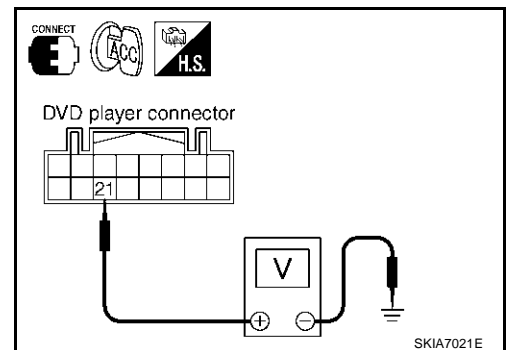
1. Check voltage between DVD player harness connector B19 terminals 31 (Y), 32 (R) and ground.

31, 32 – Ground : Battery voltage



2. Turn ignition switch ACC.
3. Check voltage between DVD player harness connector B19 terminal 21 (L) and ground.

21 – Ground : Approx. 5V



OK or NG

- OK >> GO TO 2
 NG >> Replace DVD player.

2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect DVD display connector.
3. Check continuity between DVD player harness connector B19 terminals 21 (L), 31 (Y), 32 (R) and DVD display harness connector B192 terminals 5 (L), 15 (Y), 16 (R).

21 – 5 : Continuity should exist.

31 – 15 : Continuity should exist.

32 – 16 : Continuity should exist.

4. Check continuity between DVD player harness connector B19 terminals 21(L), 31 (Y), 32 (R) and ground.

21, 31, 32 – Ground : Continuity should not exist.

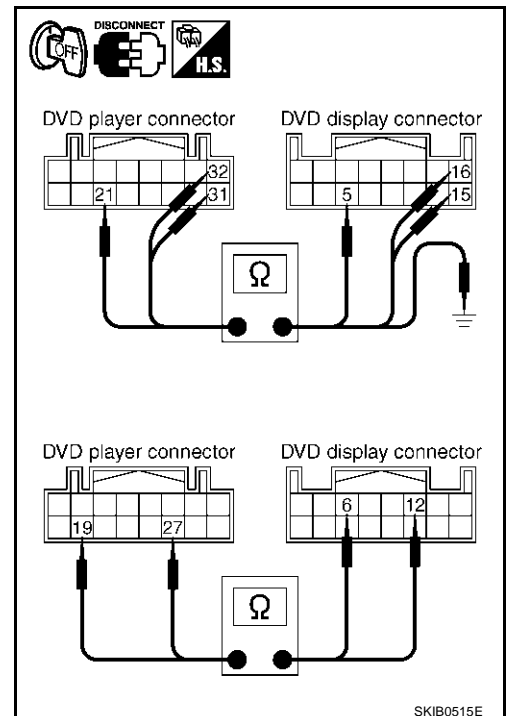
5. Check continuity between DVD player harness connector B19 terminals 19 (LG), 27 (PU) and DVD display harness connector B192 terminals 6 (LG), 12 (PU).

19 – 6 : Continuity should exist.

27 – 12 : Continuity should exist.

OK or NG

- OK >> Replace DVD display.
 NG >> Repair harness or connector.



INFINITI MOBILE ENTERTAINMENT SYSTEM

Screen is not Shown (Sounds Come Out of Both an Audio Speaker and a Head Phone)

AKS00AVK

1. CHECK HARNESS

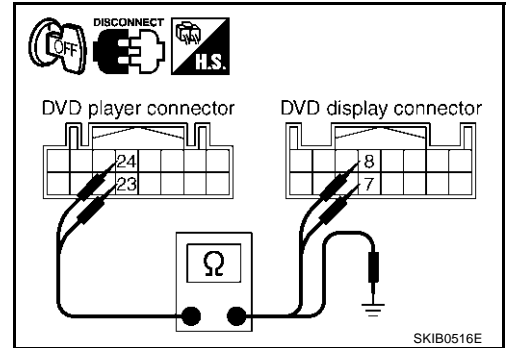
1. Disconnect DVD player connector and DVD display connector.
2. Check continuity between DVD player harness connector B19 terminals 23 (OR), 24 (W) and DVD display harness connector B192 terminals 7 (OR), 8 (W).

23 – 7 : Continuity should exist.

24 – 8 : Continuity should exist.

3. Check continuity between DVD player harness connector B19 terminals 23(OR), 24 (W) and ground.

23, 24 – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 2

NG >> Repair harness or connector.

2. CHECK VIDEO SIGNAL

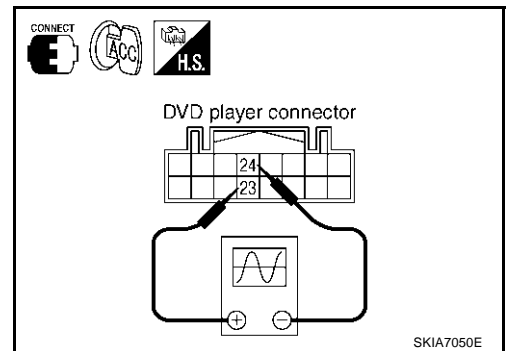
1. Connect DVD player connector and DVD display connector.
2. Turn ignition switch ACC.
3. Check the signal between DVD player harness connector B19 terminals 23 (OR) and 24 (W) with CONSULT-II or oscilloscope.

Terminal		Condition	Reference value
(+)	(-)		
23	24	Play DVD video	Refer to AV-214, "Terminals and Reference Value for DVD Player" .

OK or NG

OK >> GO TO 3.

NG >> Replace DVD player.



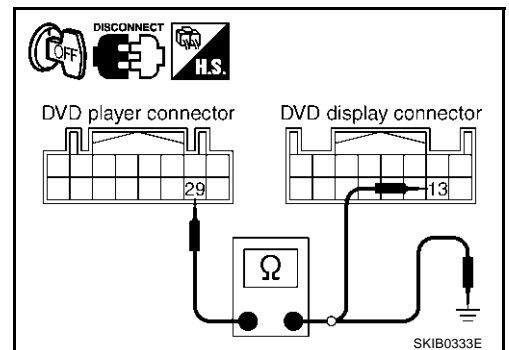
3. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect DVD player connector and DVD display connector.
3. Check continuity between DVD player harness connector B19 terminals 29 (GY) and DVD display harness connector B192 terminals 13 (GY).

29 – 13 : Continuity should exist.

4. Check continuity between DVD player harness connector B19 terminal 29 (GY) and ground.

29 – Ground : Continuity should not exist.



OK or NG

OK >> GO TO 4

NG >> Repair harness or connector.

INFINITI MOBILE ENTERTAINMENT SYSTEM

4. CHECK DATA (DVD – LCD) SIGNAL

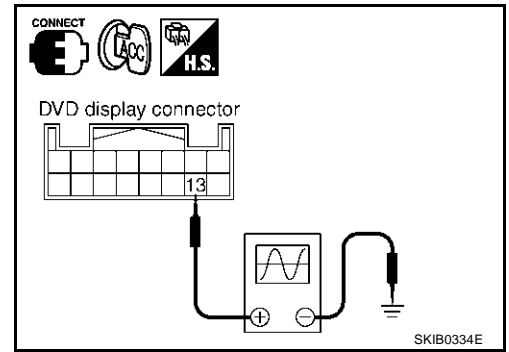
1. Connect DVD display connector and DVD player connector.
2. Turn ignition switch ACC.
3. Check voltage between DVD display harness connector B192 terminal 13 (GY) and ground.

13 – Ground

: Refer to [AV-214, "Terminals and Reference Value for DVD Player"](#) .

OK or NG

- OK >> Replace DVD display.
NG >> Replace DVD player.



Head Phone Does Not Sound

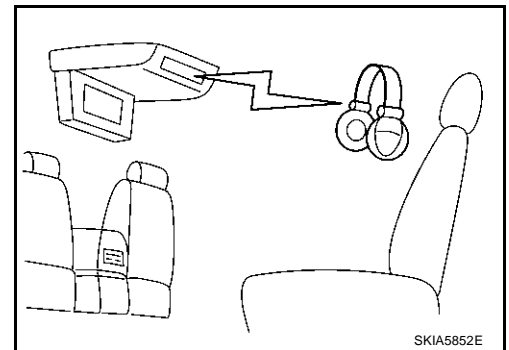
1. CHECK HEAD PHONE AND SIGNAL

Check the inspection items below to diagnose the malfunction.

- Check that the signal is received at the rear seat.
- Check that transmission part has any seals or dirt that interrupts signal.
- Check that the head phone battery has run down.

OK or NG

- OK >> GO TO 2
NG >> ● Receive signal with head phone at the rear seat.
● Remove seal or dirt that is interrupting signal.
● If the battery has run down, replace it with new one.



2. CHECK HEAD PHONE

Check that sound is heard with another head phone.

OK or NG

- OK >> Replace malfunction head phone.
NG >> GO TO 3

3. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect DVD player connector and DVD display connector.
3. Check continuity between DVD player harness connector B19 terminals 17 (G), 18 (L), 19 (LG), 20 (Y) and DVD display harness connector B192 terminals 1 (G), 2 (L), 3, 4 (Y).

17 – 1 : Continuity should exist.

18 – 2 : Continuity should exist.

19 – 3 : Continuity should exist.

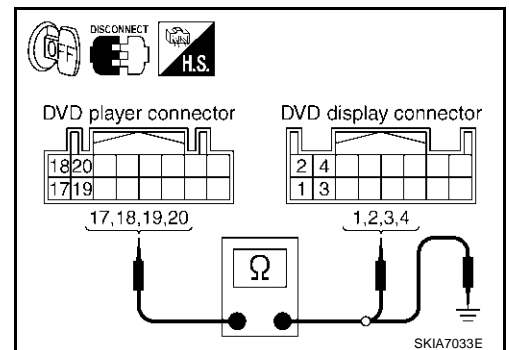
20 – 4 : Continuity should exist.

4. Check continuity between DVD player harness connector B192 terminals 17 (G), 18 (L), 19 (LG), 20 (Y) and ground.

17, 18, 19, 20 – Ground : Continuity should not exist.

OK or NG

- OK >> GO TO 4
NG >> Repair harness or connector.

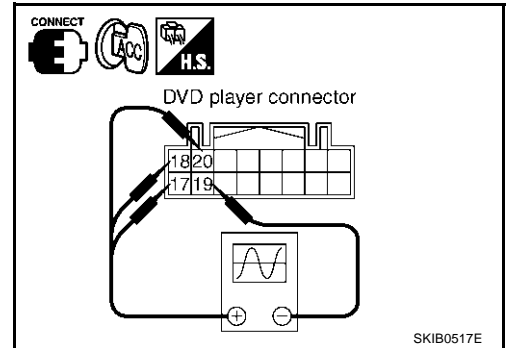


INFINITI MOBILE ENTERTAINMENT SYSTEM

4. CHECK MES SOUND SIGNAL

1. Connect DVD player connector and DVD display connector.
2. Turn the ignition switch ACC and push "POWER" switch of DVD player.
3. Check the signal between DVD player harness connector B19 terminals 17 (G), 18 (L), 20 (Y) and 19 (LG) with CONSULT-II or oscilloscope.

Terminal		Condition	Reference value
(+)	(-)		
17	19	Play CD or DVD video	Refer to AV-214 , "Terminals and Reference Value for DVD Player".
18			
20			



OK or NG

- OK >> Replace DVD display.
 NG >> Replace DVD player.

Remote Controller Is Not Work

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1. CHECK DVD PLAYER OPERATION SWITCH

1. Turn ignition switch ACC.
2. Push "POWER" switch of DVD player and operate DVD player switch.

Do the DVD player switches work?

- YES >> Replace remote controller.
 NO >> GO TO 2

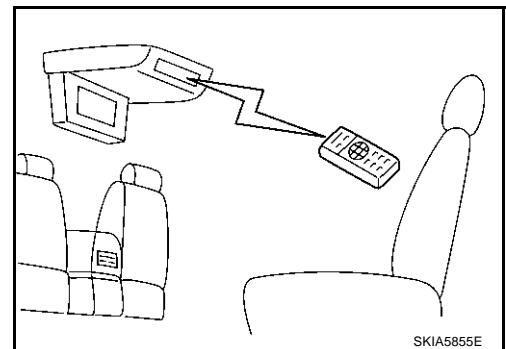
2. CHECK REMOTE CONTROLLER AND SENSOR

Check the inspection items below to diagnose the malfunction.

- Check that remote controller is facing to the sensor.
- Check that sensor does not have any seals or dirt that is interrupting signal.
- Check that the remote controller battery has run down.

OK or NG

- OK >> GO TO 3
 NG >> ● When operating, face remote controller to the sensor.
 ● Remove seal or dirt that is interrupting signal.
 ● If the battery has run down, replace it with new one.



INFINITI MOBILE ENTERTAINMENT SYSTEM

3. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect DVD player connector and DVD display connector.
3. Check continuity between DVD player harness connector B19 terminal 30 (BR) and DVD display harness connector B192 terminal 14 (BR).

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

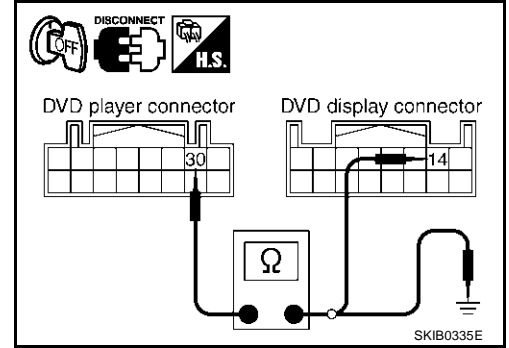
4. Check continuity between DVD player harness connector B19 terminal 30 (BR) and ground.

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

OK or NG

OK >> GO TO 4

NG >> Repair harness or connector.



4. CHECK DATA (LCD – DVD) SIGNAL

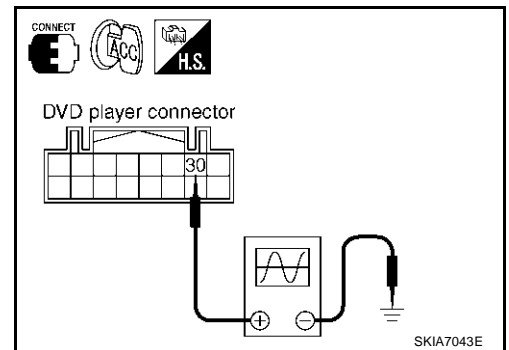
1. Connect DVD display connector.
2. Turn ignition switch ACC.
3. Check voltage between DVD player harness connector B19 terminal 30 (BR) and ground.

30 – Ground : **Refer to [AV-214, "Terminals and Reference Value for DVD Player"](#) .**

OK or NG

OK >> Replace DVD player.

NG >> Replace DVD display.



No CD-DVD Sound From All Speakers

1. VERIFY THE PHENOMENON

1. Turn ignition switch ACC.
2. Turn on the radio, receive radio program, check that the sound is heard from all the speakers.

OK or NG

OK >> GO TO 2

NG >> Replace audio unit.

2. CHECK A/C AND AV SWITCH SELF-DIAGNOSIS

Perform A/C and AV switch self-diagnosis. Check "REAR AV" switch. Refer to [AV-33, "A/C and AV Switch Self-Diagnosis Function"](#) .

OK or NG

OK >> GO TO 3

NG >> Replace A/C and AV switch.

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AV

INFINITI MOBILE ENTERTAINMENT SYSTEM

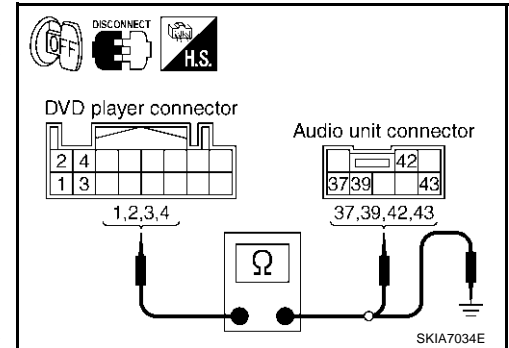
3. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect DVD player connector and audio unit connector.
3. Check continuity between DVD player harness connector M73 terminals 1 (L), 2 (R), 3(LG), 4 (PU) and audio unit harness connector M65 terminals 37 (L), 39 (R), 43 (LG), 42 (PU).

- 1 – 37 : Continuity should exist.**
2 – 39 : Continuity should exist.
3 – 43 : Continuity should exist.
4 – 42 : Continuity should exist.

4. Check continuity between DVD player harness connector M73 terminals 1 (L), 2 (R), 3(LG), 4 (PU) and ground.

- 1, 2, 3, 4 – Ground : Continuity should not exist.**



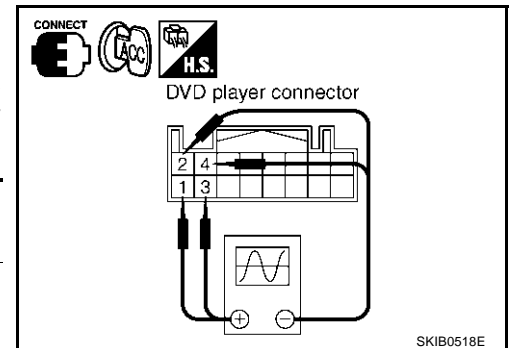
OK or NG

- OK >> GO TO 4
 NG >> Repair harness or connector.

4. CHECK MES SOUND SIGNAL

1. Connect DVD player connector and audio unit connector.
2. Turn the ignition switch ACC and push "POWER" switch of DVD player.
3. Check the signal between DVD player harness connector M73 terminals 1 (L) and 2 (R), 3 (LG) and 4 (PU) with CONSULT-II or oscilloscope.

Terminal		Condition	Reference value
(+)	(-)		
1	2	Play CD or DVD video	Refer to AV-214, "Terminals and Reference Value for DVD Player" .
3	4		



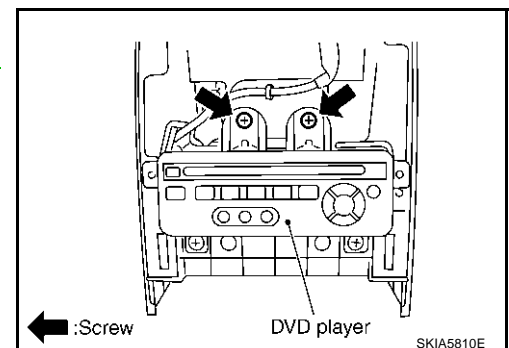
OK or NG

- OK >> Replace audio unit.
 NG >> Replace DVD player.

Removal and Installation for DVD Player

REMOVAL

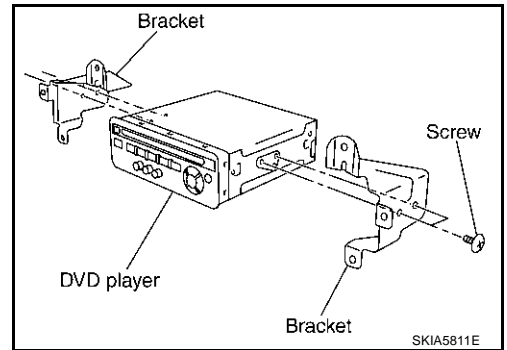
1. Remove center console. Refer to [IP-12, "\(H\) Center Console"](#) .
2. Remove center console rear finisher. Refer to [IP-17, "CENTER CONSOLE"](#) .
3. Remove screws (2) with power tool and remove DVD player.



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INFINITI MOBILE ENTERTAINMENT SYSTEM

4. Remove screws (4) with power tool and remove bracket.



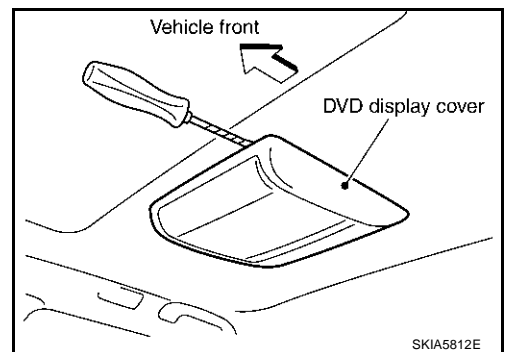
INSTALLATION

Install in the reverse order of removal.

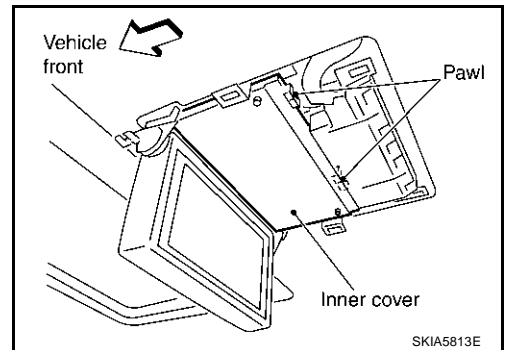
Removal and Installation for DVD Display Unit REMOVAL

AKS007WV

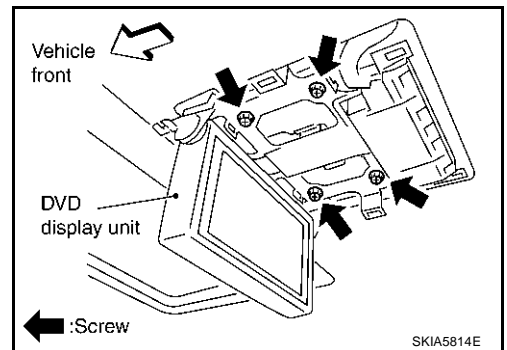
1. Insert cloth-covered driver into gaps between rear display cover and head lining, and remove rear display cover.



2. Press pawl on rear side and remove inner cover.



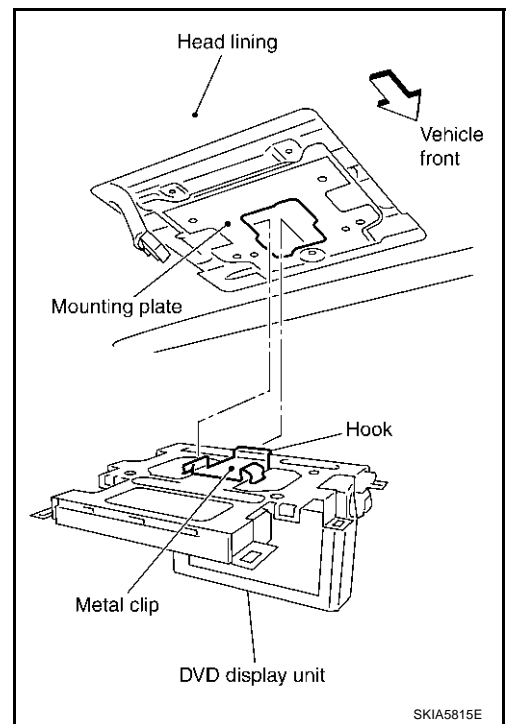
3. Remove screws (4) with power tool.



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INFINITI MOBILE ENTERTAINMENT SYSTEM

4. Pull DVD display unit to downside, and remove rear display unit from mounting plate.



INSTALLATION

Installation in the reverse order if removal. Be careful of the following.

CAUTION:

Put metal clip hook in mounting plate, and press it securely.