SECTION AV

AUDIO VISUAL, NAVIGATION & TELEPHONE SYSTEM

CONTENTS

PRECAUTIONS

PFP:00001

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

NKS001HL

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.**

AUDIO

PFP:28111

System Description

NKS001HN

AUDIO SYSTEM

For Audio System operation information, refer to Owner's Manual.
Power is supplied at all times

- through 15 A fuse [No. 52, located in the fuse, fusible link and relay block (J/B)]
- to audio unit terminal 73
- to satellite radio tuner terminal 33 (With satellite radio)
- to jumping connector (For satellite radio tuner) terminal 33 (Without satellite radio)
- to CD auto changer terminal 12,
- through 15 A fuse [No. 56, located in the fuse, fusible link and relay block (J/B)]
- to combination switch (spiral cable) terminal 24,
- through combination switch (spiral cable) terminal 20
- to steering switch terminal 1,
- through 30 A fuse [No. J, located in the fuse, fusible link and relay box]
- to BOSE speaker amp. terminal 11.

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

- through 10 A fuse [No. 21, located in the fuse block (J/B) No. 1]
- to audio unit terminal 72
- to BOSE speaker amp. terminal 34
- to satellite radio tuner terminal 34 (With satellite radio)
- to jumping connector (For satellite radio tuner) terminal 34 (Without satellite radio)
- to rear control cancel relay terminal 3
- to CD auto changer terminal 16,
- through 10 A fuse [No. 4, located in the fuse block (J/B) No. 1]
- to rear control cancel switch terminal 4.

When rear control cancel switch is in rear control position, power is supplied

- through rear control cancel switch terminal 3
- to rear control cancel relay terminal 2.

Then rear control cancel relay is energized and power is supplied

- through rear control cancel relay terminal 5
- to rear control switch terminal 1.

When steering switch pressed ON, signal is sent

- from steering switch terminal 2
- through combination switch (spiral cable) terminals 19 and 25
- to multifunction switch terminal 7.

Ground is supplied through the case of the audio unit.
Ground is also supplied

- to BOSE speaker amp. terminal 27
- to rear control cancel relay terminal 1
- through body grounds B217 and B256,
- to CD auto changer terminal 15
- through body grounds M24 and M114,
- to steering switch terminal 3
- through body ground,
- to rear control switch terminal 12
- through body grounds M25 and M115.

When the audio unit is turned to the ON position, audio signals are supplied

- through terminals 80, 79, 81 and 82 of audio unit

- to terminals 40, 39, 38 and 41 of BOSE speaker amp.
- through terminals 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 28, 29 and 30 of BOSE speaker amp.
- to every terminals 1 and 2 of instrument speakers, front and rear door speakers and woofer.

AV Communication Line

Audio system components (Audio unit, BOSE speaker amplifier, etc.) are connected by AV communication line and controlled by signals from the multifunction switch.

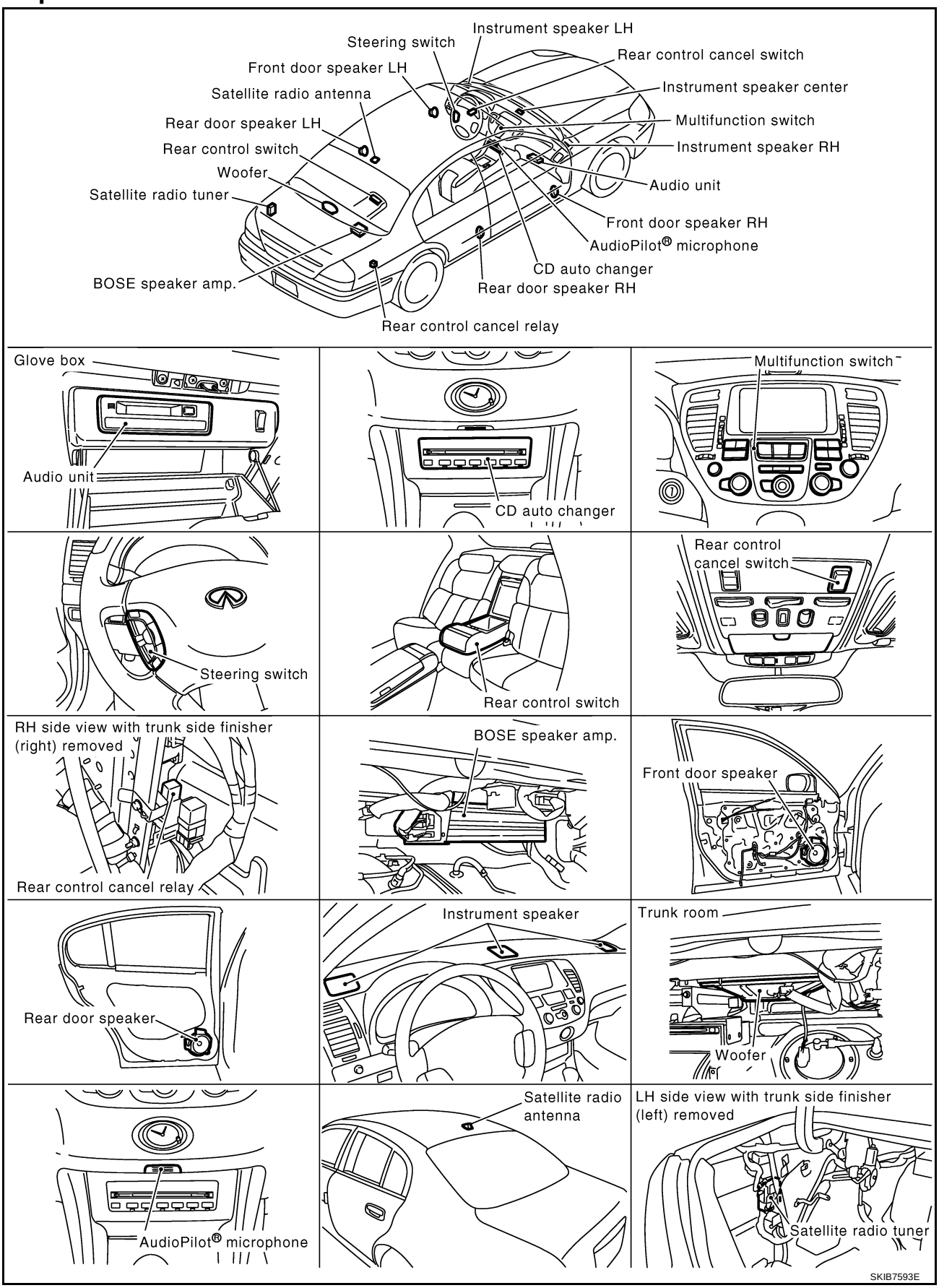
AudioPilot® system

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

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

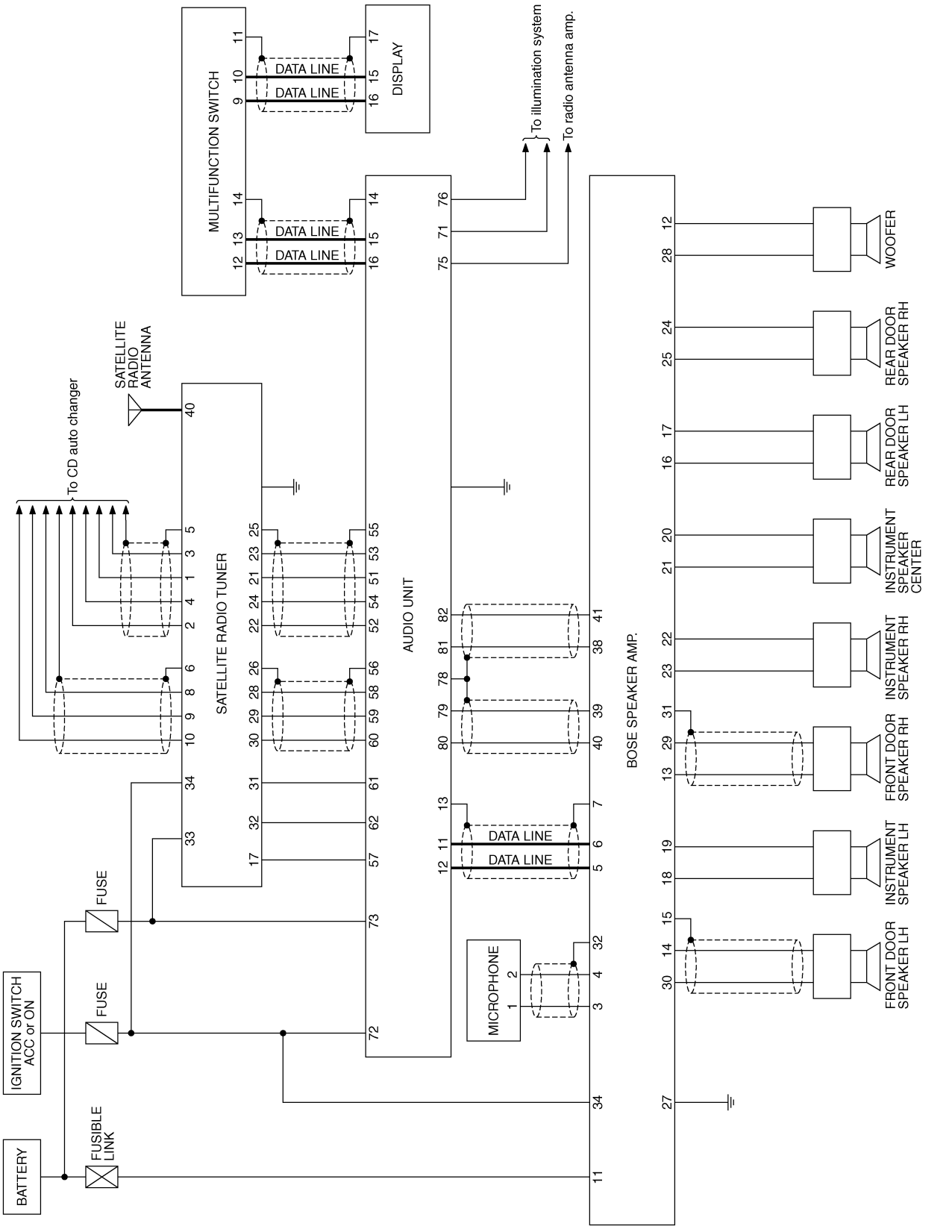
Component Parts Location

NKS001HO



Schematic — AUDIO — / With Satellite Radio

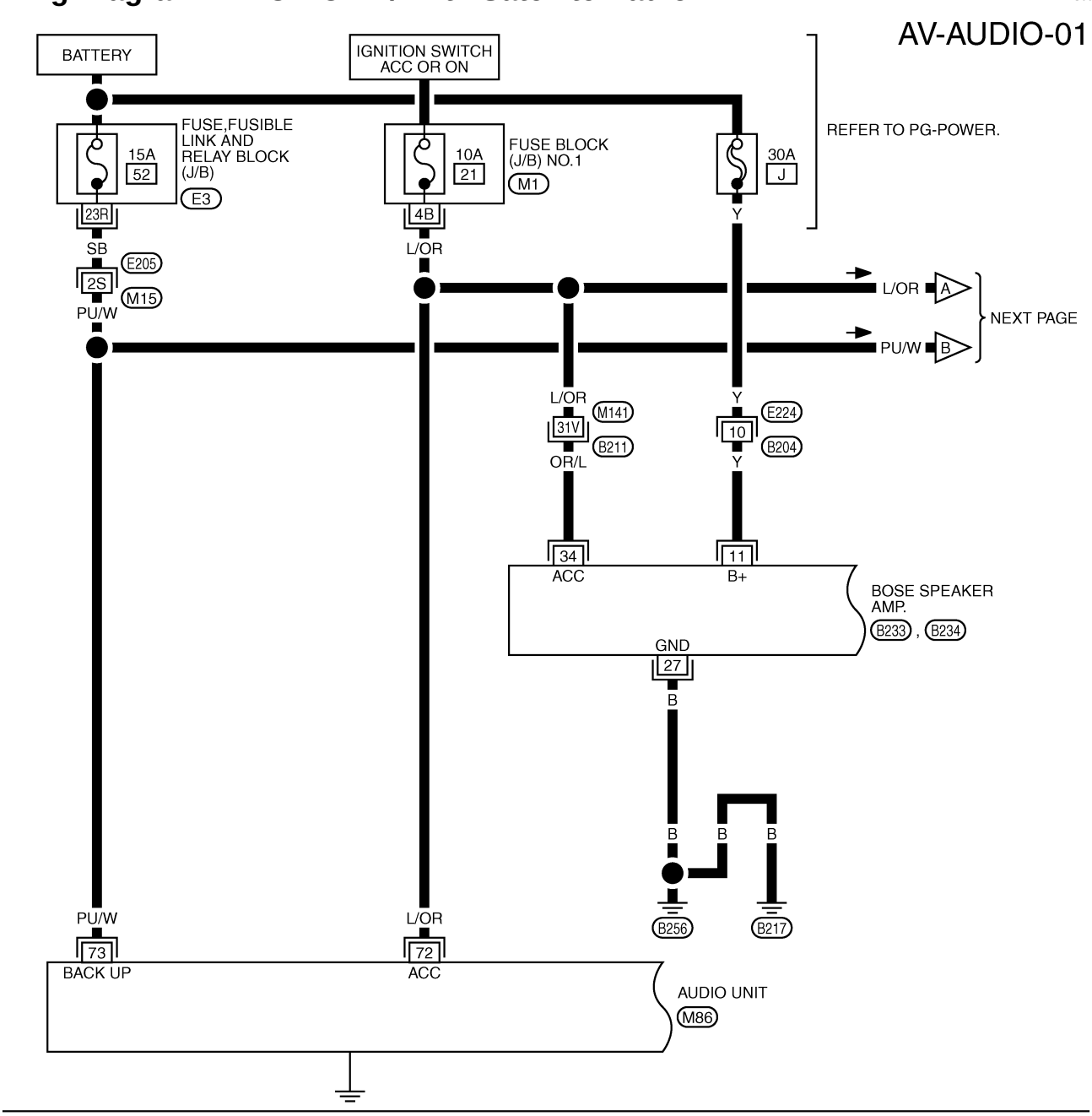
NKS001HP

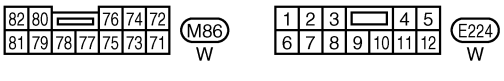


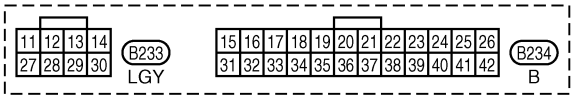
TKWM3787E

Wiring Diagram — AUDIO — / With Satellite Radio

NKS001HQ







REFER TO THE FOLLOWING.

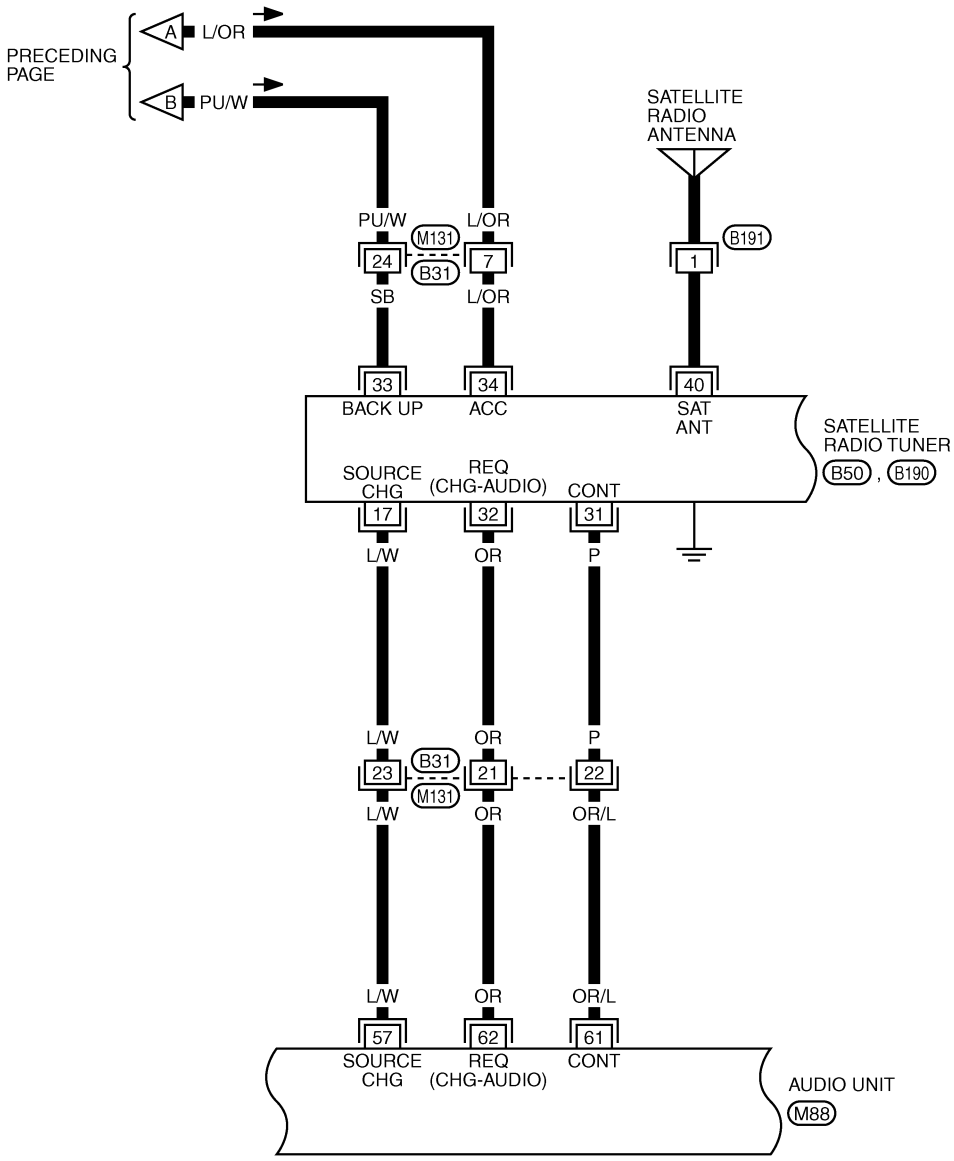
E205 , B211 -SUPER MULTIPLE JUNCTION (SMJ)

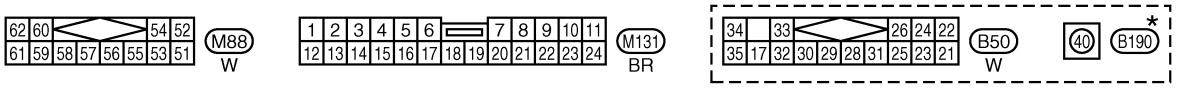
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

E3 -FUSE, FUSIBLE LINK AND RELAY BLOCK (J/B)

TKWM3788E

AV-AUDIO-02

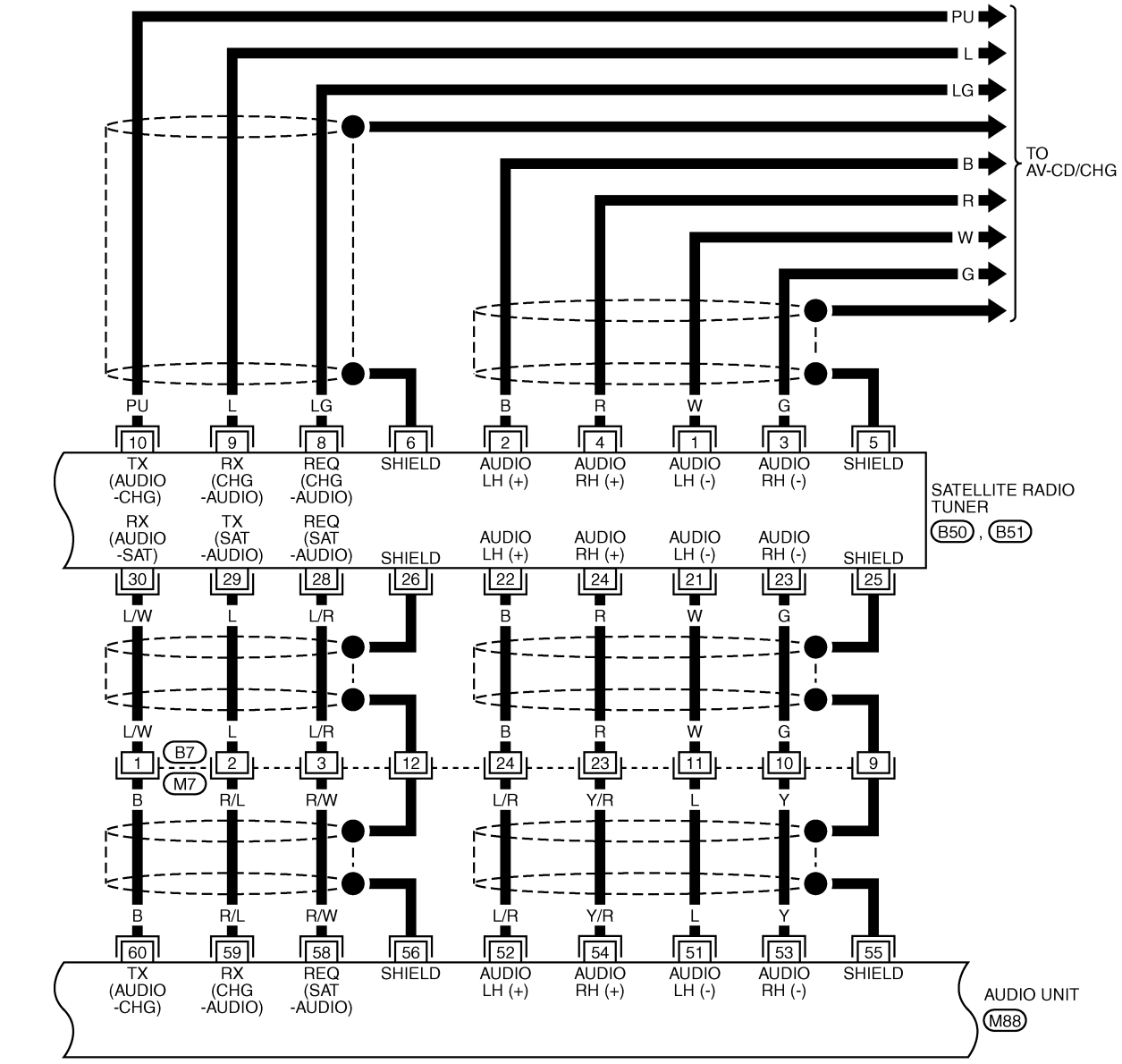


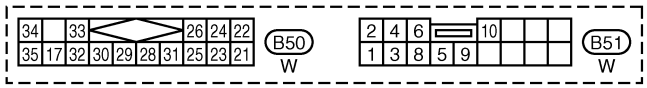


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWM3789E

AV-AUDIO-03

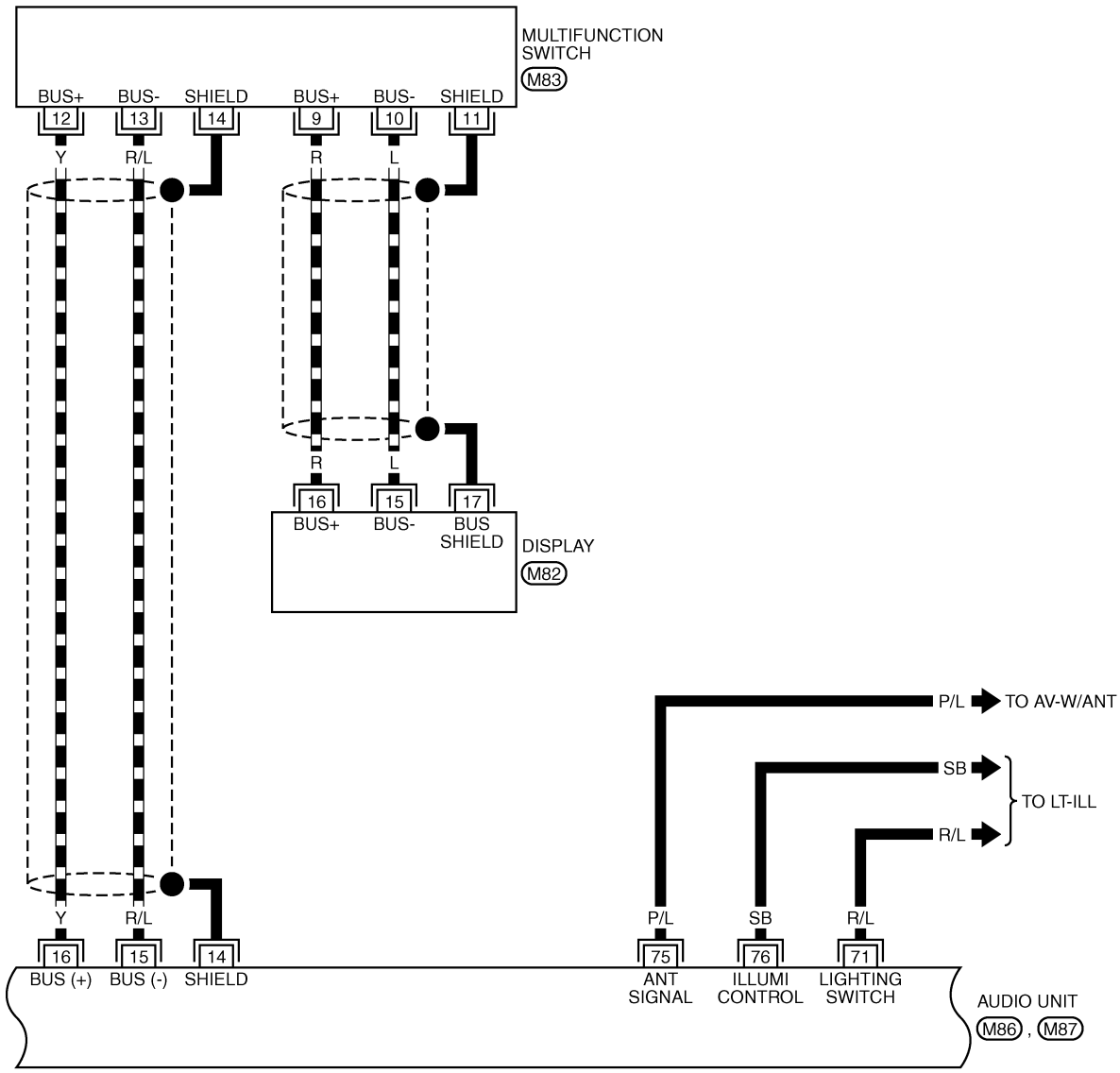


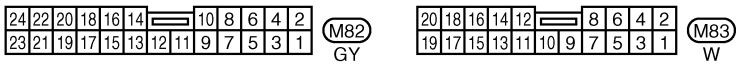


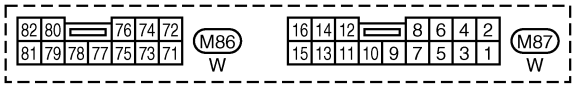
TKWM3965E

AV-AUDIO-04

: DATA LINE



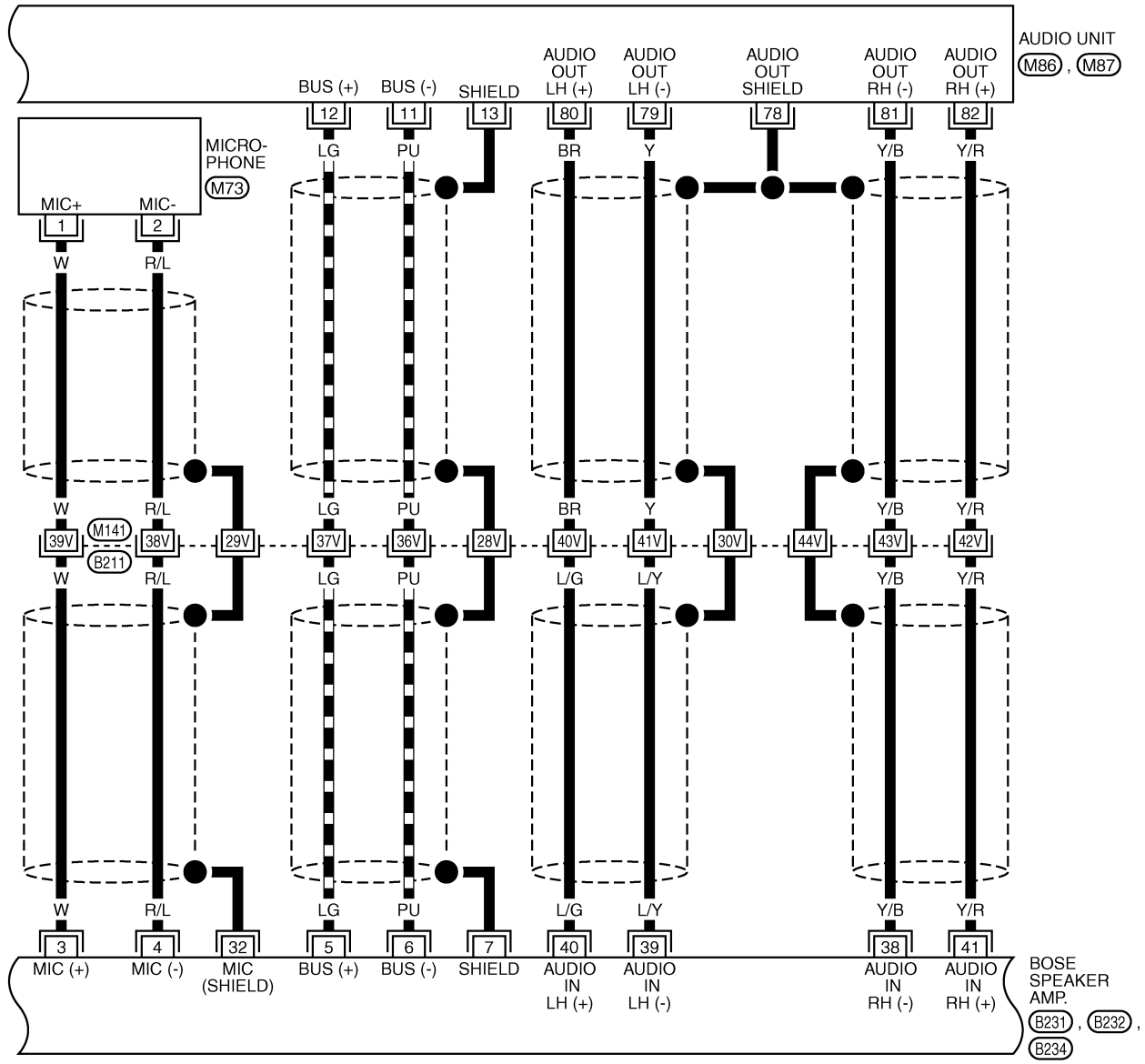


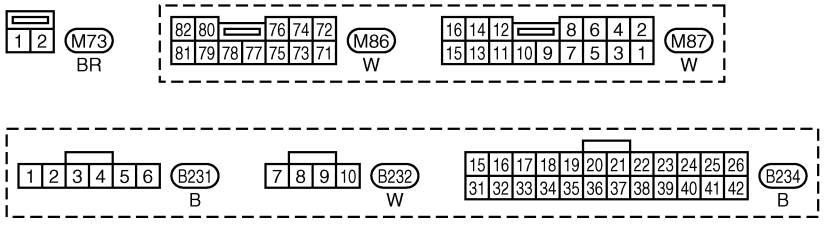


TKWM3790E

AV-AUDIO-05

: DATA LINE

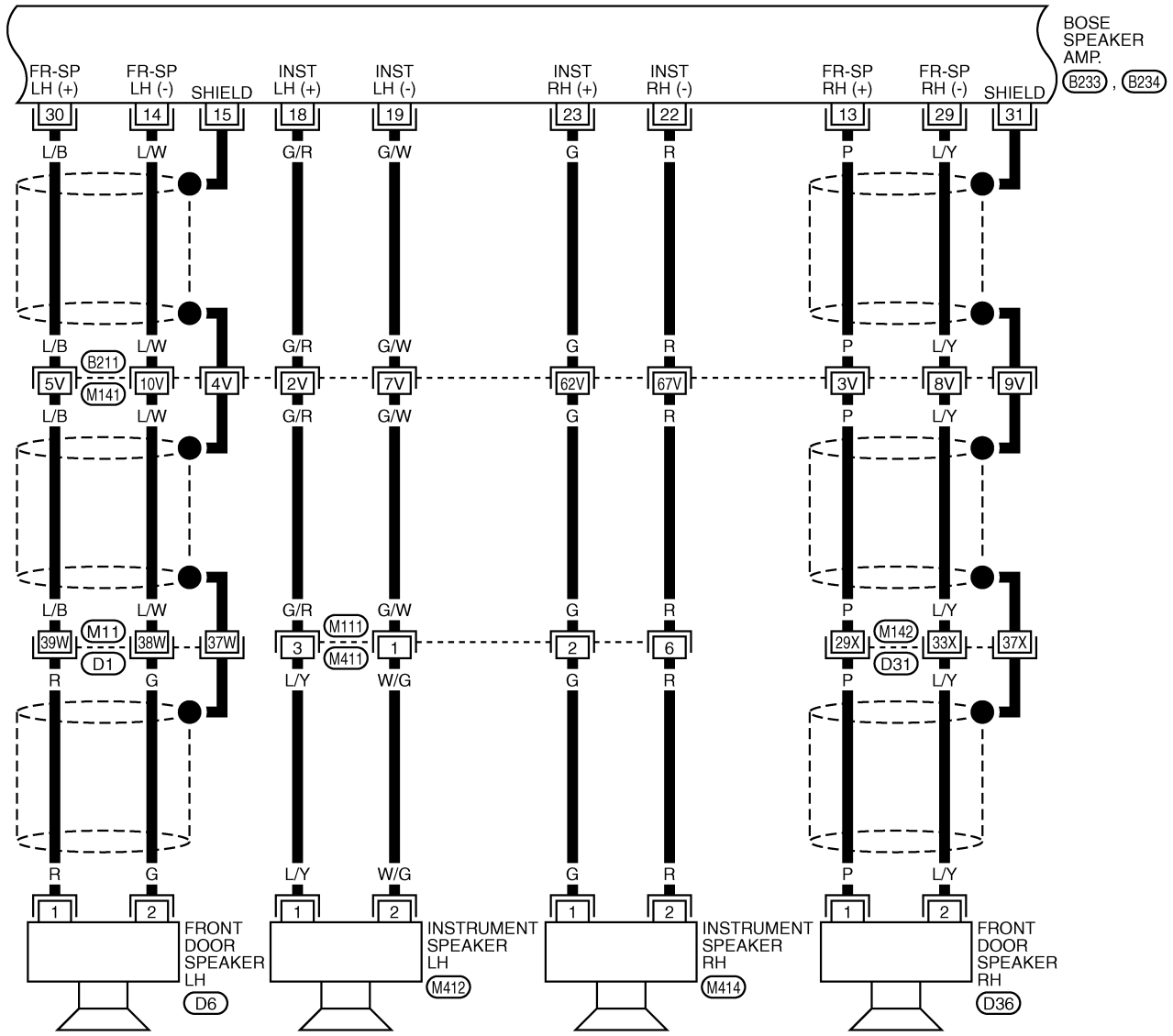


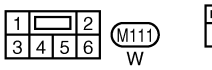


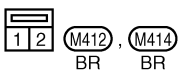
REFER TO THE FOLLOWING.
B211 -SUPER MULTIPLE JUNCTION (SMJ)

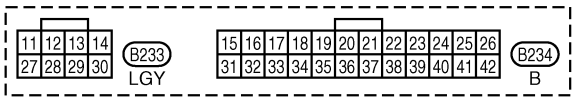
TKWM3791E

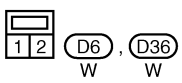
AV-AUDIO-06







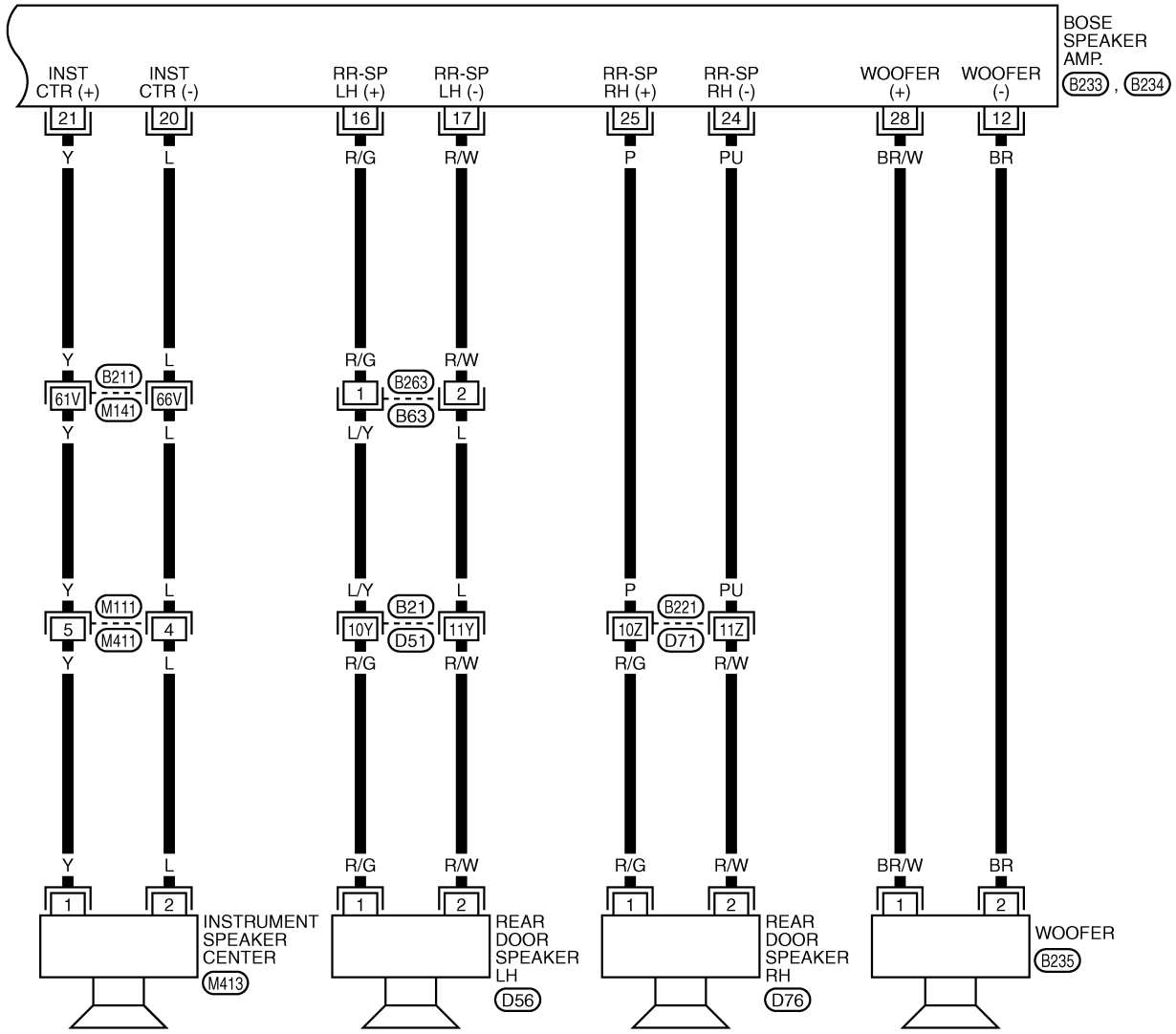


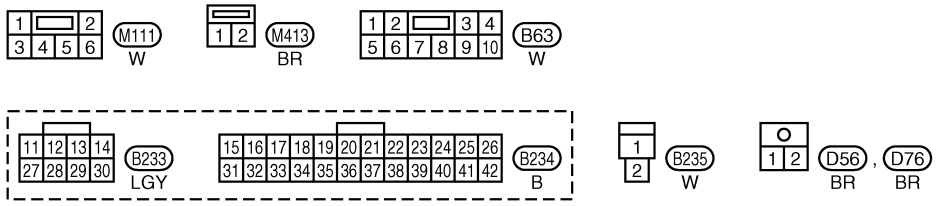


REFER TO THE FOLLOWING.
B211 , D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM3792E

AV-AUDIO-07



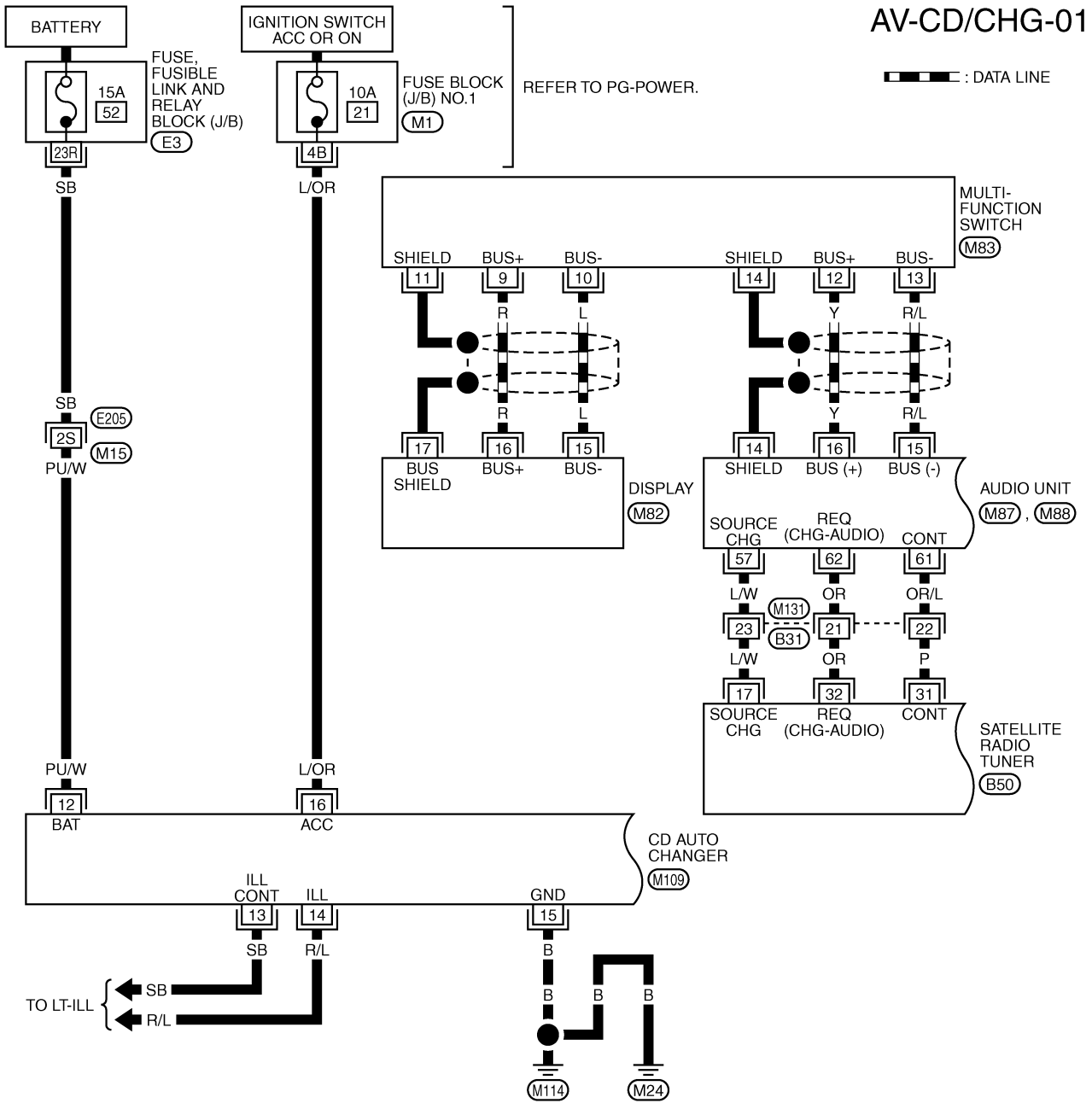


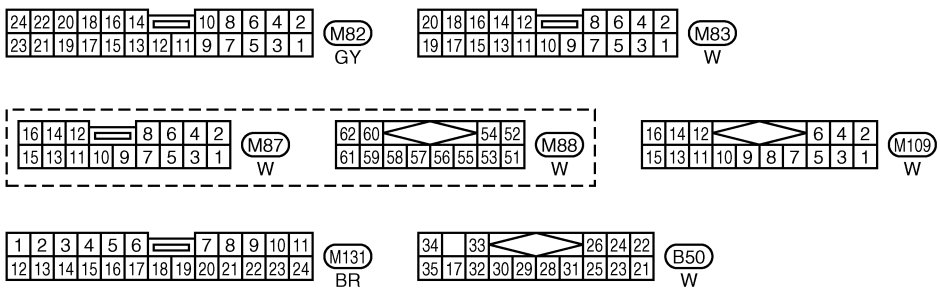
REFER TO THE FOLLOWING.
B21 , B211 , B221 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM3985E

Wiring Diagram — CD AUTO CHANGER — / With Satellite Radio

NKS001HS





REFER TO THE FOLLOWING.

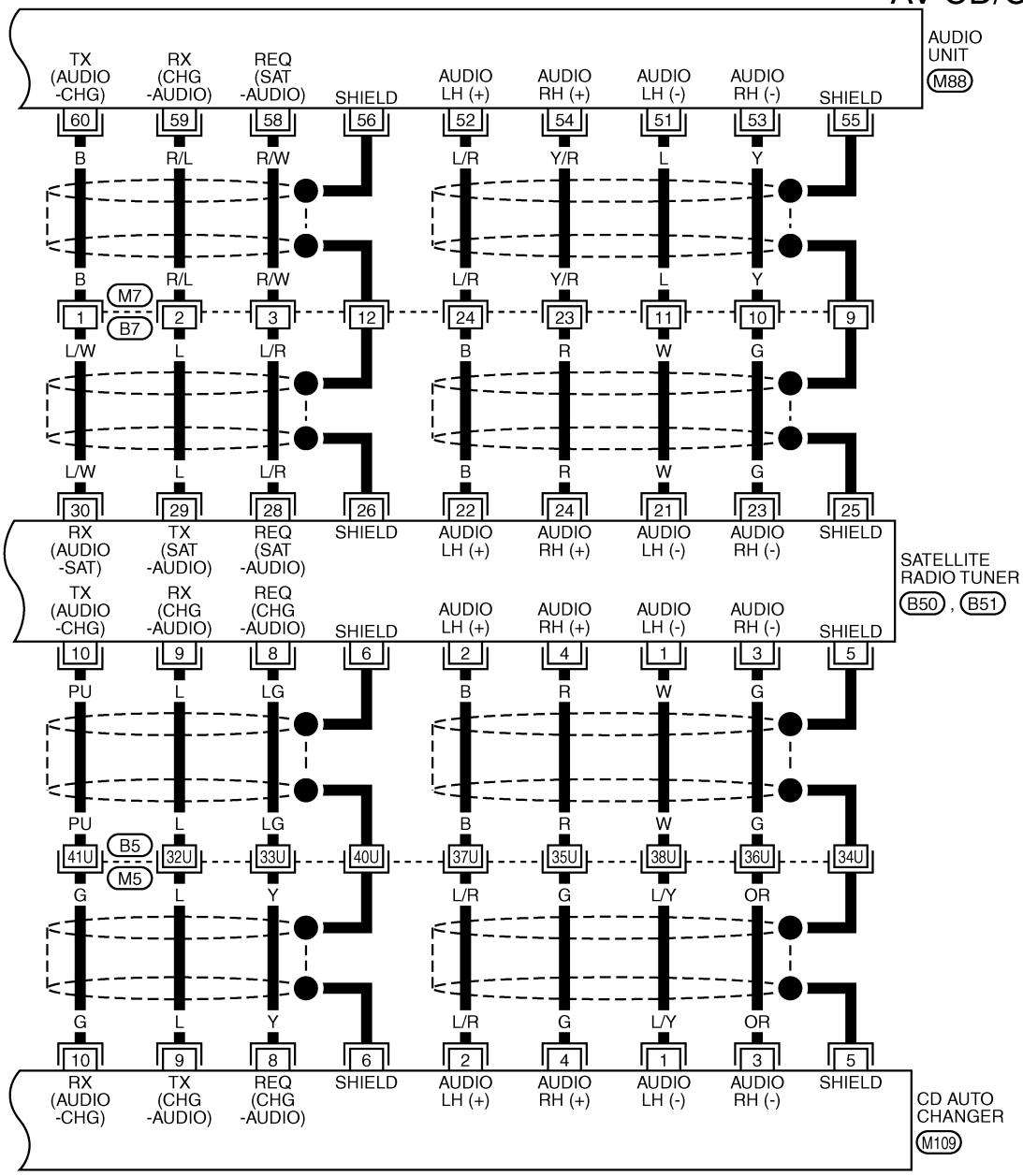
E205 -SUPER MULTIPLE JUNCTION (SMJ)

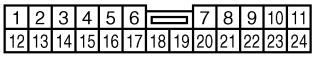
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

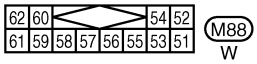
E3 -FUSE, FUSIBLE LINK AND RELAY BLOCK (J/B)

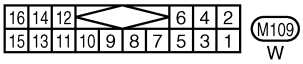
TKWM3795E

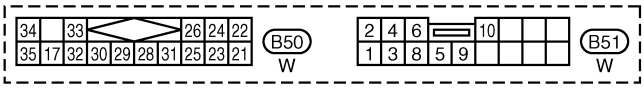
AV-CD/CHG-02









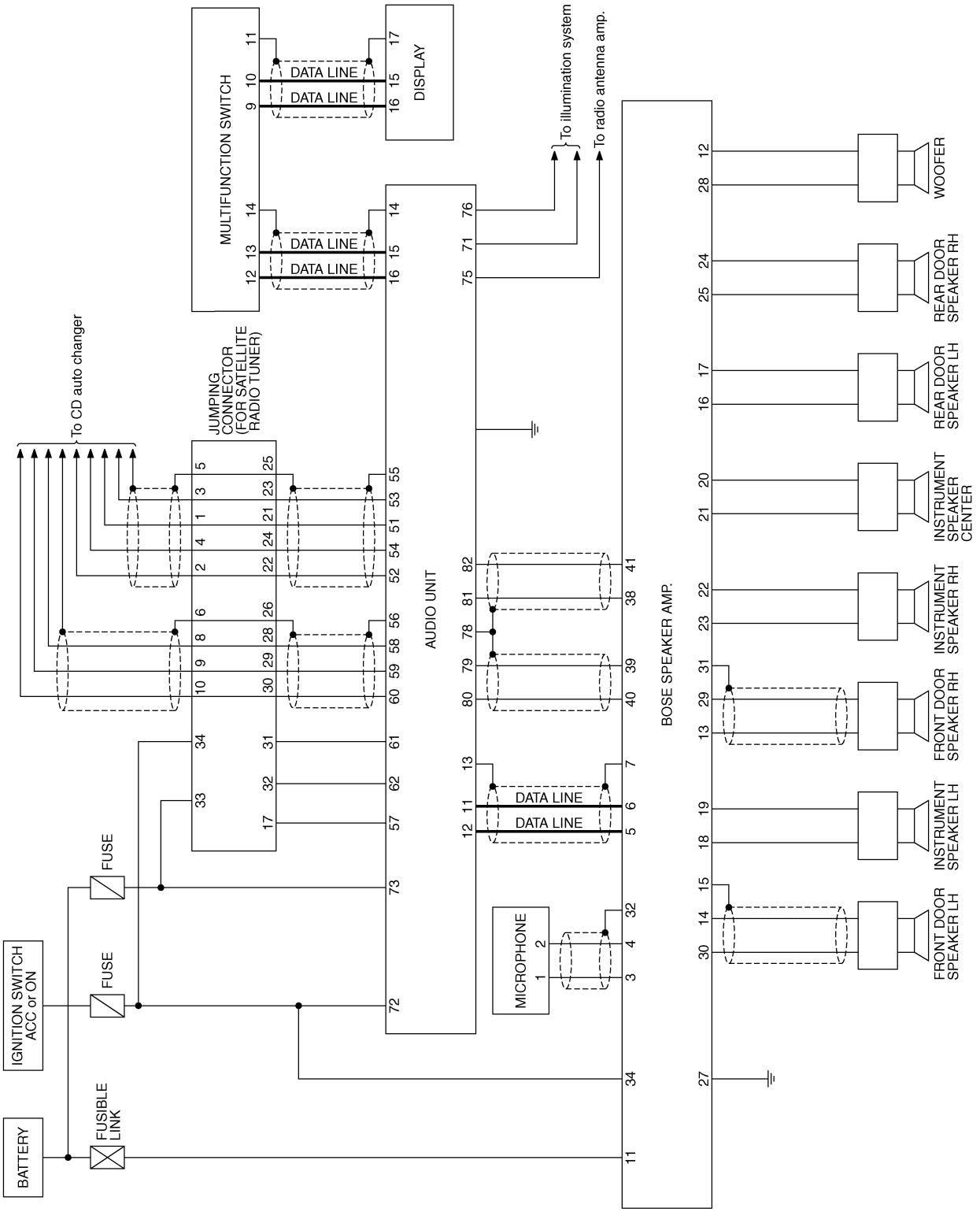


REFER TO THE FOLLOWING.
M5 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM3796E

Schematic — AUDIO — / Without Satellite Radio

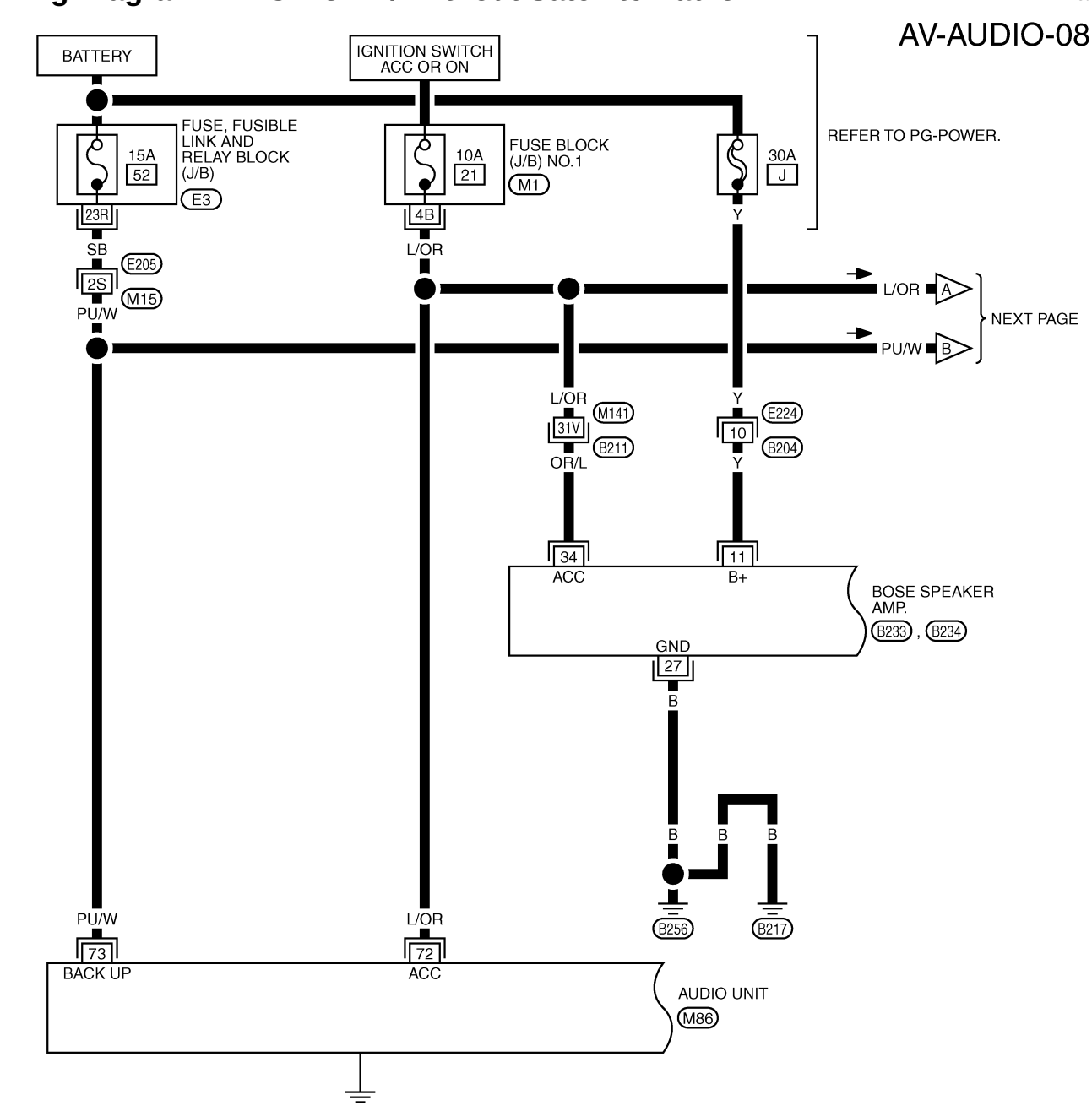
NKS002LW

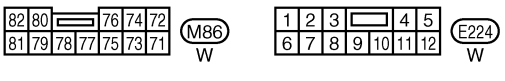


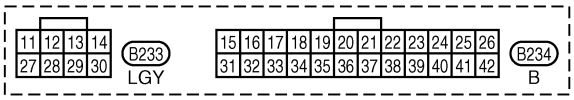
TKWM3966E

Wiring Diagram — AUDIO — / Without Satellite Radio

NKS002LX







REFER TO THE FOLLOWING.

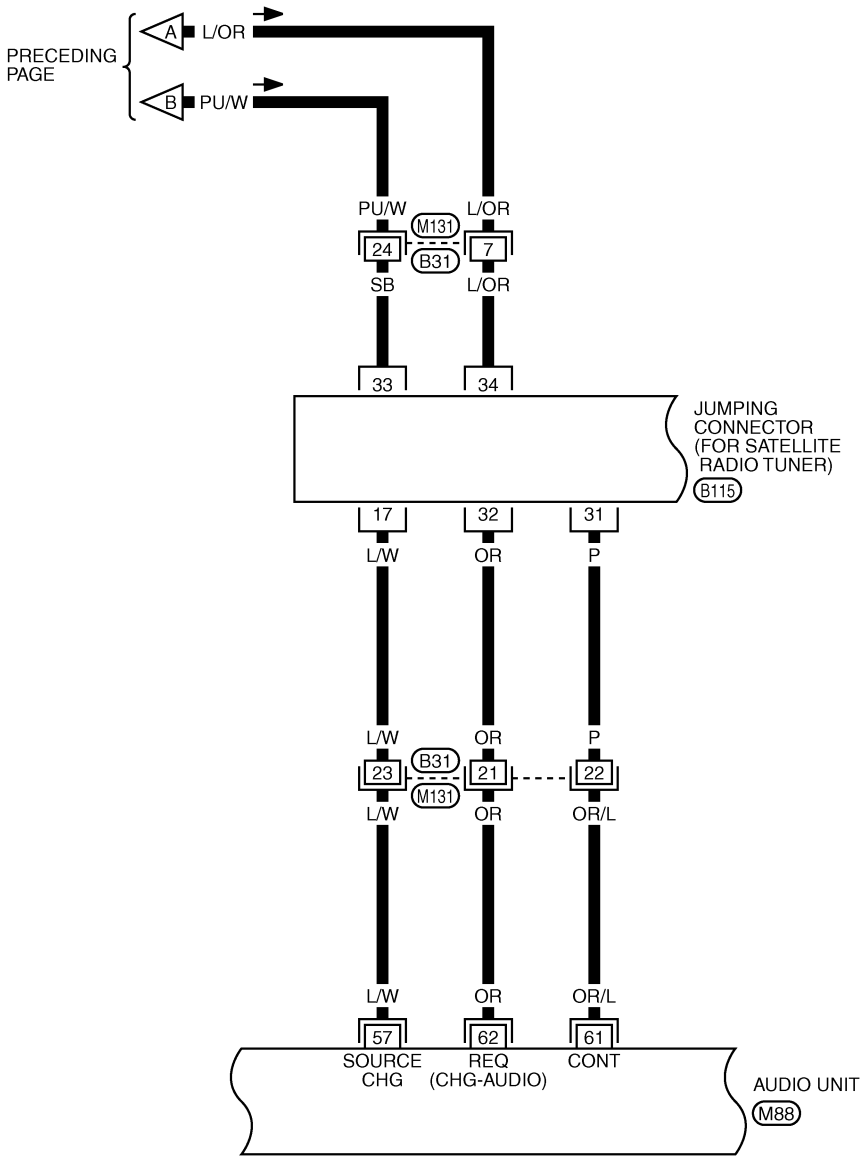
E205 , B211 -SUPER MULTIPLE JUNCTION (SMJ)

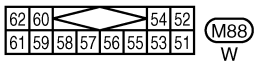
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

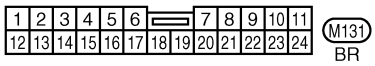
E3 -FUSE, FUSIBLE LINK AND RELAY BLOCK (J/B)

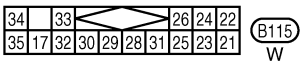
TKWM3967E

AV-AUDIO-09



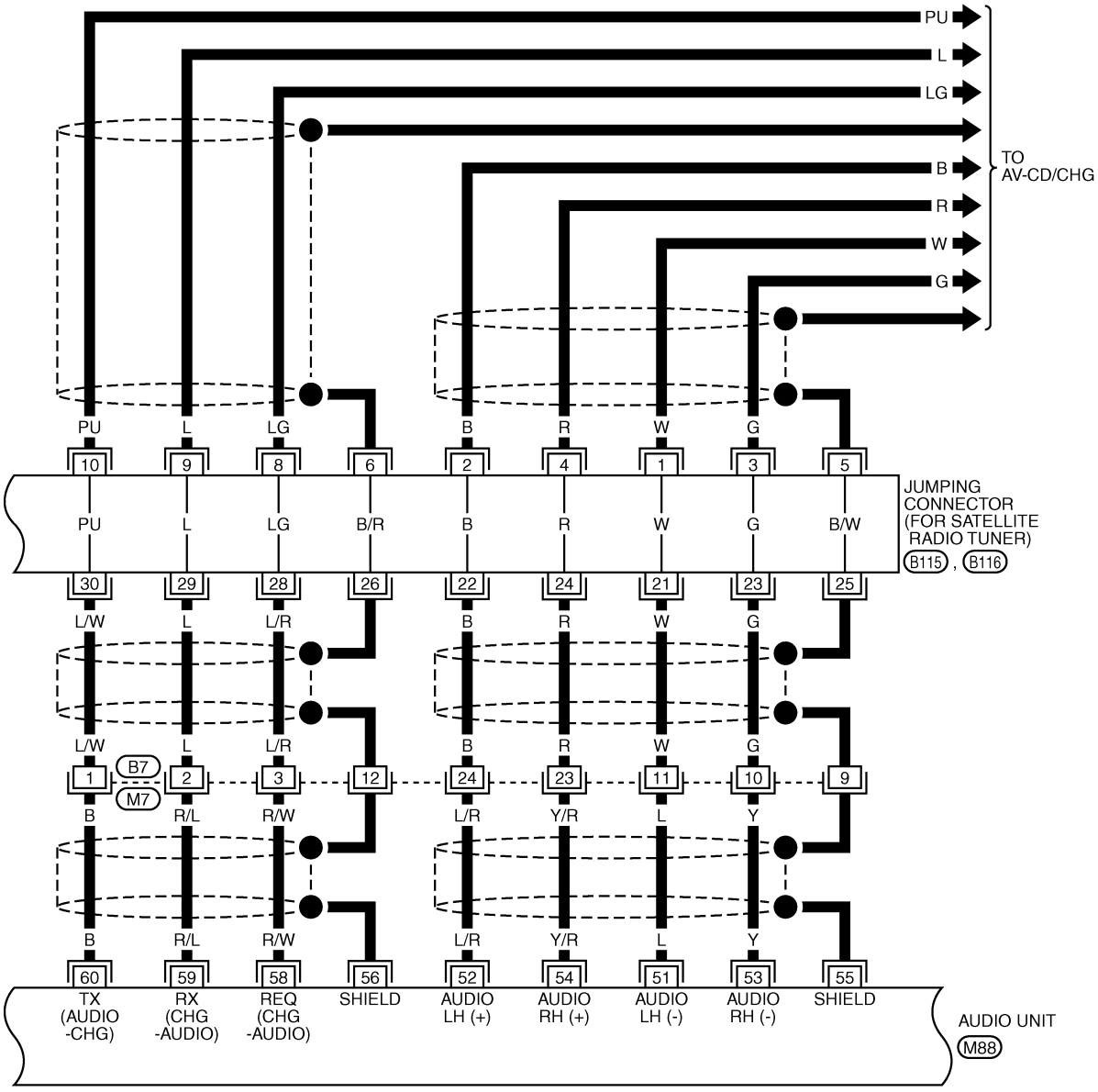


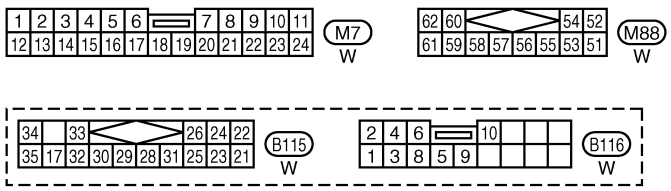




TKWM3968E

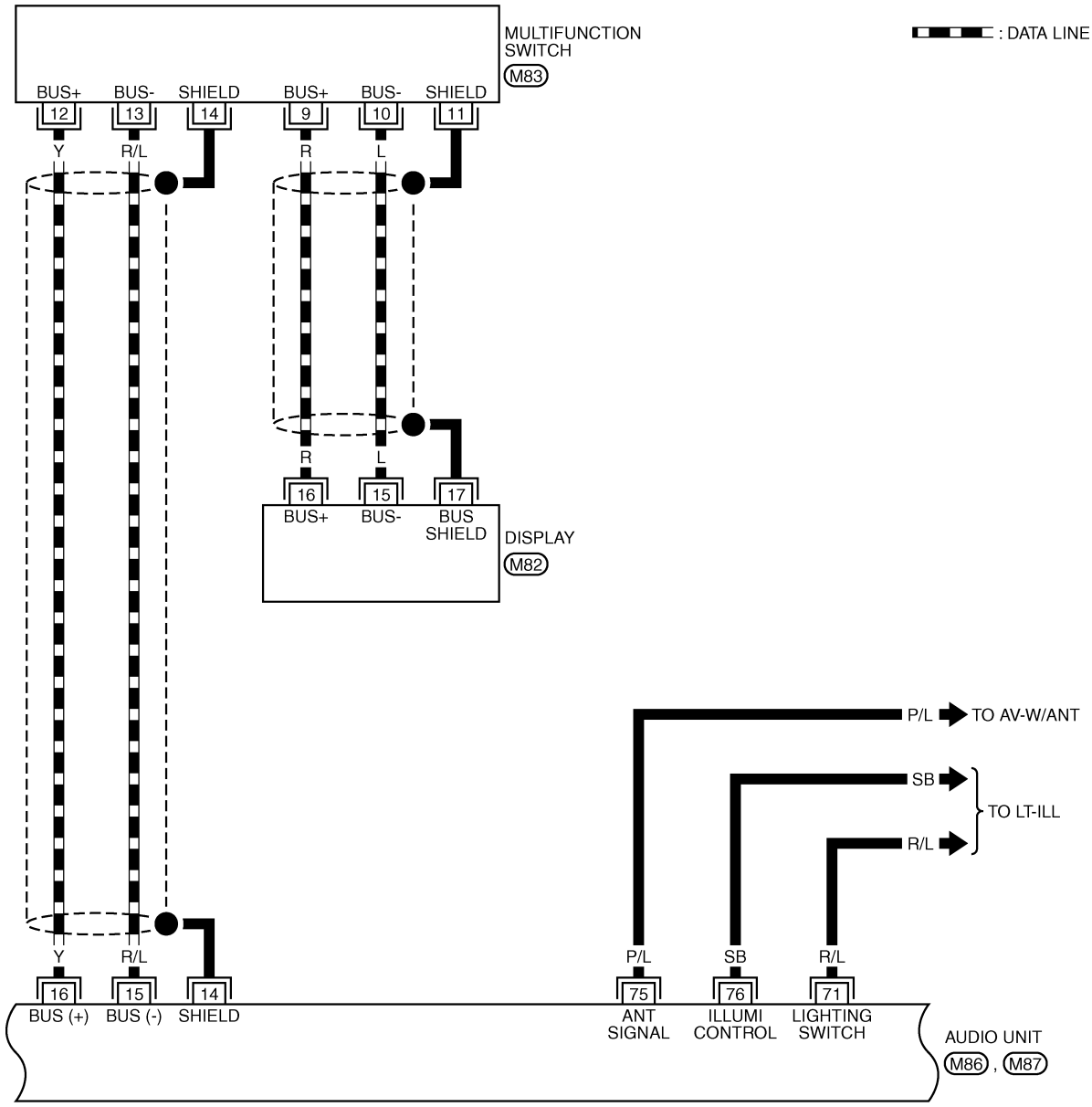
AV-AUDIO-10

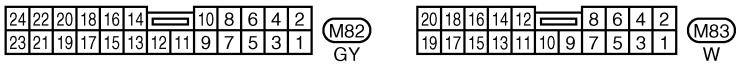


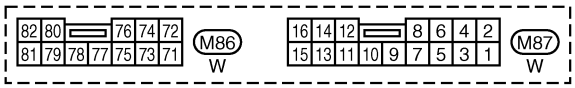


TKWM3969E

AV-AUDIO-11

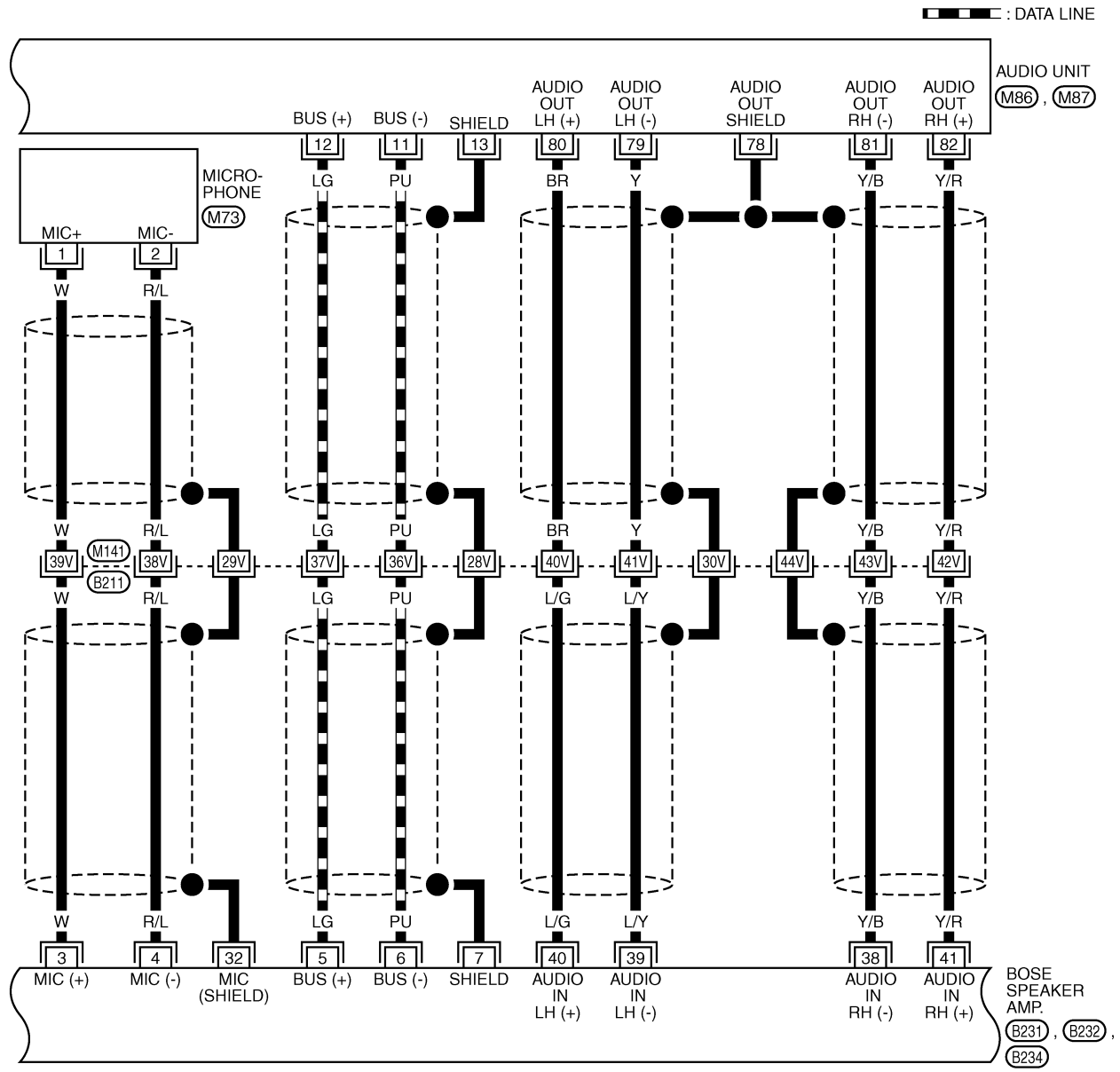


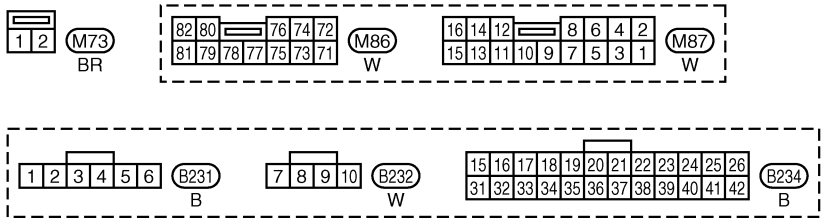




TKWM3970E

AV-AUDIO-12

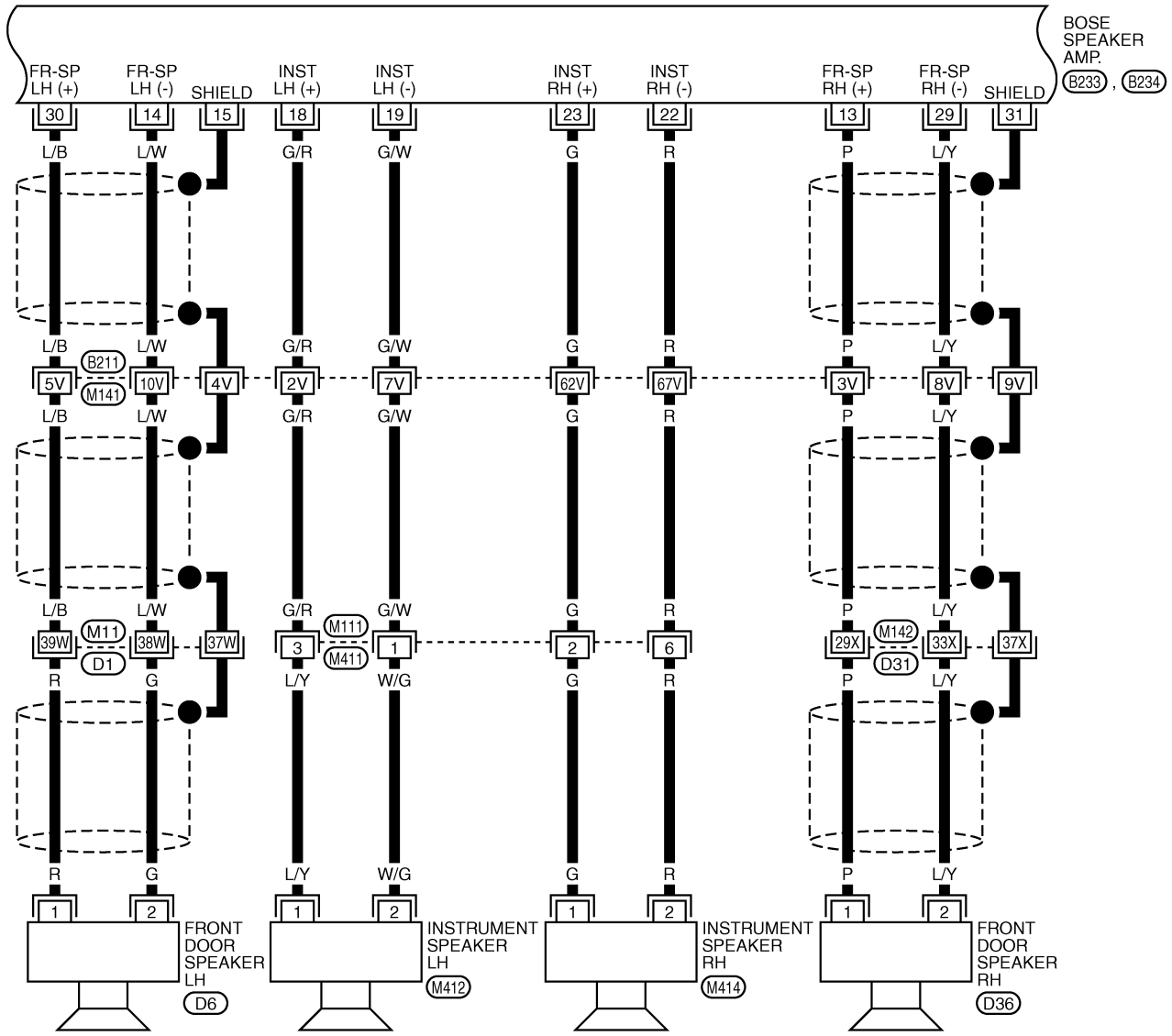




REFER TO THE FOLLOWING.
B211 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM3971E

AV-AUDIO-13



M111 W

M412 , M414 BR BR

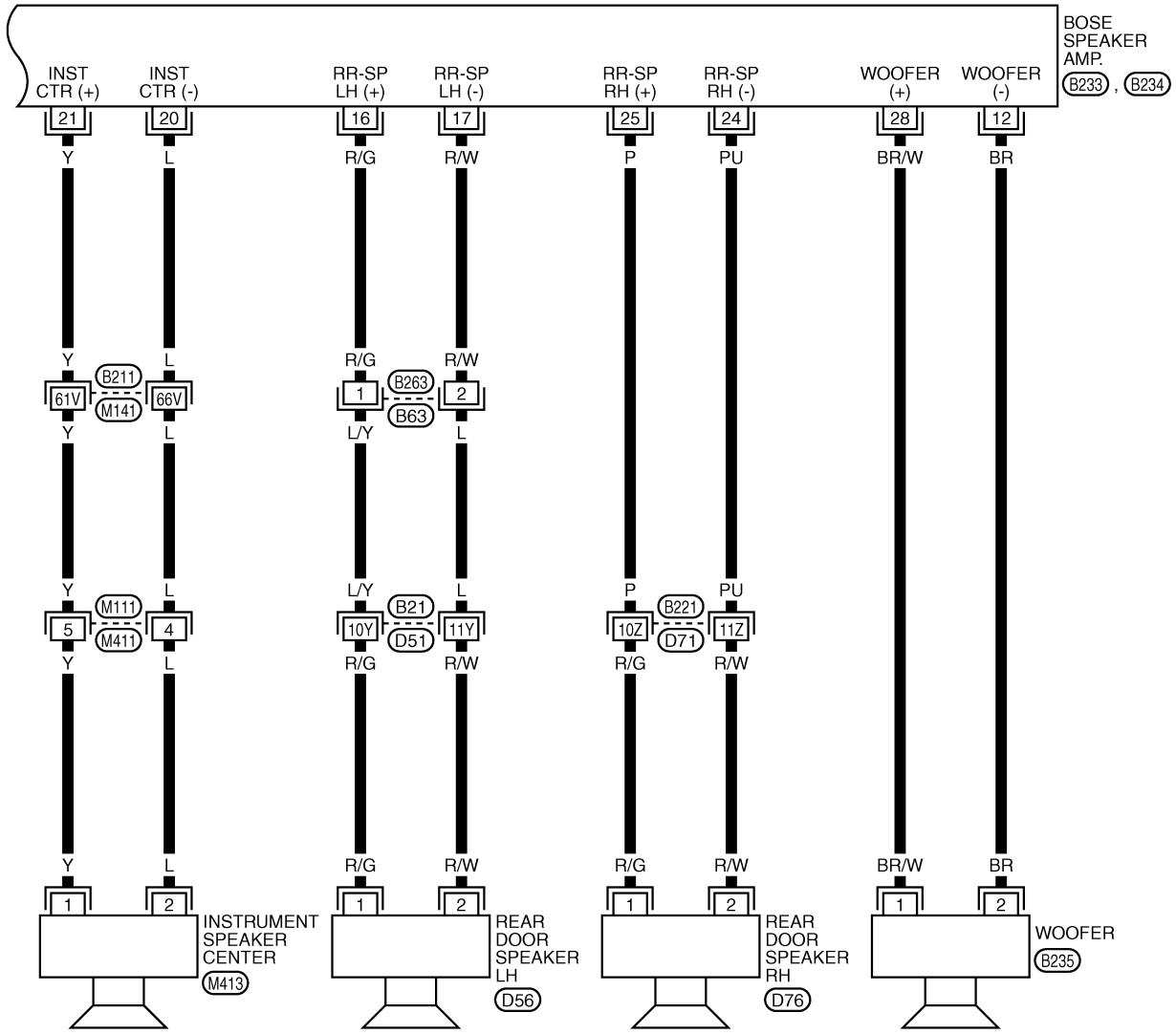
B233 LGY

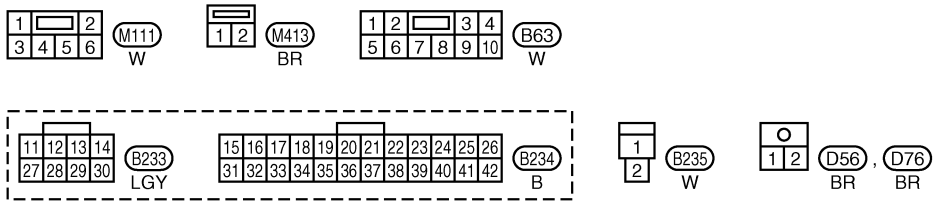
B234 B

D6 , D36 W W

REFER TO THE FOLLOWING.
B211 , D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM3972E



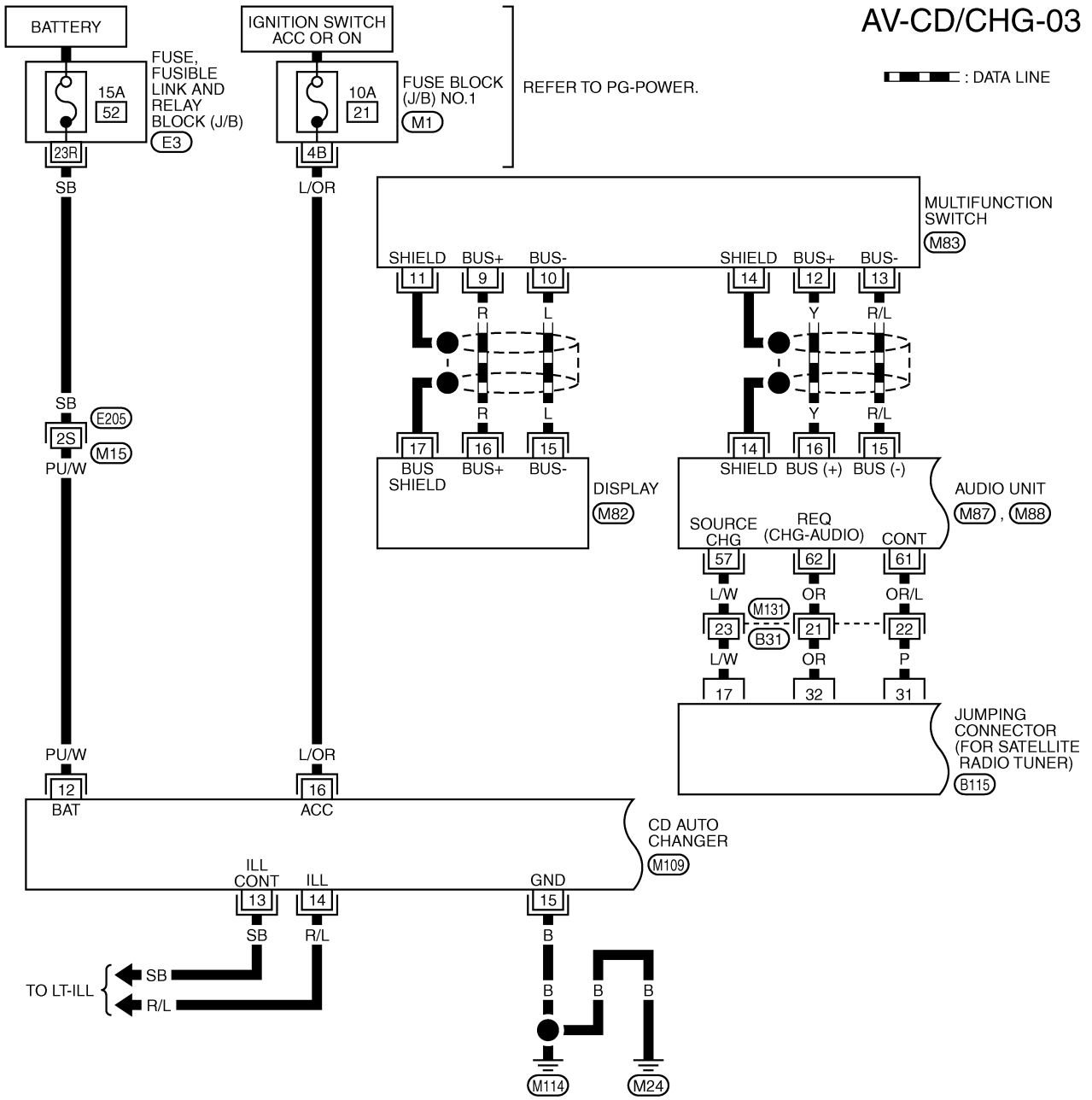


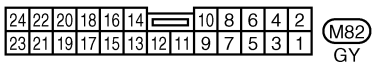
REFER TO THE FOLLOWING.
B21 , B211 , B221 -SUPER MULTIPLE JUNCTION (SMJ)

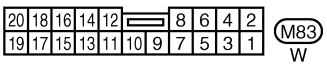
TKWM3973E

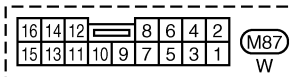
Wiring Diagram — CD AUTO CHANGER — / Without Satellite Radio

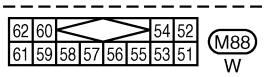
NKS002LY

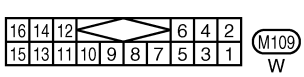


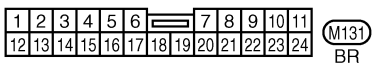


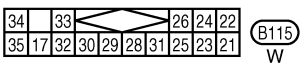












REFER TO THE FOLLOWING.

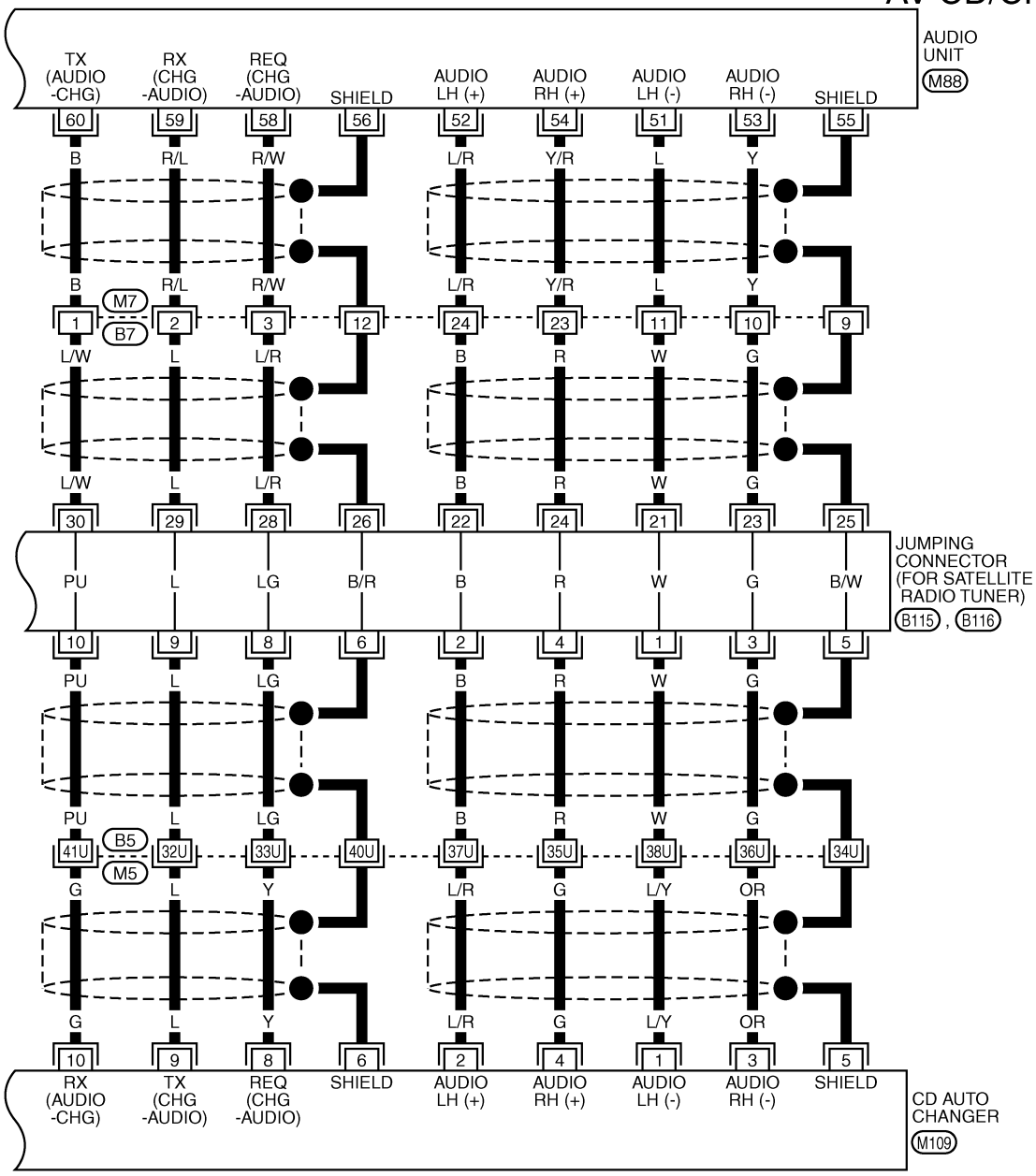
E205 -SUPER MULTIPLE JUNCTION (SMJ)

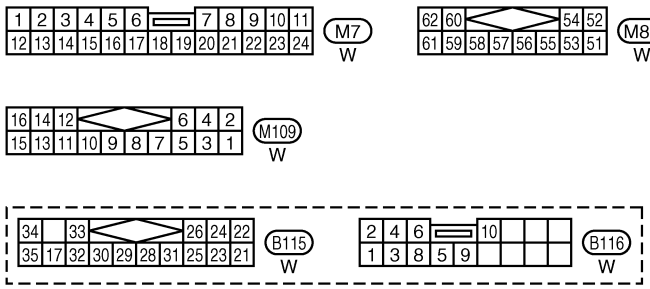
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

E3 -FUSE, FUSIBLE LINK AND RELAY BLOCK (J/B)

TKWM3974E

AV-CD/CHG-04



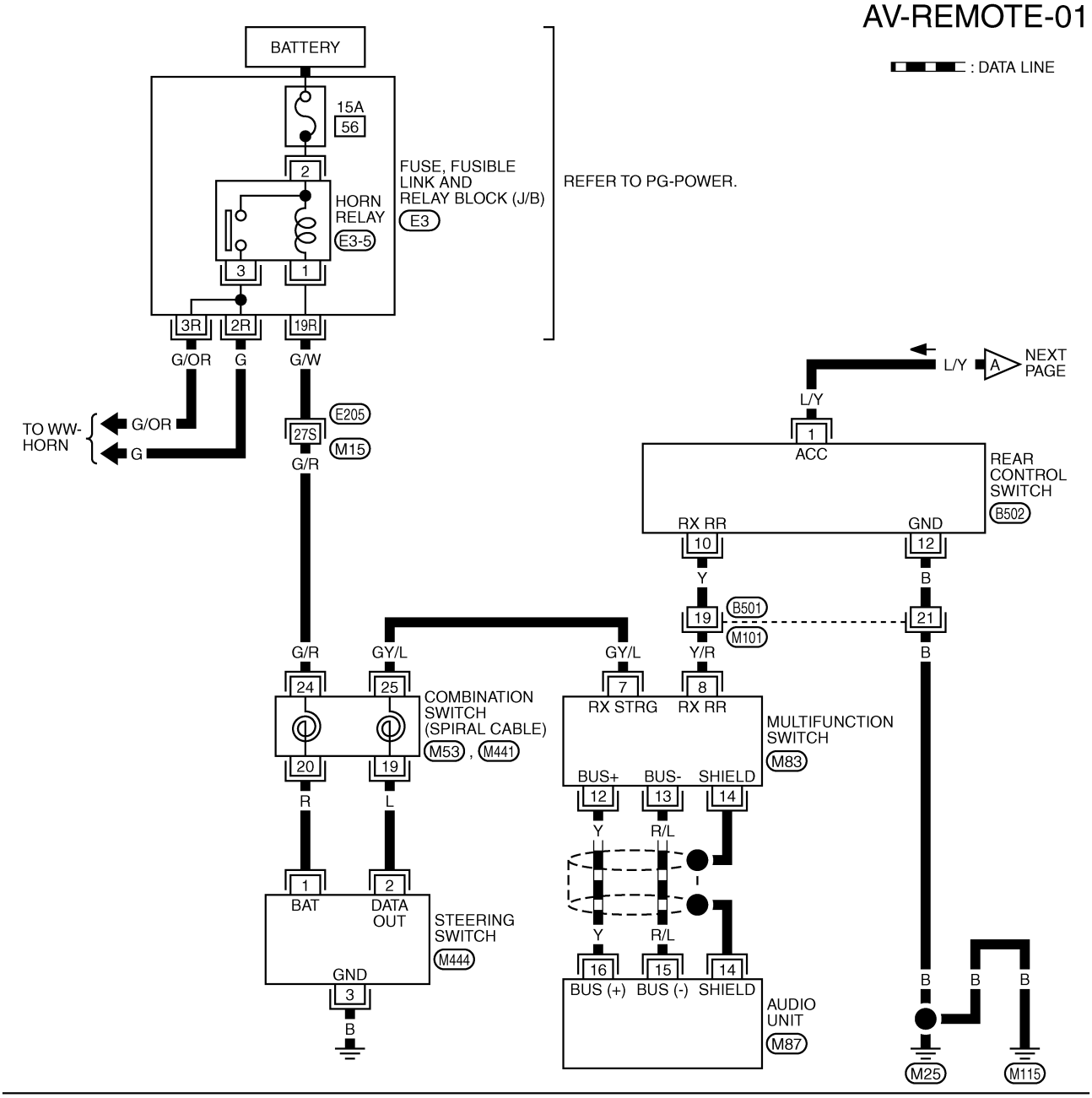


REFER TO THE FOLLOWING.
M5 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM3797E

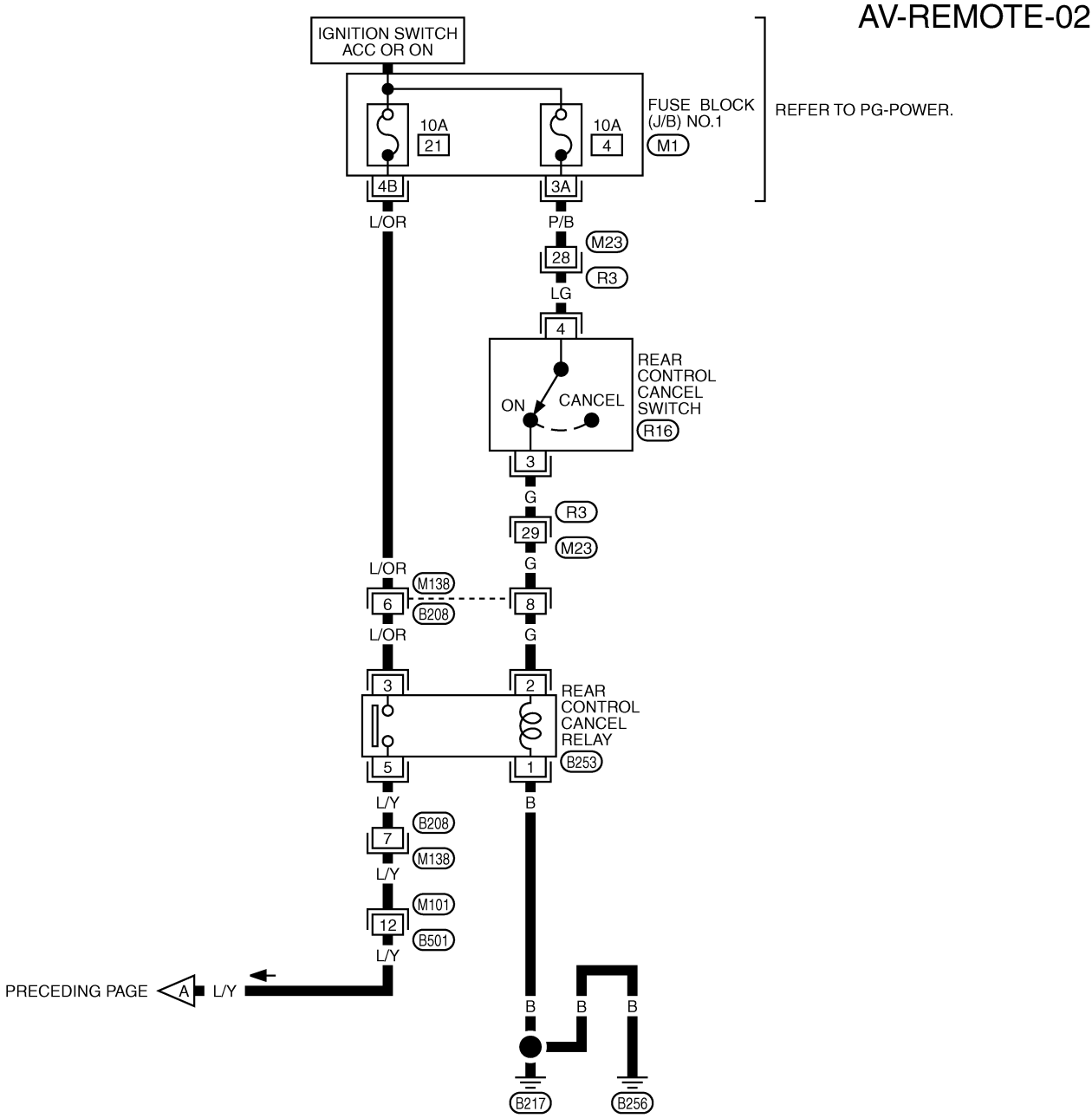
Wiring Diagram — REMOTE —

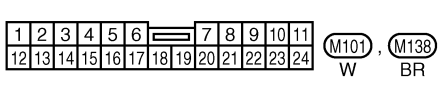
NKS001HR

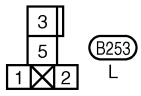


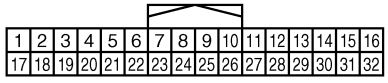
TKWM3793E

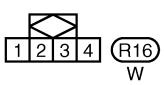
AV-REMOTE-02









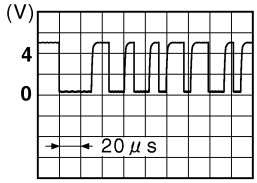
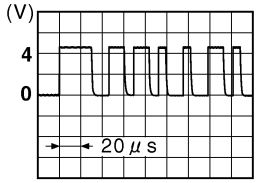
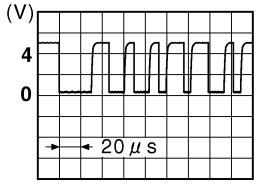
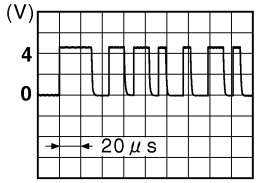
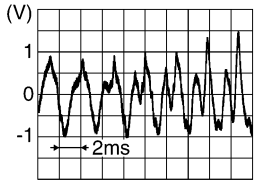
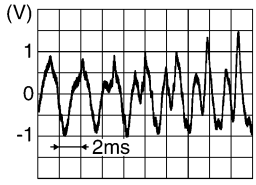


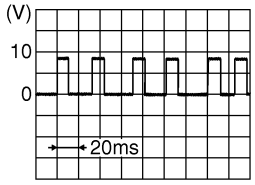
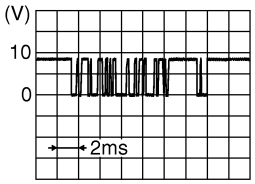
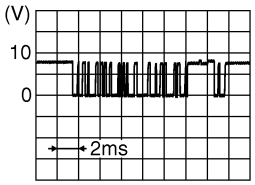
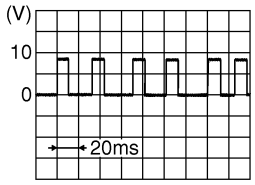
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

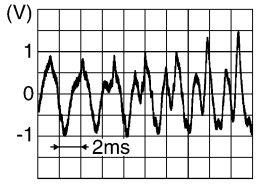
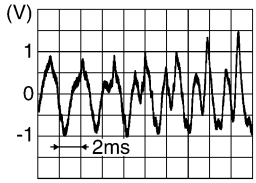
TKWM3794E

Terminals and Reference Value for Audio Unit

NKS001HT

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
11 (PU)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
12 (LG)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
13	—	Shield	—	—	—	—
14	—	Shield	—	—	—	—
15 (R/L)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
16 (Y)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
52 (L/R)	51 (L)	Audio signal LH	Input	ON	Play back CD on CD auto changer, or receive satellite radio audio signal*1	 SKIB3609E
					Play back CD on CD auto changer*2	
54 (Y/R)	53 (Y)	Audio signal RH	Input	ON	Play back CD on CD auto changer, or receive satellite radio audio signal*1	 SKIB3609E
					Play back CD on CD auto changer*2	
55	—	Shield	—	—	—	—
56	—	Shield	—	—	—	—
57 (L/W)	Ground	Source change signal*1	Output	ON	CD auto changer mode	Approx. 10 V
					Other than the above	Approx. 0 V

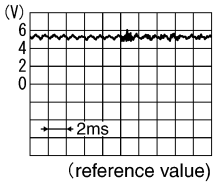
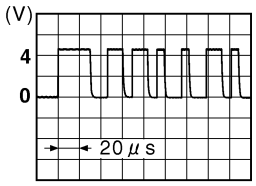
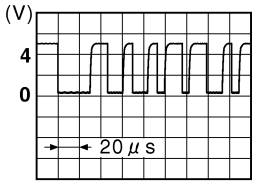
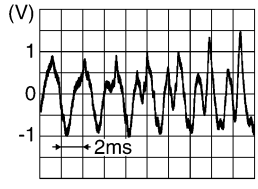
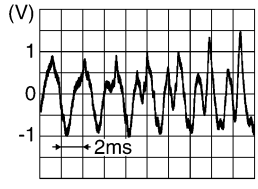
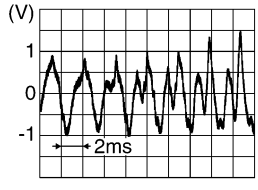
Terminal (Wire color) +	Terminal (Wire color) –	Item	Signal input/ output	Condition: Ignition switch	Condition: Operation	Reference value
58 (R/W)	Ground	Communication signal REQ (SAT-AUDIO)*1	Input	ON	When setting to CD auto changer mode, or satellite radio mode*1	 SKIB7338E
		Communication signal REQ (CHG-AUDIO)*2			When setting to CD auto changer mode*2	
59 (R/L)	Ground	Communication signal Rx (CHG-AUDIO)	Input	ON	When setting to CD auto changer mode, or satellite radio mode*1	 SKIB7337E
					When setting to CD auto changer mode*2	
60 (B)	Ground	Communication signal Tx (AUDIO-CHG)	Output	ON	When setting to CD auto changer mode, or satellite radio mode*1	 SKIB7336E
					When setting to CD auto changer mode*2	
61 (OR/L)	Ground	Control signal*1	Output	ON	CD auto changer mode	Approx. 10 V
					Other than the above	Approx. 0 V
62 (OR)	Ground	Communication signal REQ (CHG-AUDIO)*1	Input	ON	When setting to CD auto changer mode	 SKIB7338E
71 (R/L)	76 (SB)	Illumination signal	Input	ON	Illumination control switch is operated by lighting switch in ON position	Changes between approx. 0 and approx. 12 V
					Lighting switch OFF	Approx. 0 V
72 (L/OR)	Ground	ACC power supply	Input	ACC	—	Battery voltage
73 (PU/W)	Ground	Battery power supply	Input	OFF	—	Battery voltage
75 (P/L)	Ground	Antenna amp. ON signal	Output	ON	—	Approx. 12 V
76 (SB)	Ground	Illumination control signal	—	ON	Illumination control switch is operated by lighting switch in ON position	Changes between approx. 0 and approx. 12 V
78	—	Shield	—	—	—	—

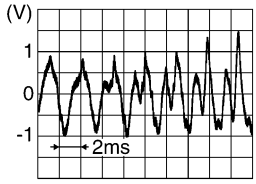
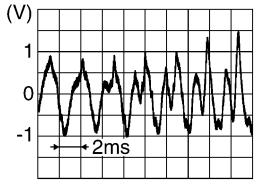
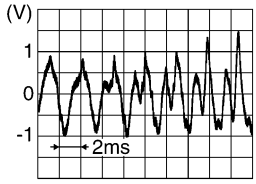
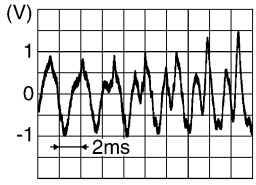
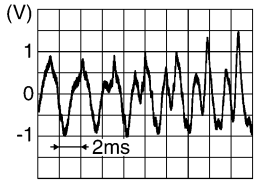
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
80 (BR)	79 (Y)	Audio signal LH	Output	ON	Receive audio signal	 SKIB3609E
82 (Y/R)	81 (Y/B)	Audio signal RH	Output	ON	Receive audio signal	 SKIB3609E

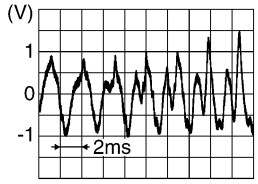
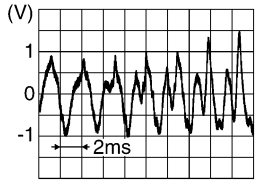
*1: With satellite radio
*2: Without satellite radio

Terminals and Reference Value for BOSE Speaker Amp.

NKS001HU

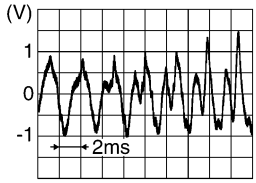
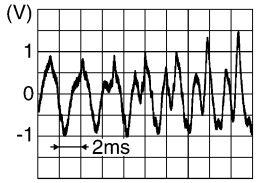
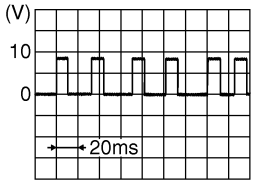
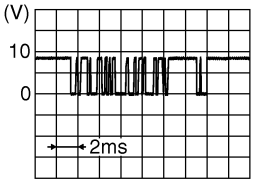
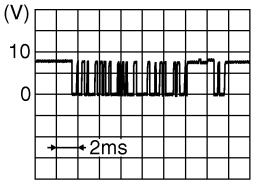
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
3 (W)	4 (R/L)	Microphone signal	Input	ON	When inputting some sounds (voice, etc.) toward the microphone	 (reference value) PKIA2104E
5 (LG)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
6 (PU)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
7	—	Shield	—	—	—	—
11 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
13 (P)	29 (L/Y)	Audio signal front door speaker RH	Output	ON	Receive audio signal	 SKIB3609E
15	—	Shield	—	—	—	—
16 (R/G)	17 (R/W)	Audio signal rear door speaker LH	Output	ON	Receive audio signal	 SKIB3609E
18 (G/R)	19 (G/W)	Audio signal instrument speaker LH	Output	ON	Receive audio signal	 SKIB3609E

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
21 (Y)	20 (L)	Audio signal instrument speaker center	Output	ON	Receive audio signal	 SKIB3609E
23 (G)	22 (R)	Audio signal instrument speaker RH	Output	ON	Receive audio signal	 SKIB3609E
25 (P)	24 (PU)	Audio signal rear door speaker RH	Output	ON	Receive audio signal	 SKIB3609E
27 (B)	Ground	Ground	—	ON	—	Approx. 0 V
28 (BR/W)	12 (BR)	Audio signal woofer	Output	ON	Receive audio signal	 SKIB3609E
30 (L/B)	14 (L/W)	Audio signal front door speaker LH	Output	ON	Receive audio signal	 SKIB3609E
31	—	Shield	—	—	—	—
32	—	Shield	—	—	—	—
34 (OR/L)	Ground	ACC power supply	Input	ACC	—	Battery voltage

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
40 (L/G)	39 (L/Y)	Audio signal LH	Input	ON	Receive audio signal	 SKIB3609E
41 (Y/R)	38 (Y/B)	Audio signal RH	Input	ON	Receive audio signal	 SKIB3609E

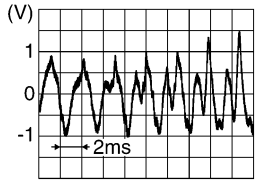
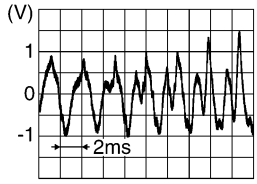
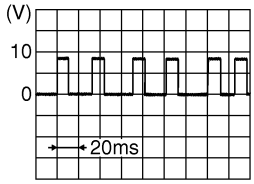
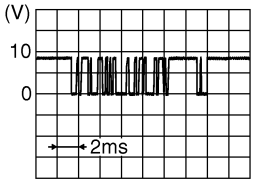
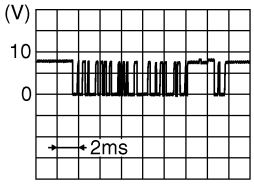
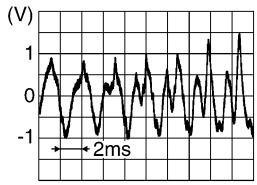
Terminals and Reference Value for CD Auto Changer

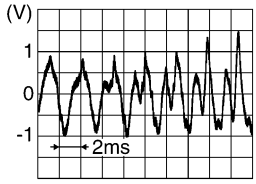
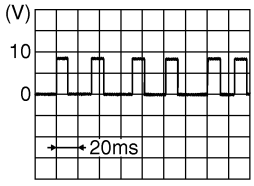
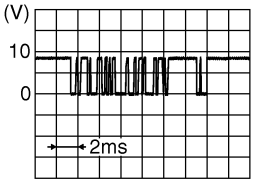
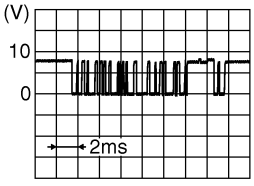
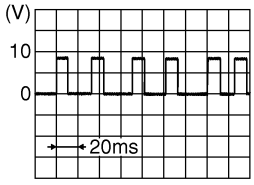
NKS001HV

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
2 (L/R)	1 (L/Y)	Audio signal LH	Output	ON	Play back CD on CD auto changer	 SKIB3609E
4 (G)	3 (OR)	Audio signal RH	Output	ON	Play back CD on CD auto changer	 SKIB3609E
5	—	Shield	—	—	—	—
6	—	Shield	—	—	—	—
8 (Y)	Ground	Communication signal REQ (CHG-AUDIO)	Output	ON	When setting to CD auto changer mode	 SKIB7338E
9 (L)	Ground	Communication signal Tx (CHG-AUDIO)	Output	ON	When setting to CD auto changer mode	 SKIB7337E
10 (G)	Ground	Communication signal Rx (AUDIO-CHG)	Input	ON	When setting to CD auto changer mode	 SKIB7336E
12 (PU/W)	Ground	Battery power supply	Input	OFF	—	Battery voltage
13 (SB)	Ground	Illumination control signal	—	ON	illumination control switch is operated by lighting switch in ON position	Changes between approx. 0 and approx. 12 V
14 (R/L)	13 (SB)	Illumination signal	Input	ON	illumination control switch is operated by lighting switch in ON position	Changes between approx. 0 and approx. 12 V
					Lighting switch OFF	Approx. 0 V
15 (B)	Ground	Ground	—	ON	—	Approx. 0 V
16 (L/OR)	Ground	ACC power supply	Input	ACC	—	Battery voltage

Terminals and Reference Value for Satellite Radio Tuner

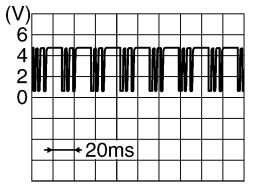
NKS002IO

Terminal (Wire color) +	Terminal (Wire color) –	Item	Signal input/ output	Condition: Ignition switch	Condition: Operation	Reference value
2 (B)	1 (W)	Audio signal LH	Input	ON	Play back CD on CD auto changer	 SKIB3609E
4 (R)	3 (G)	Audio signal RH	Input	ON	Play back CD on CD auto changer	 SKIB3609E
5	—	Shield	—	—	—	—
6	—	Shield	—	—	—	—
8 (LG)	Ground	Communication signal REQ (CHG-AUDIO)	Input	ON	When setting to CD auto changer mode	 SKIB7338E
9 (L)	Ground	Communication signal Rx (CHG-AUDIO)	Input	ON	When setting to CD auto changer mode	 SKIB7337E
10 (PU)	Ground	Communication signal Tx (AUDIO-CHG)	Output	ON	When setting to CD auto changer mode	 SKIB7336E
17 (L/W)	Ground	Source change signal	Input	ON	CD auto changer mode	Approx. 10 V
					Other than the above	Approx. 0 V
22 (B)	21 (W)	Audio signal LH	Output	ON	Play back CD on CD auto changer, or receive satellite radio audio signal	 SKIB3609E

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
24 (R)	23 (G)	Audio signal RH	Output	ON	Play back CD on CD auto changer, or receive satellite radio audio signal	 SKIB3609E
25	—	Shield	—	—	—	—
26	—	Shield	—	—	—	—
28 (L/R)	Ground	Communication signal REQ (SAT-AUDIO)	Output	ON	When setting to CD auto changer mode, or satellite radio mode	 SKIB7338E
29 (L)	Ground	Communication signal Tx (SAT-AUDIO)	Output	ON	When setting to CD auto changer mode, or satellite radio mode	 SKIB7337E
30 (L/W)	Ground	Communication signal Rx (AUDIO-SAT)	Input	ON	When setting to CD auto changer mode, or satellite radio mode	 SKIB7336E
31 (P)	Ground	Control signal	Input	ON	CD auto changer mode	Approx. 10 V
					Other than the above	Approx. 0 V
32 (OR)	Ground	Communication signal REQ (CHG-AUDIO)	Output	ON	When setting to CD auto changer mode	 SKIB7338E
33 (SB)	Ground	Battery power supply	Input	OFF	—	Battery voltage
34 (L/OR)	Ground	ACC power supply	Input	ACC	—	Battery voltage
40	—	Satellite radio antenna	—	—	—	—

Terminals and Reference Value for Rear Control Switch

NKS001HW

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (L/Y)	Ground	ACC power supply	Input	ACC	Rear control cancel switch ON	Battery voltage
10 (Y)	Ground	Communication signal Rx	Output	ON	Operate rear control switch	 SKIB0380E
12 (B)	Ground	Ground	—	ON	—	Approx. 0 V

Terminals and Reference Value for Rear Control Cancel Switch

NKS001HX

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
3 (G)	Ground	Rear control cancel switch signal	Output	ON	Rear control cancel switch ON	Battery voltage
					Rear control cancel switch CANCEL	Approx. 0 V
4 (LG)	Ground	ACC power supply	Input	ACC	—	Battery voltage

Terminals and Reference Value for Multifunction Switch

NKS002KE

Refer to DI-125, "Terminals and Reference Value for Multifunction Switch" (Without navigation system), or DI-164, "Terminals and Reference Value for Multifunction Switch" (With navigation system).

On Board Self-Diagnosis Function

NKS001HY

DESCRIPTION

Refer to DI-126, "DESCRIPTION" (Without navigation system), or AV-101, "DESCRIPTION" (With navigation system).

DIAGNOSIS ITEM

Mode		Description
Self Diagnosis		Refer to DI-126, "DIAGNOSIS ITEM" (Without navigation system), or AV-101, "DIAGNOSIS ITEM" (With navigation system).
Confirmation/ Adjustment	Display Diagnosis	
	Vehicle Signals	
	History of Errors	
	Rearview	
	Navigation	Refer to AV-101, "DIAGNOSIS ITEM" .
	Auto Climate Control	Refer to DI-126, "DIAGNOSIS ITEM" (Without navigation system), or AV-101, "DIAGNOSIS ITEM" (With navigation system).
	Speaker Test	The connection of a speaker can be confirmed by test tone.
	Voice Mic. Test	Refer to DI-211, "DIAGNOSIS ITEM" .

Self Diagnosis Mode

NKS001HZ

OPERATION PROCEDURE

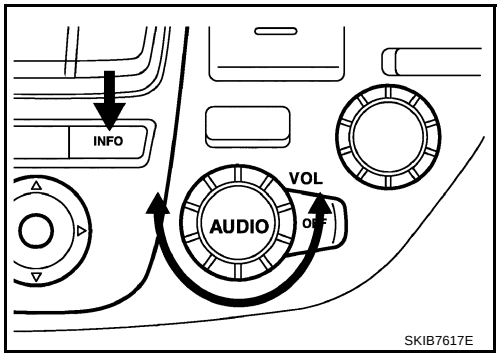
Refer to DI-126, "SELF-DIAGNOSIS MODE" (Without navigation system), or AV-102, "Self-Diagnosis Mode" (With navigation system).

Confirmation/Adjustment Mode

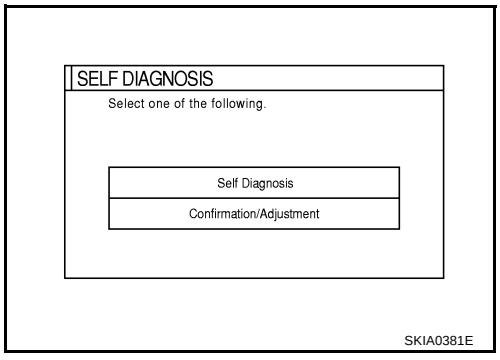
NKS001I0

OPERATION PROCEDURE

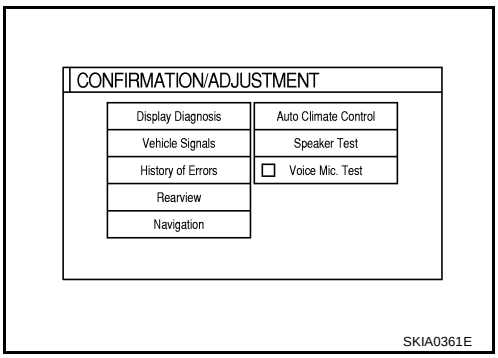
1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “INFO” button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When self-diagnosis mode is aggravated, a short beep will be heard.)
   - Shifting from current screen to previous screen is performed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



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



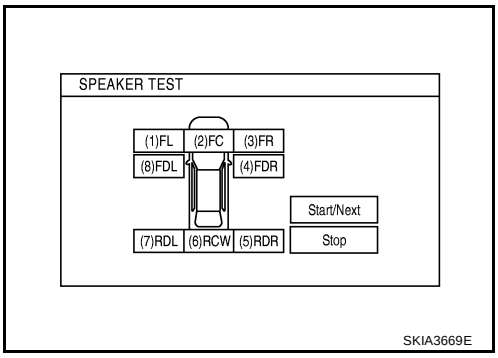
5. Each diagnosis is shown by selecting each screen switch on CONFIRMATION/ADJUSTMENT screen.



6. When selecting "Speaker Test", speaker diagnosis screen is displayed. When pressing "Start/Next", test tone emits from the speaker. At that time, when pressing "Start/Next", test tone emits from next speaker. Then, when pressing the "Stop", test tone stops.

NOTE:
The frequency of test tone emitted from each speaker is as follows.

Instrument speaker	**: 1 kHz**
Door speaker	**: 1 kHz**
Woofer	**: 100 Hz**



Trouble Diagnosis

NKS001I1

- 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.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and then determine the cause.
- Make sure that other operation except audio system can be performed with multifunction switch. If these operations are inoperative with multifunction switch, refer to DI-148, "Multifunction Switch Does Not Operate" (Without navigation system), or DI-169, "Multifunction Switch Does Not Operate" (With navigation system) to repair malfunctioning parts.
- Refer to "SERVICE BULLETIN ITB04-055" for the diagnosis of satellite radio.

Symptom	Possible malfunction location
Audio system does not work properly.	● Audio unit power supply circuit Refer to AV-44, "Power Supply Circuit Inspection" ● BOSE speaker amp. power supply and ground circuit Refer to AV-44, "Power Supply Circuit Inspection" ● Communication signal circuit between audio unit and BOSE speaker amp. Refer to AV-40, "Self Diagnosis Mode" ● Audio unit ● BOSE speaker amp.
CD auto changer does not work properly.	● CD auto changer power supply and ground circuit Refer to AV-44, "Power Supply Circuit Inspection" ● Communication signal circuit between audio unit and CD auto changer Refer to AV-40, "Self Diagnosis Mode" ● CD auto changer ● Audio unit
No sound can be heard from all speakers.	**With voice activated control system and hands-free phone system** ● TEL ON signal circuit between TEL adapter unit and voice activated control module ● TEL ON signal circuit between voice activated control module and audio unit ● Audio unit ● BOSE speaker amp. ● Voice activated control module ● TEL adapter unit
	With voice activated control system ● Mute signal circuit between voice activated control module and audio unit ● Audio unit ● BOSE speaker amp. ● Voice activated control module
	With hands-free phone system ● TEL ON signal circuit between TEL adapter unit and audio unit ● Audio unit ● BOSE speaker amp. ● TEL adapter unit
	Without voice activated control system and hands-free phone system ● Audio unit ● BOSE speaker amp.

Symptom	Possible malfunction location
No sound can be heard from one or several speakers.	● Audio signal circuit between audio unit and BOSE speaker amp. ● Audio signal circuit between BOSE speaker amp. and speaker ● Speaker ● Woofer ● Audio unit ● BOSE speaker amp.
Only the sound from CD auto changer cannot play from one or several speakers.	● Audio signal circuit between CD auto changer and audio unit ● CD auto changer ● Audio unit
No sound can be heard from radio or noise is caught.	● Antenna amp. ON signal circuit ● Antenna feeder ● Antenna ● Antenna amp. ● Audio unit

NOTE:
Noise resulting from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources. It is not a malfunction.

- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from a time difference between the broadcast waves directly from the station arriving at the antenna and the waves reflected by mountains or buildings.

Power Supply Circuit Inspection

NKS001I3

1. CHECK FUSE

Make sure that the following fuses and fusible link of the audio unit, BOSE speaker amp. and CD auto changer are not blown.

Unit	Signal name	Fuse and fusible link No.
Audio unit	Battery power supply	52
	ACC power supply	21
BOSE speaker amp.	Battery power supply	J
	ACC power supply	21
CD auto changer	Battery power supply	52
	ACC power supply	21

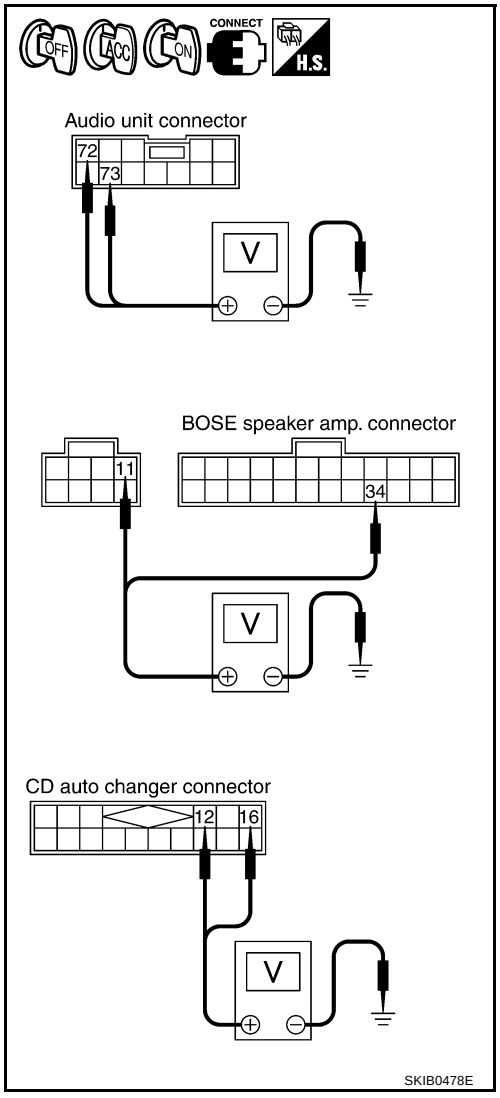
OK or NG

OK >> GO TO 2.
NG >> If fuse or fusible link is blown, be sure to eliminate cause of malfunction before installing new fuse or fusible link. Refer to PG-2, "POWER SUPPLY ROUTING" .

2. CHECK POWER SUPPLY CIRCUIT

Check voltage between the following harness connector terminals and ground.

Unit	Terminals (+) Connector	Terminals (+) Terminal	Terminals (–)	OFF	ACC	ON
Audio unit	M86	73	Ground	Battery voltage	Battery voltage	Battery voltage
		72		0 V	Battery voltage	Battery voltage
BOSE speaker amp.	B233	11		Battery voltage	Battery voltage	Battery voltage
	B234	34		0 V	Battery voltage	Battery voltage
CD auto changer	M109	12		Battery voltage	Battery voltage	Battery voltage
		16		0 V	Battery voltage	Battery voltage



OK or NG

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

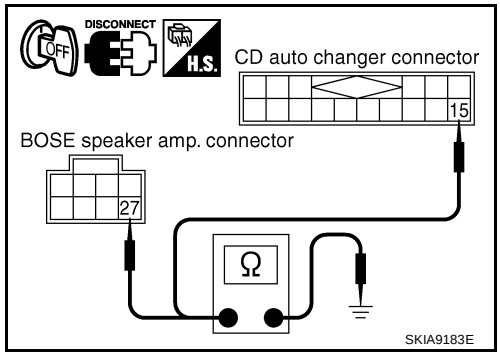
3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE speaker amp. and CD auto changer connectors.
3. Check continuity between BOSE speaker amp. harness connector B233 terminal 27 and ground.

27 – Ground : Continuity should exist.

4. Check continuity between CD auto changer harness connector M109 terminal 15 and ground.

15 – Ground : Continuity should exist.



OK or NG

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

Steering Switch Does Not Operate

NKS001I4

1. SELF-DIAGNOSIS MODE OF MULTIFUNCTION SWITCH

1. Perform the self-diagnosis mode in the self-diagnosis function. Refer to DI-136, "Multifunction Switch Self-Diagnosis Function" (Without navigation system), or DI-165, "Multifunction Switch Self-Diagnosis Function" (With navigation system).
2. Press steering switch.

Beep sound should operate.

OK or NG

OK >> GO TO 8.
NG >> GO TO 2.

2. CHECK HORN OPERATION

Check horn operation.

Horn should operate.

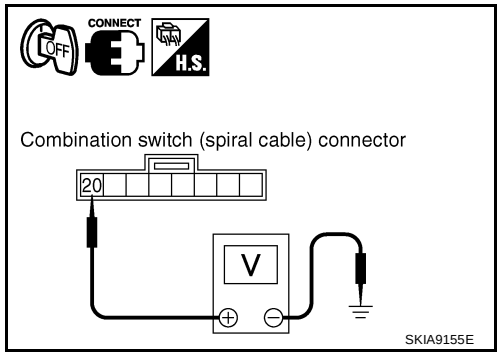
OK or NG

OK >> GO TO 5.
NG >> GO TO 3.

3. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Check voltage between combination switch (spiral cable) harness connector M441 terminal 20 and ground.

20 – Ground : Battery voltage



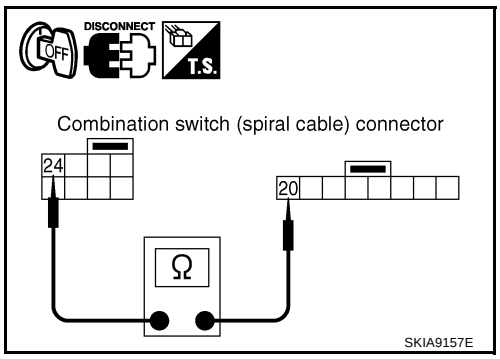
OK or NG

OK >> GO TO 5.
NG >> GO TO 4.

4. CHECK SPIRAL CABLE

1. Disconnect combination switch (spiral cable) connector.
2. Check continuity between combination switch (spiral cable) connector M53 terminal 24 and connector M441 terminal 20.

24 – 20 : Continuity should exist.



OK or NG

OK >> Repair power supply circuit of horn system.
NG >> Replace spiral cable.

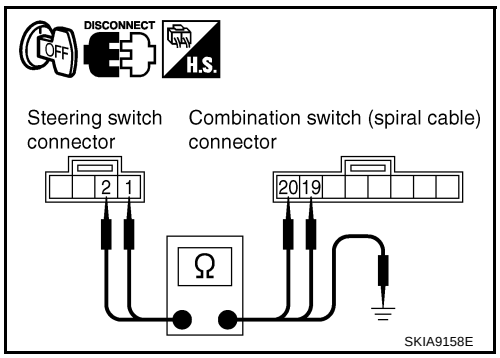
5. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect steering switch and combination switch (spiral cable) connectors.
3. Check continuity between steering switch harness connector M444 terminals 1, 2 and combination switch (spiral cable) harness connector M441 terminals 20, 19.

1 – 20 : Continuity should exist.
2 – 19 : Continuity should exist.

4. Check continuity between steering switch harness connector M444 terminals 1, 2 and ground.

1, 2 – Ground : Continuity should not exist.

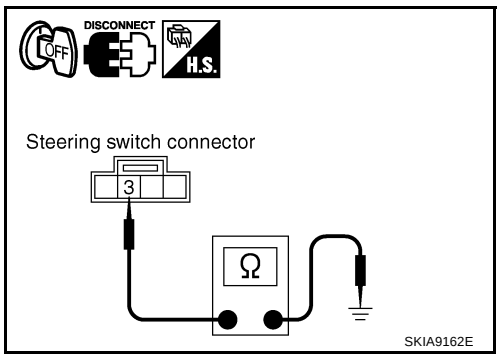


5. Check continuity between steering switch harness connector M444 terminal 3 and ground.

3 – Ground : Continuity should exist.

OK or NG

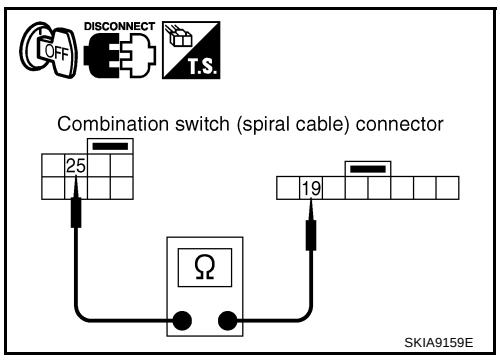
OK >> GO TO 6.
NG >> Repair harness or connector.



6. CHECK SPIRAL CABLE

1. Disconnect combination switch (spiral cable) connector.
2. Check continuity between combination switch (spiral cable) connector M53 terminal 25 and connector M441 terminal 19.

25 – 19 : Continuity should exist.



OK or NG

OK >> GO TO 7.
NG >> Replace spiral cable.

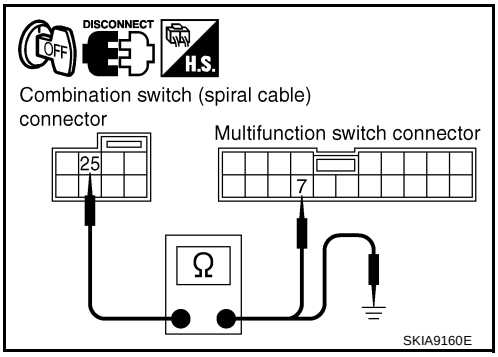
7. CHECK HARNESS

1. Disconnect multifunction switch connector.
2. Check continuity between combination switch (spiral cable) harness connector M53 terminal 25 and multifunction switch harness connector M83 terminal 7.

25 – 7 : Continuity should exist.

3. Check continuity between combination switch (spiral cable) harness connector M53 terminal 25 and ground.

25 – Ground : Continuity should not exist.



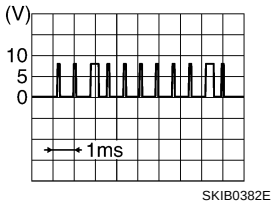
OK or NG

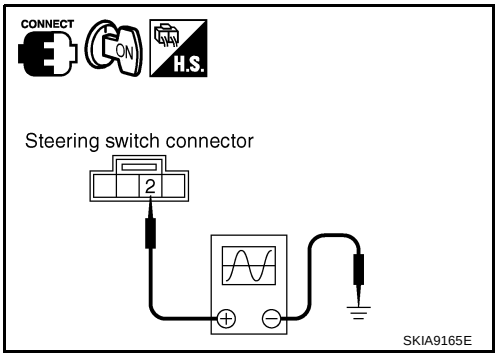
OK >> GO TO 8.
NG >> Repair harness or connector.

8. CHECK COMMUNICATION SIGNAL

1. Connect steering switch, combination switch (spiral cable) and multifunction switch connectors.
2. Turn ignition switch ON.
3. Check voltage waveform between steering switch harness connector M444 terminal 2 and ground with CONSULT-II or oscilloscope, when operating the steering switch.

2 – Ground:





OK or NG

OK >> Replace multifunction switch.
NG >> Replace steering switch.

Rear Control Switch Does Not Operate

NKS001I5

1. CONFIRM STATUS OF REAR CONTROL CANCEL SWITCH

Is rear control cancel switch in the status of cancel?

YES or NO

YES >> After turning on the switch reconfirm the status.
NO >> GO TO 2.

2. SELF-DIAGNOSIS MODE OF MULTIFUNCTION SWITCH

1. Perform the self-diagnosis mode in the self-diagnosis function. Refer to DI-136, "Multifunction Switch Self-Diagnosis Function" (Without navigation system), or DI-165, "Multifunction Switch Self-Diagnosis Function" (With navigation system).
2. Press rear control switch.

Beep sound should operate.

OK or NG

OK >> GO TO 12.
NG >> GO TO 3.

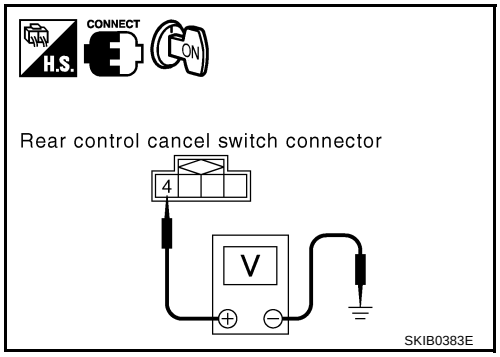
3. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between rear control cancel switch harness connector R16 terminal 4 and ground.

4 – Ground : Battery voltage

OK or NG

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



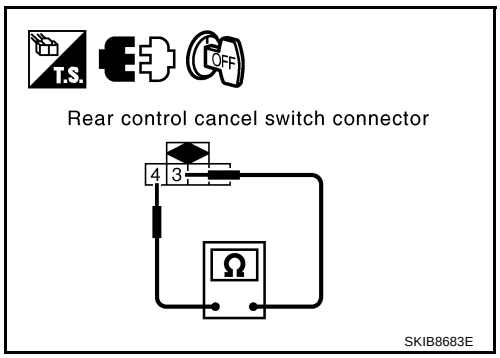
4. CHECK REAR CONTROL CANCEL SWITCH

1. Turn ignition switch OFF.
2. Disconnect rear control cancel switch connector.
3. Check continuity between rear control cancel switch terminals 3 and 4.

When press “ON” : Continuity should exist.
When press “CANCEL” : Continuity should not exist.

OK or NG

OK >> GO TO 5.
NG >> Replace rear control cancel switch.



5. CHECK HARNESS

1. Disconnect rear control cancel relay connector.
2. Check continuity between rear control cancel switch harness connector R16 terminal 3 and rear control cancel relay harness connector B253 terminal 2.

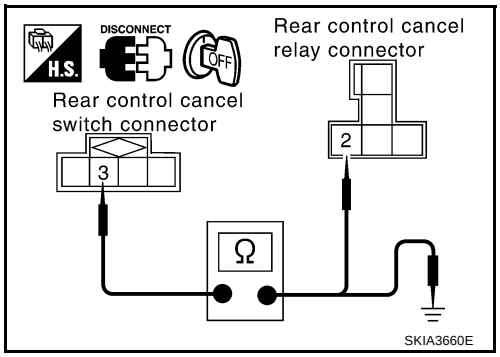
3 – 2 : Continuity should exist.

3. Check continuity between rear control cancel switch harness connector R16 terminal 3 and ground.

3 – Ground : Continuity should not exist.

OK or NG

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



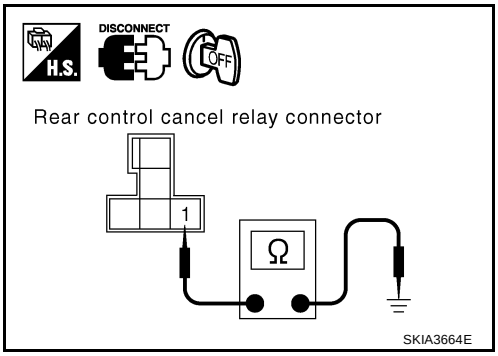
6. CHECK REAR CONTROL CANCEL RELAY GROUND CIRCUIT

Check continuity rear control cancel relay harness connector B253 terminal 1 and ground.

1 – Ground : Continuity should exist.

OK or NG

OK >> GO TO 7.
NG >> Repair harness or connector.



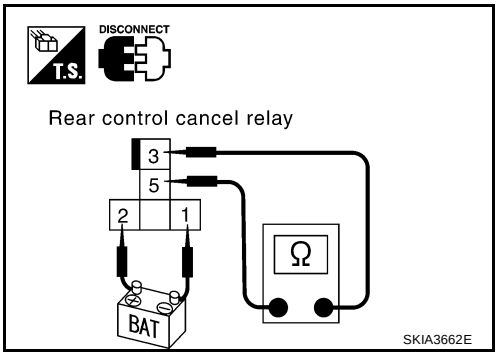
7. CHECK REAR CONTROL CANCEL RELAY

1. Supply 12 V current between rear control cancel relay terminals 1 and 2.
2. Check continuity between rear control cancel relay terminals 3 and 5.

3 – 5 : Continuity should exist.

OK or NG

OK >> GO TO 8.
NG >> Replace rear control cancel relay.



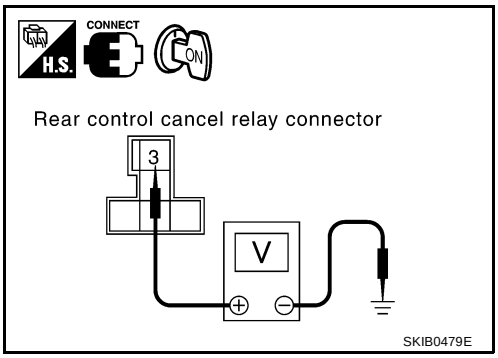
8. CHECK POWER SUPPLY CIRCUIT

1. Connect rear control cancel switch and rear control cancel relay connectors.
2. Turn ignition switch ON.
3. Check voltage between rear control cancel relay harness connector B253 terminal 3 and ground.

3 – Ground : Battery voltage

OK or NG

OK >> GO TO 9.
NG >> Repair harness or connector.



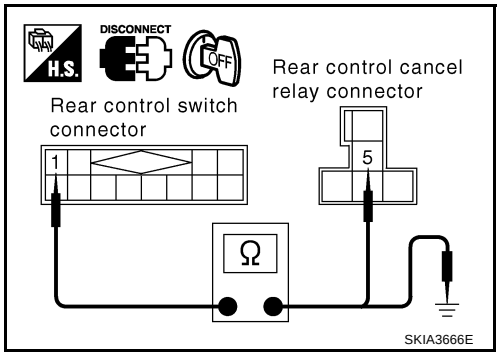
9. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect rear control switch and rear control cancel relay connectors.
3. Check continuity between rear control switch harness connector B502 terminal 1 and rear control cancel relay harness connector B253 terminal 5.

1 – 5 : Continuity should exist.

4. Check continuity between rear control switch harness connector B502 terminal 1 and ground.

1 – Ground : Continuity should not exist.



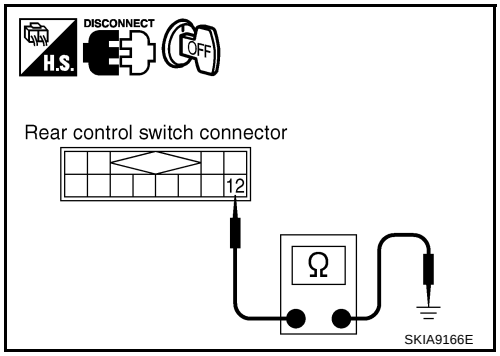
OK or NG

OK >> GO TO 10.
NG >> Repair harness or connector.

10. CHECK HARNESS

Check continuity between rear control switch harness connector B502 terminal 12 and ground.

12 – Ground : Continuity should exist.



OK or NG

OK >> GO TO 11.
NG >> Repair harness or connector.

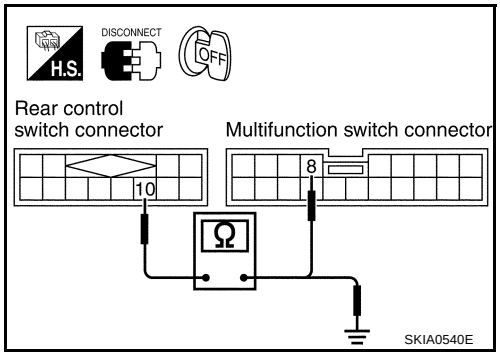
11. CHECK HARNESS

1. Disconnect multifunction switch connector.
2. Check continuity between rear control switch harness connector B502 terminal 10 and multifunction switch harness connector M83 terminal 8.

10 – 8 : Continuity should exist.

3. Check continuity between rear control switch harness connector B502 terminal 10 and ground.

10 – Ground : Continuity should not exist.



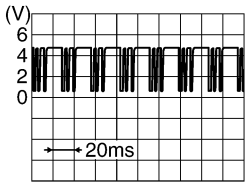
OK or NG

OK >> GO TO 12.
NG >> Repair harness or connector.

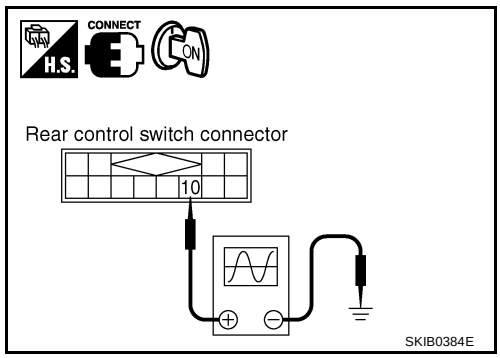
12. CHECK COMMUNICATION SIGNAL

1. Connect multifunction switch, rear control switch, rear control cancel relay and rear control cancel switch connectors.
2. Turn ignition switch ON.
3. Check voltage waveform between rear control switch harness connector B502 terminal 10 and ground with CONSULT-II or oscilloscope, when operating the rear control switch.

10 – Ground:



SKIB0380E



SKIB0384E

OK or NG

OK >> Replace multifunction switch.
NG >> Replace rear control switch.

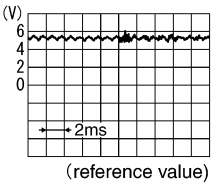
AudioPilot® Does Not Work

NKS001I6

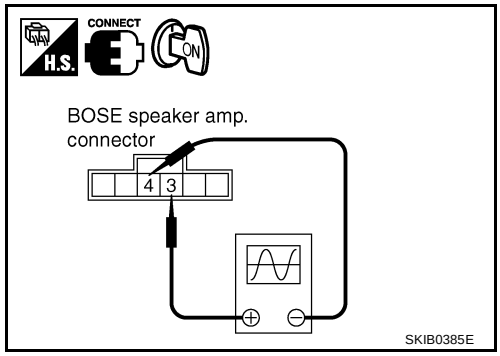
1. CHECK MICROPHONE SIGNAL

1. Turn ignition switch ON.
2. Check voltage waveform between BOSE speaker amp. harness connector B231 terminals 3 and 4 with CONSULT-II or oscilloscope, when inputting some sounds (voice, etc.) toward the microphone.

3 – 4:



PKIA2104E



SKIB0385E

Does the voltage waveform change with sounds?

YES >> Replace BOSE speaker amp.
NO >> GO TO 2.

2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect BOSE speaker amp. and microphone connectors.
3. Check continuity between BOSE speaker amp. harness connector B231 terminal 3 and microphone harness connector M73 terminal 1.

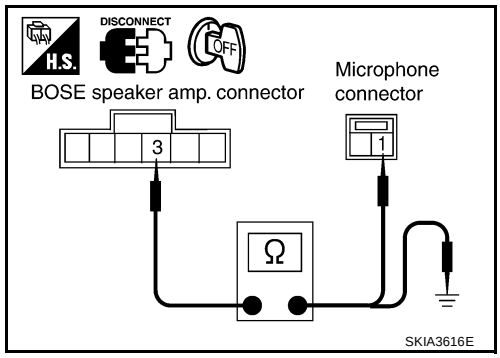
3 – 1 : Continuity should exist.

4. Check continuity between BOSE speaker amp. harness connector B231 terminal 3 and ground.

3 – Ground : Continuity should not exist.

OK or NG

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



SKIA3616E

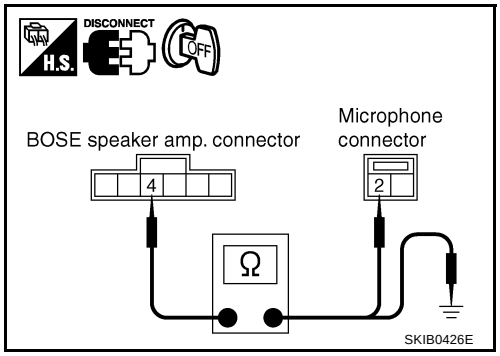
3. CHECK HARNESS

1. Check continuity between BOSE speaker amp. harness connector B231 terminal 4 and microphone harness connector M73 terminal 2.

4 – 2 : Continuity should exist.

2. Check continuity between BOSE speaker amp. harness connector B231 terminal 4 and ground.

4 – Ground : Continuity should not exist.



OK or NG

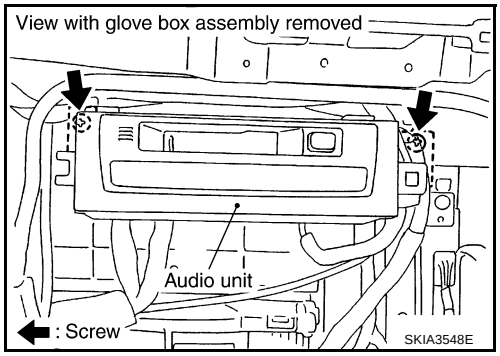
OK >> Replace microphone.
NG >> Repair harness or connector.

Removal and Installation of Audio Unit

NKS001I7

REMOVAL

1. Remove glove box cover. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove screws (2), and remove audio unit.



INSTALLATION

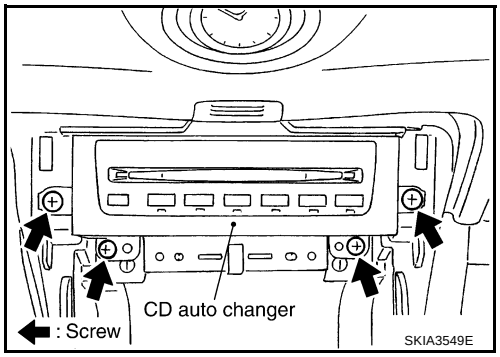
Installation is the reverse order of removal.

Removal and Installation of CD Auto Changer

NKS001I8

REMOVAL

1. Remove cluster lid center lower. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove console box assembly. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
3. Remove screws (4), and remove CD auto changer.



INSTALLATION

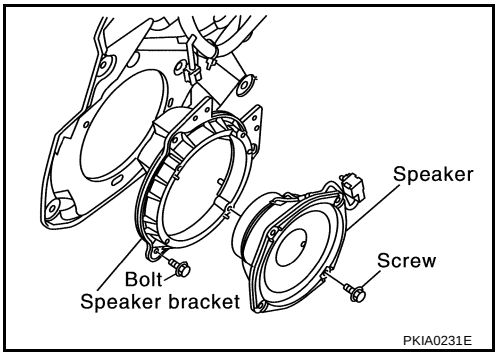
Installation is the reverse order of removal.

Removal and Installation of Door Speaker

NKS001I9

REMOVAL

1. Remove door finisher. Refer to EI-35, "DOOR FINISHER" .
2. Remove screws (3), and remove speaker.



INSTALLATION

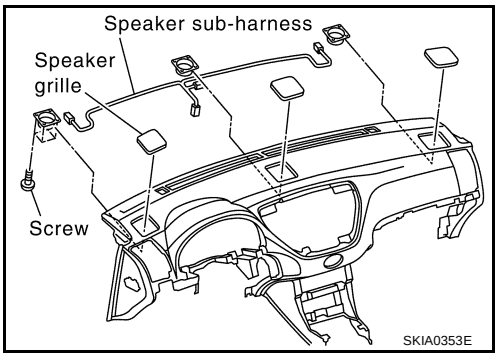
Installation is the reverse order of removal.

Removal and Installation of Instrument Panel Speaker

NKS001IA

REMOVAL

1. Remove instrument panel. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove screws (4), and remove instrument panel speaker.



INSTALLATION

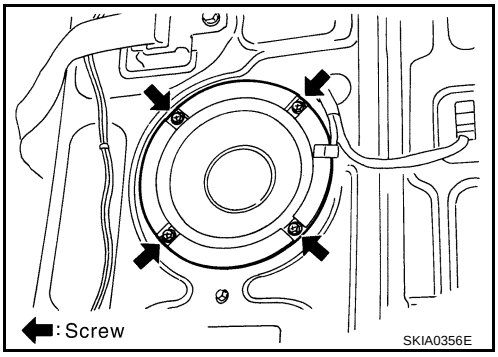
Installation is the reverse order of removal.

Removal and Installation of Woofer

NKS001IB

REMOVAL

1. Remove rear parcel shelf finisher. Refer to EI-48, "REAR PARCEL SHELF FINISHER" .
2. Remove screws (4), and remove woofer.



INSTALLATION

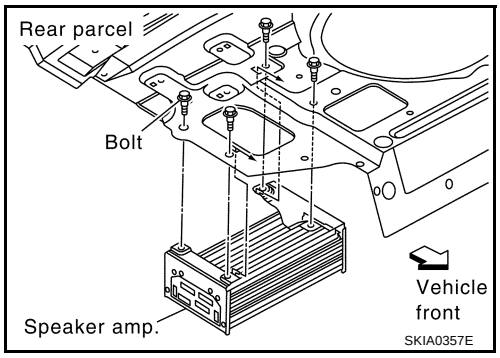
Installation is the reverse order of removal.

Removal and Installation of BOSE Speaker Amp.

NKS001IC

REMOVAL

1. Remove trunk front finisher. Refer to EI-60, "TRUNK ROOM TRIM & TRUNK LID FINISHER" .
2. Remove rear parcel shelf finisher. Refer to EI-48, "REAR PARCEL SHELF FINISHER" .
3. Remove screws (4), and remove BOSE speaker amp. from the trunk room side.



INSTALLATION

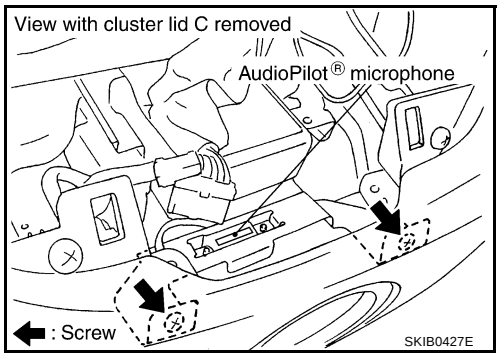
Installation is the reverse order of removal.

Removal and Installation of AudioPilot® Microphone

NKS001ID

REMOVAL

1. Remove cluster lid C. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove clock. Refer to DI-227, "Removal and Installation" .
3. Disconnect AudioPilot® microphone connector.
4. Remove screws (2), and remove AudioPilot® microphone.



INSTALLATION

Installation is the reverse order of removal.

Removal and Installation of Steering Wheel Switch

NKS001IE

Refer to SRS-40, "DRIVER AIR BAG MODULE" .

Removal and Installation of Multifunction Switch

NKS002KF

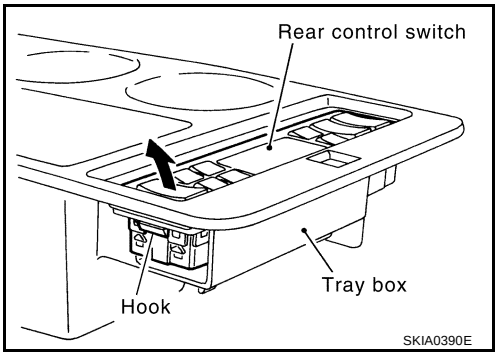
Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .

Removal and Installation of Rear Control Switch

NKS001IF

REMOVAL

1. Remove tray box from the center armrest. Refer to SE-191, "REAR SEAT" .
2. Remove rear control switch from tray box.



INSTALLATION

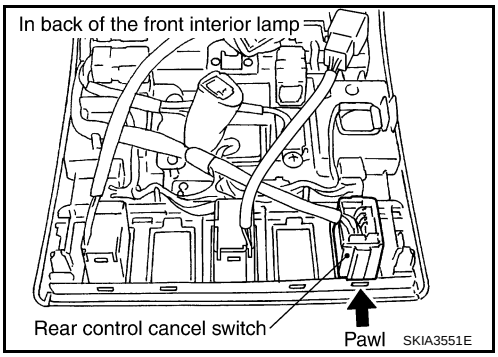
Installation is the reverse order of removal.

Removal and Installation of Rear Control Cancel Switch

NKS001IG

REMOVAL

1. Remove front interior lamp. Refer to LT-143, "FRONT INTERIOR LAMP" .
2. Remove rear control cancel switch from front interior lamp.



INSTALLATION

Installation is the reverse order of removal.

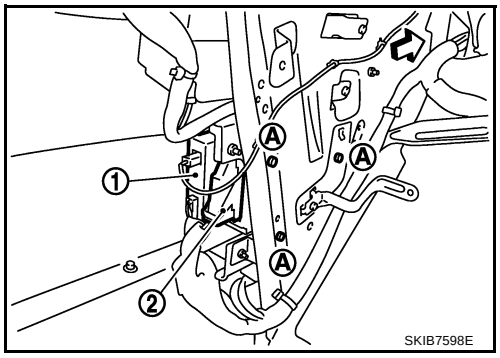
Removal and Installation of Satellite Radio Tuner

NKS002JT

REMOVAL

⇦: Vehicle front

1. Remove trunk side finisher (left). Refer to EI-60, "TRUNK ROOM TRIM & TRUNK LID FINISHER" .
2. Remove screws (A), and remove satellite radio tuner (1) and active damper suspension control unit (2) from vehicle.
3. Remove satellite radio tuner from bracket.



INSTALLATION

Installation is the reverse order of removal.

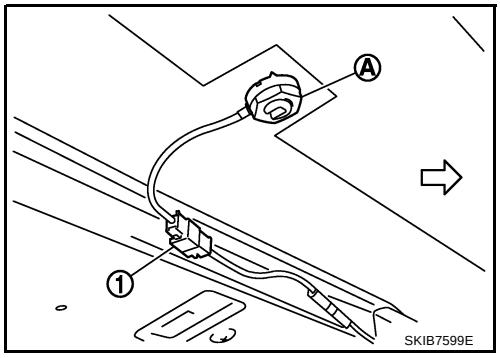
Removal and Installation of Satellite Radio Antenna

NKS002JU

REMOVAL

⇦: Vehicle front

1. Remove head lining. Refer to EI-58, "HEADLINING" .
2. Remove nut (A), and then disconnect connector (1).
3. Remove satellite radio antenna.



INSTALLATION

Installation is the reverse order of removal.

Roof antenna mounting nut : 6.5 N·m (0.66 kg-m, 58 in-lb)

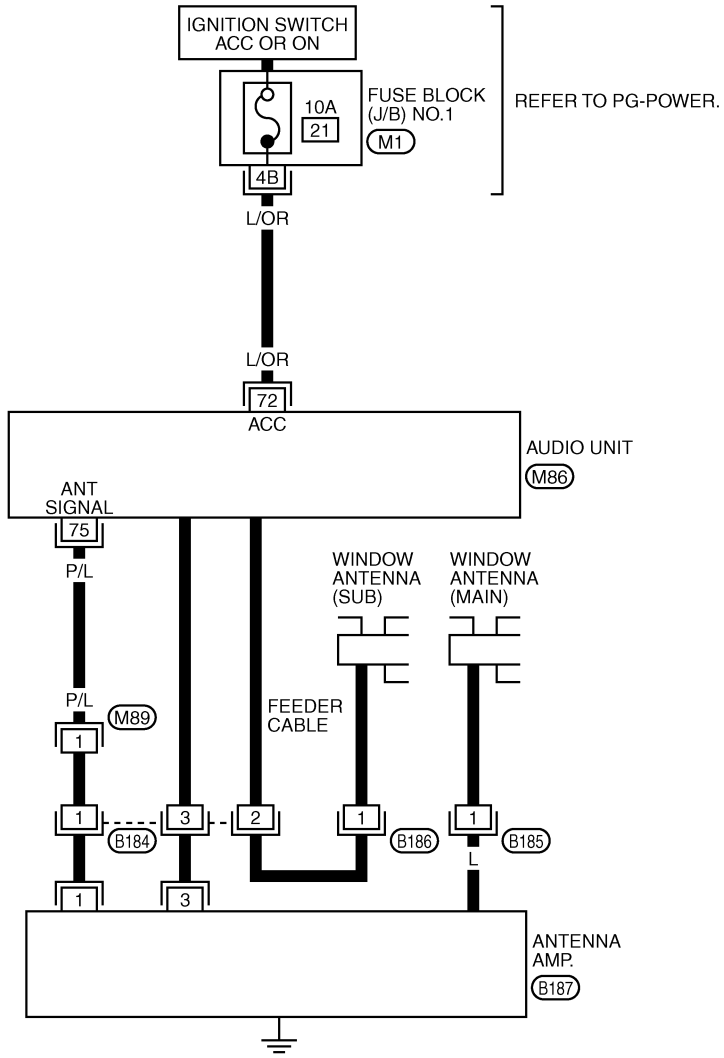
ANTENNA

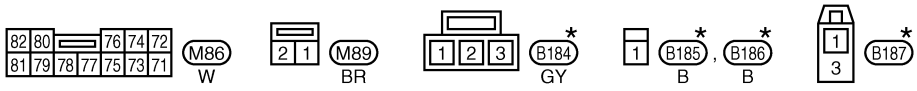
PFP:28200

Wiring Diagram — W/ANT —

NKS002H7

AV-W/ANT-01





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

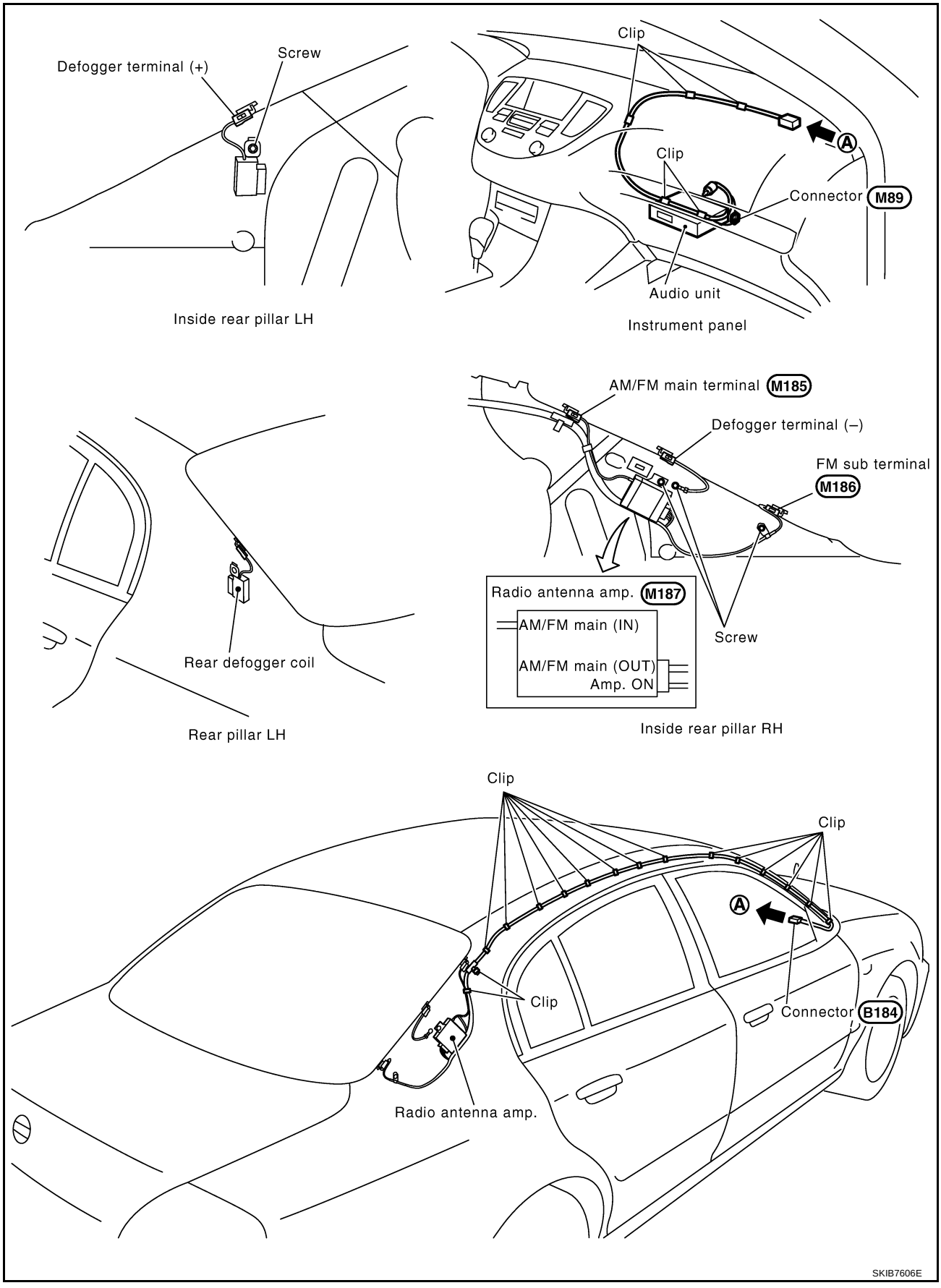
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TKWM1353E

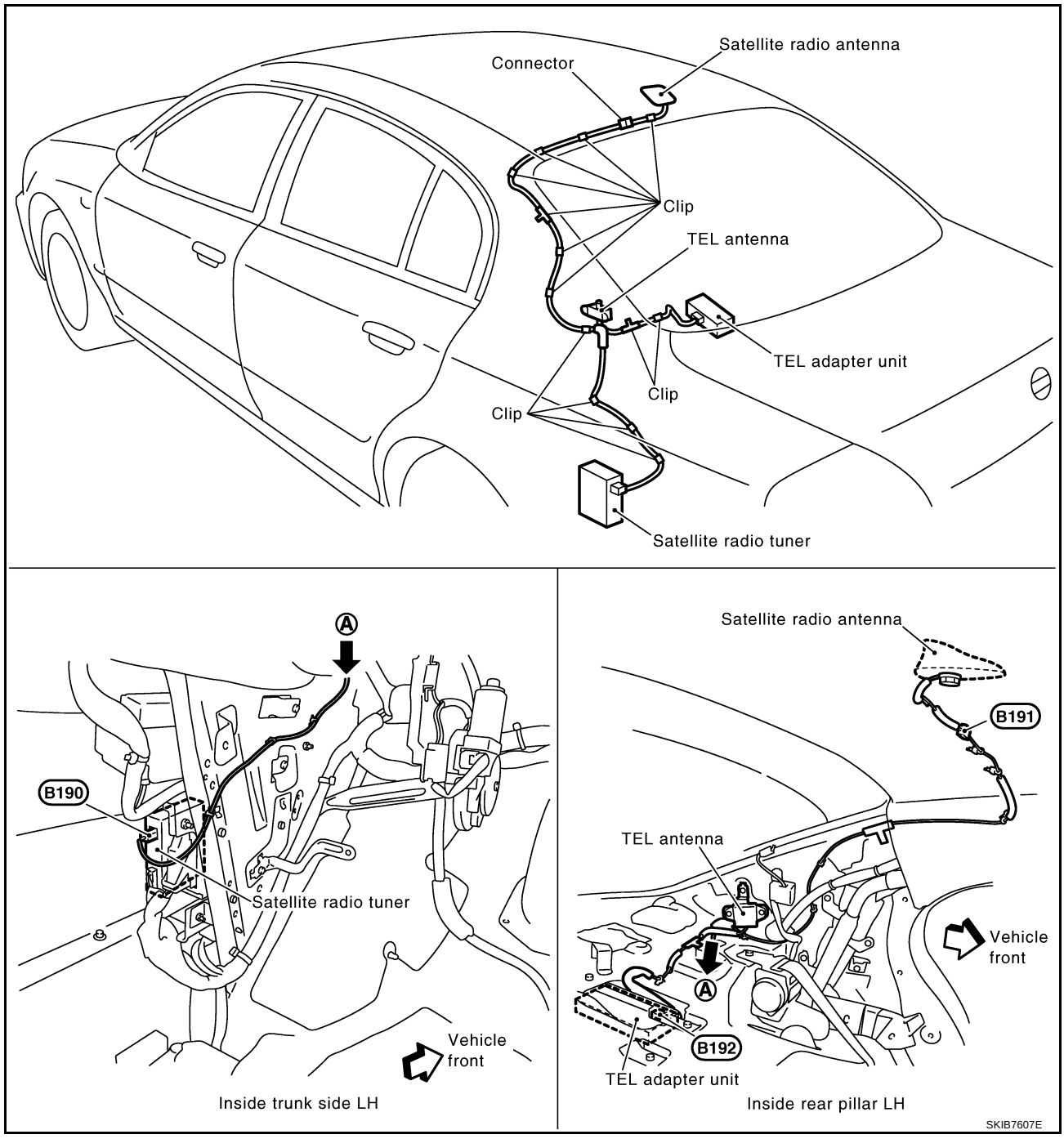
Location of Antenna

NKS002H8

RADIO ANTENNA



SATELLITE RADIO ANTENNA AND TEL ANTENNA

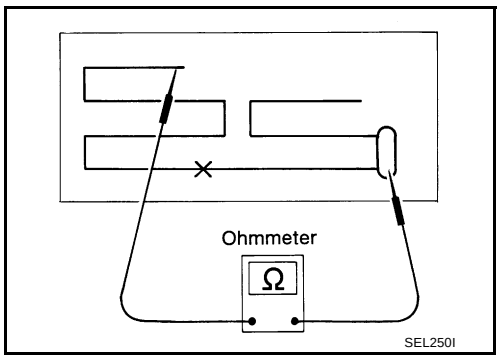


Window Antenna Repair

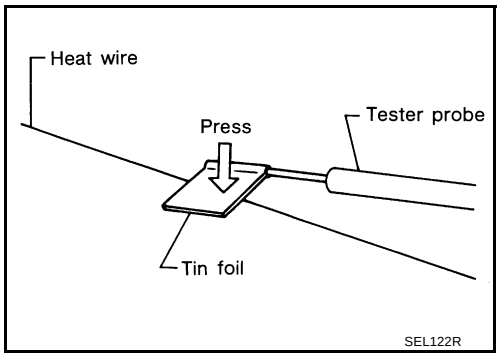
NKS002H9

CHECK ELEMENT

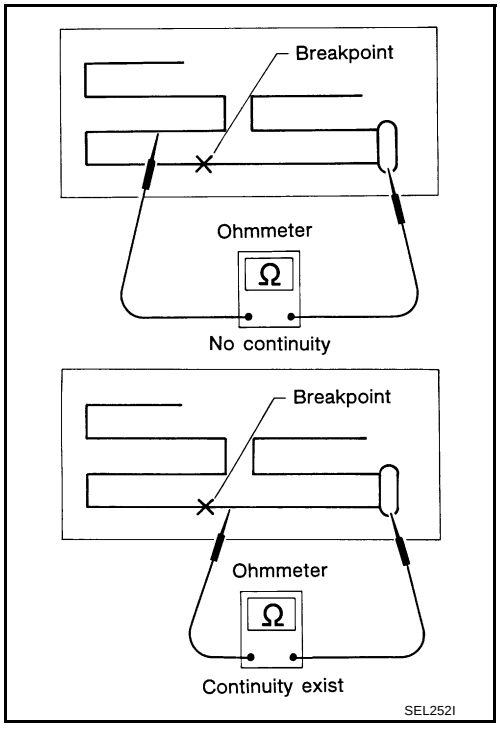
1. Attach probe circuit tester (ohm setting) to antenna terminal on each side.



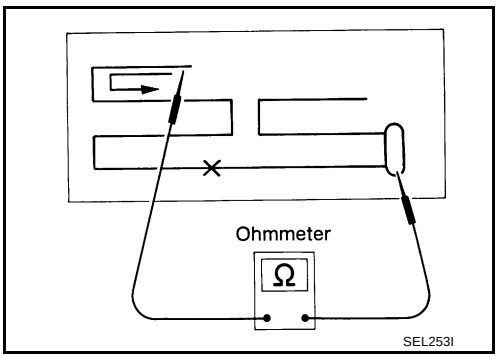
- **When measuring continuity, wrap tin foil around the top of probe. Then, press the foil against the wire with your finger.**



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.



Removal and Installation of Satellite Radio Antenna

NKS002KH

Refer to AV-56, "Removal and Installation of Satellite Radio Antenna" .

Removal and Installation of TEL Antenna

NKS002KI

Refer to AV-158, "Removal and Installation for TEL Antenna" .

NAVIGATION SYSTEM

PFP:25915

System Description

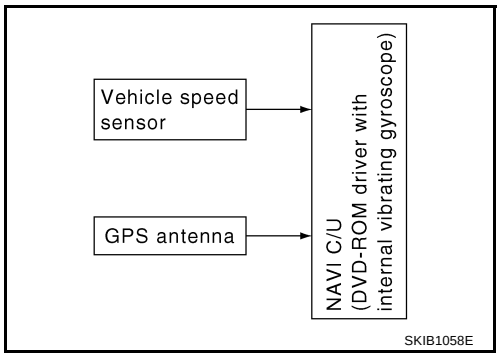
NKS001IL

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

LOCATION DETECTION PRINCIPLE

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

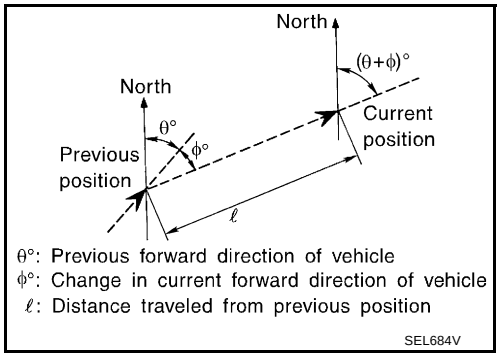
- Travel distance of the vehicle as determined by the vehicle speed sensor
- Turning angle of the vehicle as determined by the gyroscope (angular velocity sensor)
- Direction of vehicle travel as determined by the GPS antenna (GPS information)



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

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

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



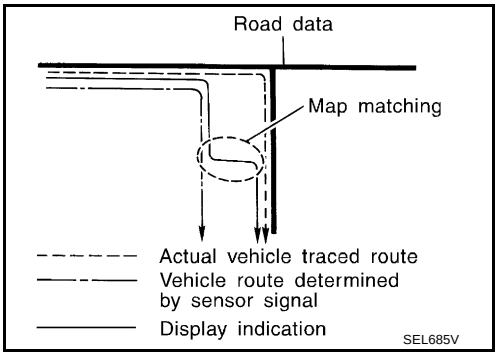
Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	Can detect the vehicle's turning angle quite accurately.	Direction errors may accumulate when vehicle is driven for long distances without stopping.
GPS antenna (GPS information)	Can detect the vehicle's travel direction (North/South/East/West).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

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

MAP-MATCHING

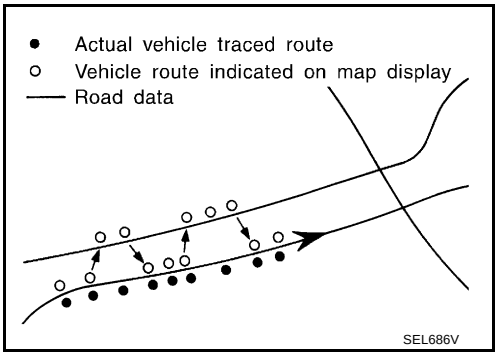
Map-matching compares a current location detected by the method in the “Location Detection Principle” with a road map data from DVD-ROM stored in DVD-ROM drive.

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

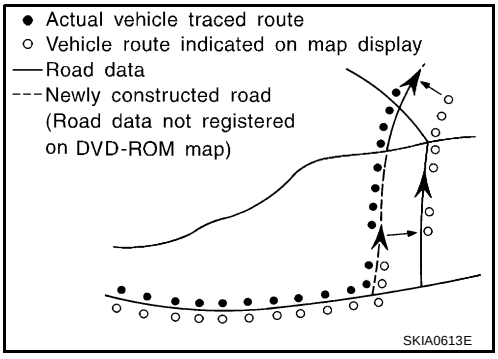


The vehicle position may not be corrected under the following circumstances and after driving for a certain time when GPS information is difficult to receive. In this case, the current-location mark on the display must be corrected manually.

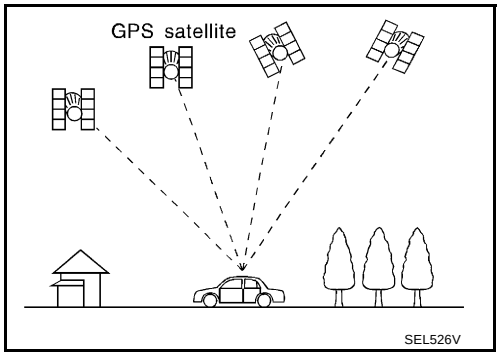
- In map-matching, alternative routes are prepared and prioritized in addition to the road judged currently driven. Due to the distance and/or direction error, the incorrect road may be prioritized and current-location mark may be repositioned to the wrong road.
  When two roads are running in parallel, they are judged to the same priority. Therefore, the current-location mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road.



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



GPS (GLOBAL POSITIONING SYSTEM)



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

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

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

Accuracy of GPS will deteriorate under the following conditions:

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

NOTE:

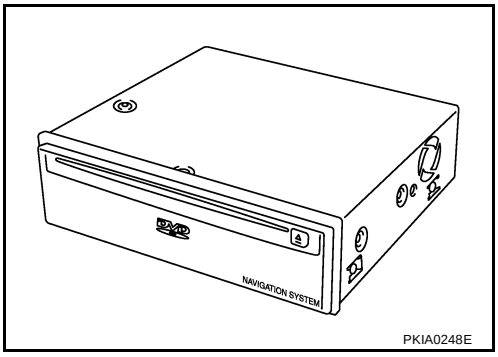
- Even a high-precision three dimensional positioning, the detection result has an error about 10 m (30ft).
- Because the signals of GPS satellite is controlled by the Tracking and Control Center in the United States, the accuracy may be degraded lower intentionally or the radio waves may stop.

Component Description

NKS001IM

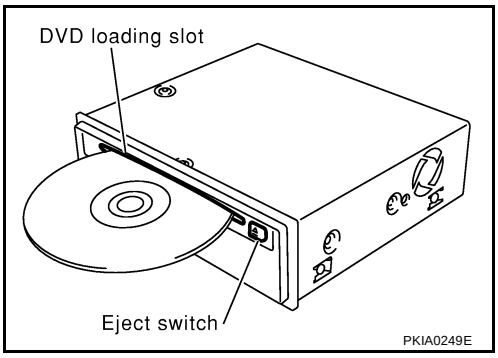
AV AND NAVI CONTROL UNIT

- 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 these data with the data contained in the DVD-ROM map. Locations information is shown on display unit.
- AV and NAVI control unit is connected to each control unit composing systems. The systems are controled by transmitting and receiving request signals and response signal.
- NAVI control unit outputs ON signal and voice guidance signal to audio unit.



DVD-ROM Drive

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



DVD-ROM

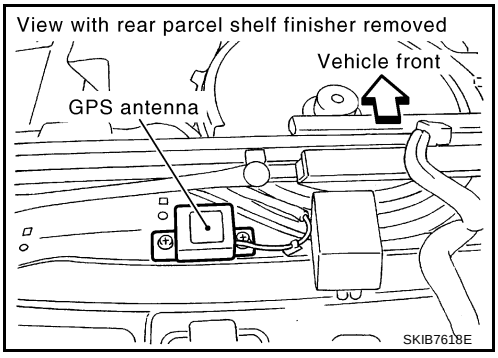
- The DVD-ROM has maps, traffic control regulations, and other pertinent information.
- To improve DVD-ROM map matching and route determination functions, the DVD-ROM uses an exclusive Nissan format. Therefore, the use of a DVD-ROM provided by other manufacturers cannot be used.

Gyro (Angular Speed Sensor)

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

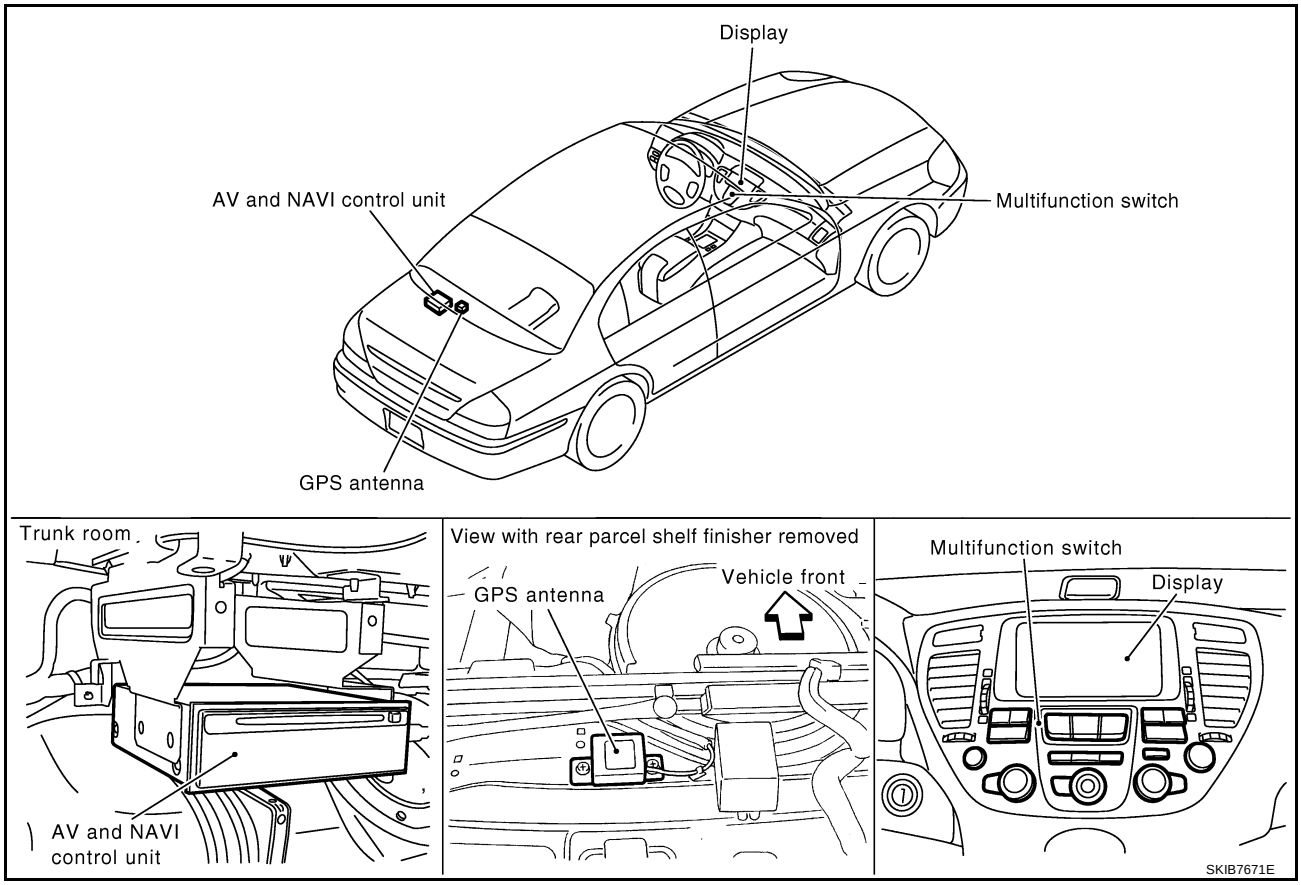
GPS ANTENNA

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



Component Parts Location

NKS001IN



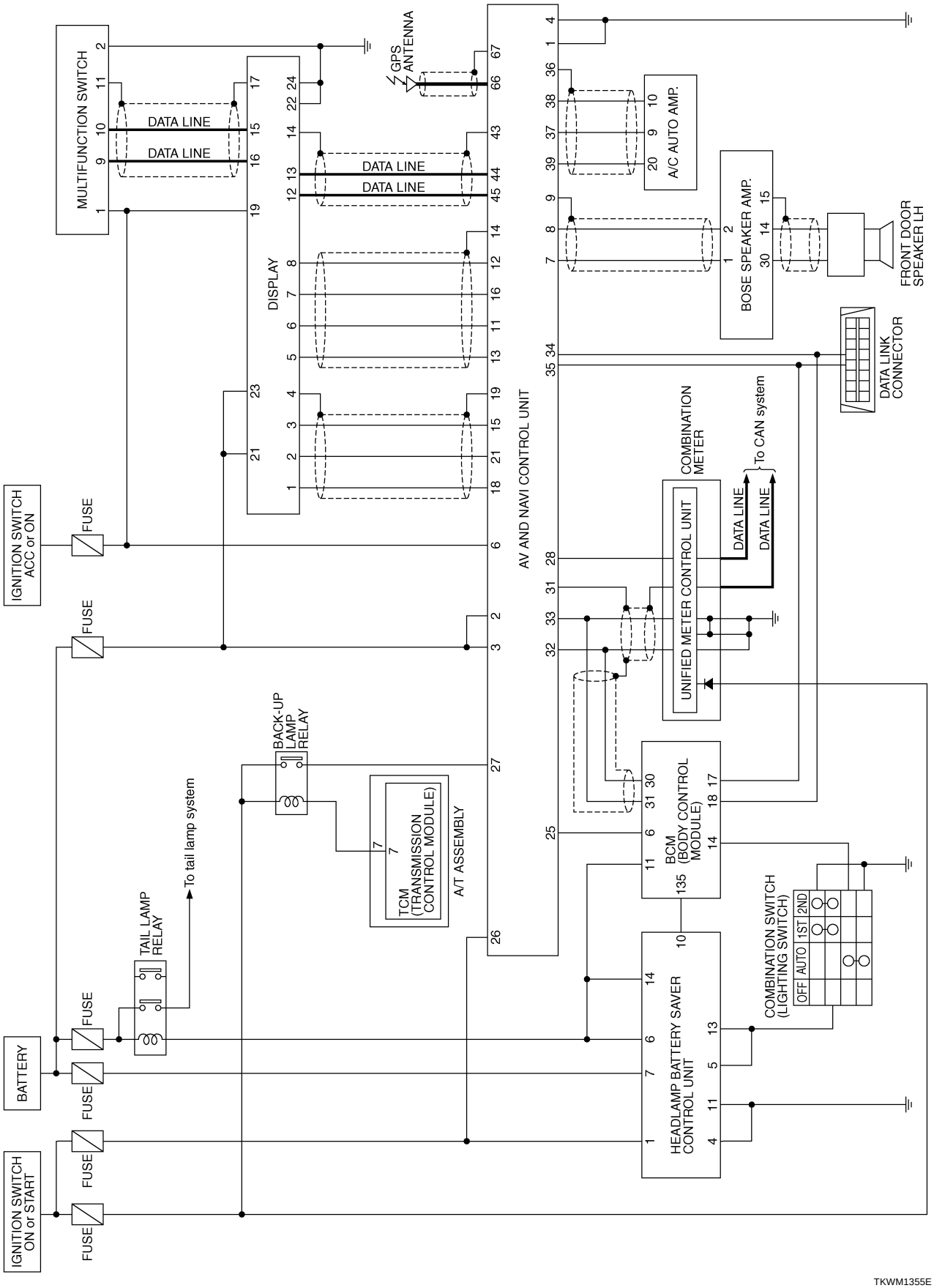
Location of Antenna

NKS001IO

Refer to AV-58, "Location of Antenna" .

Schematic — NAVI —

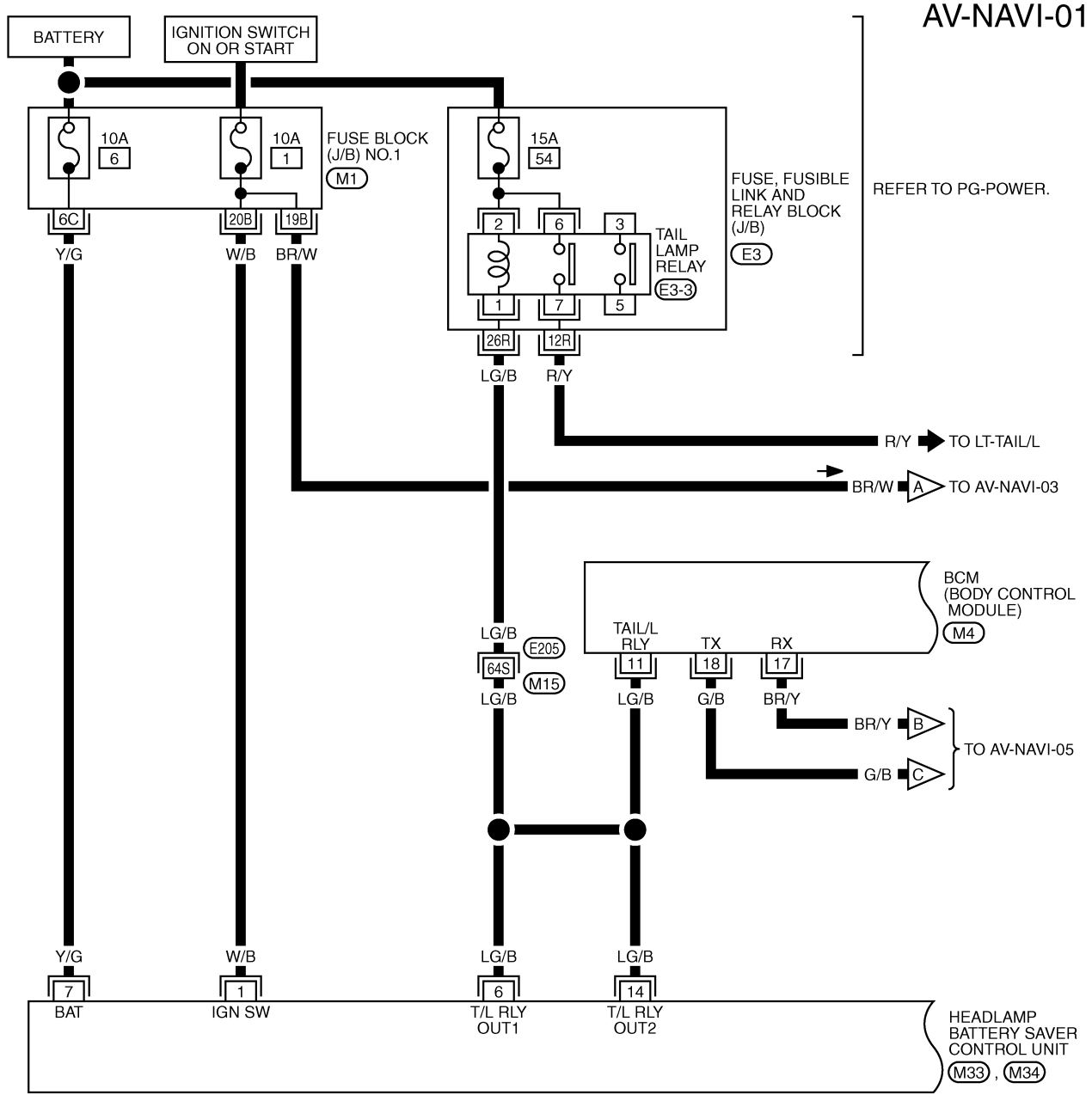
NKS001IP

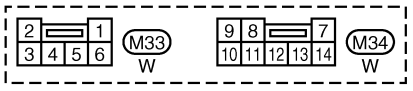


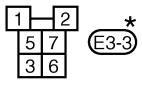
TKWM1355E

Wiring Diagram — NAVI —

NKS001IQ







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

REFER TO THE FOLLOWING.

E205 -SUPER MULTIPLE JUNCTION (SMJ)

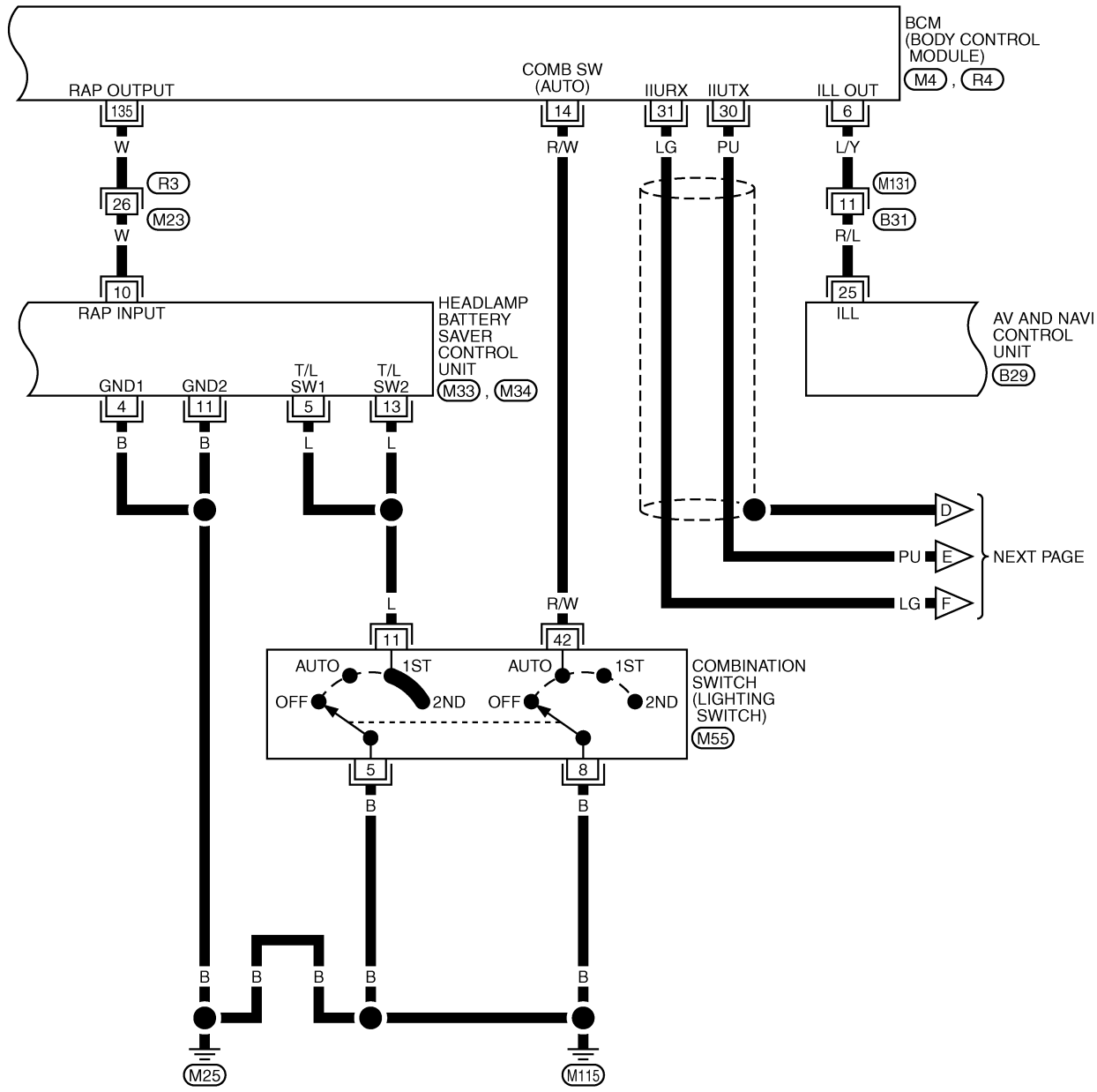
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

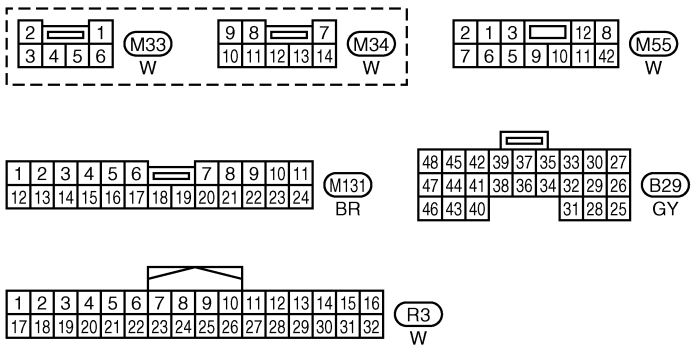
E3 -FUSE, FUSIBLE LINK AND RELAY BLOCK (J/B)

M4 -ELECTRICAL UNITS

TKWM3798E

AV-NAVI-02

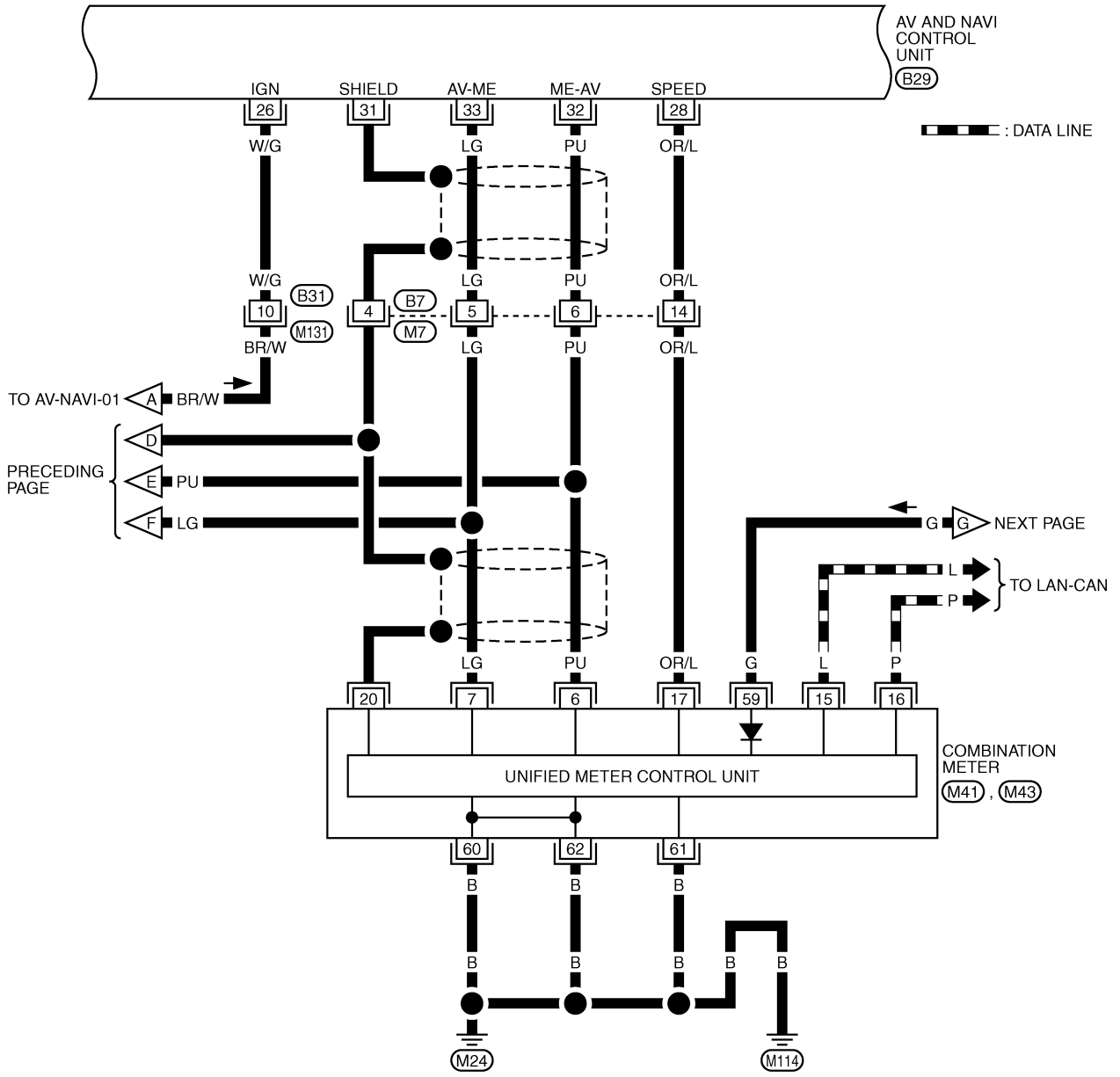


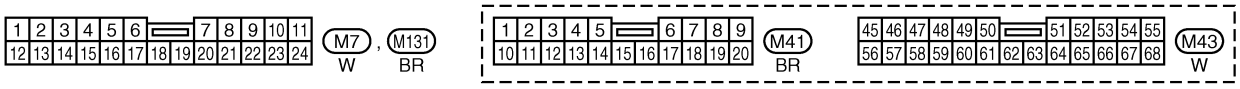


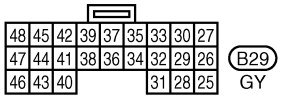
REFER TO THE FOLLOWING.
M4 , R4 -ELECTRICAL UNITS

TKWM3799E

AV-NAVI-03

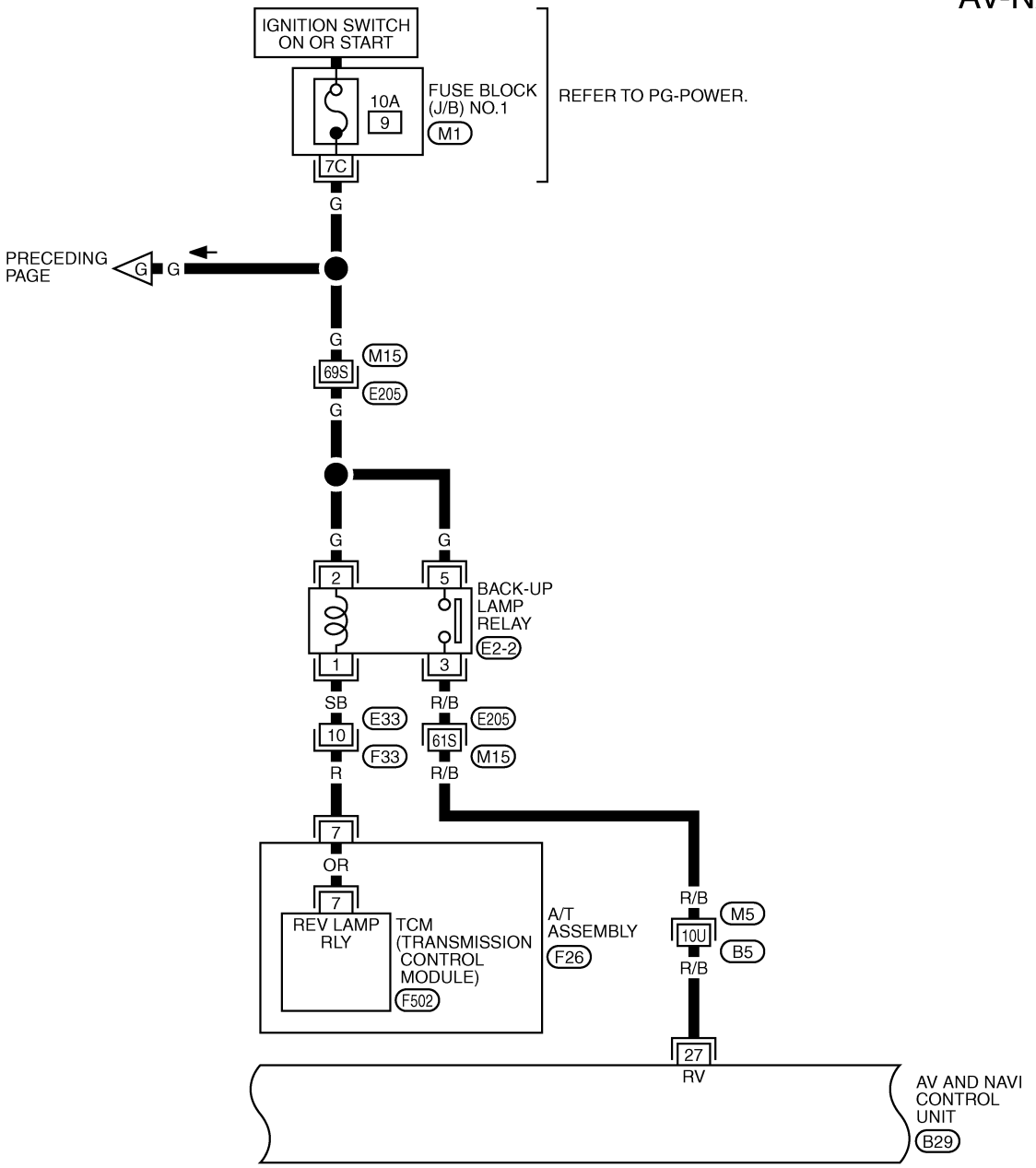


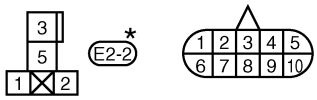


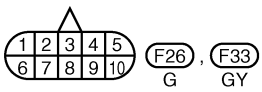


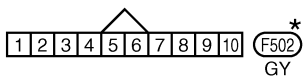
TKWM1358E

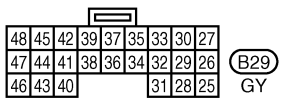
AV-NAVI-04











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

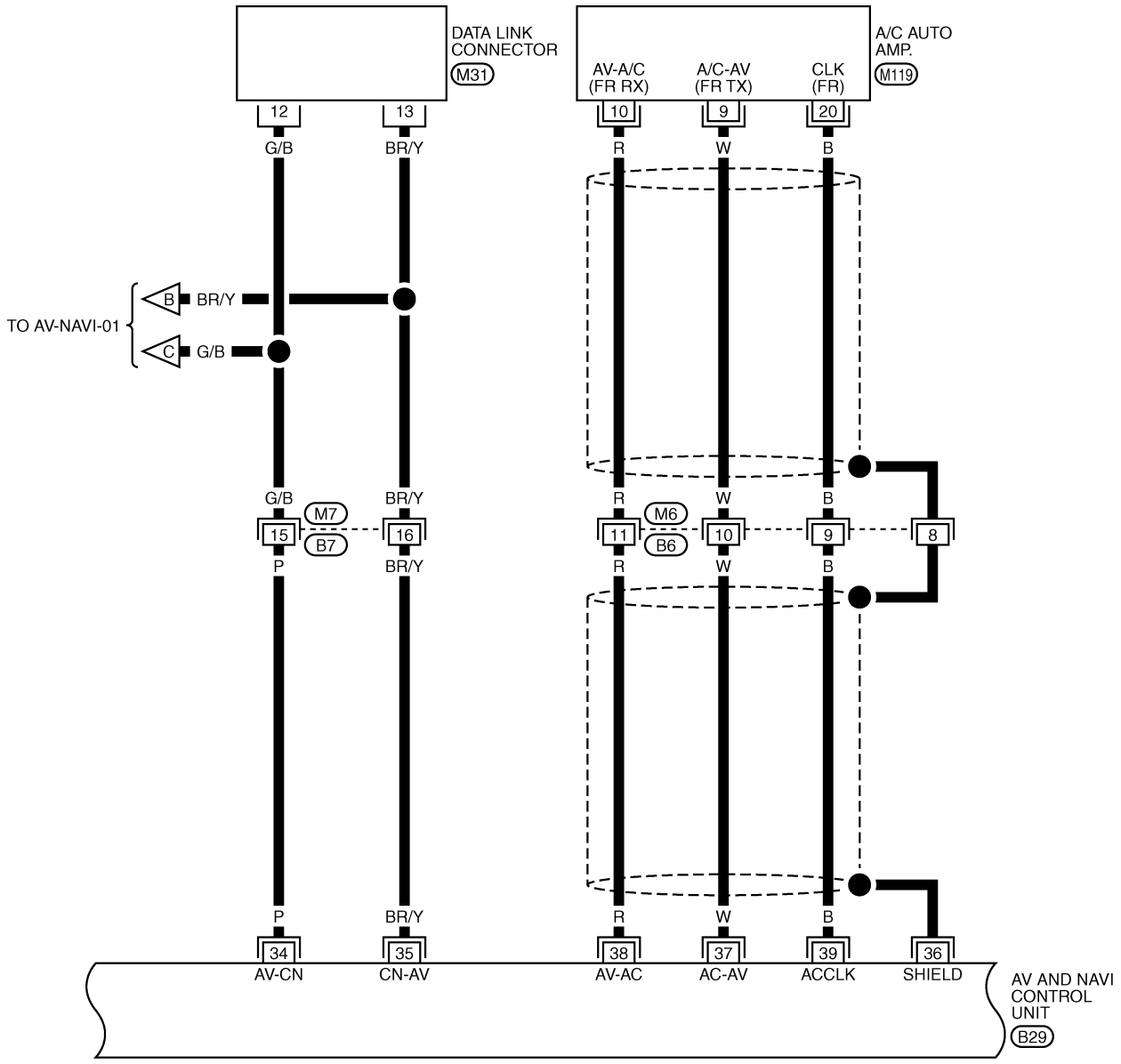
REFER TO THE FOLLOWING.

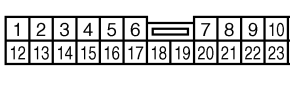
M5 , E205 -SUPER MULTIPLE JUNCTION (SMJ)

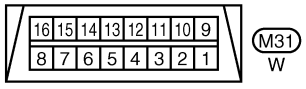
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

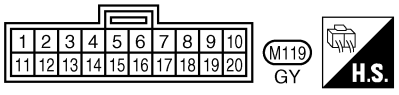
TKWM3800E

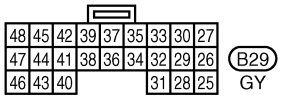
AV-NAVI-05





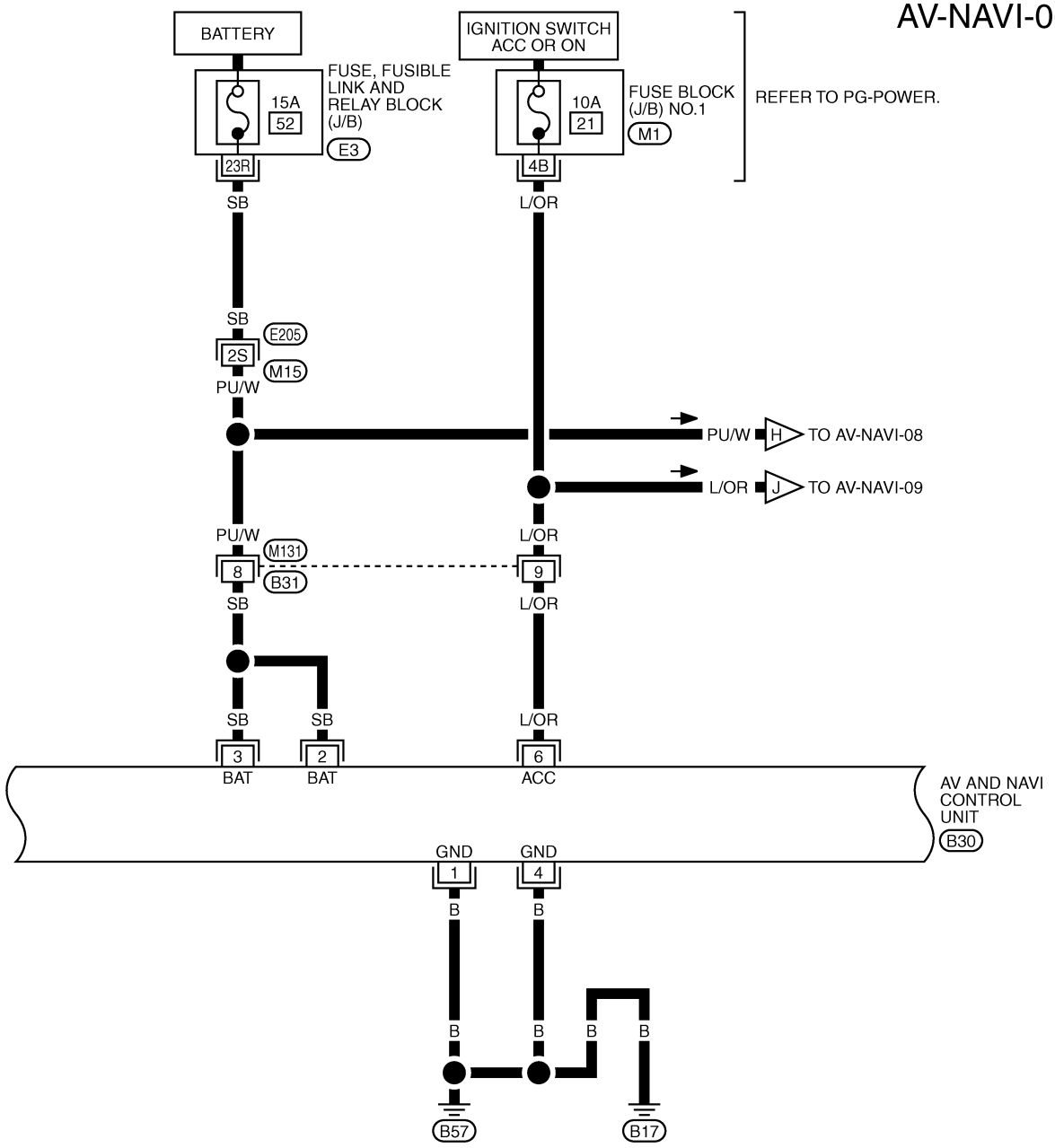


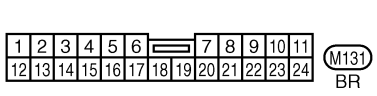


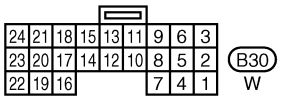


TKWM3801E

AV-NAVI-06







REFER TO THE FOLLOWING.

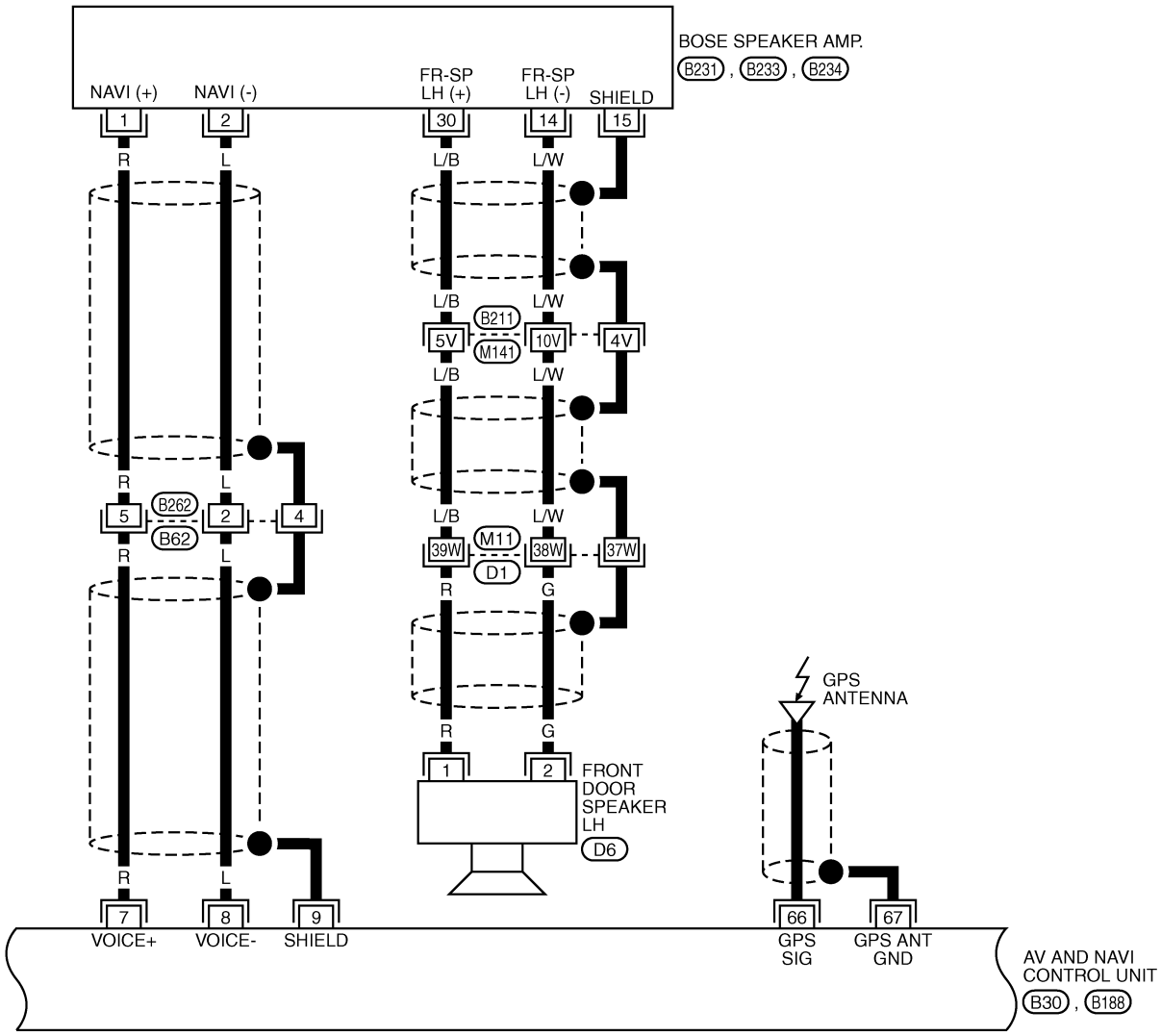
E205 -SUPER MULTIPLE JUNCTION (SMJ)

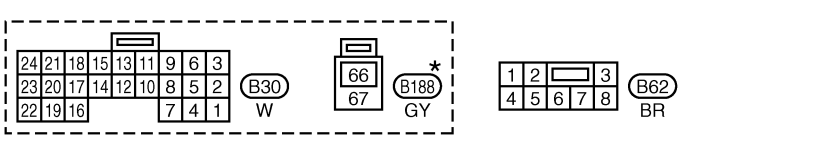
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

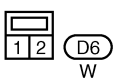
E3 -FUSE, FUSIBLE LINK AND RELAY BLOCK (J/B)

TKWM3802E

AV-NAVI-07



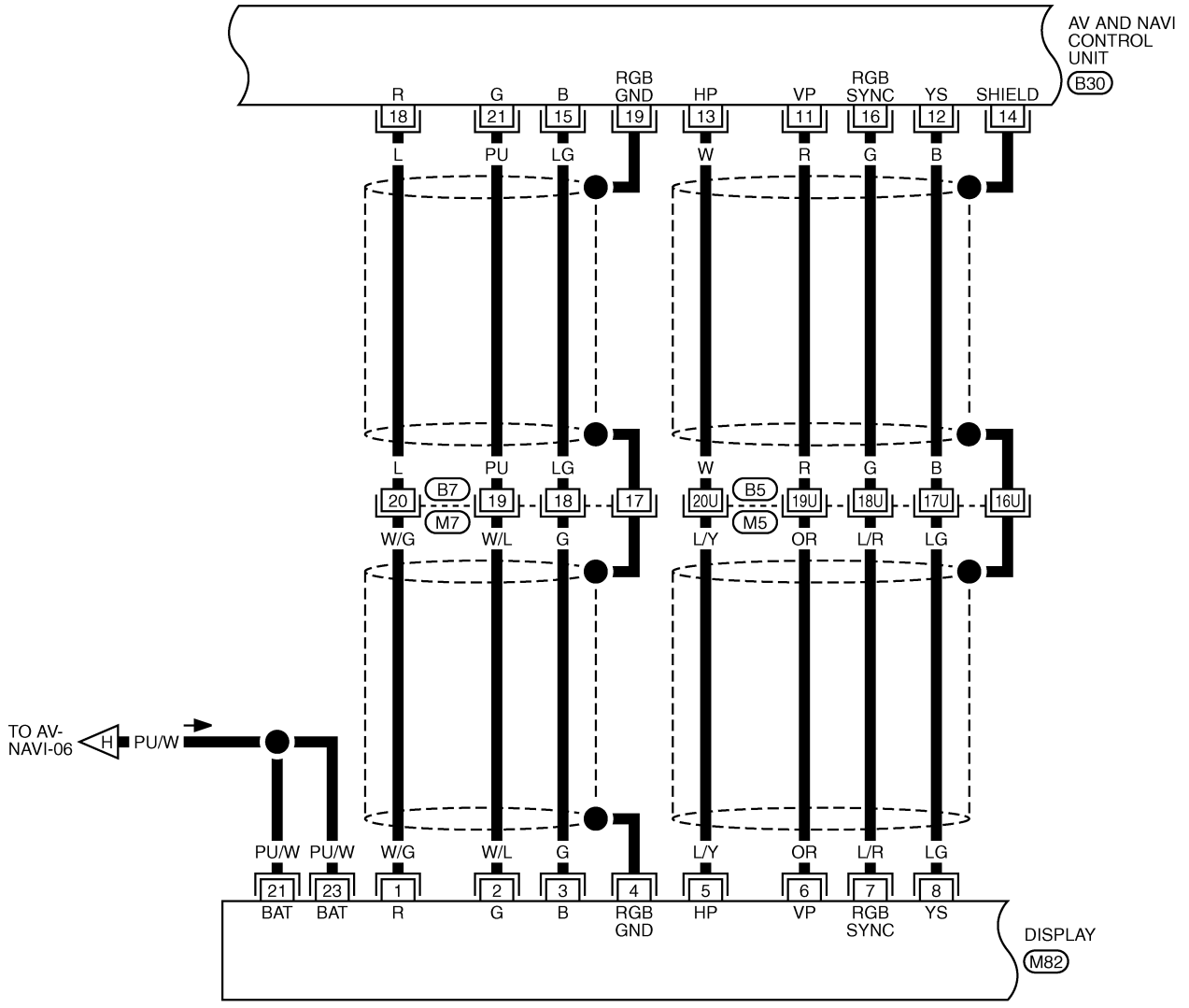


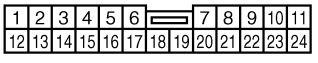


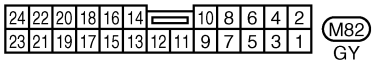
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

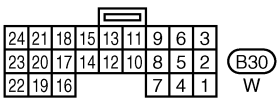
REFER TO THE FOLLOWING.
B211 , D1 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM3803E







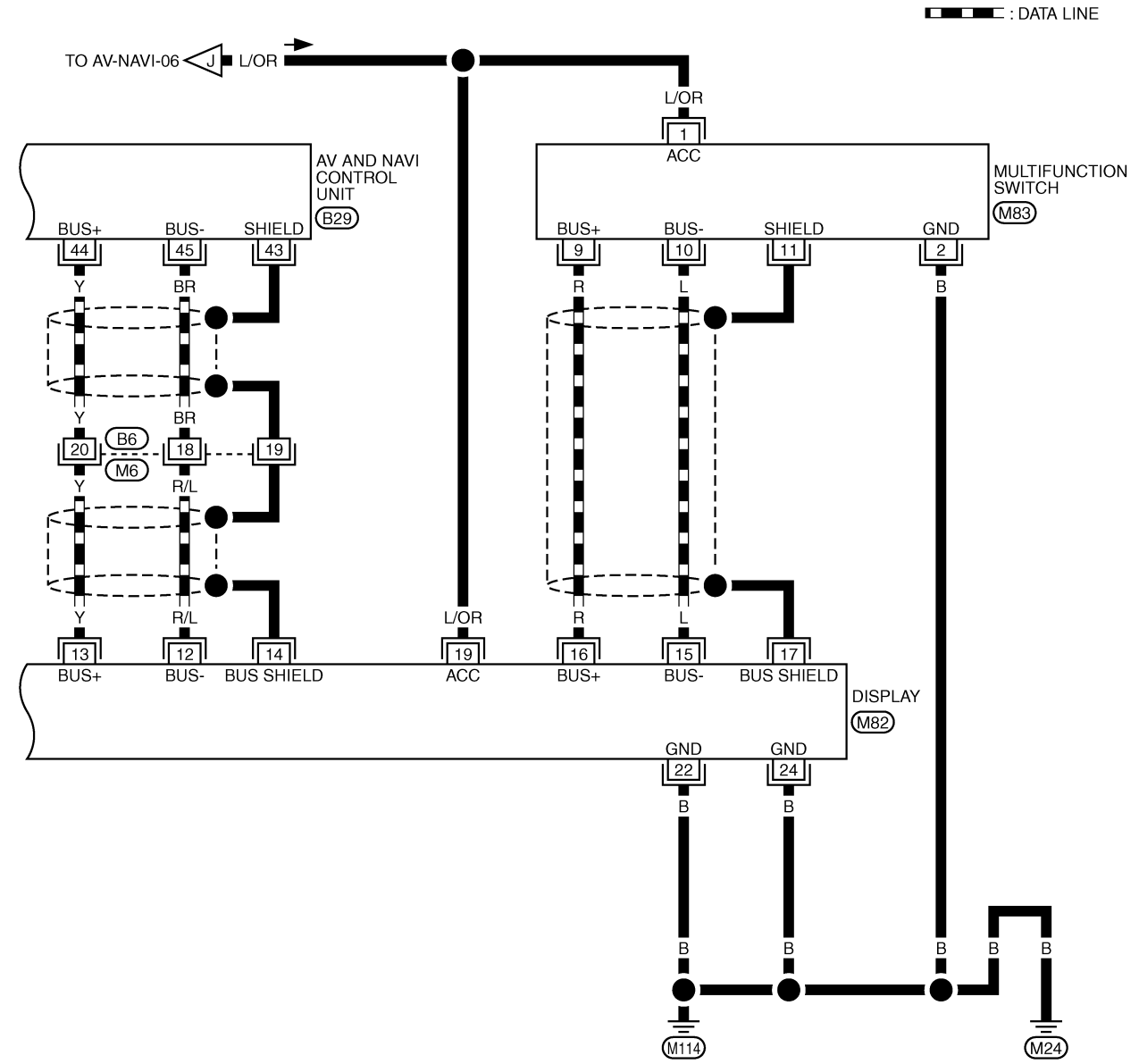


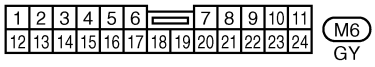
REFER TO THE FOLLOWING.

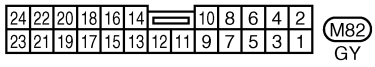
M5 -SUPER MULTIPLE JUNCTION (SMJ)

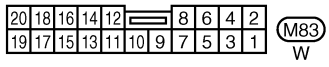
TKWM3804E

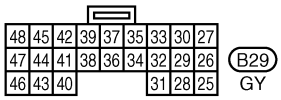
AV-NAVI-09









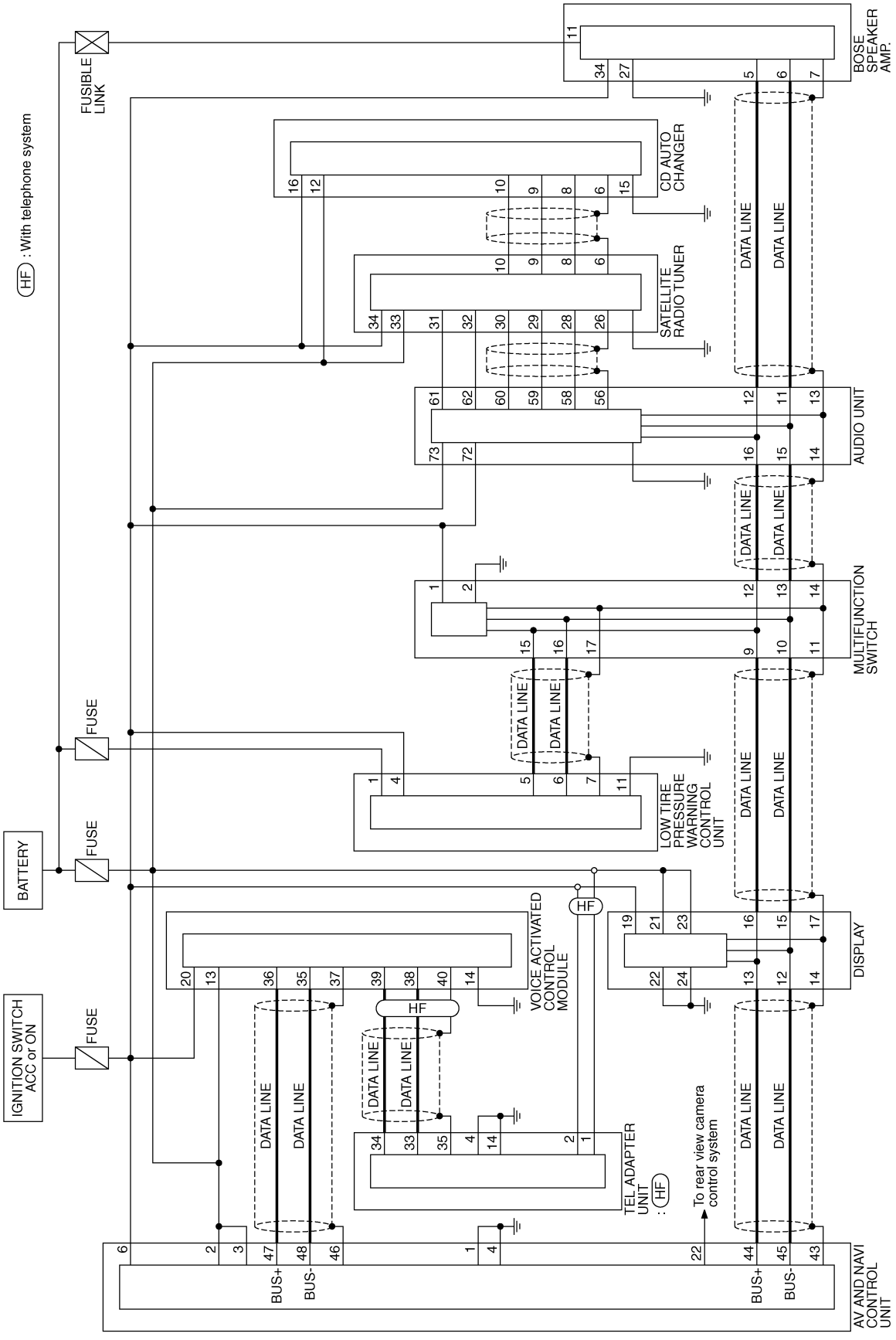


TKWM1363E

Schematic — COMM — / With Voice Activated Control System

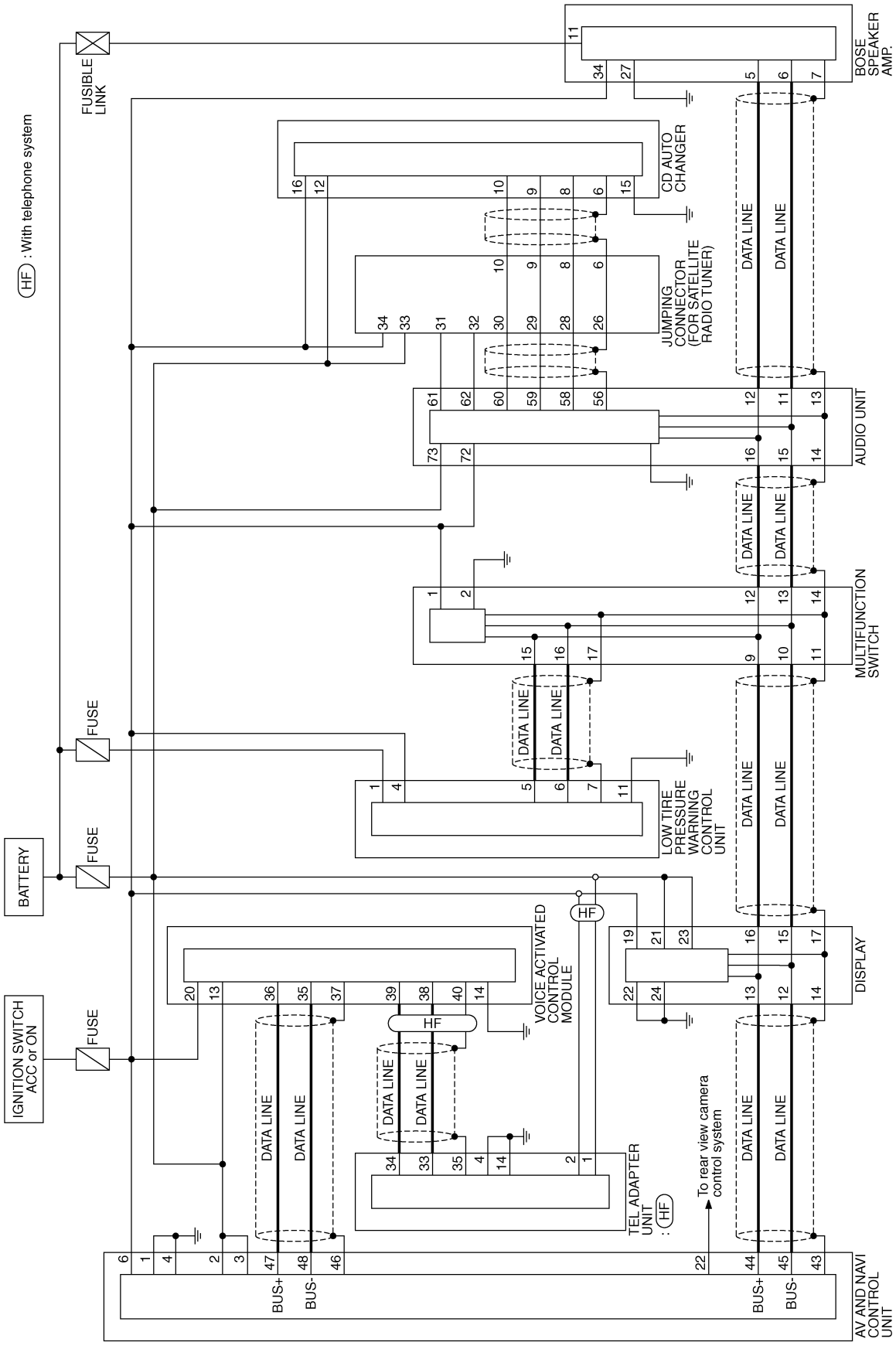
NKS001IR

WITH SATELLITE RADIO



TKWM3805E

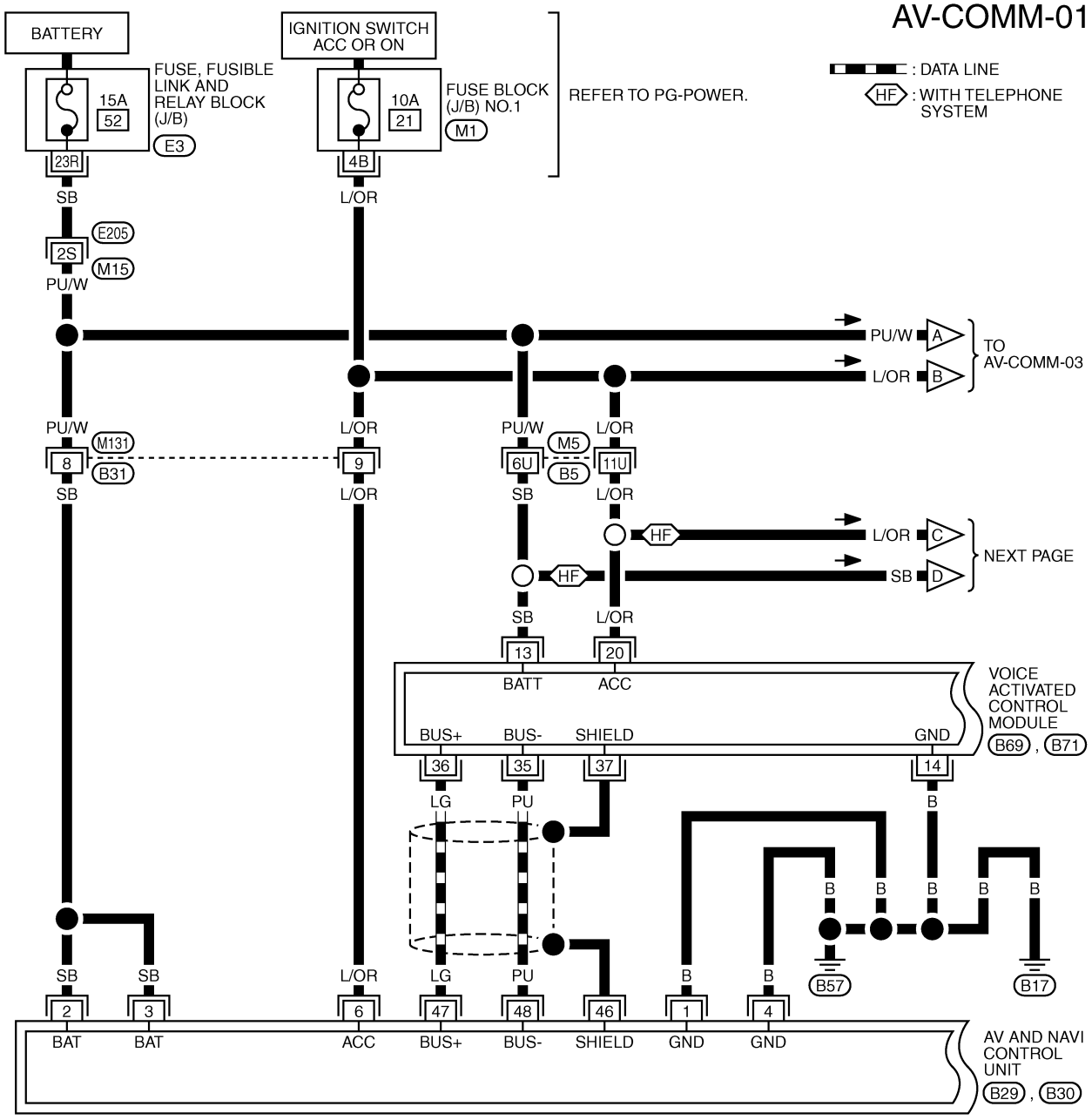
WITHOUT SATELLITE RADIO

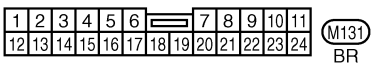


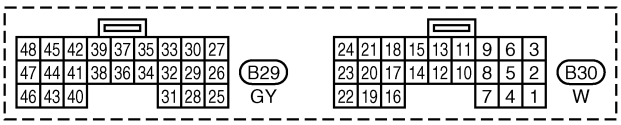
Wiring Diagram — COMM — / With Voice Activated Control System

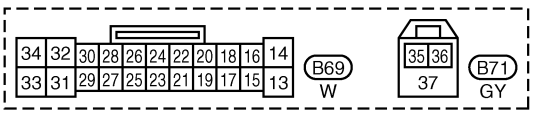
NKS001IS

WITH SATELLITE RADIO









REFER TO THE FOLLOWING.

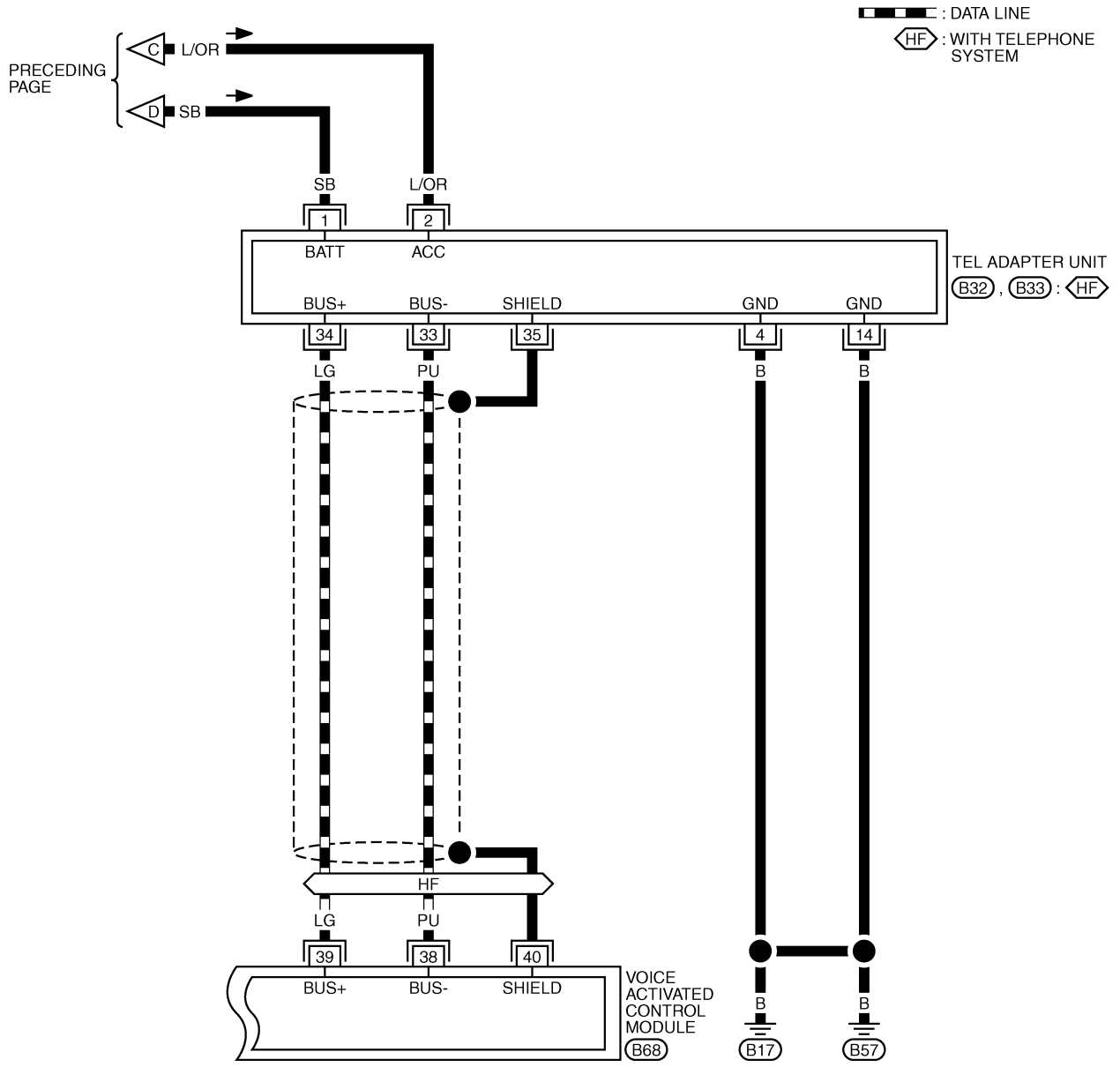
M5 , E205 -SUPER MULTIPLE JUNCTION (SMJ)

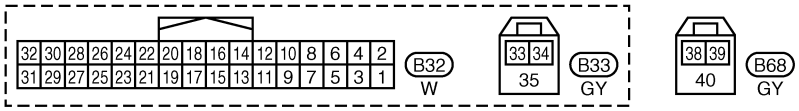
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

E3 -FUSE, FUSIBLE LINK AND RELAY BLOCK (J/B)

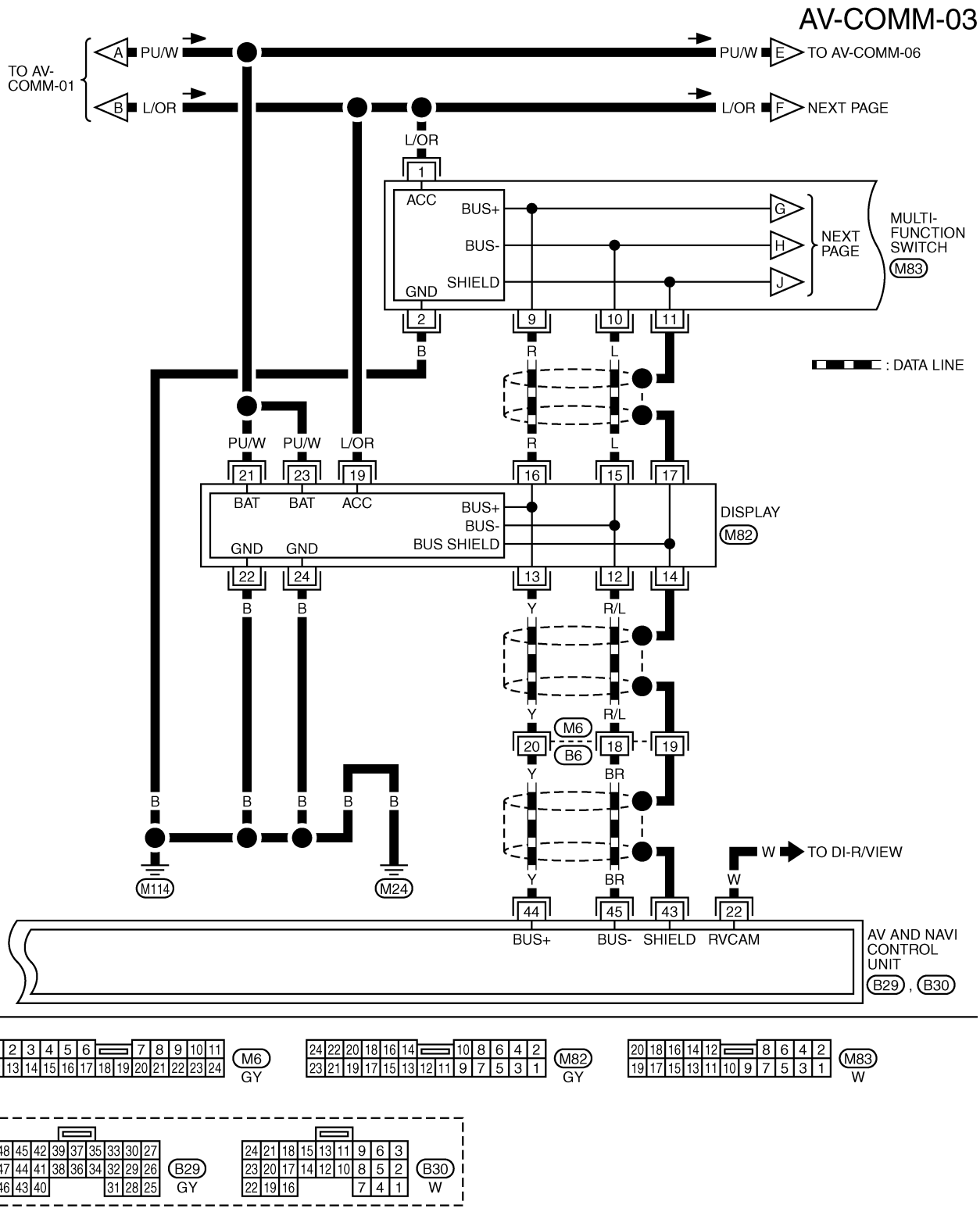
TKWM3807E

AV-COMM-02





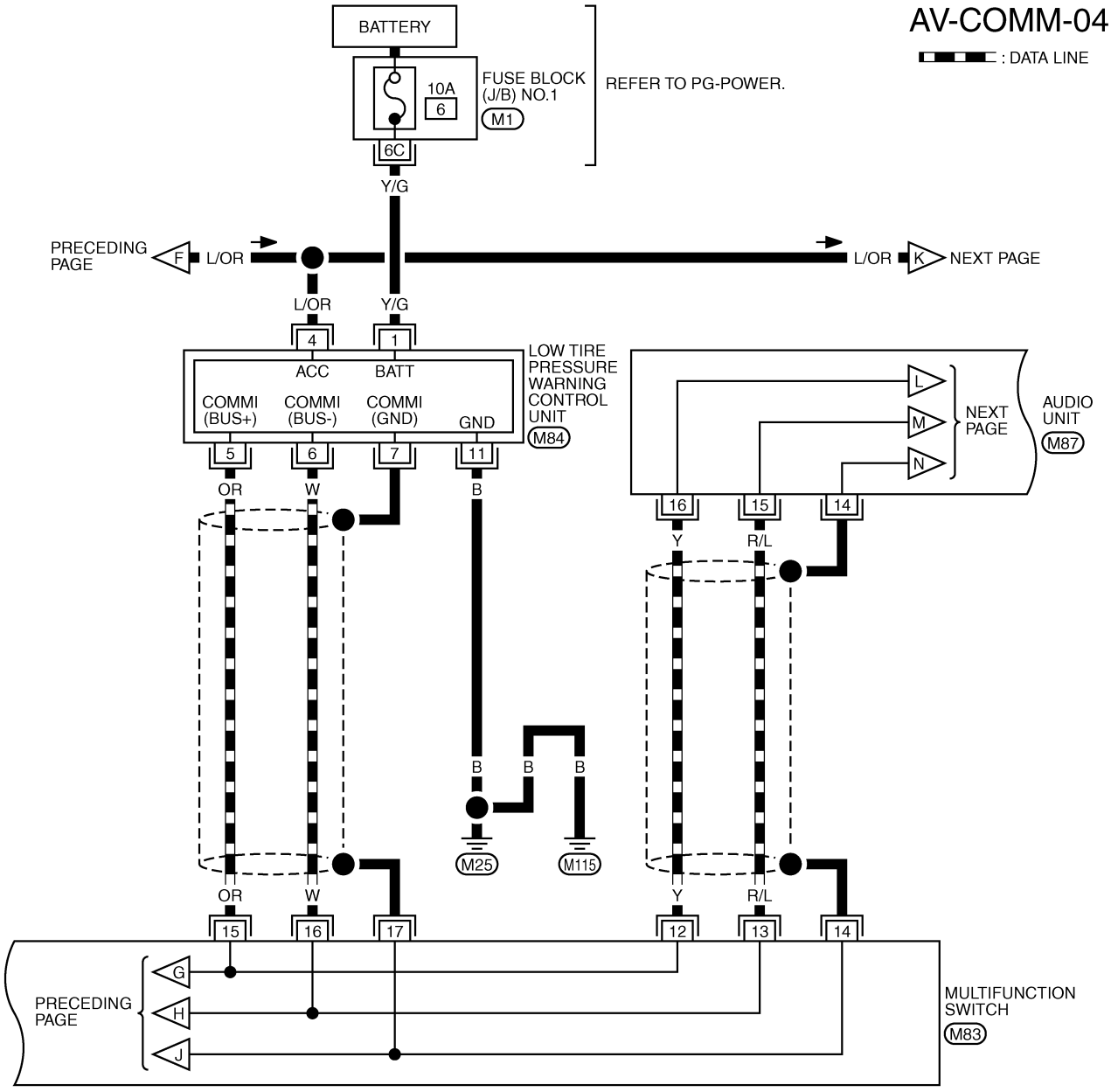
TKWM3808E

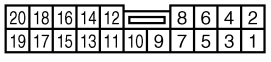

AV-COMM-03
TO AV-COMM-01
A PU/W
B L/OR
PU/W E TO AV-COMM-06
L/OR F NEXT PAGE
L/OR
1
ACC
BUS+
BUS-
SHIELD
GND
G
H
J
NEXT PAGE
MULTI-FUNCTION SWITCH
M83
2 9 10 11
B R L
: DATA LINE
PU/W PU/W L/OR
21 23 19
BAT BAT ACC
GND GND
BUS+
BUS-
BUS SHIELD
DISPLAY
M82
22 24 13 12 14
B B Y R/L
Y R/L
M6
20 18 19
B6
Y BR
B B B B B
W TO DI-R/VIEW
M114 M24
Y BR W
44 45 43 22
BUS+ BUS- SHIELD RVCAM
AV AND NAVI CONTROL UNIT
B29 , B30

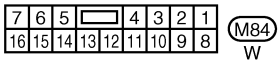
M6
GY
M82
GY
M83
W

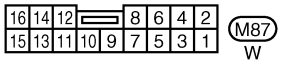
B29
GY
B30
W

TKWM3809E





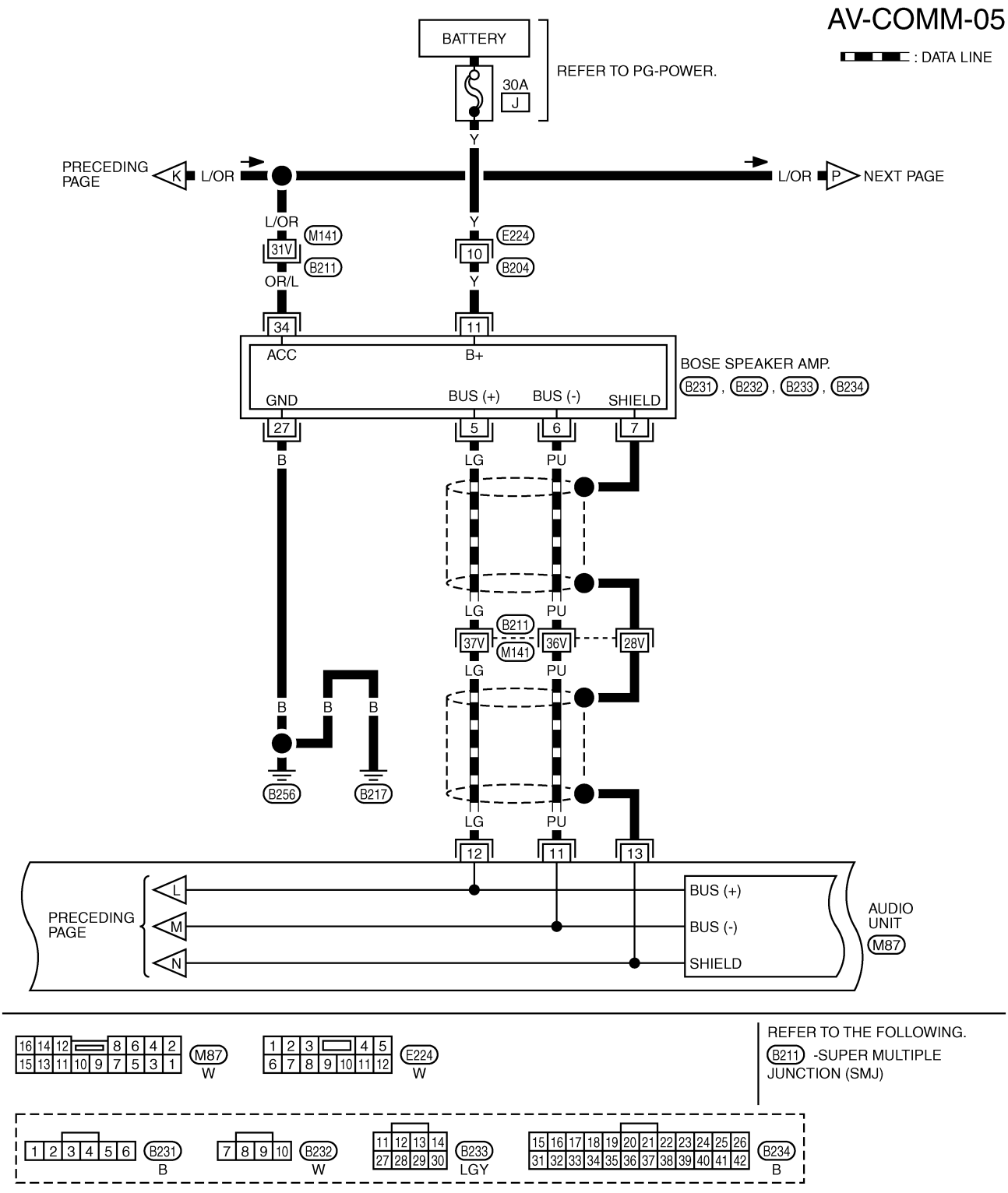




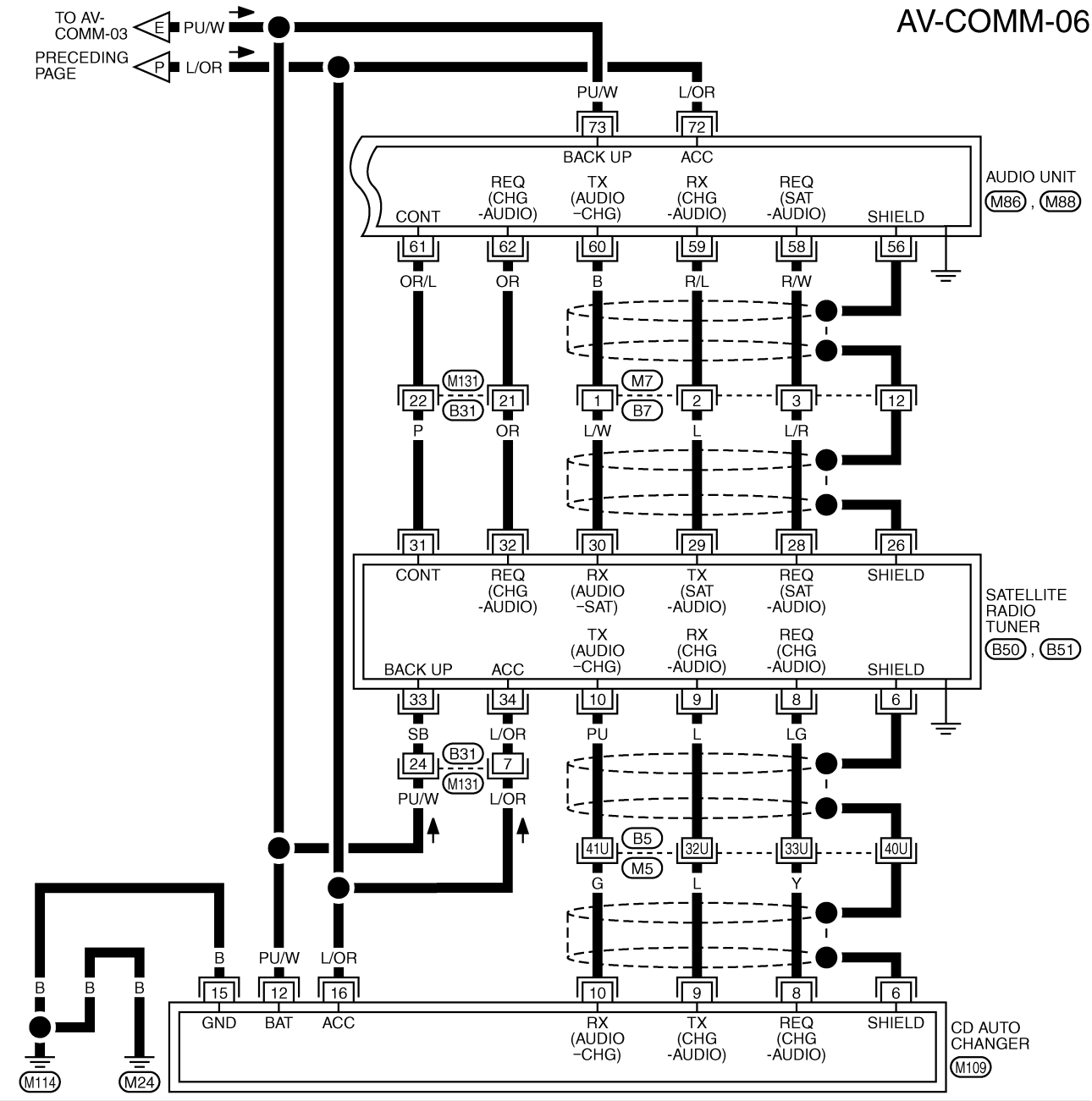
REFER TO THE FOLLOWING.

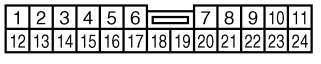
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

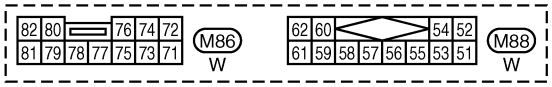
TKWM3810E

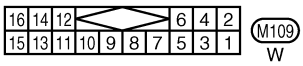

AV-COMM-05
: DATA LINE
BATTERY
30A
J
REFER TO PG-POWER.
Y
PRECEDING PAGE
K
L/OR
L/OR
P
NEXT PAGE
L/OR
31V
M141
B211
OR/L
34
Y
10
E224
B204
Y
11
ACC
B+
BOSE SPEAKER AMP.
B231 , B232 , B233 , B234
GND
BUS (+)
BUS (-)
SHIELD
27
5
6
7
B
LG
PU
LG
PU
B211
37V
M141
36V
28V
LG
PU
B
B
B
B256
B217
LG
PU
12
11
13
PRECEDING PAGE
L
M
N
BUS (+)
BUS (-)
SHIELD
AUDIO UNIT
M87
M87
W
E224
W
REFER TO THE FOLLOWING.
B211 -SUPER MULTIPLE JUNCTION (SMJ)
B231
B
B232
W
B233
LGY
B234
B

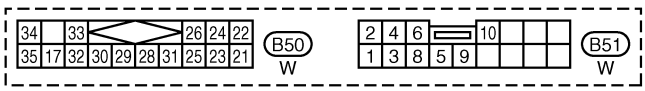
TKWM3811E









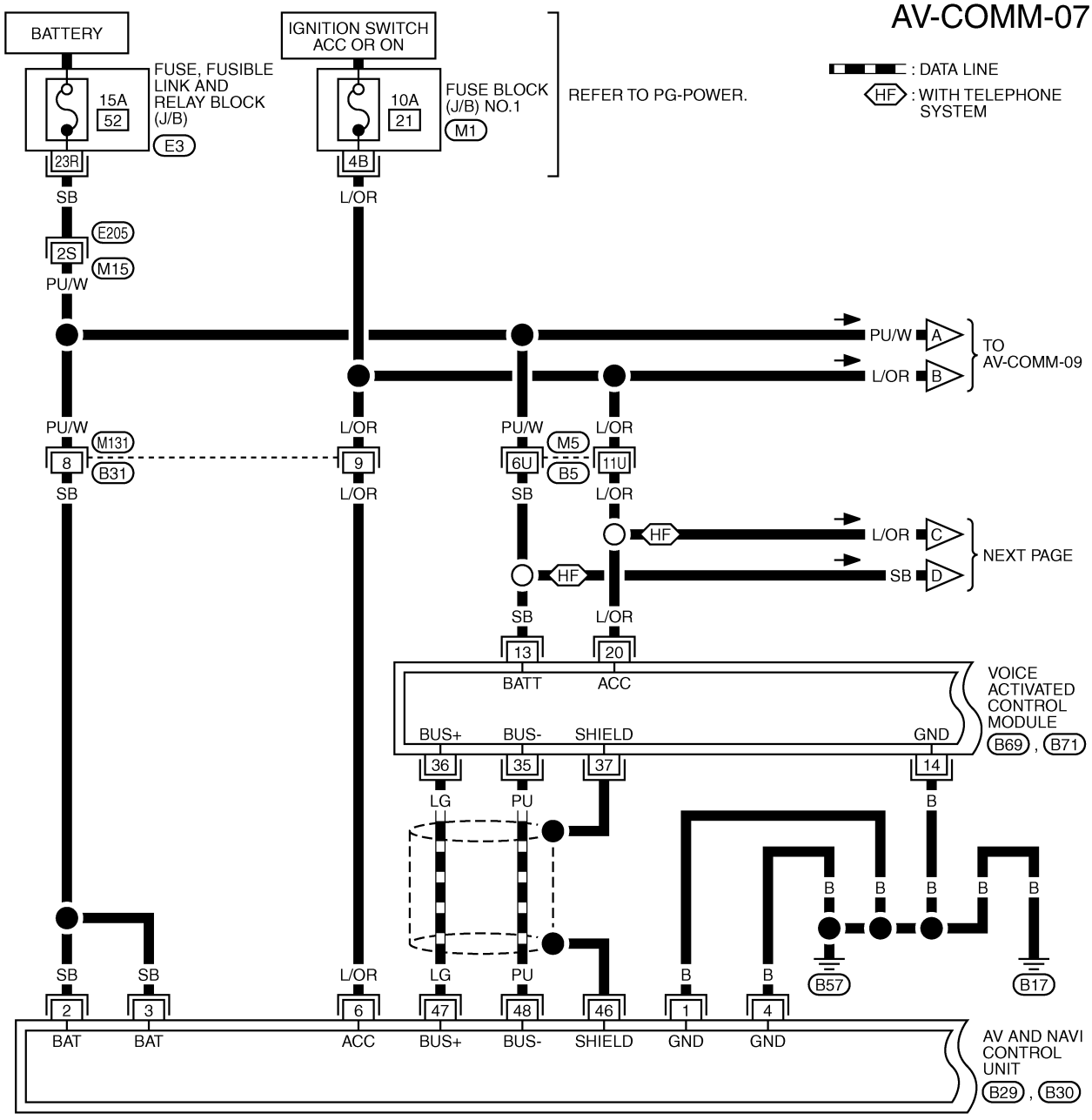


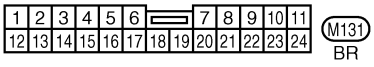
REFER TO THE FOLLOWING.
M5 -SUPER MULTIPLE JUNCTION (SMJ)

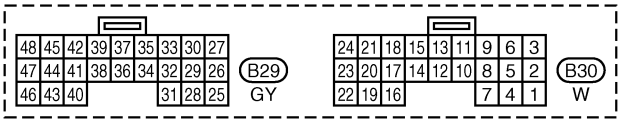
TKWM3812E

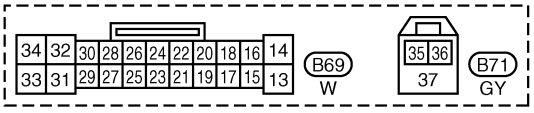
WITHOUT SATELLITE RADIO

AV-COMM-07









REFER TO THE FOLLOWING.

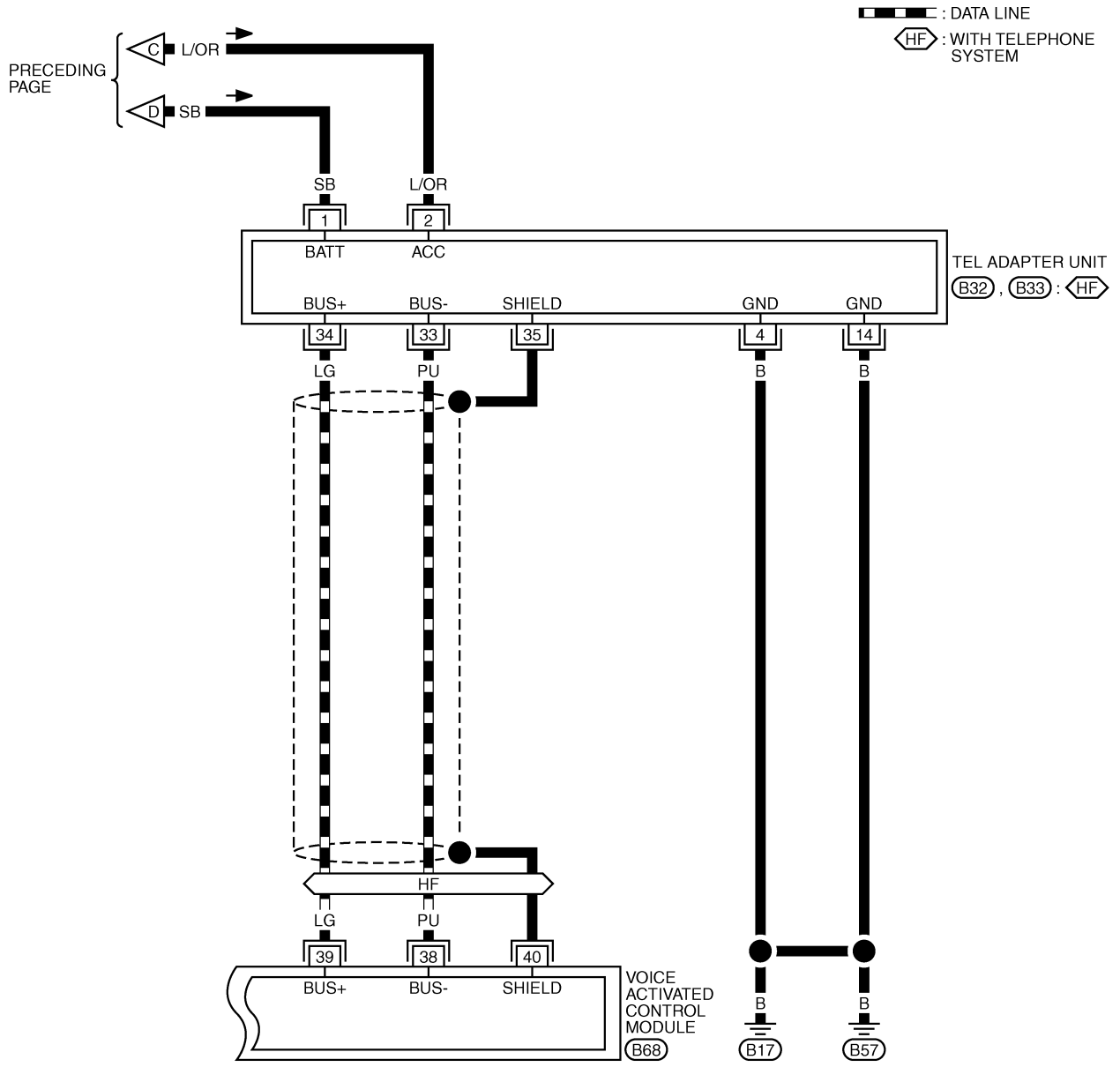
M5 , E205 -SUPER MULTIPLE JUNCTION (SMJ)

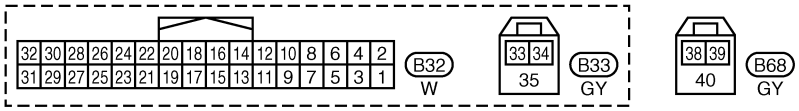
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

E3 -FUSE, FUSIBLE LINK AND RELAY BLOCK (J/B)

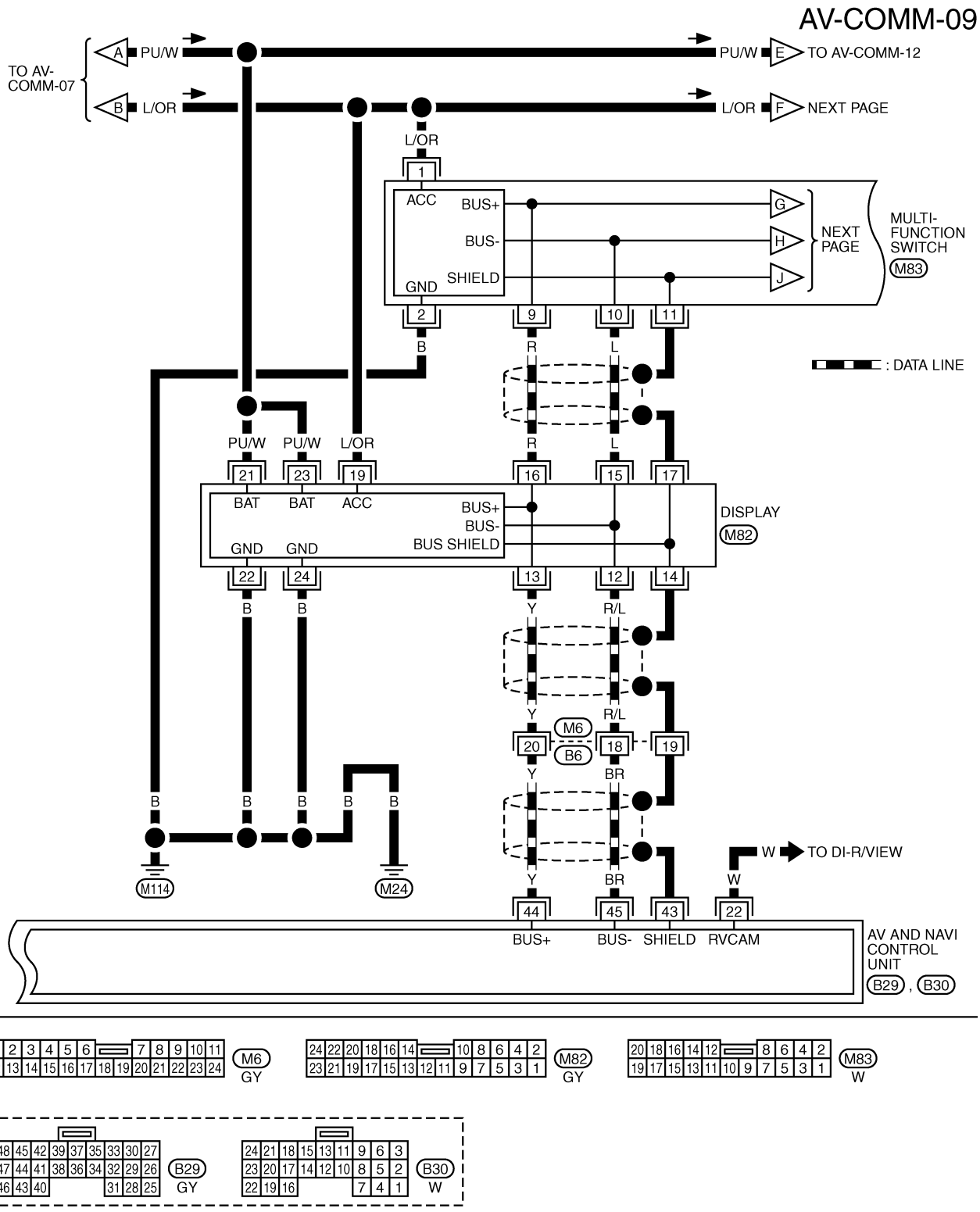
TKWM3975E

AV-COMM-08





TKWM3976E

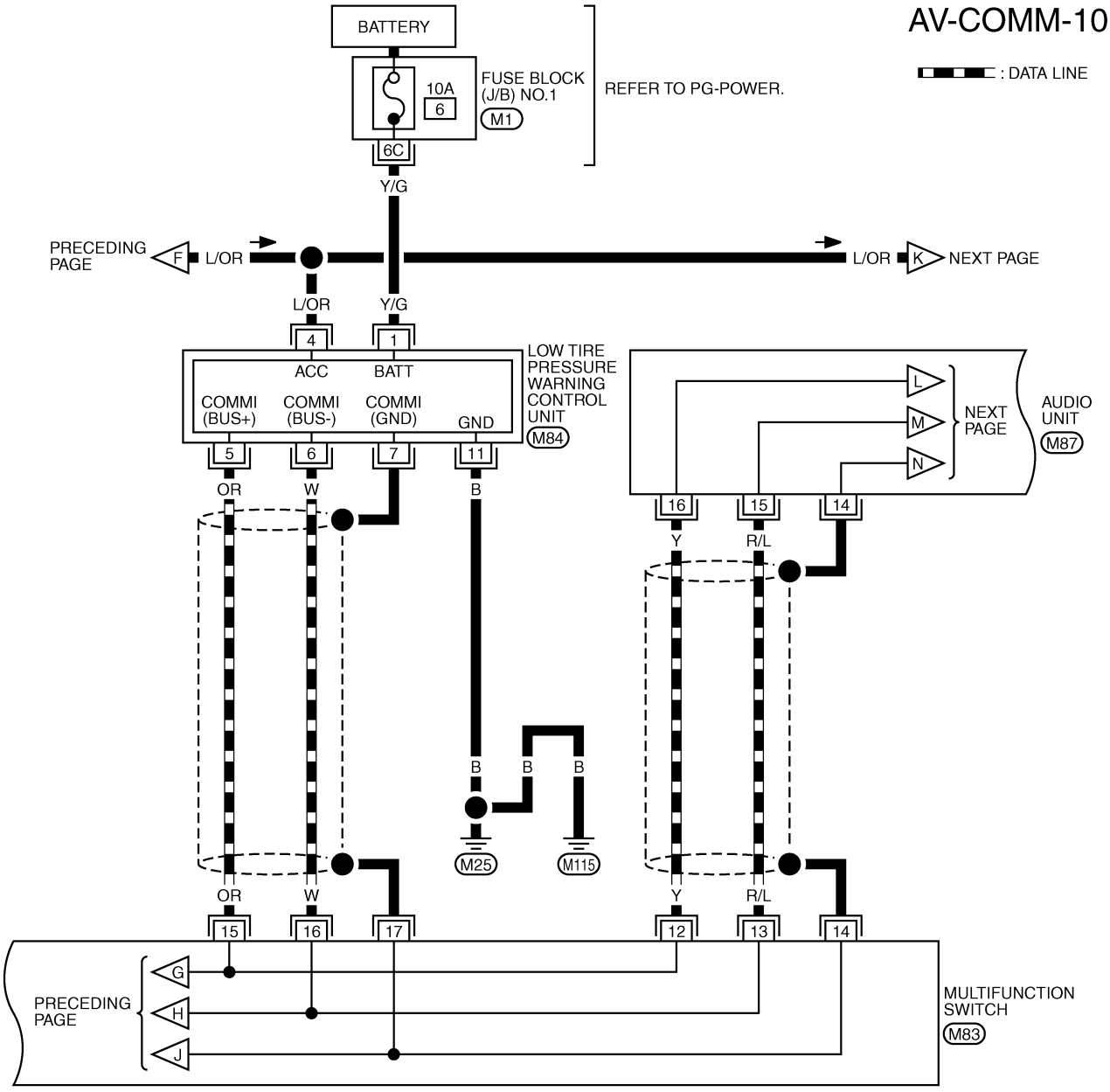

AV-COMM-09
TO AV-COMM-07
A PU/W
B L/OR
PU/W E TO AV-COMM-12
L/OR F NEXT PAGE
L/OR
1
ACC
BUS+
BUS-
SHIELD
GND
G
H
J
NEXT PAGE
MULTI-FUNCTION SWITCH
M83
2 9 10 11
B R L
: DATA LINE
PU/W PU/W L/OR
21 23 19
BAT BAT ACC
GND GND
BUS+
BUS-
BUS SHIELD
DISPLAY
M82
22 24 13 12 14
B B Y R/L
Y R/L
M6
20 18 19
B6
Y BR
B B B B B
W TO DI-R/VIEW
M114 M24
Y BR W
44 45 43 22
BUS+ BUS- SHIELD RVCAM
AV AND NAVI CONTROL UNIT
B29 , B30

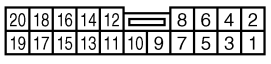
M6
GY
M82
GY
M83
W

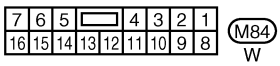
B29
GY
B30
W

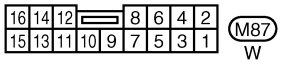
TKWM3977E

AV-COMM-10







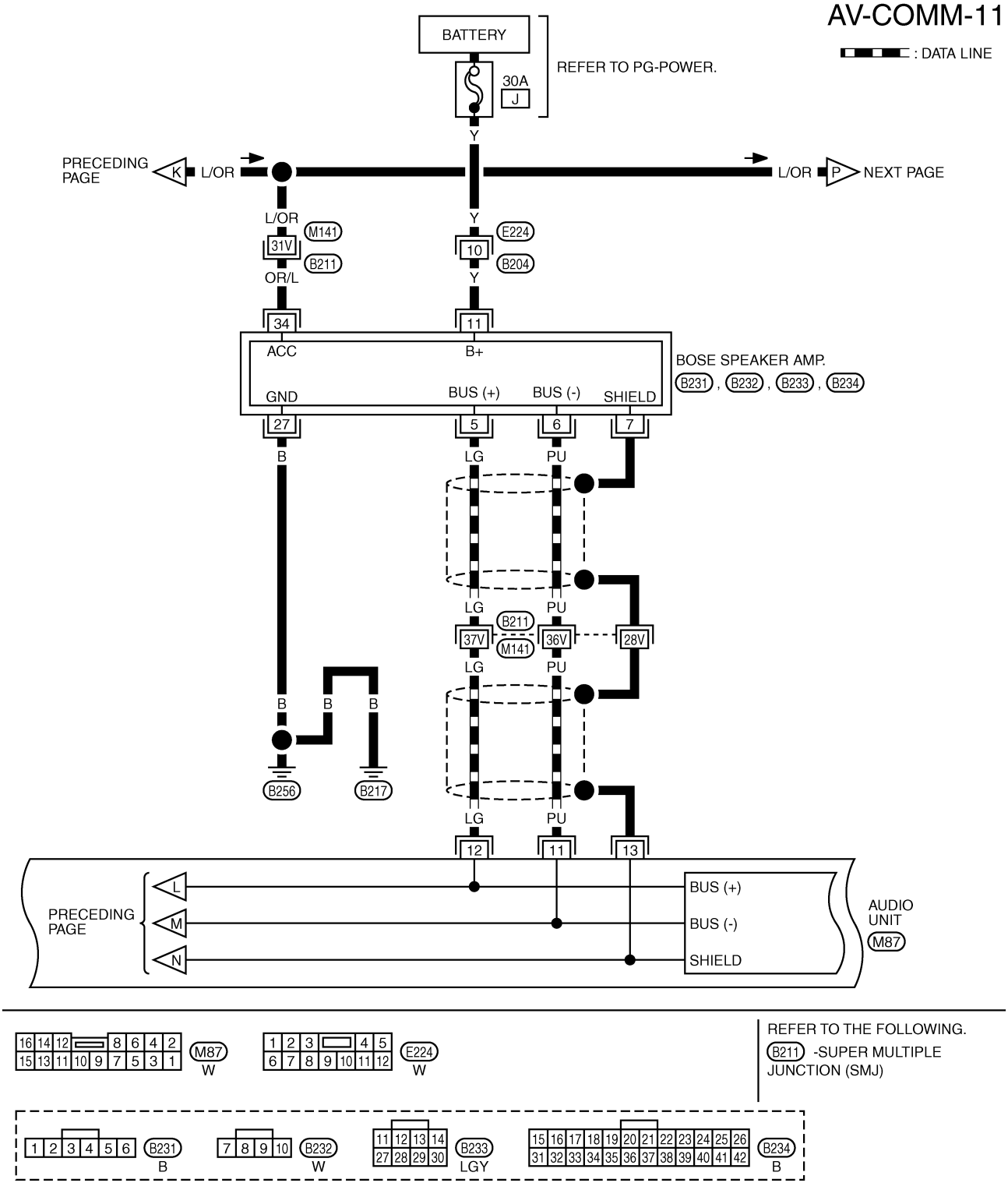


REFER TO THE FOLLOWING.

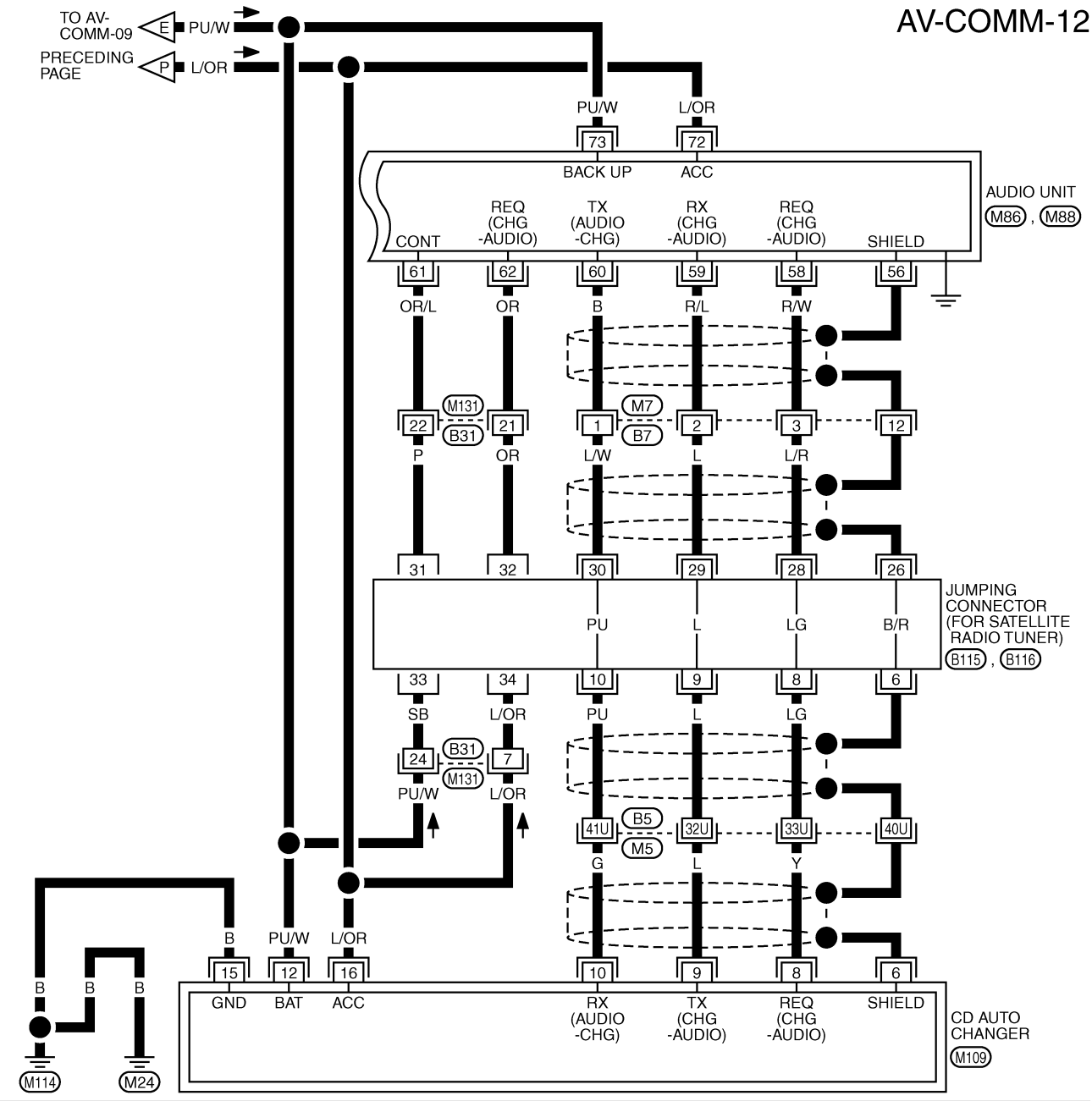
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TKWM3978E

AV-COMM-11



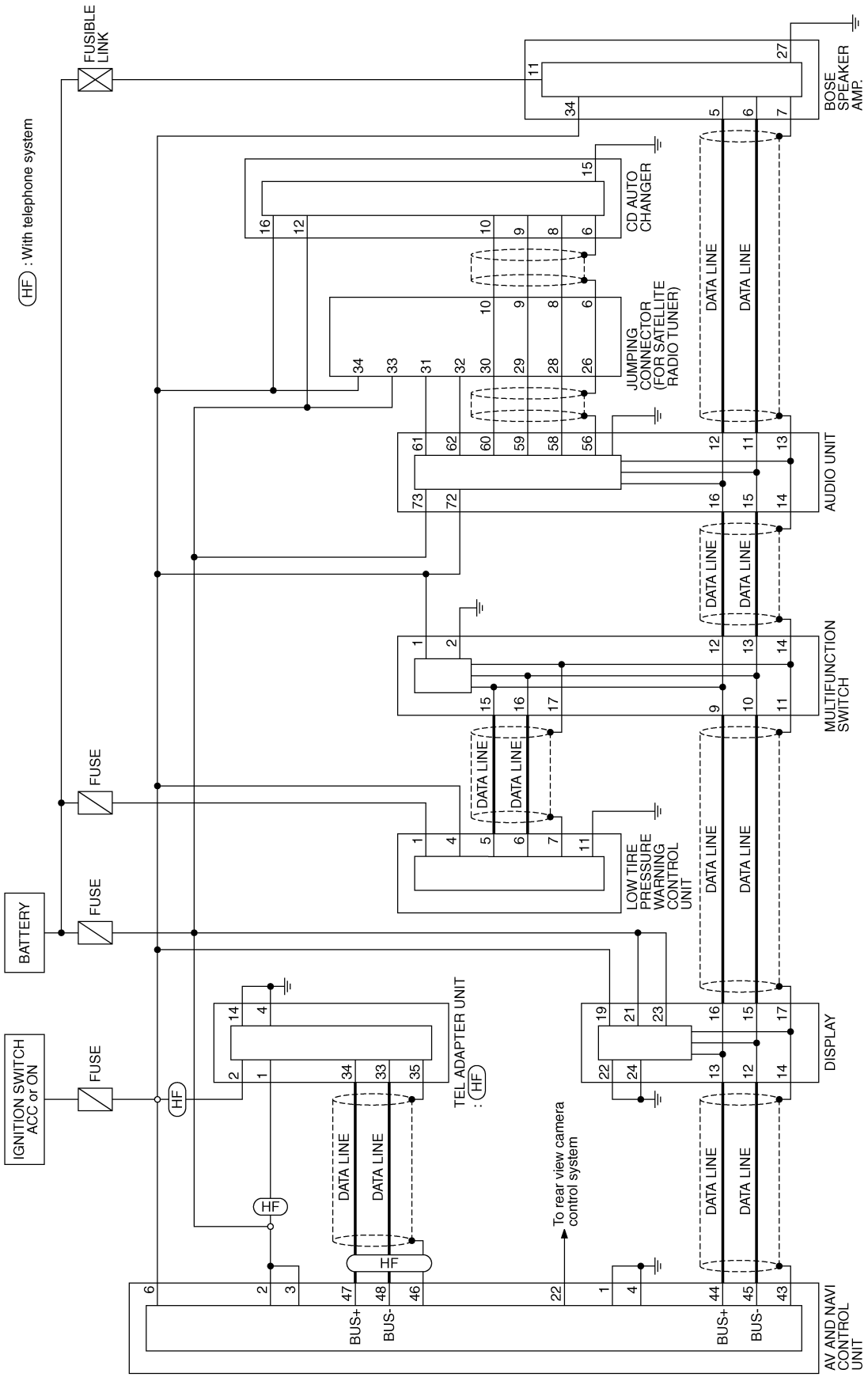
TKWM3979E


AV-COMM-12
TO AV-COMM-09
E
PU/W
PRECEDING PAGE
P
L/OR
PU/W
L/OR
73
72
BACK UP
ACC
AUDIO UNIT
M86 , M88
CONT
REQ (CHG -AUDIO)
TX (AUDIO -CHG)
RX (CHG -AUDIO)
REQ (CHG -AUDIO)
SHIELD
61
62
60
59
58
56
OR/L
OR
B
R/L
R/W
M131
B31
M7
B7
22
21
1
2
3
12
P
OR
L/W
L
L/R
31
32
30
29
28
26
JUMPING CONNECTOR (FOR SATELLITE RADIO TUNER)
B115 , B116
PU
L
LG
B/R
33
34
10
9
8
6
SB
L/OR
PU
L
LG
24
7
B31
M131
PU/W
L/OR
B5
M5
41U
32U
33U
40U
G
L
Y
B
PU/W
L/OR
15
12
16
10
9
8
6
B
B
B
GND
BAT
ACC
RX (AUDIO -CHG)
TX (CHG -AUDIO)
REQ (CHG -AUDIO)
SHIELD
CD AUTO CHANGER
M109
M114
M24
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
M7 , M131
W
BR
82 80 76 74 72 81 79 78 77 75 73 71
M86
W
62 60 54 52 61 59 58 57 56 55 53 51
M88
W
16 14 12 6 4 2 15 13 11 10 9 8 7 5 3 1
M109
W
34 33 26 24 22 35 17 32 30 29 28 31 25 23 21
B115
W
2 4 6 10 1 3 8 5 9
B116
W
REFER TO THE FOLLOWING.
M5 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM3813E

Schematic — COMM — / Without Voice Activated Control System

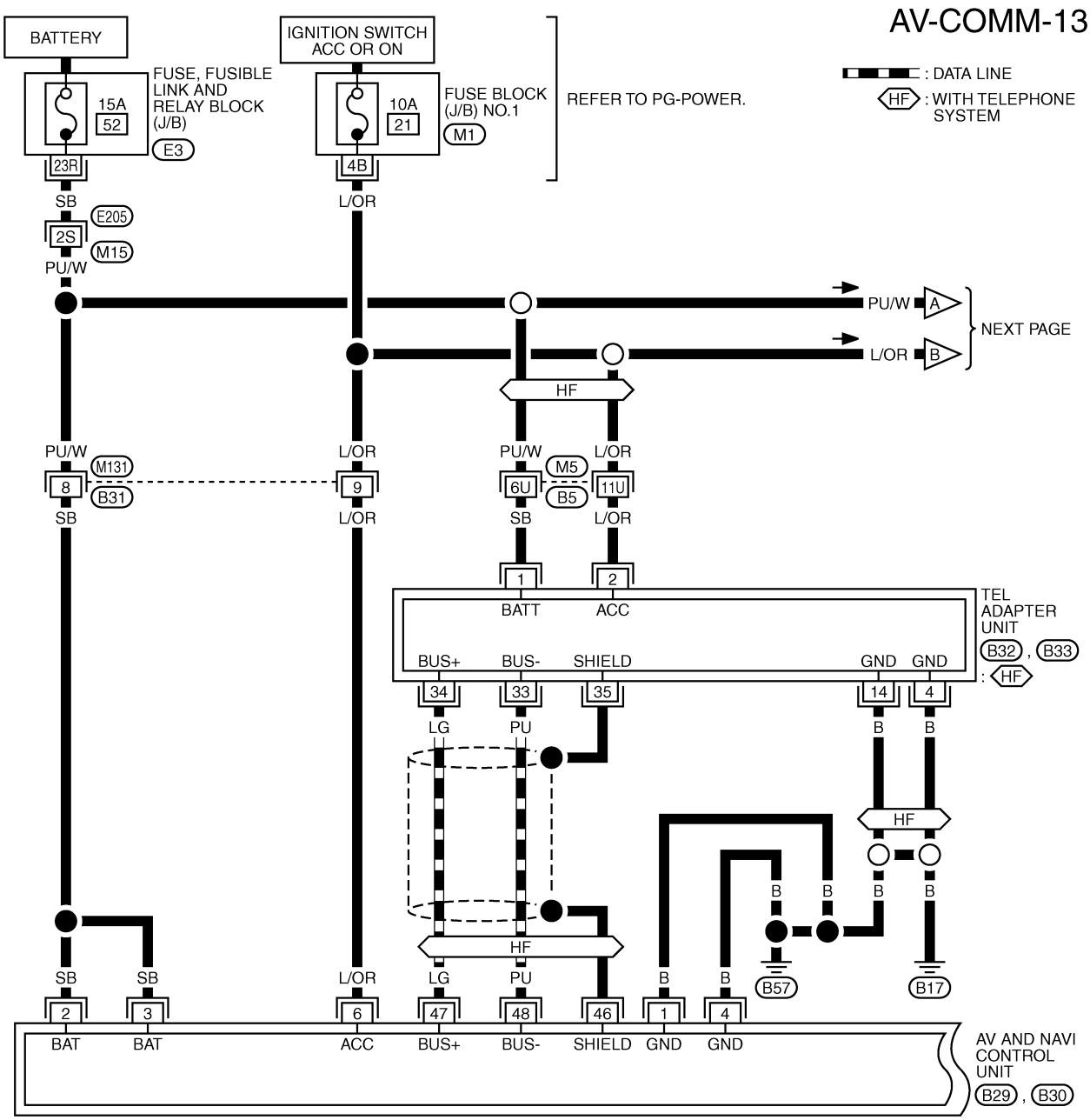
NKS002MB

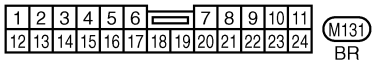


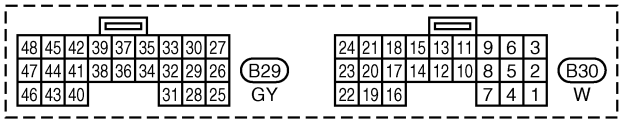
TKWM3815E

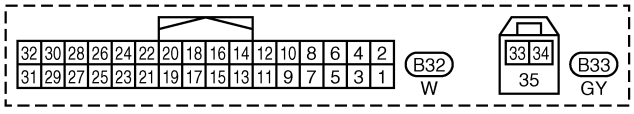
Wiring Diagram — COMM — / Without Voice Activated Control System

NKS002MC









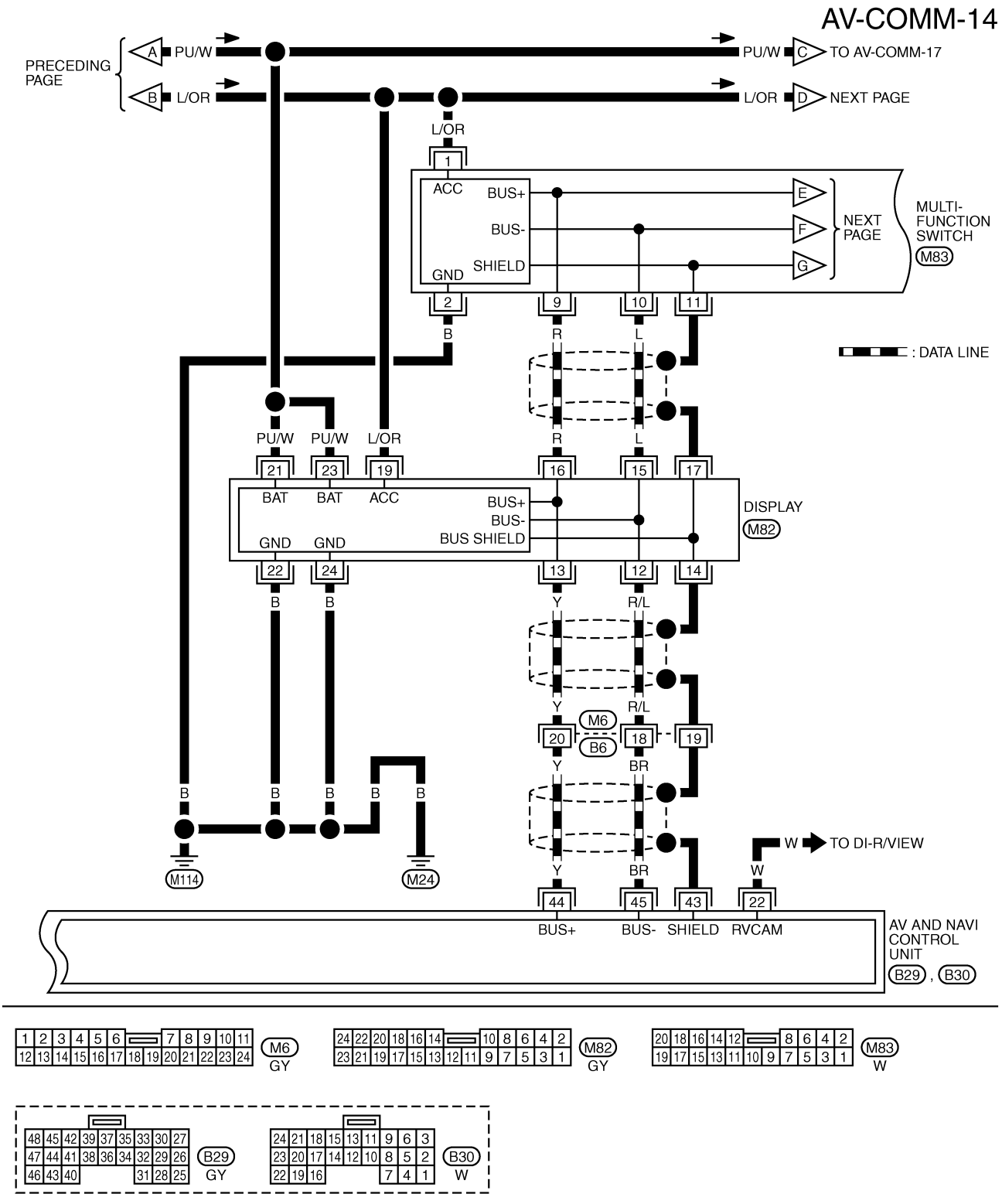
REFER TO THE FOLLOWING.

M5 , E205 -SUPER MULTIPLE JUNCTION (SMJ)

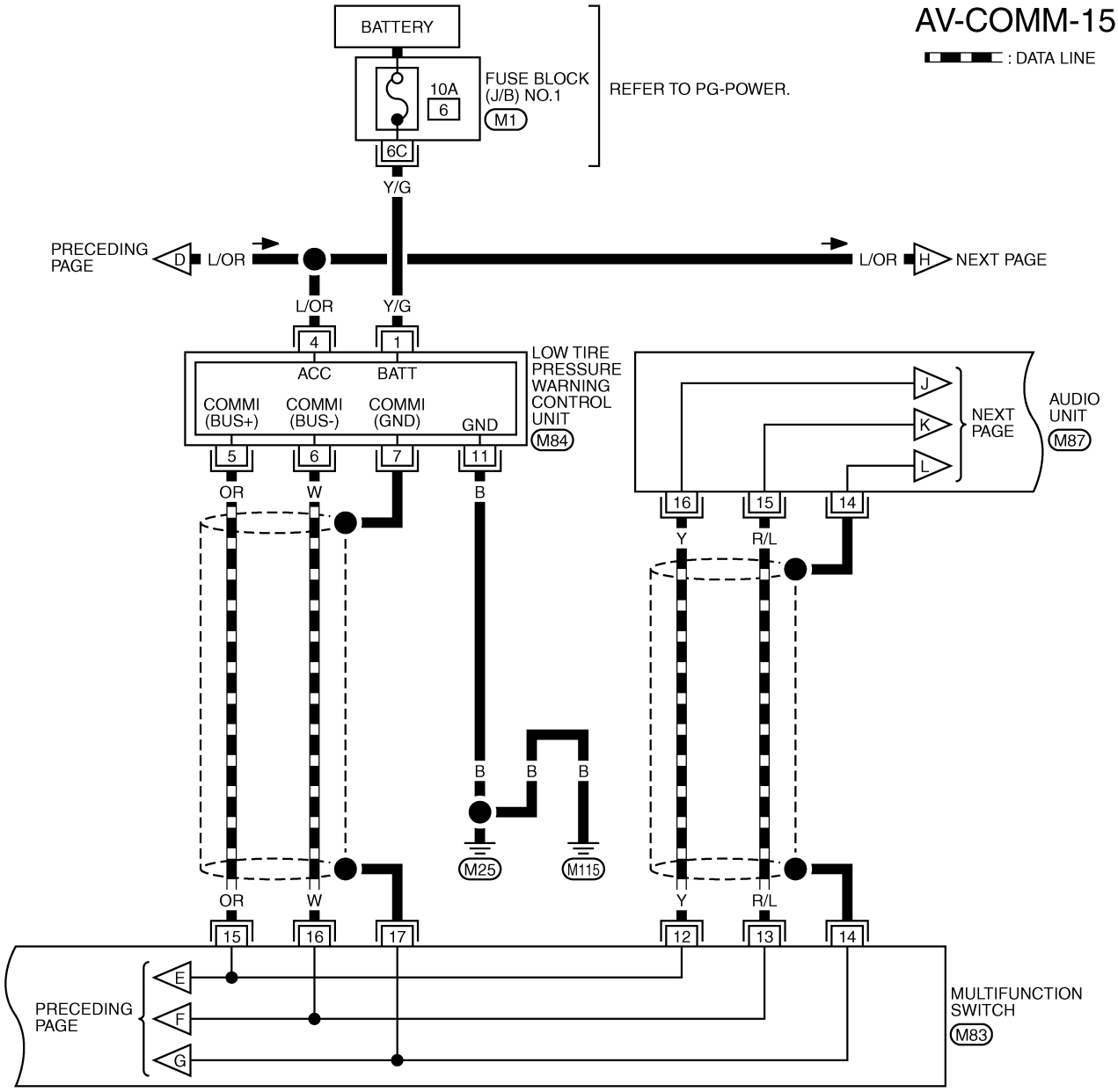
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

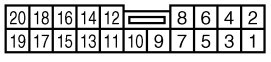
E3 -FUSE, FUSIBLE LINK AND RELAY BLOCK (J/B)

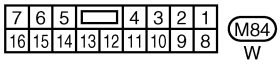
TKWM3816E

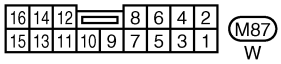

AV-COMM-14
PRECEDING PAGE
A PU/W
B L/OR
PU/W C TO AV-COMM-17
L/OR D NEXT PAGE
L/OR
1
ACC
BUS+
BUS-
SHIELD
GND
E
F
G
NEXT PAGE
MULTI-FUNCTION SWITCH
M83
2 9 10 11
B R L
: DATA LINE
PU/W PU/W L/OR
21 23 19
BAT BAT ACC
GND GND
BUS+
BUS-
BUS SHIELD
DISPLAY
M82
22 24 13 12 14
B B Y R/L
M6
20 18 19
B6
Y BR
B B B B B
W TO DI-R/VIEW
M114 M24
Y BR W
44 45 43 22
BUS+ BUS- SHIELD RVCAM
AV AND NAVI CONTROL UNIT
B29 , B30
M6 GY
M82 GY
M83 W
B29 GY
B30 W

TKWM3817E





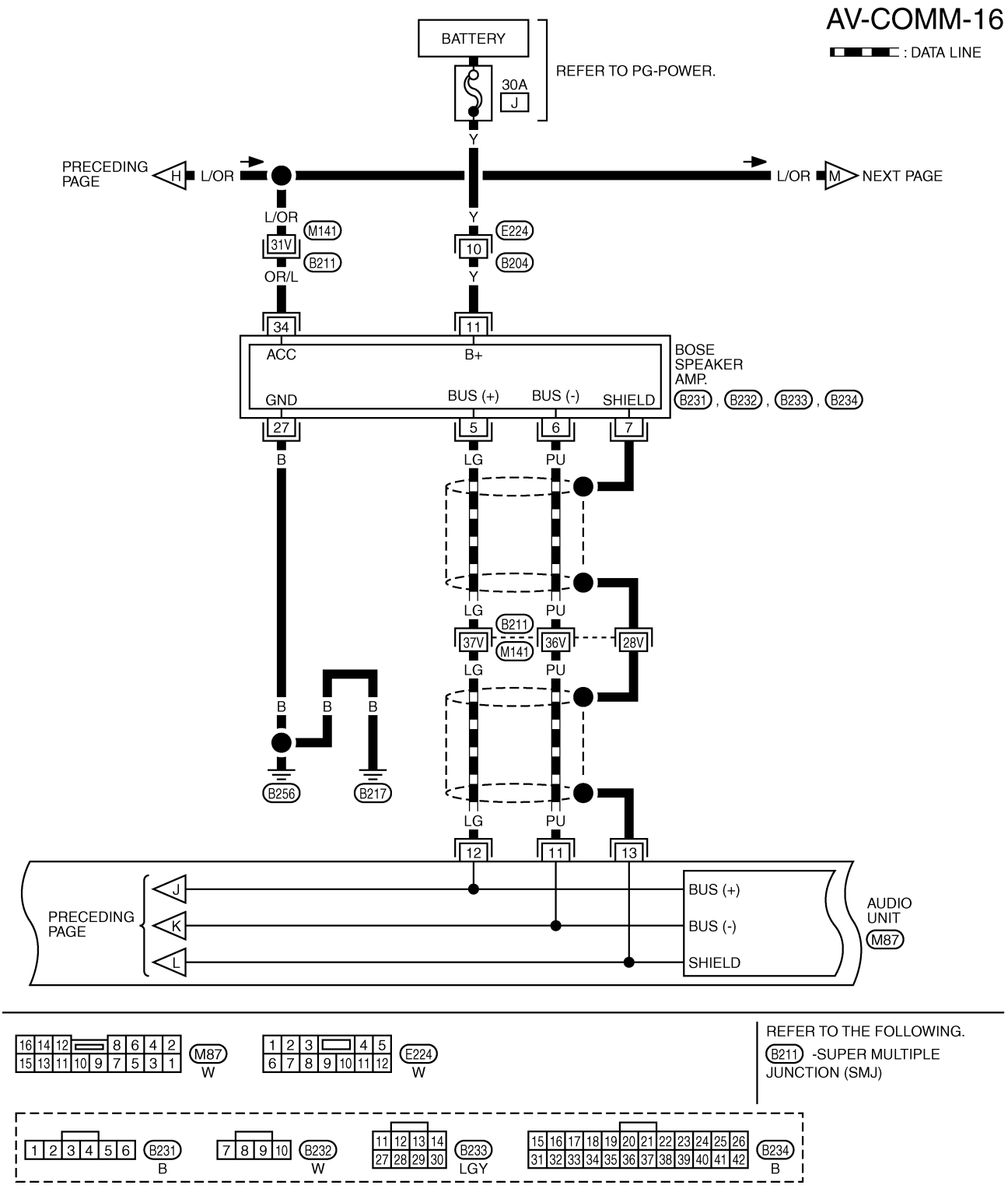




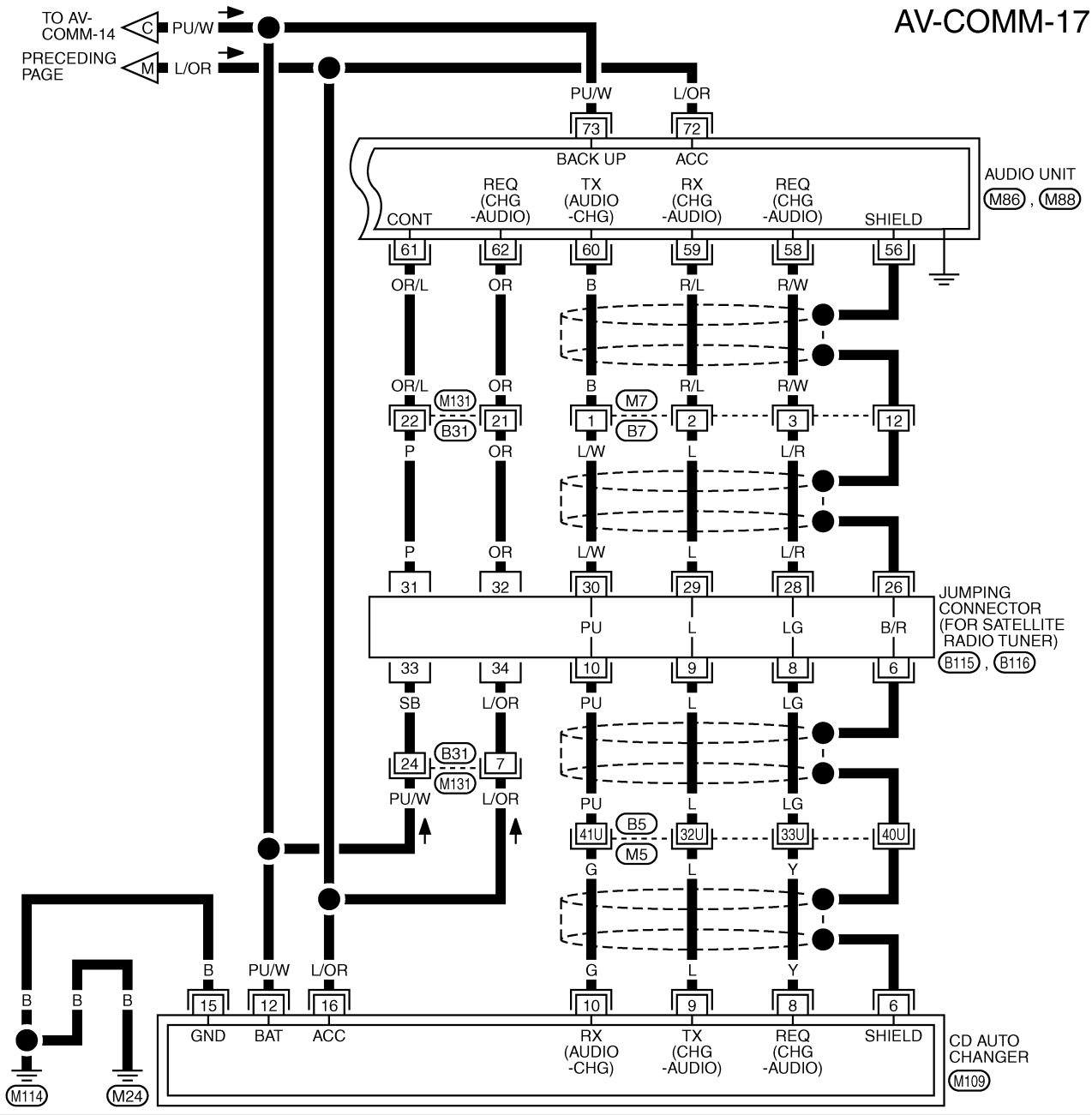
REFER TO THE FOLLOWING.

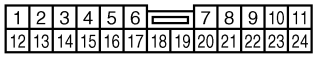
M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

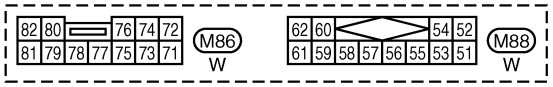
TKWM3818E

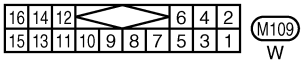

AV-COMM-16
: DATA LINE
BATTERY
30A
J
REFER TO PG-POWER.
Y
PRECEDING PAGE
H
L/OR
L/OR
M
NEXT PAGE
L/OR
M141
31V
B211
OR/L
Y
E224
10
B204
Y
34
11
ACC
B+
BOSE SPEAKER AMP.
B231 , B232 , B233 , B234
GND
BUS (+)
BUS (-)
SHIELD
27
5
6
7
B
LG
PU
LG
PU
B211
37V
M141
36V
28V
LG
PU
B
B
B
B256
B217
LG
PU
12
11
13
PRECEDING PAGE
J
K
L
BUS (+)
BUS (-)
SHIELD
AUDIO UNIT
M87
M87
W
E224
W
REFER TO THE FOLLOWING.
B211 -SUPER MULTIPLE JUNCTION (SMJ)
B231
B
B232
W
B233
LGY
B234
B

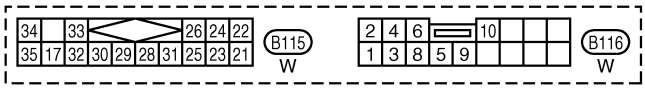
TKWM3819E









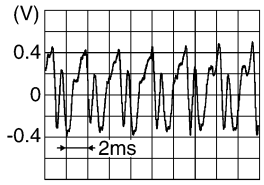
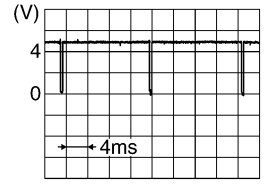
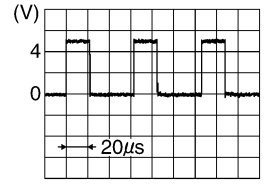
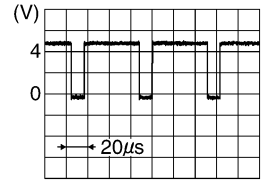
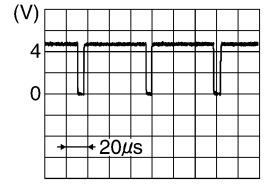


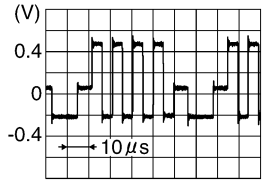
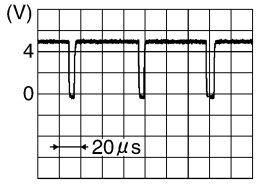
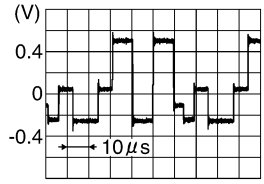
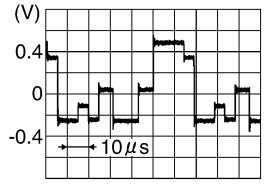
REFER TO THE FOLLOWING.
M5 -SUPER MULTIPLE JUNCTION (SMJ)

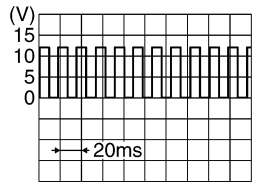
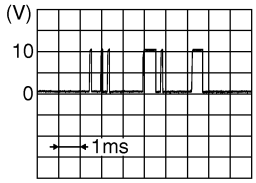
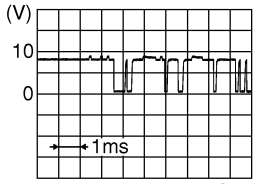
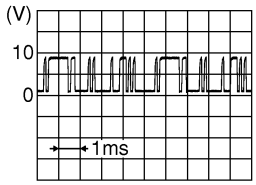
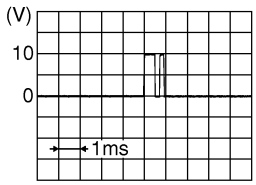
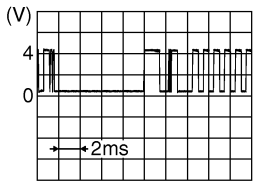
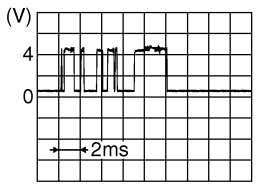
TKWM3821E

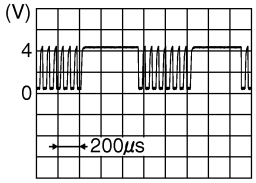
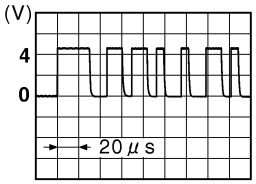
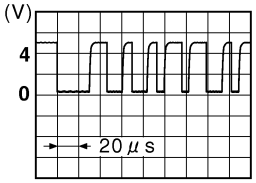
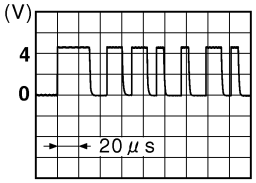
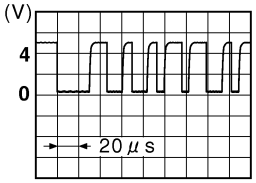
Terminals and Reference Value for AV and NAVI Control Unit

NKS001IT

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (B)	Ground	Ground	—	ON	—	Approx. 0 V
2 (SB)	Ground	Battery power supply	Input	OFF	—	Battery voltage
3 (SB)						
4 (B)	Ground	Ground	—	ON	—	Approx. 0 V
6 (L/OR)	Ground	ACC power supply	Input	ACC	—	Battery voltage
7 (R)	8 (L)	Voice guidance signal	Output	ON	Press “VOICE” button	 SKIB3597E
9	—	Shield	—	—	—	—
11 (R)	Ground	Vertical synchronizing (VP) signal	Input	ON	Set the selector lever in R position, and then display the rear view image	 SKIB3598E
					Other than the above	Approx. 0 V
12 (B)	Ground	RGB area (YS) signal	Output	ON	Set the selector lever in R position, and then display the rear view image	 SKIB3599E
					Other than the above	 SKIB3600E
13 (W)	Ground	Horizontal synchronizing (HP) signal	Input	ON	Set the selector lever in R position, and then display the rear view image	 SKIB3601E
					Other than the above	Approx. 0 V
14	—	Shield	—	—	—	—

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
15 (LG)	Ground	RGB signal (B: blue)	Output	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Display Color Spectrum Bar” on DISPLAY DIAGNOSIS screen	 SKIB3602E
16 (G)	Ground	RGB synchronizing signal	Output	ON	When displaying RGB image	 SKIB3603E
18 (L)	Ground	RGB signal (R: red)	Output	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Display Color Spectrum Bar” on DISPLAY DIAGNOSIS screen	 SKIB3604E
19	—	Shield	—	—	—	—
21 (PU)	Ground	RGB signal (G: green)	Output	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Display Color Spectrum Bar” on DISPLAY DIAGNOSIS screen	 SKIB3605E
22 (W)	Ground	Camera-connection recognition signal	Input	ON	Connected to rear view camera control unit connector	Approx. 0 V
					Not connected rear view camera control unit connector	Approx. 5 V
25 (R/L)	Ground	Illumination dimmer signal	Input	ON	Lighting switch is ON, and then optical sensor is not illuminated	Approx. 12 V
					Lighting switch OFF	Approx. 0 V
					Lighting switch is ON, and then optical sensor is illuminated	
26 (W/G)	Ground	Ignition signal	Input	ON	—	Battery voltage
27 (R/B)	Ground	Reverse signal	Input	ON	Select R position	Approx. 12 V
					Other position	Approx. 0 V

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
28 (OR/L)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 PKIA1935E
31	—	Shield	—	—	—	—
32 (PU)	Ground	Communication signal (ME-AV)	Input	ON	—	 SKIB7619E
33 (LG)	Ground	Communication signal (AV-ME)	Output	ON	—	 SKIB7620E
34 (P)	Ground	Communication signal (AV-CN)	Output	ON	Perform CONSULT-II	 SKIB7621E
35 (BR/Y)	Ground	Communication signal (CN-AV)	Input	ON	Perform CONSULT-II	 SKIB7622E
36	—	Shield	—	—	—	—
37 (W)	Ground	Communication signal (AC-AV)	Input	ON	—	 SKIB7623E
38 (R)	Ground	Communication signal (AV-AC)	Output	ON	—	 SKIB7624E

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
39 (B)	Ground	A/C clock signal	Input	ON	—	 SKIB7625E
43	—	Shield	—	—	—	—
44 (Y)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
45 (BR)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
46	—	Shield	—	—	—	—
47 (LG)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
48 (PU)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
66	Ground	GPS signal	Input	ON	Connector is not connected	Approx. 5 V
67	—	Shield	—	—	—	—

Terminals and Reference Value for Display

NKS001IU

Refer to DI-162, "Terminals and Reference Value for Display" .

Terminals and Reference Value for Multifunction Switch

NKS001IV

Refer to DI-164, "Terminals and Reference Value for Multifunction Switch" .

Terminals and Reference Value for Voice Activated Control Module

NKS001IW

Refer to DI-210, "Terminals and Reference Values for Voice Activated Control Module" .

Special Note for Trouble Diagnosis

NKS002KN

Prior to perform trouble diagnosis, make sure there are no corresponding description in the “Example of Symptoms Possible No Malfunction”. Refer to AV-128, "Example of Symptoms Possible No Malfunction" .

On Board Self-Diagnosis Function (Without CONSULT-II)

NKS001IX

DESCRIPTION

- Trouble diagnosis function of navigation system has a Self Diagnosis mode by automatic operation and a Confirmation/Adjustment mode by manual operation.
- Self Diagnosis mode checks for connections between the units constituting this system, analyzes each individual unit at the same time, and displays the results on the display.
- Confirmation/Adjustment mode displays trouble diagnosis that require an operation and a judgment by a human (auto-decision can not be performed by the system), confirmation of preset value, and an error history.
- If the on board self-diagnosis does not start (because the display is not displayed, the multifunction switch operation is not activated, etc.), perform diagnosis using CONSULT-II. Refer to AV-115, "CONSULT-II Function (MULTI AV)" .

DIAGNOSIS ITEM

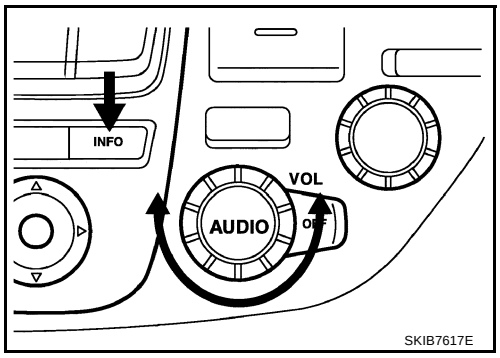
Mode			Description
Self Diagnosis			● AV and NAVI control unit diagnosis (DVD-ROM drive will not be diagnosed when no DVD-ROM is in it.). ● Analyzes connection between the AV and NAVI control unit and the GPS antenna, connection between the AV and NAVI control unit and each unit, and operation of each unit.
Confirmation/ Adjustment	Display Diagnosis		Color tone and shading of the screen can be checked by the display of a color bar and a gray scale.
	Vehicle Signals		Diagnosis of signals that are input to AV and NAVI control unit can be performed for Vehicle Speed, Light, IGN (ignition switch) and Reverse.
	History of Errors		Malfunctions that occurred in the past are displayed, along with the number of times each has occurred. Time and location when/where the errors occurred are also displayed.
	Rearview		The guiding line position that overlaps rear view camera image can be adjusted. Refer to DI-185, "Side Distance Guideline Correction" .
	Navigation	Display Longitude & Latitude	This mode is to 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 can immediately restore system accuracy in cases such as when distance calibration is needed because of the use of tire chains.
		Angle Adjustment	This mode is used to correct difference between actual turning angle of a vehicle and turning angle of the vehicle mark on the display.
		Initialize Location	This mode is for initializing the current location. Use when the vehicle is transported a long distance on a trailer, etc.
	Auto Climate Control		Turns all A/C screens on display and A/C switch indicator lamp on. Refer to ATC-53, "Self-diagnosis Function" .
	Speaker Test		Refer to AV-40, "DIAGNOSIS ITEM" .
	Voice Mic. Test		Refer to DI-211, "DIAGNOSIS ITEM" .

Self-Diagnosis Mode

NKS001IY

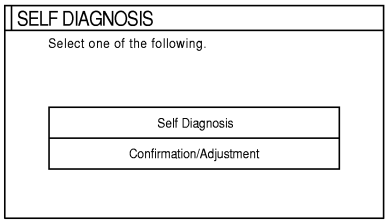
OPERATION PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “INFO” 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.



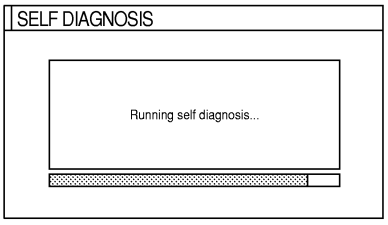
SKIB7617E

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



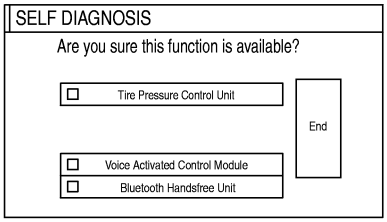
SKIA0381E

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



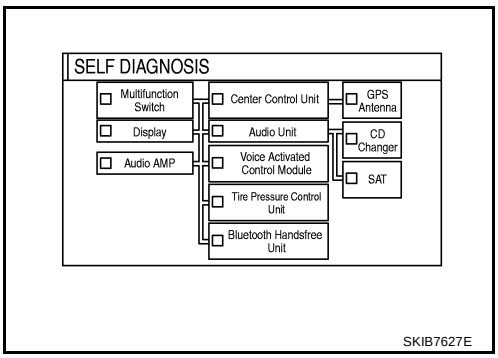
SKIA0382E

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.



SKIB7626E

7. On the diagnosis results 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.

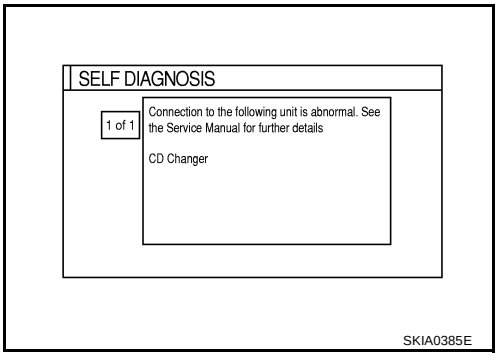
Red : Unit is malfunctioning.

Gray : Diagnosis has not been done.

NOTE:

- Audio AMP = BOSE speaker amp.
- Center Control Unit = AV and NAVI control unit
- Bluetooth Handsfree Unit = TEL adapter unit
- SAT = Satellite radio tuner
- If multiple malfunctions occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > yellow > gray.

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



SELF-DIAGNOSIS RESULT

Quick Reference Table

1. Select the applicable diagnosis number in the quick reference table of diagnosis result.
2. Confirm the possible malfunction with the diagnosis table, and then perform inspection.
3. Turn ignition switch OFF and perform self-diagnosis again.

Switch color	Screen switch									Diagnosis No.
	Audio AMP	Center Control Unit	Audio Unit	Voice Activated Control Module	Tire Pressure Control Unit	Bluetooth Hands-free Unit	GPS Antenna	CD Changer	SAT	
Red		×								1
Gray		×								2
Yellow		×								3
		×					×			4
	×	×	×					× (Gray)	× (Gray)	5
		×			×					6
	×	×								7
		×	×					× (Gray)	× (Gray)	8
			×					×		9
			×					×	×	10
			×						×	11
Screen switch not displayed*				×						12
						×				13
				×		×				14

NOTE:

- Audio AMP = BOSE speaker amp.
- Center Control Unit = AV and NAVI control unit
- Bluetooth Handsfree Unit = TEL adapter unit
- SAT = Satellite radio tuner

*: In a case that screen switches (on the self-diagnosis result screen) are not displayed though the vehicle has voice activated control module, or TEL adapter unit, or both of them.

Self-diagnosis Codes

Diagnosis No.	Possible cause	Action to take
1	AV and NAVI control unit malfunction is detected	Replace AV and NAVI control unit
2	DVD-ROM not inserted is detected	Insert DVD-ROM
3	● Malfunction is detected on DVD-ROM drive pickup lens in AV and NAVI control unit ● There is dirt and damage on the DVD-ROM	1. Check if the inserted DVD-ROM is specified for this navigation system, and the DVD-ROM is dirty, scratched or warped. 2. If the results from the above checkup show no malfunction, insert the same DVD-ROM, and then restart self-diagnosis. 3. If self-diagnosis results still show any malfunction, replace AV and NAVI control unit.
4	GPS antenna connection malfunction is detected	1. Check if GPS antenna feeder line is snapped or pinched. 2. If the results from the above checkup show no malfunction, replace GPS antenna, and then restart self-diagnosis. 3. If self-diagnosis results still show any malfunction, replace AV and NAVI control unit.
5	Malfunction is detected on communication signal between multifunction switch and audio unit	1. Check communication circuit between multifunction switch and audio unit. 2. If the results from the above checkup show no malfunction, replace either multifunction switch or audio unit, and then start self-diagnosis. 3. If self-diagnosis results still show any malfunction, replace the other unit.
6	● Low tire pressure warning control unit power supply and ground circuit malfunction is detected ● Malfunction is detected on communication signal between multifunction switch and low tire pressure warning control unit	1. Check low tire pressure warning control unit power supply and ground circuit. 2. Check communication circuit between multifunction switch and low tire pressure warning control unit. 3. If the results from the above checkup show no malfunction, replace either multifunction switch or low tire pressure warning control unit, and then start self-diagnosis. 4. If self-diagnosis results still show any malfunction, replace the other unit.
7	● BOSE speaker amp. power supply and ground circuit malfunction is detected ● Malfunction is detected on communication signal between audio unit and BOSE speaker amp.	1. Check BOSE speaker amp. power supply and ground circuit. 2. Check communication circuit between audio unit and BOSE speaker amp. 3. If the results from the above checkup show no malfunction, replace either audio unit or BOSE speaker amp., and then start self-diagnosis. 4. If self-diagnosis results still show any malfunction, replace the other unit.
8	Audio unit power supply and ground circuit malfunction is detected	1. Check audio unit power supply circuit. 2. If the results from the above checkup show no malfunction, replace audio unit.

Diagnosis No.	Possible cause	Action to take
9	**Without satellite radio** ● Malfunction is detected on communication signal [REQ (CHG-AUDIO)] between audio unit and CD auto changer	1. Check communication circuit [REQ (CHG-AUDIO)] between audio unit and CD auto changer. 2. Check communication signal [REQ (CHG-AUDIO)] between audio unit and CD auto changer. 3. If the results from the above checkup show no malfunction, replace either audio unit or CD auto changer, and then start self-diagnosis. 4. If self-diagnosis results still show any malfunction, replace the other unit.
	With satellite radio ● Malfunction is detected on communication signal [REQ (CHG-AUDIO)] between audio unit and satellite radio tuner ● Malfunction is detected on control signal (CONT) between audio unit and satellite radio tuner ● Malfunction is detected on communication signal [REQ (CHG-AUDIO)] between satellite radio tuner and CD auto changer	1. Check communication circuit [REQ (CHG-AUDIO)] between audio unit and satellite radio tuner. 2. Check control signal circuit (CONT) between audio unit and satellite radio tuner. 3. Check communication circuit [REQ (CHG-AUDIO)] between satellite radio tuner and CD auto changer. 4. Check communication signal [REQ (CHG-AUDIO)] between audio unit and satellite radio tuner. 5. Check control signal (CONT) between audio unit and satellite radio tuner. 6. Check communication signal [REQ (CHG-AUDIO)] between satellite radio tuner and CD auto changer. 7. If the results from the above checkup show no malfunction, replace audio unit, satellite radio tuner, or CD auto changer, and then start self-diagnosis. 8. If self-diagnosis results still show any malfunction, replace one of the two units that is not replaced yet. 9. If self-diagnosis results still show any malfunction, replace the other unit.
10	● Satellite radio tuner power supply and ground circuit malfunction is detected ● CD auto changer power supply and ground circuit malfunction is detected ● Malfunction is detected on communication signal [REQ (CHG-AUDIO), REQ (SAT-AUDIO), Tx and RX] between audio unit and satellite radio tuner ● Malfunction is detected on control signal (CONT) between audio unit and satellite radio tuner ● Malfunction is detected on communication signal [REQ (CHG-AUDIO), Tx and Rx] between satellite radio tuner and CD auto changer	1. Check satellite radio tuner power supply and ground circuit. 2. Check CD auto changer power supply and ground circuit. 3. Check communication circuit [REQ (CHG-AUDIO), REQ (SAT-AUDIO), Tx and RX] between audio unit and satellite radio tuner. 4. Check control signal circuit (CONT) between audio unit and satellite radio tuner. 5. Check communication circuit [REQ (CHG-AUDIO), Tx and Rx] between satellite radio tuner and CD auto changer. 6. Check communication signal [REQ (CHG-AUDIO), REQ (SAT-AUDIO), Tx and RX] between audio unit and satellite radio tuner. 7. Check control signal (CONT) between audio unit and satellite radio tuner. 8. Check communication signal [REQ (CHG-AUDIO), Tx and Rx] between satellite radio tuner and CD auto changer. 9. If the results from the above checkup show no malfunction, replace audio unit, satellite radio tuner, or CD auto changer, and then start self-diagnosis. 10. If self-diagnosis results still show any malfunction, replace one of the two units that is not replaced yet. 11. If self-diagnosis results still show any malfunction, replace the other unit.

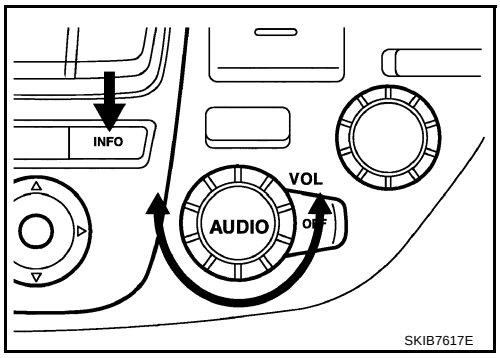
Diagnosis No.	Possible cause	Action to take
11	Malfunction is detected on communication signal [REQ (SAT-AUDIO)] between audio unit and satellite radio tuner	1. Check communication circuit [REQ (SAT-AUDIO)] between audio unit and satellite radio tuner. 2. Check communication signal [REQ (SAT-AUDIO)] between audio unit and satellite radio tuner. 3. If the results from the above checkup show no malfunction, replace either audio unit or satellite radio tuner, and then start self-diagnosis. 4. If self-diagnosis results still show any malfunction, replace the other unit.
12	Voice activated control module power supply and ground circuit malfunction is detected	1. Check voice activated control module power supply and ground circuit. 2. If the results from the above checkup show no malfunction, replace voice activated control module.
13	● TEL adapter unit power supply and ground circuit malfunction is detected ● Malfunction is detected on communication signal between voice activated control module and TEL adapter unit	1. Check TEL adapter unit power supply and ground circuit. 2. Check communication circuit between voice activated control module and TEL adapter unit. 3. If the results from the above checkup show no malfunction, replace either voice activated control module or TEL adapter unit, and then start self-diagnosis. 4. If self-diagnosis results still show any malfunction, replace the other unit.
14	Malfunction is detected on communication signal between AV and NAVI control unit and voice activated control module	1. Check communication circuit between AV and NAVI control unit and voice activated control module. 2. If the results from the above checkup show no malfunction, replace either AV and NAVI control unit or voice activated control module, and then start self-diagnosis. 3. If self-diagnosis results still show any malfunction, replace the other unit.

Confirmation/Adjustment Mode

NKS001IZ

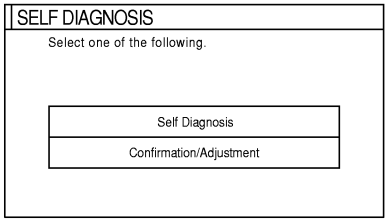
OPERATION PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “INFO” 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.



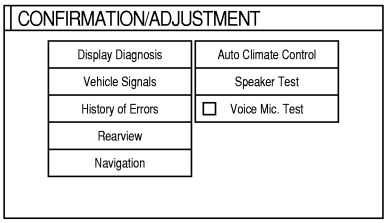
SKIB7617E

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



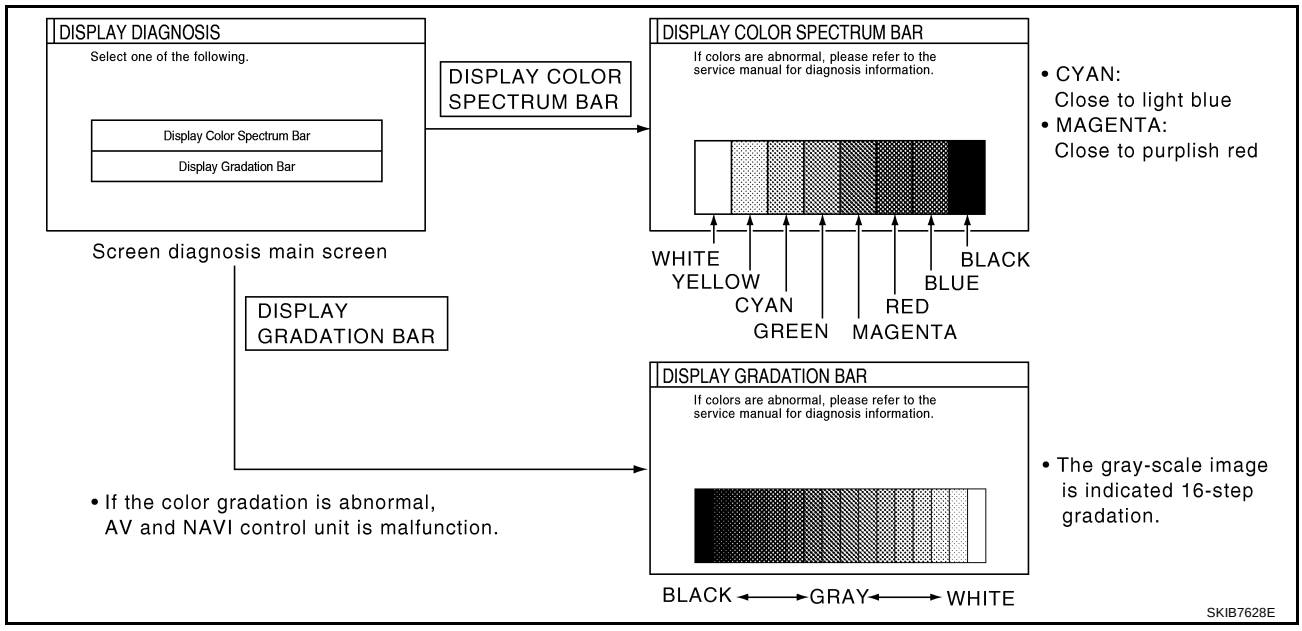
SKIA0381E

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



SKIA0361E

DISPLAY DIAGNOSIS

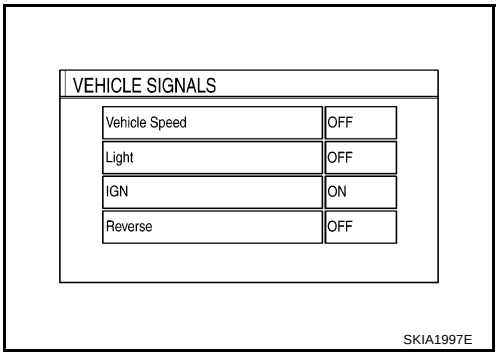


- If RGB signal is malfunctioning, the tint of the color bar display is as follows.

R (red) signal error : Light blue (Cyan) tint
G (green) signal error : Purple (Magenta) tint
B (blue) signal error : Yellow tint

VEHICLE SIGNALS

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



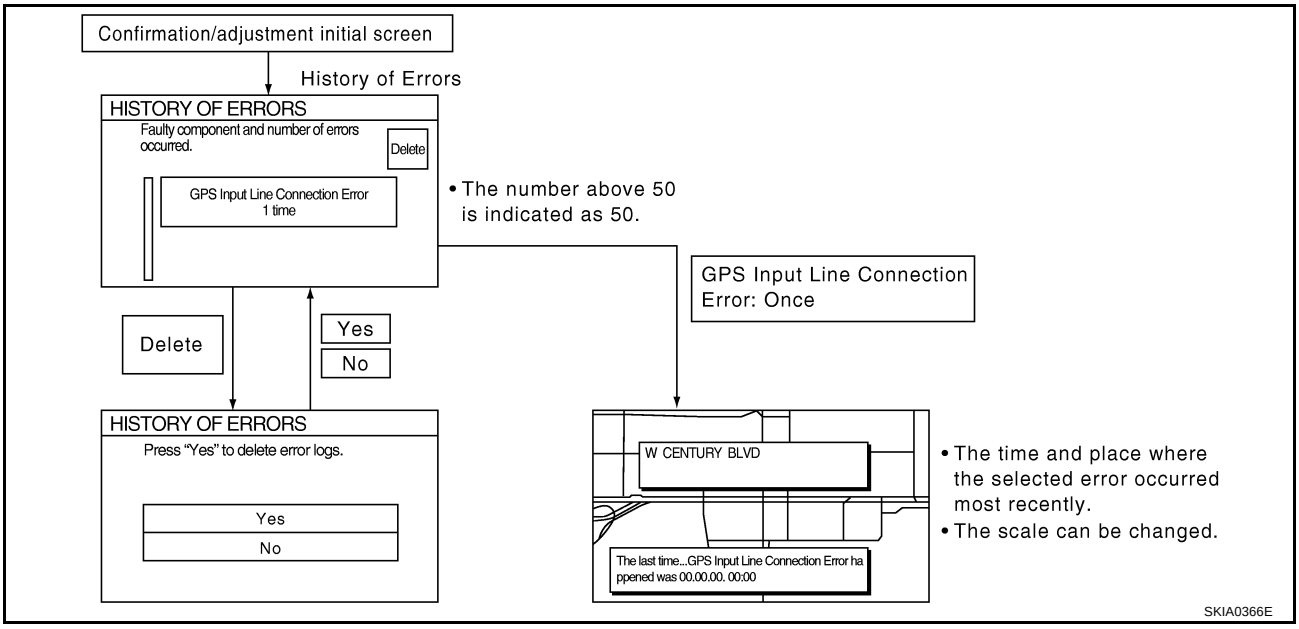
Diagnosis item	Display	Condition	Remarks
Vehicle Speed	ON	When vehicle speed is more than 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	When vehicle speed is 0 km/h (0 MPH)	
	—	Ignition switch in ACC position	
Lights	ON	Lighting switch is ON, and then optical sensor is not illuminated	—
	OFF	Lighting switch OFF	
		Lighting switch is ON, and then optical sensor is illuminated	
Ignition	ON	Ignition switch ON	—
	OFF	Ignition switch ACC position	
Reverse	ON	Selector lever in R position	Changes in indication may be delayed. This is normal.
	OFF	Selector lever in any position other than R position	
	—	Ignition switch in ACC position	

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

HISTORY OF ERRORS

Diagnosis results of self-diagnosis depend on if any error occurred during the time after selecting “Self Diagnosis” until self-diagnosis results is displayed.
Meanwhile, when an error occurs before selecting “Self Diagnosis”, and if an error does not occur until self-diagnosis results is displayed, a diagnosis result is judged as normal.
Consequently, a diagnosis needs to be performed with “History of Errors” for the past error that is not available with self-diagnosis.
“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 AV and NAVI control unit has malfunctioned.
- Place of the error occurrence is represented by the position of the vehicle mark at the time when the error occurred. If the vehicle mark has deviated from the correct position, then the place of the error occurrence may not be located correctly.
- “History of Errors” stores error occurrences up to 50, and errors after the 51st are displayed as the 50th.



Diagnosis by History of Errors

When having a difficulty on the investigation of cause due to multiple errors with a reproducible malfunction, turn ON the ignition switch from OFF mode after making a memo of the item and number of time (or delete “History of Errors”). Check “History of Errors” again after the malfunction was reproduced, and then perform diagnosis focusing on the item of which number of time increased.

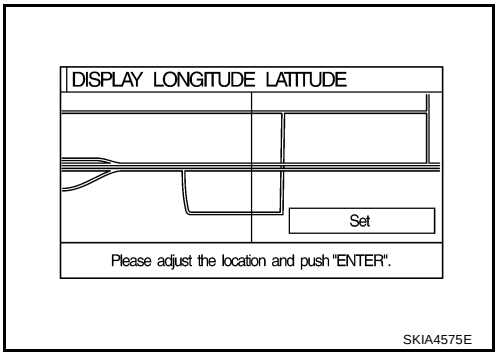
Error item	Possible causes Action/symptom	Example of symptom
Gyro sensor disconnected	Communications malfunction between AV and NAVI control unit and internal gyro. ● Perform self-diagnosis. ● When the AV and NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Navigation location detection performance has deteriorated. (Angular velocity cannot be detected.)
GPS disconnected	Communication error between AV and NAVI control unit and internal GPS substrate. ● Perform self-diagnosis. ● When the AV and NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
GPS transmission cable malfunction	Malfunctioning transmission wires to AV and NAVI control unit and internal GPS substrate. ● Perform self-diagnosis. ● When the AV and NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● During self-diagnosis, GPS diagnosis is not performed.
GPS input line connection error	Malfunctioning receiving wires to AV and NAVI control unit and internal GPS substrate. ● Perform self-diagnosis. ● When the AV and NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
GPS TCX0 over GPS TCX0 under	Oscillating frequency of the GPS substrate frequency synchronizing oscillation circuit exceeded (or below) the specification. ● Perform self-diagnosis. ● When the AV and 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 location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
GPS ROM malfunction GPS RAM malfunction	Contents of ROM (or RAM) in GPS substrate are malfunctioning. ● Perform self-diagnosis. ● When the AV and NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Location detection accuracy of the navigation system may have deteriorated, depending on the error area in the memory, because GPS could not make correct positioning. (Location correction using GPS is not performed.)
GPS RTC malfunction	Clock IC in GPS substrate is malfunctioning. ● Perform self-diagnosis. ● When the AV and NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	● Correct time may not be displayed. ● After the power is turned on, the system always takes some time until GPS positioning becomes possible. (The GPS receiver starts positioning without re-collecting the whole satellite information when it judged the data stored in the receiver is correct.) ● Correct time of error occurrence may not be stored in the ″History of Errors″.

Error item	Possible causes Action/symptom	Example of symptom
GPS antenna disconnected	Malfunctioning connection between GPS substrate in AV and NAVI control unit and GPS antenna. ● Perform self-diagnosis. ● When connection between AV and NAVI control unit and GPS antenna is judged normal by self-diagnosis, the symptom may be intermittent, caused by impact or vibration.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
Low voltage of GPS	The power voltage supplied to the GPS circuit board has decreased. ● Perform self-diagnosis. ● When connection between AV and NAVI control unit and GPS antenna is judged normal by self-diagnosis, the symptom may be intermittent, caused by impact or vibration.	● Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) ● GPS receiving status remains gray.
DVD-ROM malfunction DVD-ROM read error DVD-ROM response Error	Malfunctioning AV and NAVI control unit.	—
	Dedicated DVD-ROM is in the system, but the data cannot be read. ● Is DVD-ROM damaged, warped, or dirty? – If damaged or warped, the DVD-ROM is malfunctioning. – If dirty, wipe the DVD-ROM clean with a soft cloth. ● Perform self-diagnosis. ● When AV and NAVI control unit is judged normal by self-diagnosis, the symptom is judged intermittent, caused by vibration.	● 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.

NAVIGATION

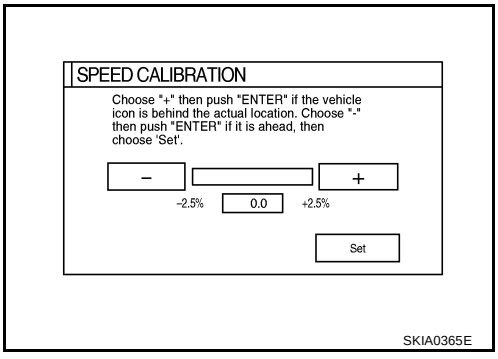
Display Longitude & Latitude

Able to confirm/adjust longitude and latitude.



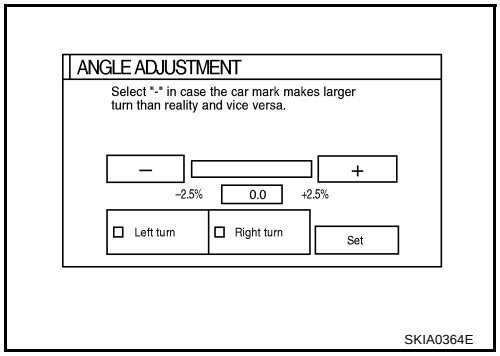
Speed Calibration

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



Angle Adjustment

The turning angle output detected by the gyroscope can be adjusted.



Initialize Location

This mode is for initializing the current location.

CONSULT-II Function (MULTI AV)

NKS001J0

CONSULT-II can display each diagnostic item using the diagnostic test modes shown following.

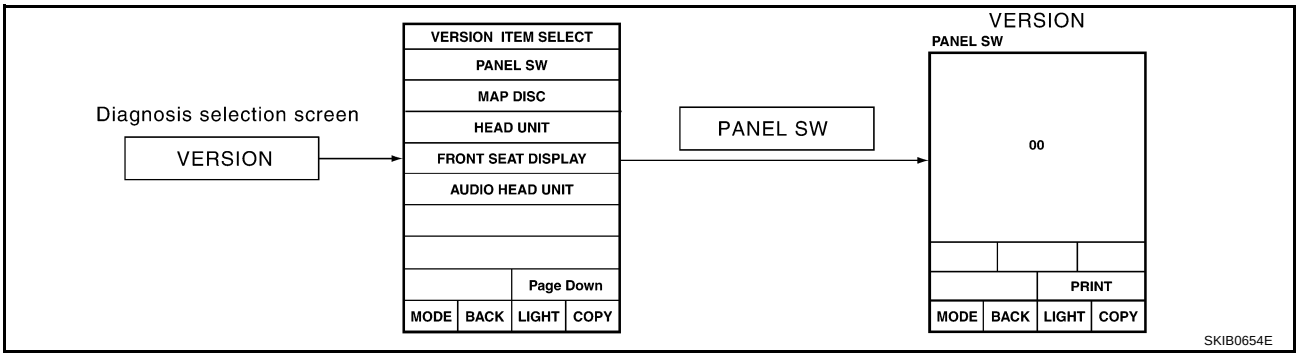
System part	Diagnosis mode	Description
MULTI AV	VERSION	Displays version of each unit connected to AV and NAVI control unit.
	SELF-DIAG RESULTS	● Performs the connection diagnosis of communication circuit between AV and NAVI control unit and each unit, and displays the current malfunctions. ● The DVD-ROM drive diagnosis of AV and NAVI control unit can be performed.
	SIGNAL MONITOR	The diagnosis of vehicle signal that is input to the AV and NAVI control unit can be performed.

CONSULT-II BASIC OPERATION PROCEDURE

Refer to GI-36, "CONSULT-II Start Procedure" .

VERSION

Displays version of each unit connected to the AV and NAVI control unit.



Version display	Remarks
“PANEL SW”	Multifunction switch
“MAP DISK”	DVD-ROM
“HEAD UNIT”	AV and NAVI control unit
“FRONT SEAT DISPLAY”	Display
“AUDIO HEAD UNIT”	Audio unit
“AIR COMP RECEIVER”	Low tire pressure warning control unit
“BOSE AMP”	BOSE speaker amp.
“VOICE UNIT”	Voice activated control module

SELF-DIAG RESULTS

The self-diagnosis is started and self-diagnosis results are displayed by touching “START” after selecting “SELF-DIAG RESULTS”.

Display Item of SELF-DIAG RESULTS

Self-diagnosis results may be displayed simultaneously according to the cause. If some error items are displayed simultaneously, the detection of the cause can be performed by the combination of display items.

NOTE:
When “IVCS [ABNORMAL CONNECTION]” is indicated, this is not malfunction.

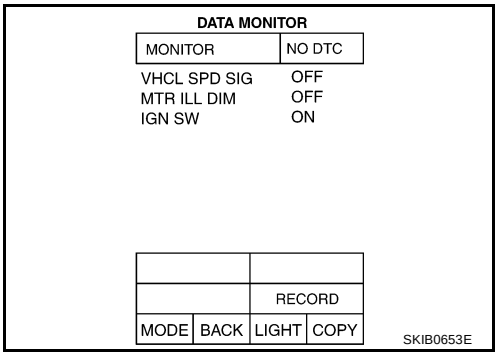
Error item	Possible cause	Action to take
HEAD UNIT [ABNORMAL]	AV and NAVI control unit malfunction is detected	Replace AV and NAVI control unit
BOSE AMP [ABNORMAL]	BOSE speaker amp. malfunction is detected	Replace BOSE speaker amp.
VOICE UNIT [ABNORMAL]	Voice activated control module malfunction is detected	Replace voice activated control module
MAP DISC [NO INSERT]	DVD-ROM not inserted is detected	Insert DVD-ROM
MAP DISC [ABNORMAL] MAP DISC DRIVER [ABNORMAL 1] MAP DISC OR DRIVER [ABNORMAL]	● Malfunction is detected on DVD-ROM drive pickup lens in AV and NAVI control unit ● There is dirt and damage on the DVD-ROM	1. Check if the inserted DVD-ROM is specified for this navigation system, and the DVD-ROM is dirty, scratched or warped. 2. If the results from the above checkup show no malfunction, insert the same DVD-ROM, and then restart self-diagnosis. 3. If self-diagnosis results still show any malfunction, replace AV and NAVI control unit.
● PANEL SW [ABNORMAL CONNECTION] ● AUDIO HEAD UNIT [ABNORMAL CONNECTION] ● AIR COMP RECEIVER [ABNORMAL CONNECTION] ● VOICE UNIT [ABNORMAL CONNECTION] ● BOSE AMP [ABNORMAL CONNECTION] ● FRONT SEAT DISPLAY [ABNORMAL CONNECTION]	Malfunction is detected on communication signal	Check all communication circuits composing AV system. Repair malfunctioning parts.
● PANEL SW [ABNORMAL CONNECTION] ● AUDIO HEAD UNIT [ABNORMAL CONNECTION] ● AIR COMP RECEIVER [ABNORMAL CONNECTION] ● BOSE AMP [ABNORMAL CONNECTION] ● FRONT SEAT DISPLAY [ABNORMAL CONNECTION]	Malfunction is detected on communication signal between AV and NAVI control unit and display	1. Check communication circuit between AV and NAVI control unit and display. 2. If the results from the above checkup show no malfunction, replace either AV and NAVI control unit or display, and then start self-diagnosis. 3. If self-diagnosis results still show any malfunction, replace the other unit.
● PANEL SW [ABNORMAL CONNECTION] ● AUDIO HEAD UNIT [ABNORMAL CONNECTION] ● AIR COMP RECEIVER [ABNORMAL CONNECTION] ● BOSE AMP [ABNORMAL CONNECTION]	Malfunction is detected on communication signal between display and multifunction switch	1. Check communication circuit between display and multifunction switch. 2. If the results from the above checkup show no malfunction, replace either display or display, and then start self-diagnosis. 3. If self-diagnosis results still show any malfunction, replace the other unit.

Error item	Possible cause	Action to take
PANEL SW [ABNORMAL CONNECTION]	Multifunction switch power supply and ground circuit malfunction is detected	1. Check multifunction switch power supply and ground circuit. 2. If the results from the above checkup show no malfunction, replace multifunction switch.
● AUDIO HEAD UNIT [ABNORMAL CONNECTION] ● BOSE AMP [ABNORMAL CONNECTION]	Malfunction is detected on communication signal between multifunction switch and audio unit	1. Check communication circuit between multifunction switch and audio unit. 2. If the results from the above checkup show no malfunction, replace either multifunction switch or audio unit, and then start self-diagnosis. 3. If self-diagnosis results still show any malfunction, replace the other unit.
AIR COMP RECEIVER [ABNORMAL CONNECTION]	● Low tire pressure warning control unit power supply and ground circuit malfunction is detected ● Malfunction is detected on communication signal between multifunction switch and low tire pressure warning control unit	1. Check low tire pressure warning control unit power supply and ground circuit. 2. Check communication circuit between multifunction switch and low tire pressure warning control unit. 3. If the results from the above checkup show no malfunction, replace either multifunction switch or low tire pressure warning control unit, and then start self-diagnosis. 4. If self-diagnosis results still show any malfunction, replace the other unit.
BOSE AMP [ABNORMAL CONNECTION]	● BOSE speaker amp. power supply and ground circuit malfunction is detected ● Malfunction is detected on communication signal between audio unit and BOSE speaker amp.	1. Check BOSE speaker amp. power supply and ground circuit. 2. Check communication circuit between audio unit and BOSE speaker amp. 3. If the results from the above checkup show no malfunction, replace either audio unit or BOSE speaker amp., and then start self-diagnosis. 4. If self-diagnosis results still show any malfunction, replace the other unit.
AUDIO HEAD UNIT [ABNORMAL CONNECTION]	Audio unit power supply and ground circuit malfunction is detected	1. Check audio unit power supply circuit. 2. If the results from the above checkup show no malfunction, replace audio unit.

Error item	Possible cause	Action to take
CD CHANGER [ABNORMAL CONNECTION]	**Without satellite radio** ● CD auto changer power supply and ground circuit malfunction is detected ● Malfunction is detected on communication signal [REQ (CHG-AUDIO), Tx and RX] between audio unit and CD auto changer	1. Check CD auto changer power supply and ground circuit. 2. Check communication circuit [REQ (CHG-AUDIO), Tx and RX] between audio unit and CD auto changer. 3. Check communication signal [REQ (CHG-AUDIO), Tx and RX] between audio unit and CD auto changer. 4. If the results from the above checkup show no malfunction, replace either audio unit or CD auto changer, and then start self-diagnosis. 5. If self-diagnosis results still show any malfunction, replace the other unit.
	With satellite radio ● CD auto changer power supply and ground circuit malfunction is detected ● Satellite radio tuner power supply and ground circuit malfunction is detected ● Malfunction is detected on communication signal [REQ (CHG-AUDIO), REQ (SAT-AUDIO), Tx and RX] between audio unit and satellite radio tuner ● Malfunction is detected on control signal (CONT) between audio unit and satellite radio tuner ● Malfunction is detected on communication signal [REQ (CHG-AUDIO), Tx and Rx] between satellite radio tuner and CD auto changer	1. Check CD auto changer power supply and ground circuit. 2. Check satellite radio tuner power supply and ground circuit. 3. Check communication circuit [REQ (CHG-AUDIO), REQ (SAT-AUDIO), Tx and RX] between audio unit and satellite radio tuner. 4. Check control signal circuit (CONT) between audio unit and satellite radio tuner. 5. Check communication circuit [REQ (CHG-AUDIO), Tx and Rx] between satellite radio tuner and CD auto changer. 6. Check communication signal [REQ (CHG-AUDIO), REQ (SAT-AUDIO), Tx and RX] between audio unit and satellite radio tuner. 7. Check control signal (CONT) between audio unit and satellite radio tuner. 8. Check communication signal [REQ (CHG-AUDIO), Tx and Rx] between satellite radio tuner and CD auto changer. 9. If the results from the above checkup show no malfunction, replace audio unit, satellite radio tuner, or CD auto changer, and then start self-diagnosis. 10. If self-diagnosis results still show any malfunction, replace one of the two units that is not replaced yet. 11. If self-diagnosis results still show any malfunction, replace the other unit.
FRONT SEAT DISPLAY [ABNORMAL CONNECTION]	Display power supply and ground circuit malfunction is detected	1. Check display power supply and ground circuit. 2. If the results from the above checkup show no malfunction, replace display.
VOICE UNIT [ABNORMAL CONNECTION]	● Voice activated control module power supply and ground circuit malfunction is detected ● Malfunction is detected on communication signal between AV and NAVI control unit and voice activated control module	1. Check voice activated control module power supply and ground circuit. 2. Check communication circuit between AV and NAVI control unit and voice activated control module. 3. If the results from the above checkup show no malfunction, replace either AV and NAVI control unit or voice activated control module, and then start self-diagnosis. 4. If self-diagnosis results still show any malfunction, replace the other unit.

SIGNAL MONITOR

- When “SIGNAL MONITOR” is selected, “ALL SIGNALS” and “SELECTION FROM MENU” are displayed.
- For each signal, a comparison of actual operating status and the status recognized by the system can be checked.



Display Condition

Diagnosis item	Display	Condition	Remarks
VHCL SPD SIG	ON	When vehicle speed is more than 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	When vehicle speed is 0 km/h (0 MPH)	
	—	Ignition switch in ACC position	
MTR ILL DIM	ON	Lighting switch is ON, and then optical sensor is not illuminated	—
	OFF	Lighting switch OFF	
		Lighting switch is ON, and then optical sensor is illuminated	
IGN SW	ON	Ignition switch ON	—
	OFF	Ignition switch ACC position	

RGB Image Is Not Displayed (Rear View Image Is Displayed)

NKS001J6

Symptom: RGB image such as a map screen is not displayed. (No warning message though rear view image is displayed.)

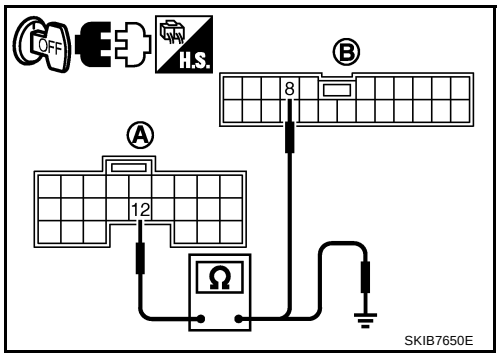
1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect AV and NAVI control unit and display connectors.
3. Check continuity between AV and NAVI control unit harness connector (A) B30 terminal 12 and display harness connector (B) M82 terminal 8.

12 – 8 : Continuity should exist.

4. Check continuity between AV and NAVI control unit harness connector (A) B30 terminal 12 and ground.

12 – Ground : Continuity should not exist.

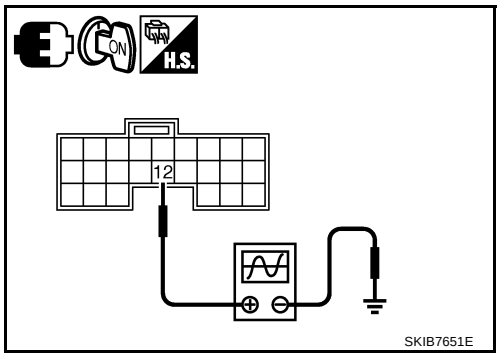


OK or NG

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

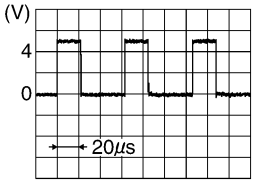
2. CHECK RGB AREA (YS) SIGNAL

1. Turn ignition switch OFF.
2. Connect AV and NAVI control unit and display connectors.
3. Check voltage waveform between AV and NAVI control unit harness connector B30 terminal 12 and ground with CONSULT-II or oscilloscope.



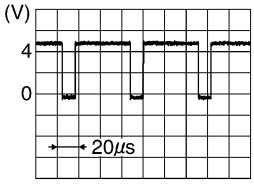
12 – Ground:

When displaying rear view image



SKIB3599E

When displaying RGB image



SKIB3600E

OK or NG

OK >> Replace display.
NG >> Replace AV and NAVI control unit.

All Images Are Not Displayed

NKS002KL

Symptom: RGB image and rear view image are not displayed.

1. DIAGNOSIS USING CONSULT-II

1. With the ignition switch OFF, connect “CONSULT-II” and “CONSULT-II CONVERTER” to the data link connector, and then turn the ignition switch ON.
2. Check if “MULTI AV” is shown on the SELECT SYSTEM screen.

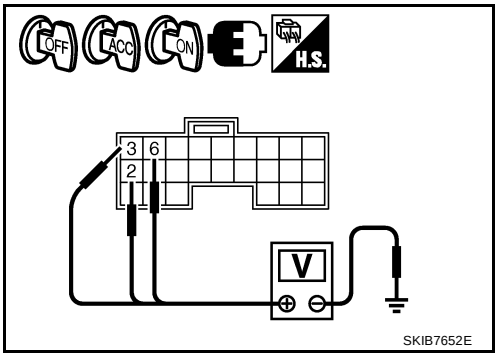
Is “MULTI AV” shown?

YES >> GO TO 3.
NO >> GO TO 2.

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

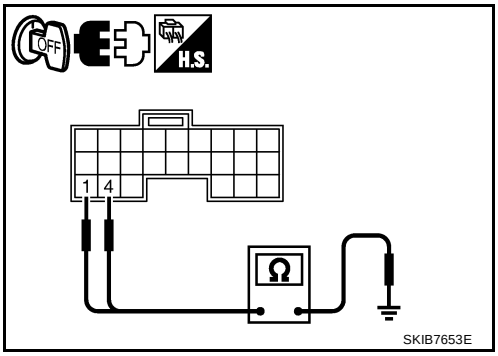
1. Check voltage between AV and NAVI control unit harness connector terminals and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal				
B30	2, 3	Ground	Battery voltage	Battery voltage	Battery voltage
	6		0 V	Battery voltage	Battery voltage



2. Turn ignition switch OFF.
3. Disconnect NAVI control unit connector.
4. Check continuity between NAVI control unit harness connector B30 terminals 1, 4 and ground.

1, 4 – Ground : Continuity should exist.



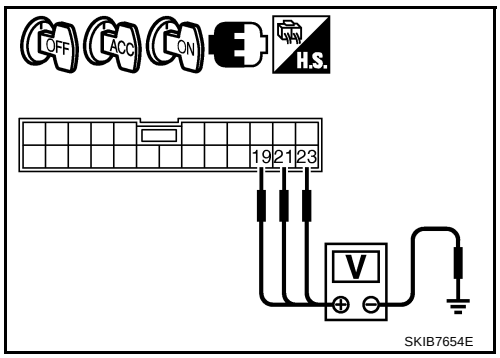
OK or NG

OK >> Replace AV and NAVI control unit.
NG >> Repair harness or connector.

3. CHECK DISPLAY POWER SUPPLY AND GROUND CIRCUIT

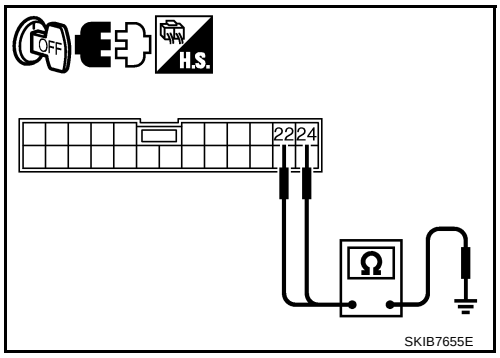
1. Check voltage between display harness connector terminals and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal				
M82	21, 23	Ground	Battery voltage	Battery voltage	Battery voltage
	19		0 V	Battery voltage	Battery voltage



2. Turn ignition switch OFF.
3. Disconnect display connector.
4. Check continuity between display harness connector M82 terminals 22, 24 and ground.

22, 24 – Ground : Continuity should exist.



OK or NG

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

Rear View Image Is Not Displayed

NKS002KM

Refer to DI-186, "Trouble Diagnosis" .

Tint Is Strange for The RGB Image

NKS001J7

Symptom: Tint of RGB image is strange.

1. CHECK HARNESS

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

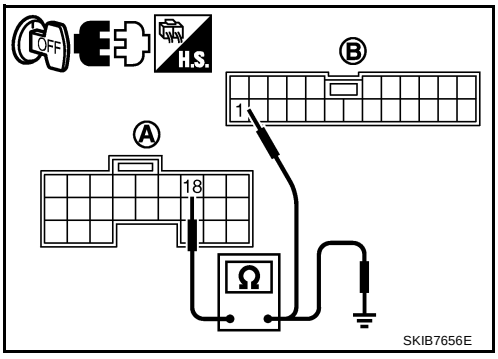
- **Light blue (Cyan) tinged screen**

Check continuity between AV and NAVI control unit harness connector (A) B30 terminal 18 and display harness connector (B) M82 terminal 1.

18 – 1 : Continuity should exist.

Check continuity between AV and NAVI control unit harness connector (A) B30 terminal 18 and ground.

18 – Ground : Continuity should not exist.



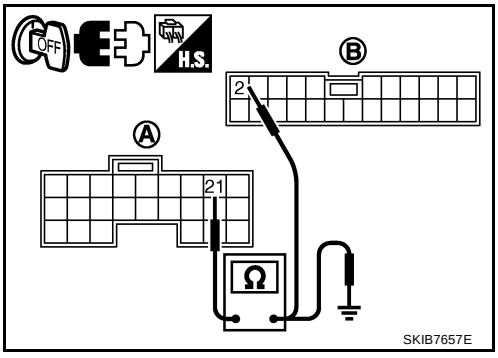
- **Purple (Magenta) tinged screen**

Check continuity between AV and NAVI control unit harness connector (A) B30 terminal 21 and display harness connector (B) M82 terminal 2.

21 – 2 : Continuity should exist.

Check continuity between AV and NAVI control unit harness connector (A) B30 terminal 21 and ground.

21 – Ground : Continuity should not exist.



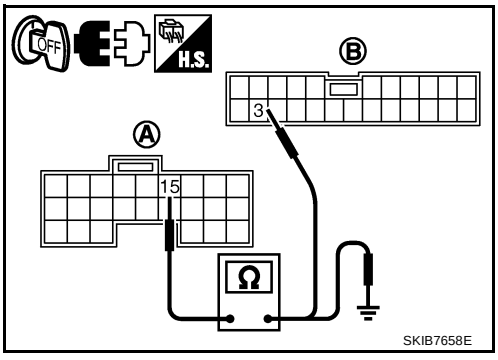
- **Yellow tinged screen**

Check continuity between AV and NAVI control unit harness connector (A) B30 terminal 15 and display harness connector (B) M82 terminal 3.

15 – 3 : Continuity should exist.

Check continuity between AV and NAVI control unit harness connector (A) B30 terminal 15 and ground.

15 – Ground : Continuity should not exist.



OK or NG

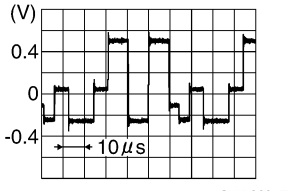
OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK RGB SIGNAL

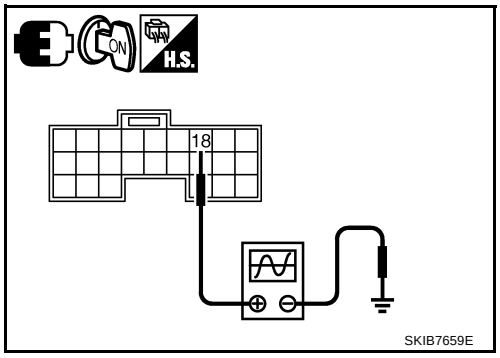
1. Connect AV and NAVI control unit and display connectors.
2. Turn ignition switch ON.
3. Start Confirmation/Adjustment mode. Refer to AV-108, "Confirmation/Adjustment Mode" .
4. Display color bar by selecting “Display Color Spectrum Bar” on DISPLAY DIAGNOSIS screen. Refer to AV-109, "DISPLAY DIAGNOSIS" .
5. Check the malfunctioning circuit according to the symptoms.

- **Light blue (Cyan) tinged screen**
  Check voltage waveform between AV and NAVI control unit harness connector B30 terminal 18 and ground with CONSULT-II or oscilloscope.

18 – Ground:



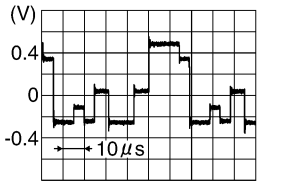
SKIB3604E



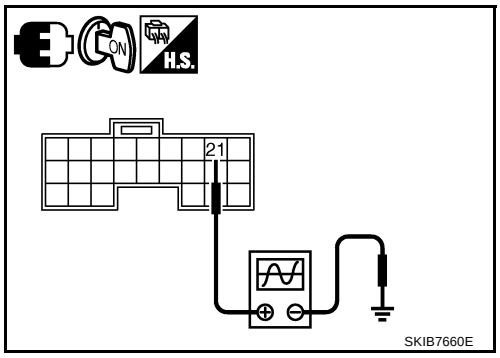
SKIB7659E

- **Purple (Magenta) tinged screen**
  Check voltage waveform between AV and NAVI control unit harness connector B30 terminal 21 and ground with CONSULT-II or oscilloscope.

21 – Ground:



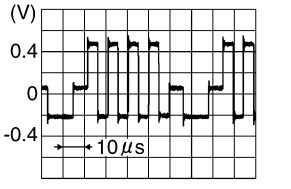
SKIB3605E



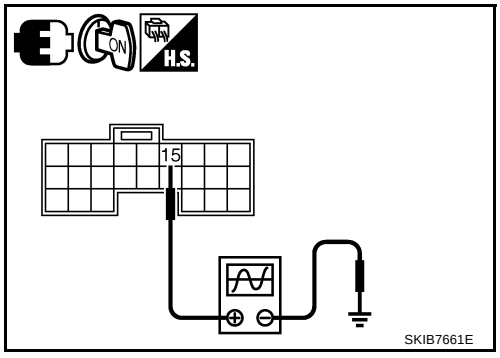
SKIB7660E

- **Yellow tinged screen**
  Check voltage waveform between AV and NAVI control unit harness connector B30 terminal 15 and ground with CONSULT-II or oscilloscope.

15 – Ground:



SKIB3602E



SKIB7661E

OK or NG

OK >> Replace display.
NG >> Replace AV and NAVI control unit.

RGB Image Is Rolling

NKS001J8

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

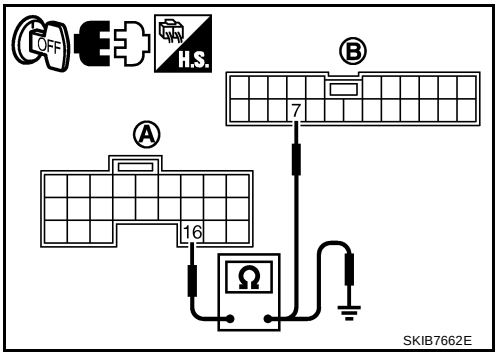
1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect AV and NAVI control unit and display connectors.
3. Check continuity between AV and NAVI control unit harness connector (A) B30 terminal 16 and display harness connector (B) M82 terminal 7.

16 – 7 : Continuity should exist.

4. Check continuity between AV and NAVI control unit harness connector (A) B30 terminal 16 and ground.

16 – Ground : Continuity should not exist.



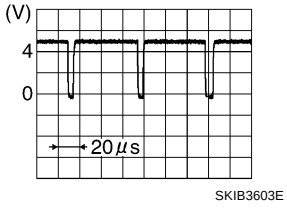
OK or NG

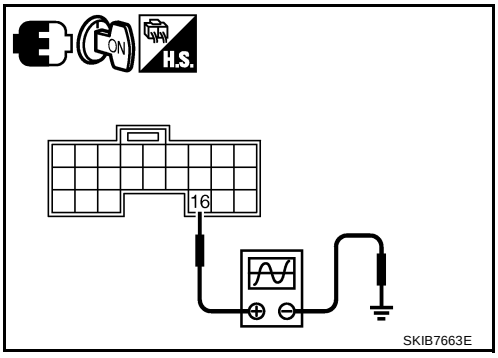
OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK RGB SYNCHRONIZING SIGNAL

1. Connect AV and NAVI control unit and display connectors.
2. Turn ignition switch ON.
3. When displaying RGB image, check voltage waveform between AV and NAVI control unit harness connector B30 terminal 16 and ground with CONSULT-II or oscilloscope.

16 – Ground:





OK or NG

OK >> Replace display.
NG >> Replace AV and NAVI control unit.

Voice Guidance Is Not Heard

NKS001J9

Symptom: Voice guidance does not sound at route guidance.

1. PERFORM SELF-DIAGNOSIS

Perform on board self-diagnosis (Refer to AV-101, "On Board Self-Diagnosis Function (Without CONSULT-II)") or CONSULT-II self-diagnosis (Refer to AV-115, "CONSULT-II Function (MULTI AV)"), and check the malfunction.

Is there a malfunction?

YES >> Refer to AV-104, "SELF-DIAGNOSIS RESULT" (On board self-diagnosis) or AV-116, "SELF-DIAG RESULTS" (CONSULT-II self-diagnosis).

NO >> GO TO 2.

2. CHECK HARNESS

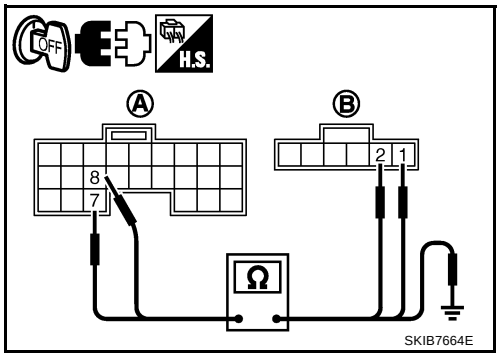
1. Turn ignition switch OFF.
2. Disconnect AV and NAVI control unit and BOSE speaker amp. connectors.
3. Check continuity between AV and NAVI control unit harness connector (A) B30 terminals 7, 8 and BOSE speaker amp. harness connector (B) B231 terminals 1, 2.

   7 – 1 : Continuity should exist.

   8 – 2 : Continuity should exist.

4. Check continuity between AV and NAVI control unit harness connector (A) B30 terminals 7, 8 and ground.

   7, 8 – Ground : Continuity should not exist.



OK or NG

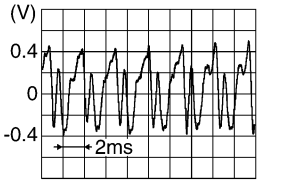
OK >> GO TO 3.

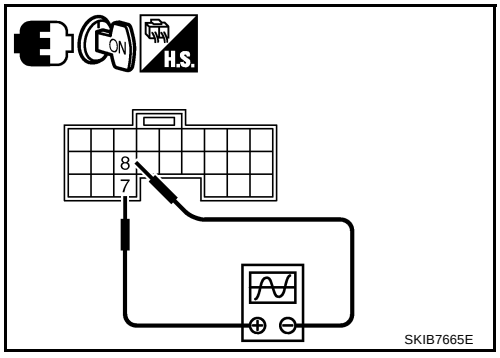
NG >> Repair harness or connector.

3. CHECK VOICE GUIDANCE SIGNAL

1. Connect AV and NAVI control unit and BOSE speaker amp. connectors.
2. Turn ignition switch ON.
3. When pressing “VOICE” button, check voltage waveform between AV and NAVI control unit harness connector B30 terminals 7 and 8 with CONSULT-ll or oscilloscope.

7 – 8:





OK or NG

OK >> Replace BOSE speaker amp.

NG >> Replace AV and NAVI control unit

A/C Display Is Malfunctioning

NKS001JA

Refer to DI-145, "No A/C Display is Shown" .

A/C Operation Is Malfunctioning

NKS001JB

Refer to DI-145, "A/C Operation Is Not Possible" .

Fuel Information Is Not Displayed/Warning Message Is Not Displayed

NKS001JC

Refer to DI-167, "Fuel Information Is Not Displayed/Warning Message Is Not Displayed" .

Vehicle Condition Setting Is Not Possible

NKS001JD

Refer to DI-168, "Vehicle Condition Setting Is Not Possible" .

Vehicle Mark Is Not Displayed Properly

NKS001JE

1. NAVIGATION SYSTEM ADJUSTMENT

1. Select “Navigation” in Confirmation/Adjustment mode, and adjust items, “Display Longitude & Latitude”, “Speed Calibration”, “Angle Adjustment” and “Initialize Location”. Refer to AV-113, "NAVIGATION" .
2. Check symptom with driving.

Is any malfunction observed?

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

2. SELF-DIAGNOSIS

Perform self-diagnosis, and check any malfunction related to GPS. Refer to AV-102, "Self-Diagnosis Mode" .

Is any malfunction related to GPS observed?

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

3. CHECK VEHICLE SIGNAL

Select “Vehicle Signals” in Confirmation/Adjustment mode, and check the vehicle speed signal and reverse signal inputting to AV and NAVI control unit. Refer to AV-110, "VEHICLE SIGNALS" .

OK or NG

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

Example of Symptoms Possible No Malfunction

NKS001JH

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

BASIC OPERATION

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” switch to display the current location.
Vehicle mark will not be shown.	Current location is not displayed.	Press “MAP” switch to display the current location.
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 (19MPH)] and the deviation will be automatically adjusted. If advancement or retard still occur, perform the distance adjustment by Confirmation/ Adjustment Mode 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 guidance is turned OFF.	Turn the route guidance 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.

VOICE GUIDANCE

Symptom	Cause	Remedy
Voice guidance will not operate.	Note: Voice guidance 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 guidance is turned OFF.	Turn the voice guidance ON.
	Route guidance is turned OFF.	Turn the route guidance ON.
Voice guidance does not match the actual road pattern.	Voice guidance 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 SEARCHING

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 position 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 position 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 position 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 guidance 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.

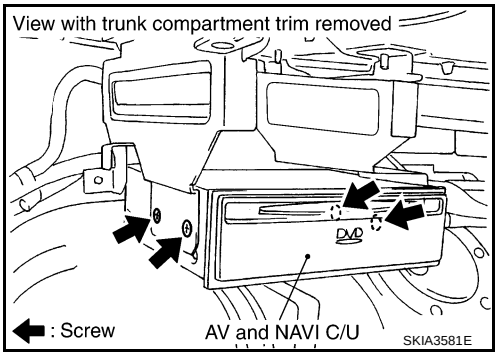
NOTE:
Except for the ordinance-designated cities and the prefectural capitals (Applicable areas may be changed in the updated map disc.)

Removal and Installation of AV and NAVI Control Unit

NKS001JJ

REMOVAL

1. Remove trunk room trim. Refer to EI-60, "TRUNK ROOM TRIM & TRUNK LID FINISHER" .
2. Remove screws (4), and remove AV and NAVI control unit.



INSTALLATION

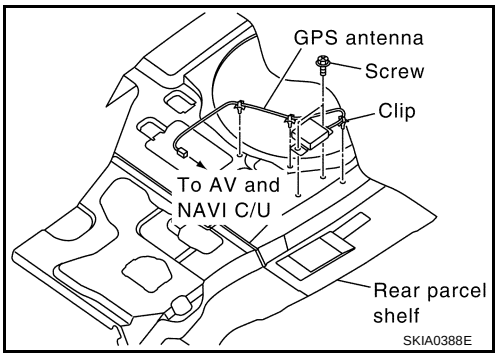
Installation is the reverse order of removal.

Removal and Installation of GPS Antenna

NKS001JK

REMOVAL

1. Remove rear parcel shelf finisher. Refer to EI-48, "REAR PARCEL SHELF FINISHER" .
2. Remove screws and remove the GPS antenna.



INSTALLATION

Installation is the reverse order of removal.

Removal and Installation of Multifunction Switch

NKS002KO

Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .

Removal and Installation of Display

NKS002KP

Refer to DI-170, "Removal and Installation of Display" .

Removal and Installation of Steering Wheel Switch

NKS001JL

Refer to SRS-40, "DRIVER AIR BAG MODULE" .

Removal and Installation of Rear Control Switch

NKS001JM

Refer to AV-55, "Removal and Installation of Rear Control Switch" .

Removal and Installation of Rear Control Cancel Switch

NKS001JN

Refer to AV-55, "Removal and Installation of Rear Control Cancel Switch" .

TELEPHONE

PFP:28342

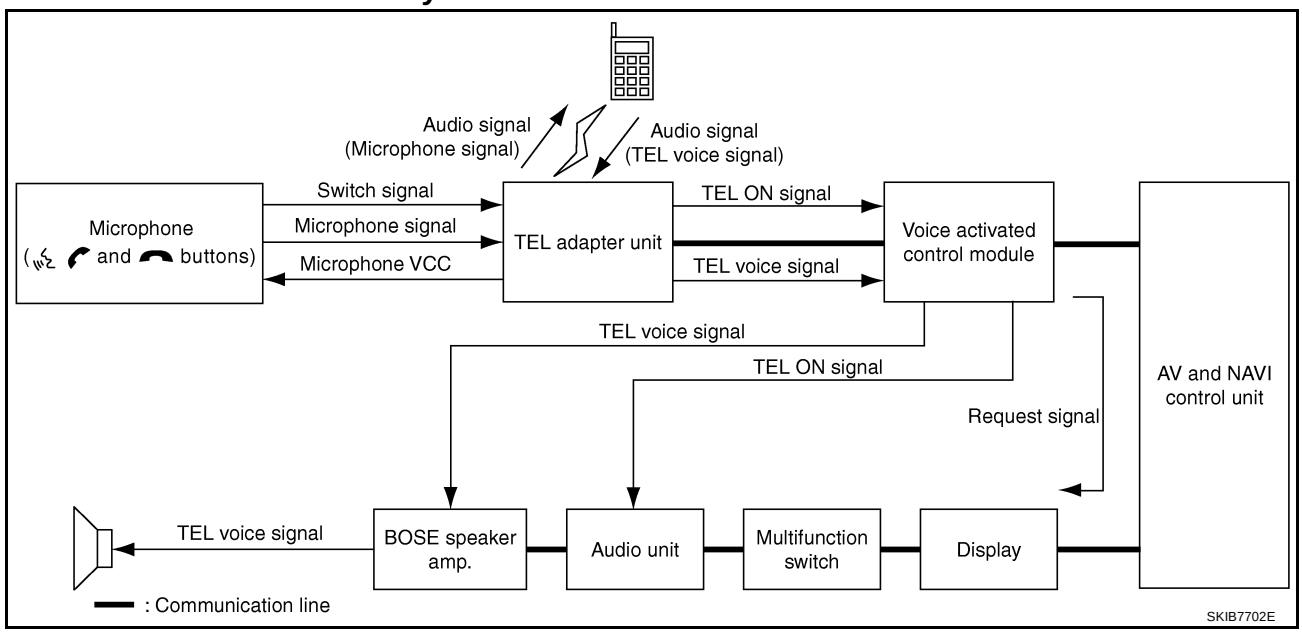
System Description

NKS002JV

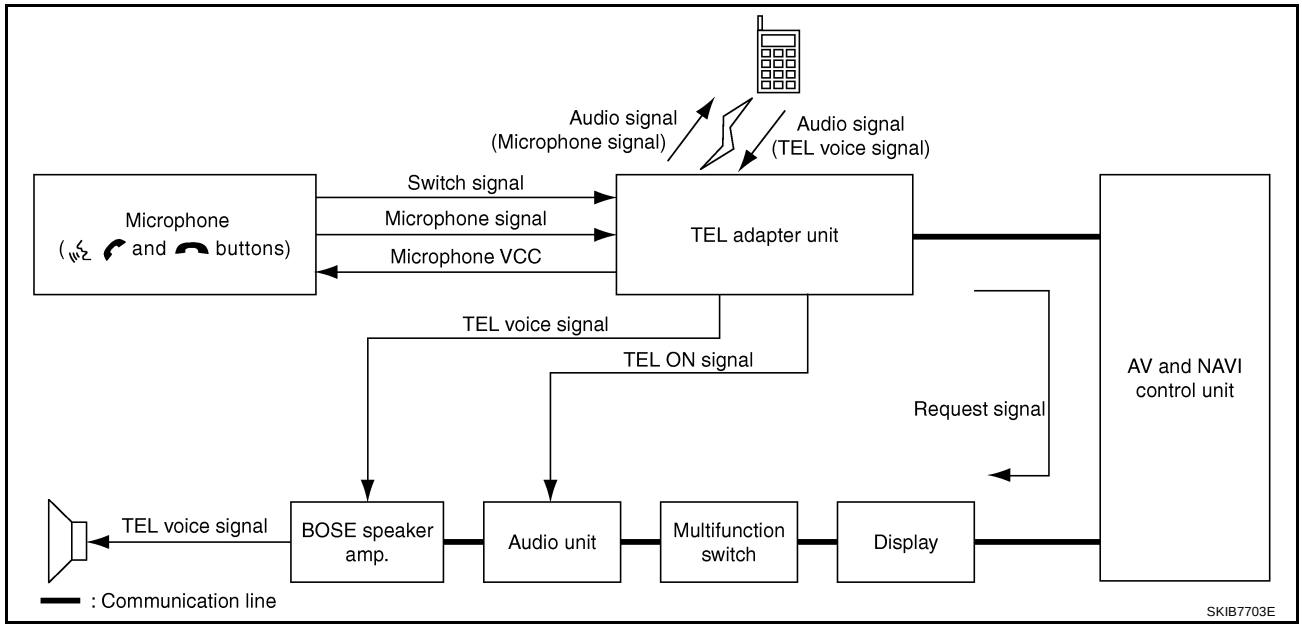
HANDS-FREE PHONE SYSTEM

- For Hands-free phone system operation information, refer to Owner's Manual.
- TEL adapter unit has Bluetooth® module. It can perform wireless hands-free telephone calls using a cellular phone in vehicle compartment.
- 5 or less cellular phones can be registered into the TEL adapter unit.
- Hands-free phone mode starts by transmitting switch signal to TEL adapter unit when pressing button.
- Hands-free phone mode ends by transmitting switch signal to TEL adapter unit when pressing button.
- When uttering to the microphone, microphone signal (audio signal) is transmitted from the microphone to the TEL adapter unit and transmitted to the cellular phone with the Bluetooth® communication.
- Audio signals from a party at the other end are transmitted from the cellular phone to the TEL adapter unit with the Bluetooth® communication, and transmitted from the TEL adapter unit to the BOSE speaker amp. through the voice activated control module, then the party's voice is output from the front door speaker RH. (With voice activated control system)
- Audio signals from a party at the other end are transmitted from the cellular phone to the TEL adapter unit with the Bluetooth® communication, and transmitted from the TEL adapter unit to the BOSE speaker amp., and then the party's voice is output from the front door speaker RH. (Without voice activated control system)
- BOSE speaker amp. switches the voice from front speaker RH to TEL voice when receiving TEL ON signal from TEL adapter unit, and when receiving request signal with the communication line.

With Voice Activated Control System

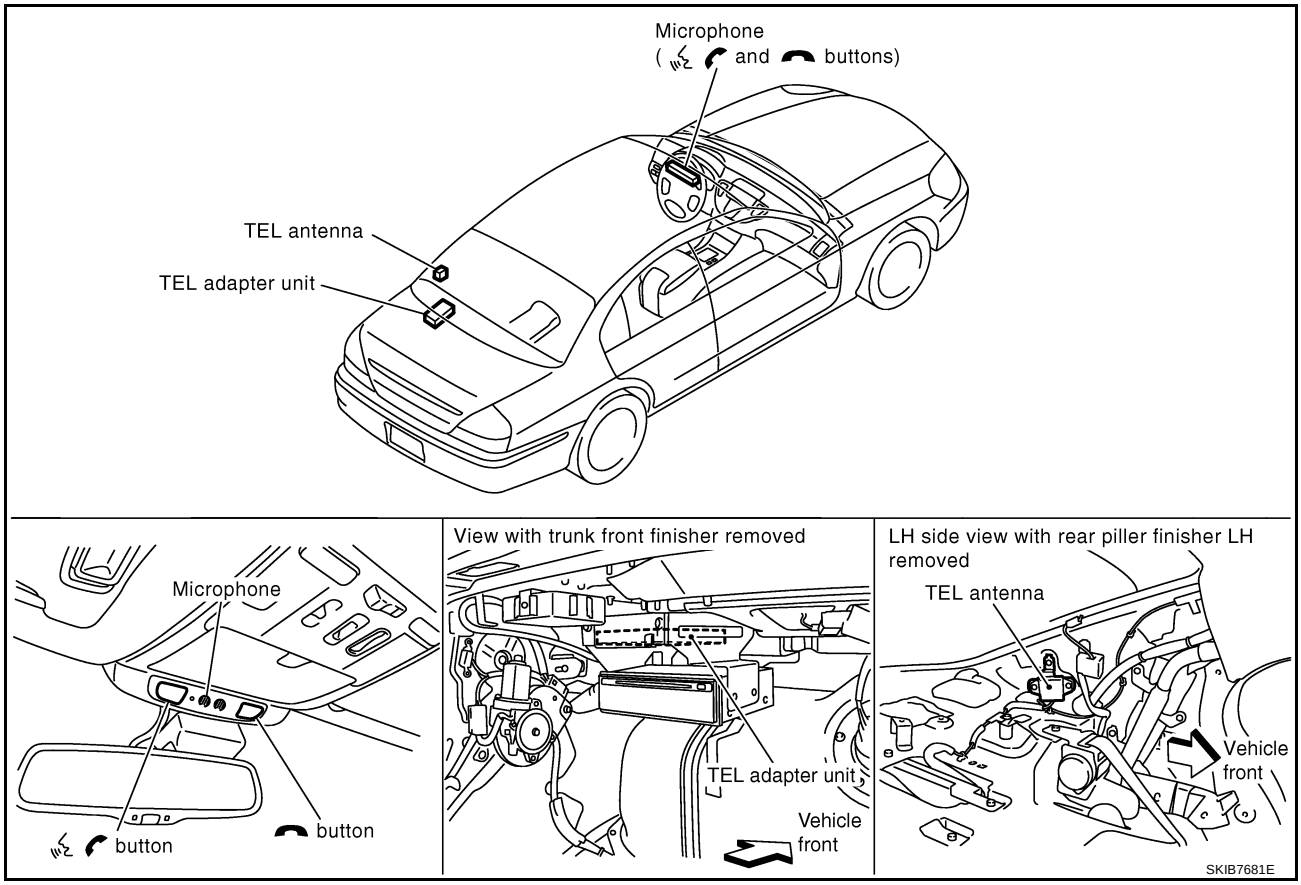


Without Voice Activated Control System



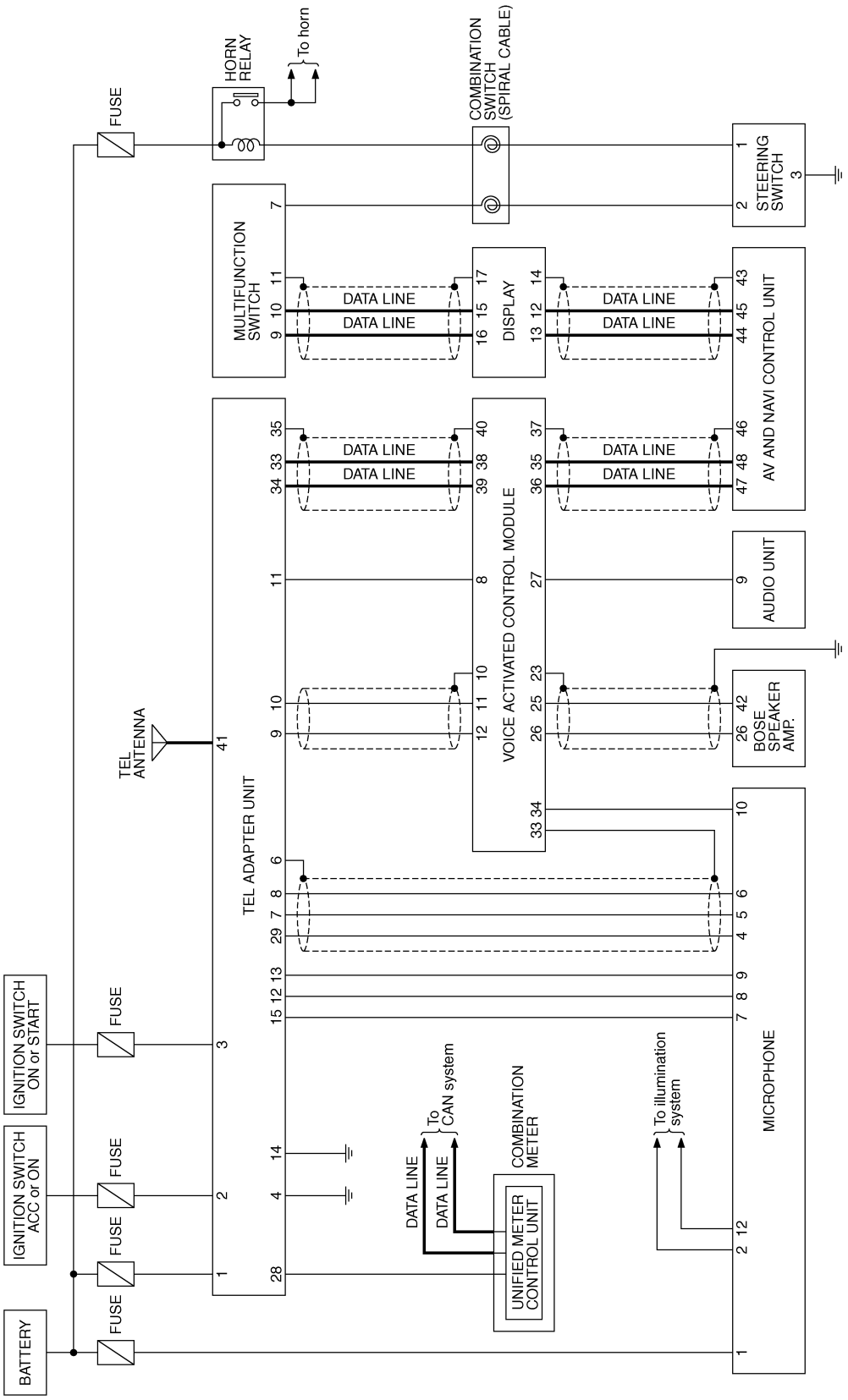
Component Parts Location

NKS002JW



Schematic — H/PHON — / With Voice Activated Control System

NKS002JX

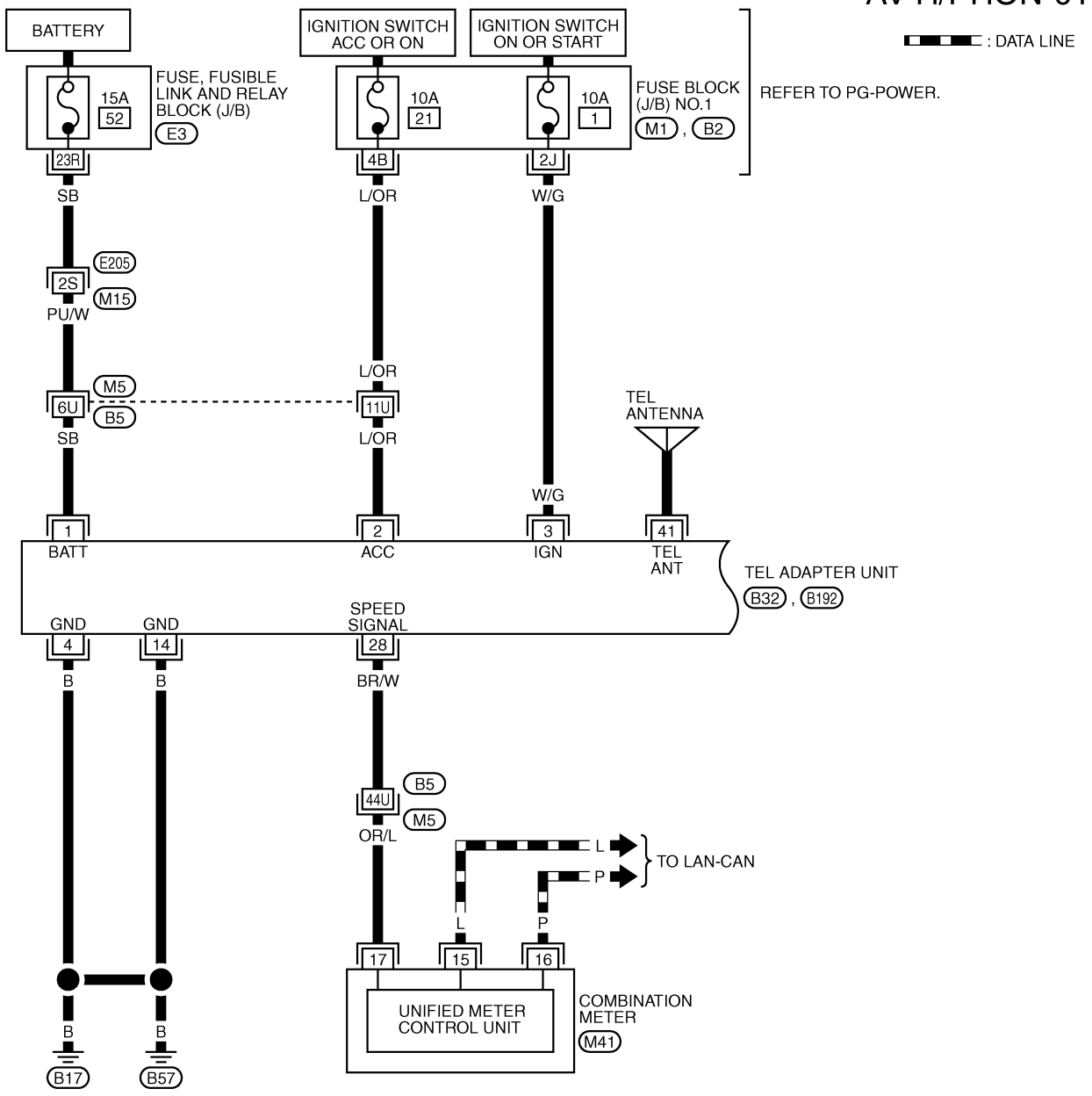


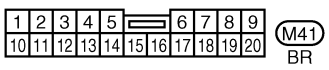
TKWM3822E

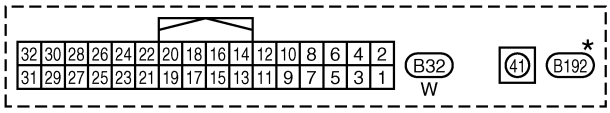
Wiring Diagram — H/PHON — / With Voice Activated Control System

NKS002JY

AV-H/PHON-01







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

REFER TO THE FOLLOWING.

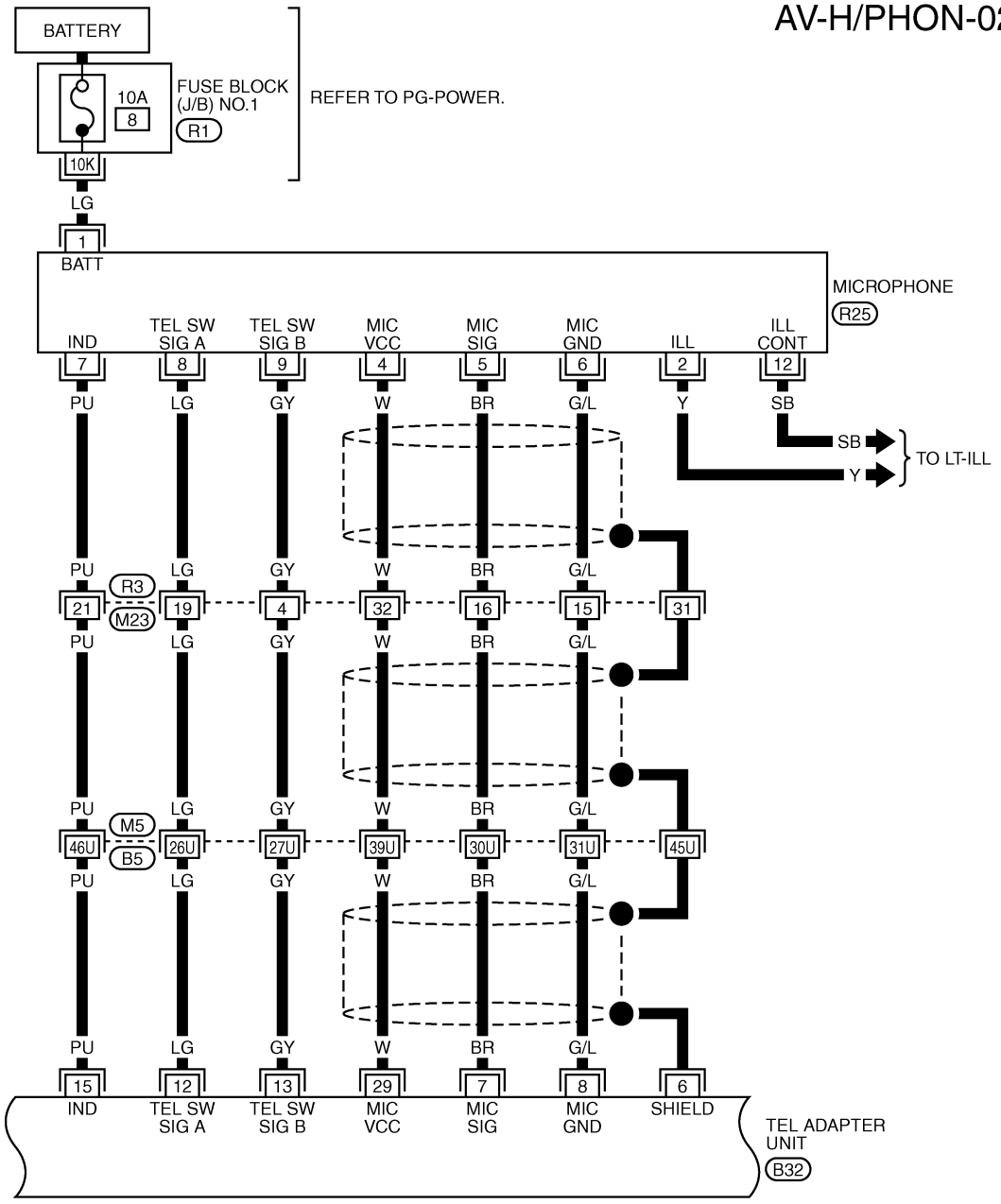
M5 , E205 -SUPER MULTIPLE JUNCTION (SMJ)

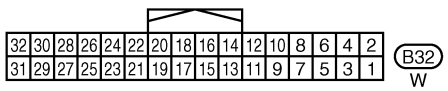
M1 , B2 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

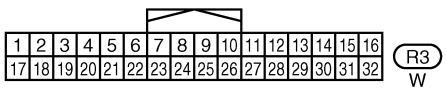
E3 -FUSE, FUSIBLE LINK AND RELAY BLOCK (J/B)

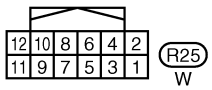
TKWM3823E

AV-H/PHON-02









REFER TO THE FOLLOWING.

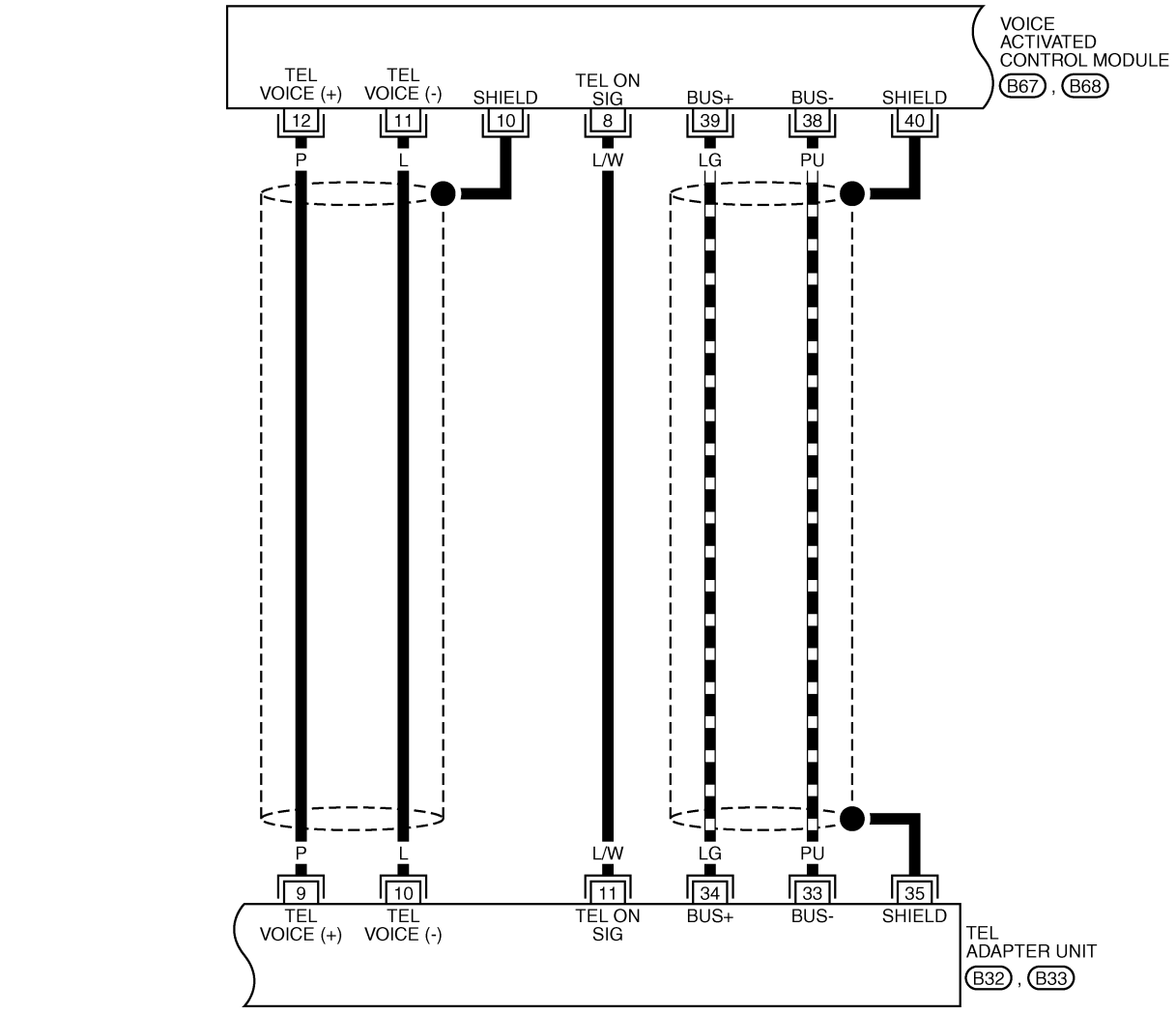
M5 -SUPER MULTIPLE JUNCTION (SMJ)

R1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TKWM3824E

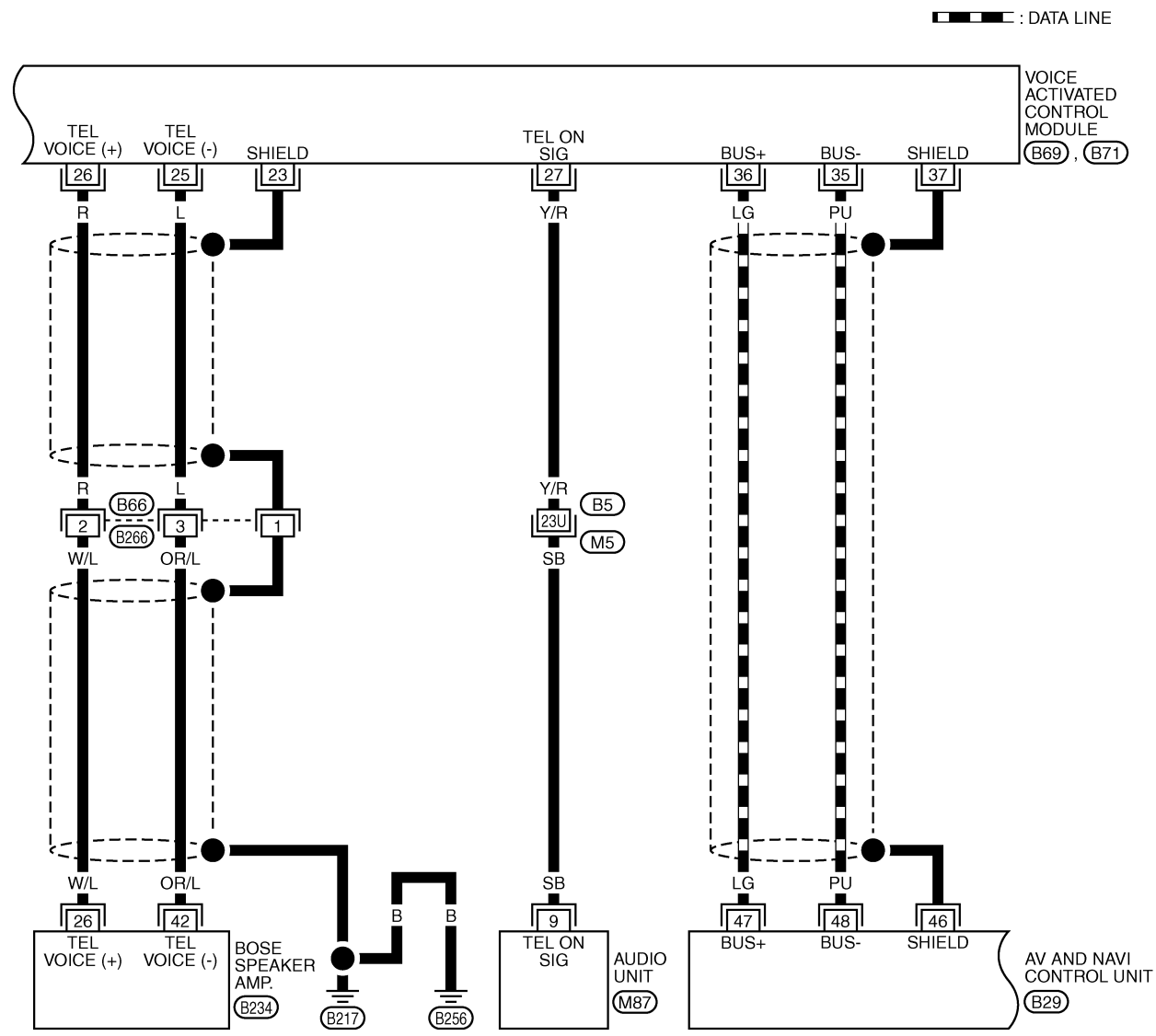
AV-H/PHON-03

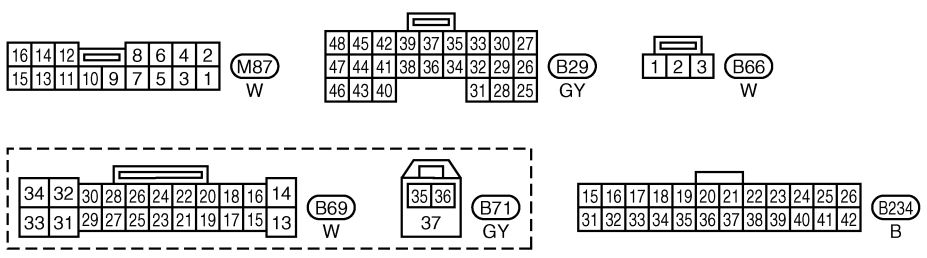
: DATA LINE



TKWM3825E

AV-H/PHON-04

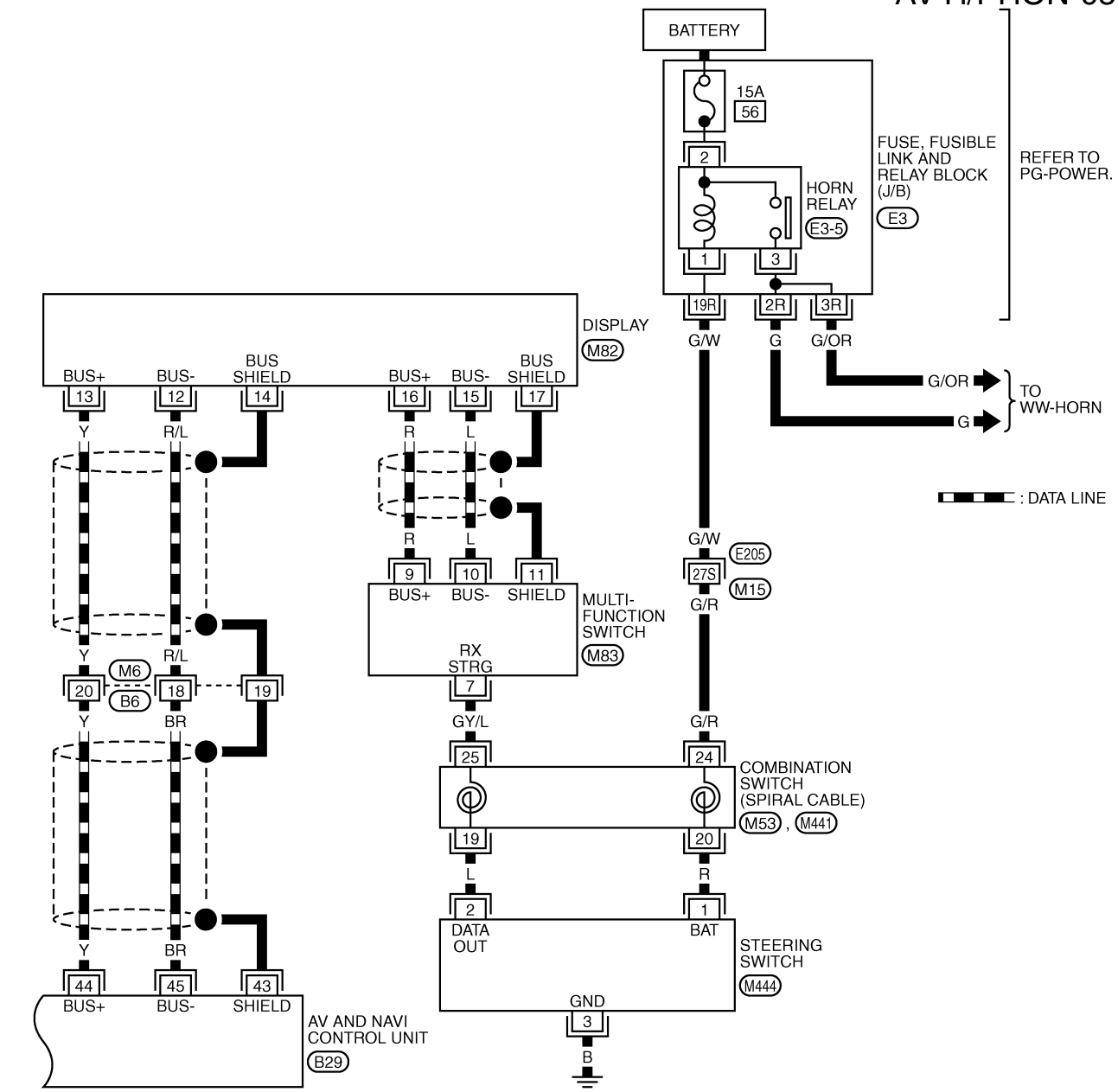


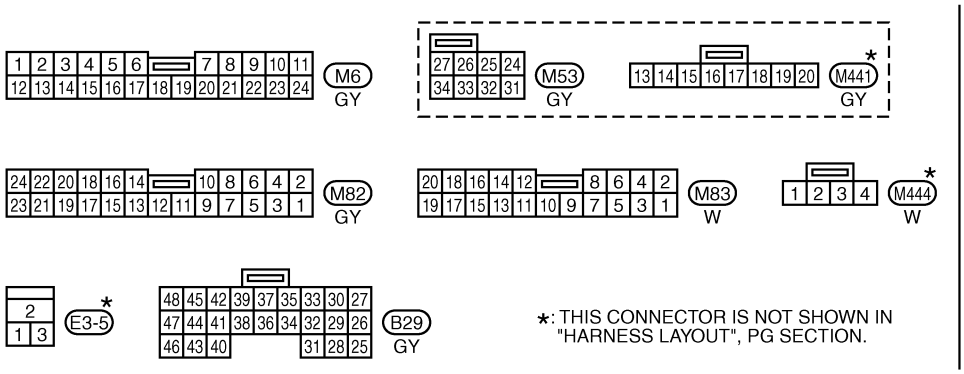


REFER TO THE FOLLOWING.
M5 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM3826E

AV-H/PHON-05





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

REFER TO THE FOLLOWING.

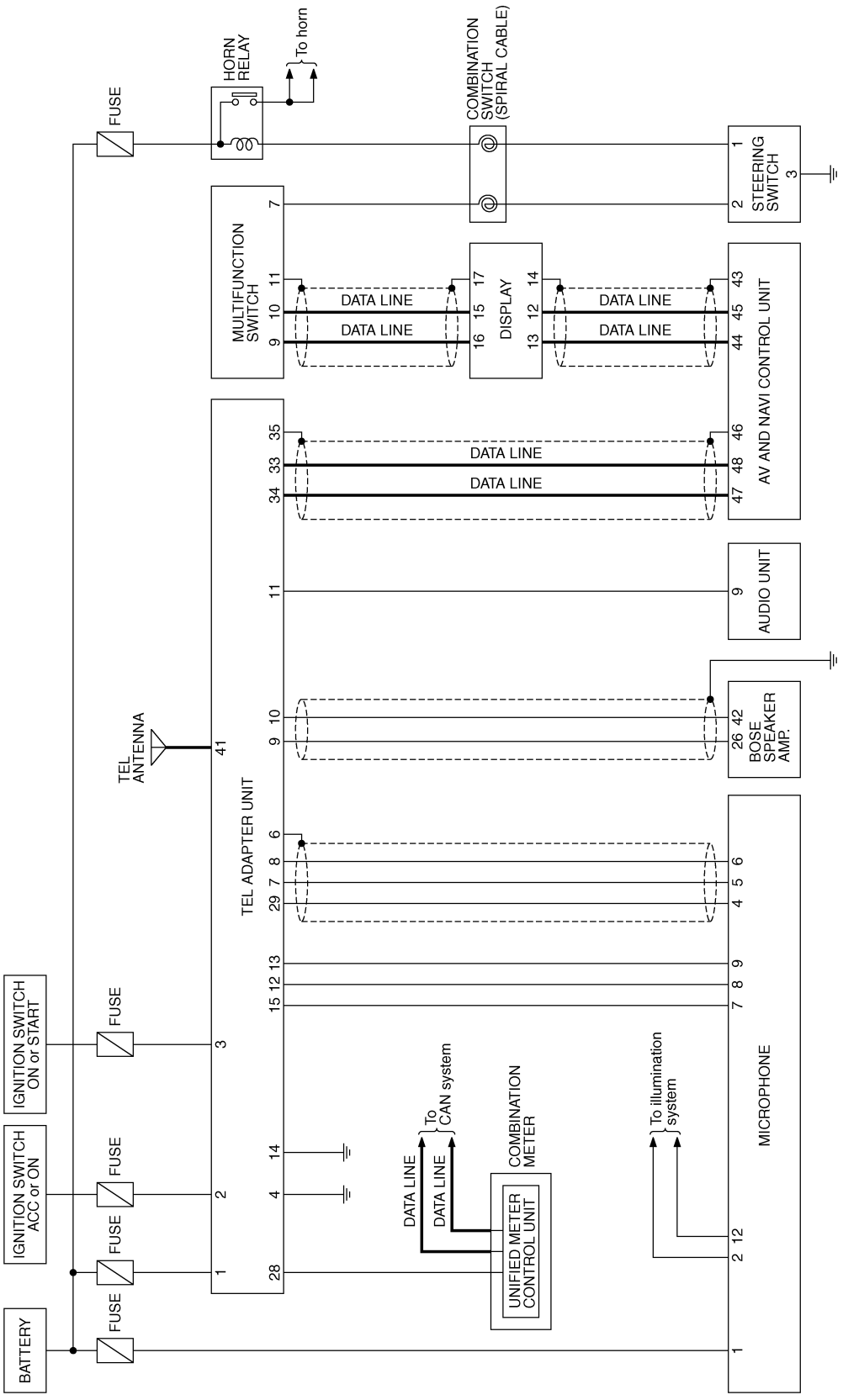
E205 -SUPER MULTIPLE JUNCTION (SMJ)

E3 -FUSE, FUSIBLE LINK AND RELAY BLOCK (J/B)

TKWM3827E

Schematic — H/PHON — / Without Voice Activated Control System

NKS002ME

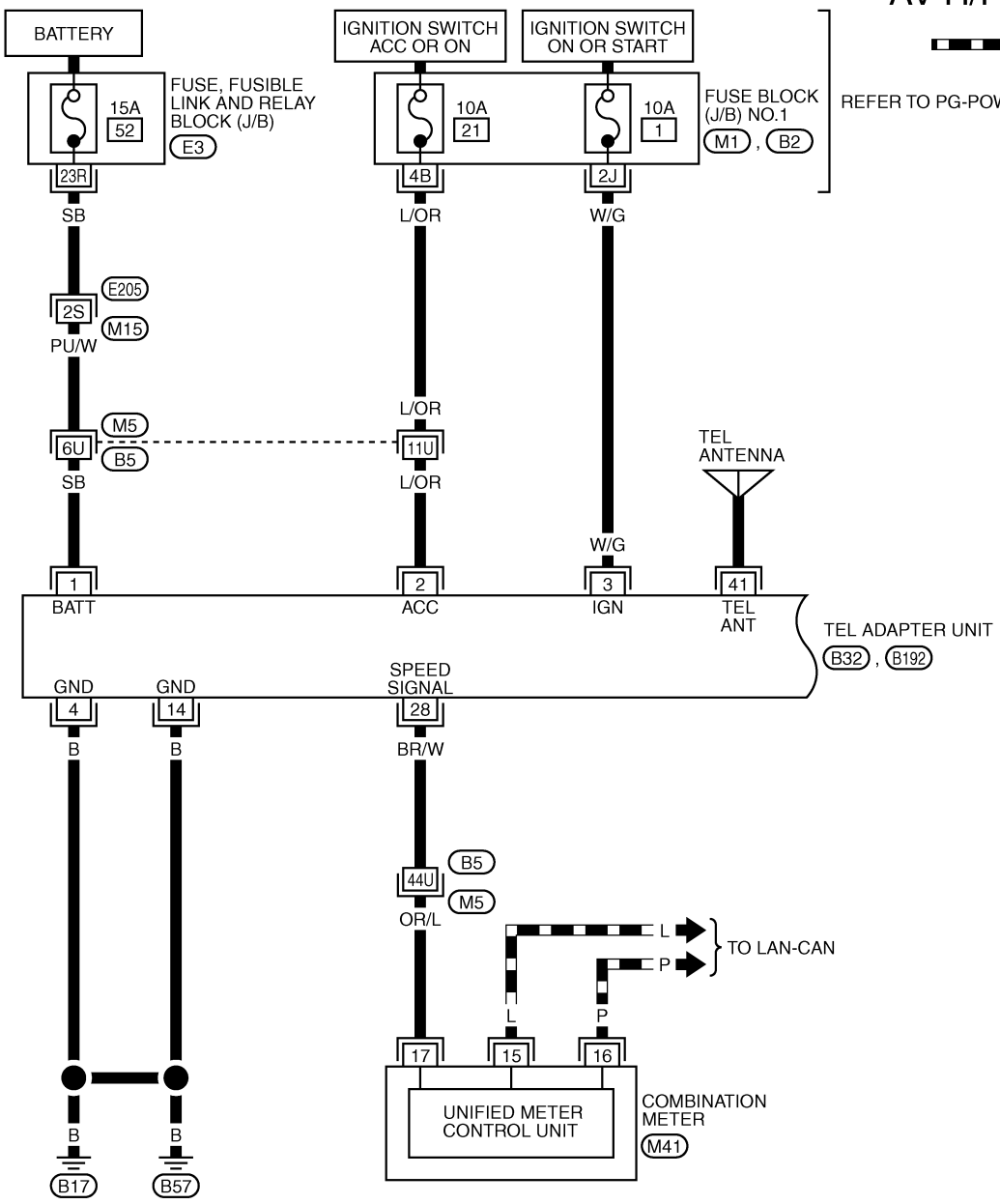


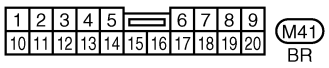
TKWM3828E

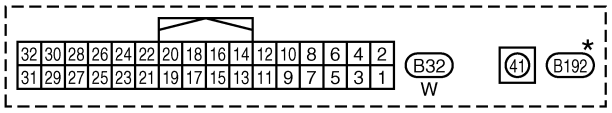
Wiring Diagram — H/PHON — / Without Voice Activated Control System

NKS002MF

AV-H/PHON-06







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

REFER TO THE FOLLOWING.

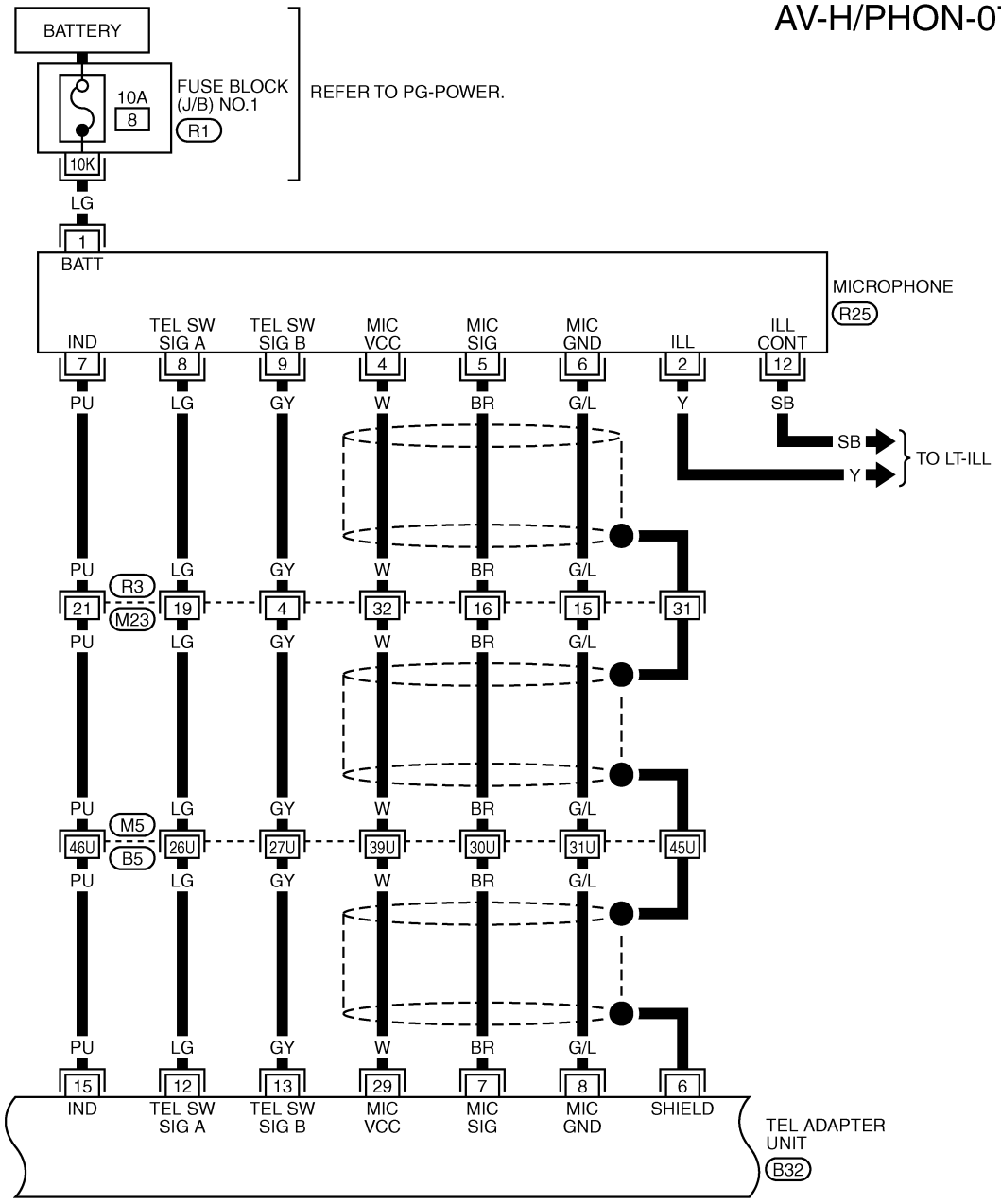
M5 , E205 -SUPER MULTIPLE JUNCTION (SMJ)

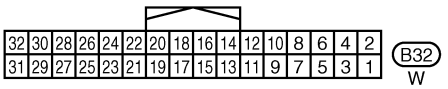
M1 , B2 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

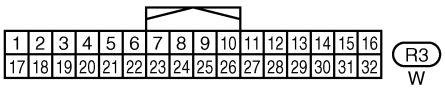
E3 -FUSE, FUSIBLE LINK AND RELAY BLOCK (J/B)

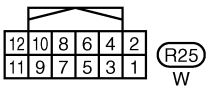
TKWM3829E

AV-H/PHON-07









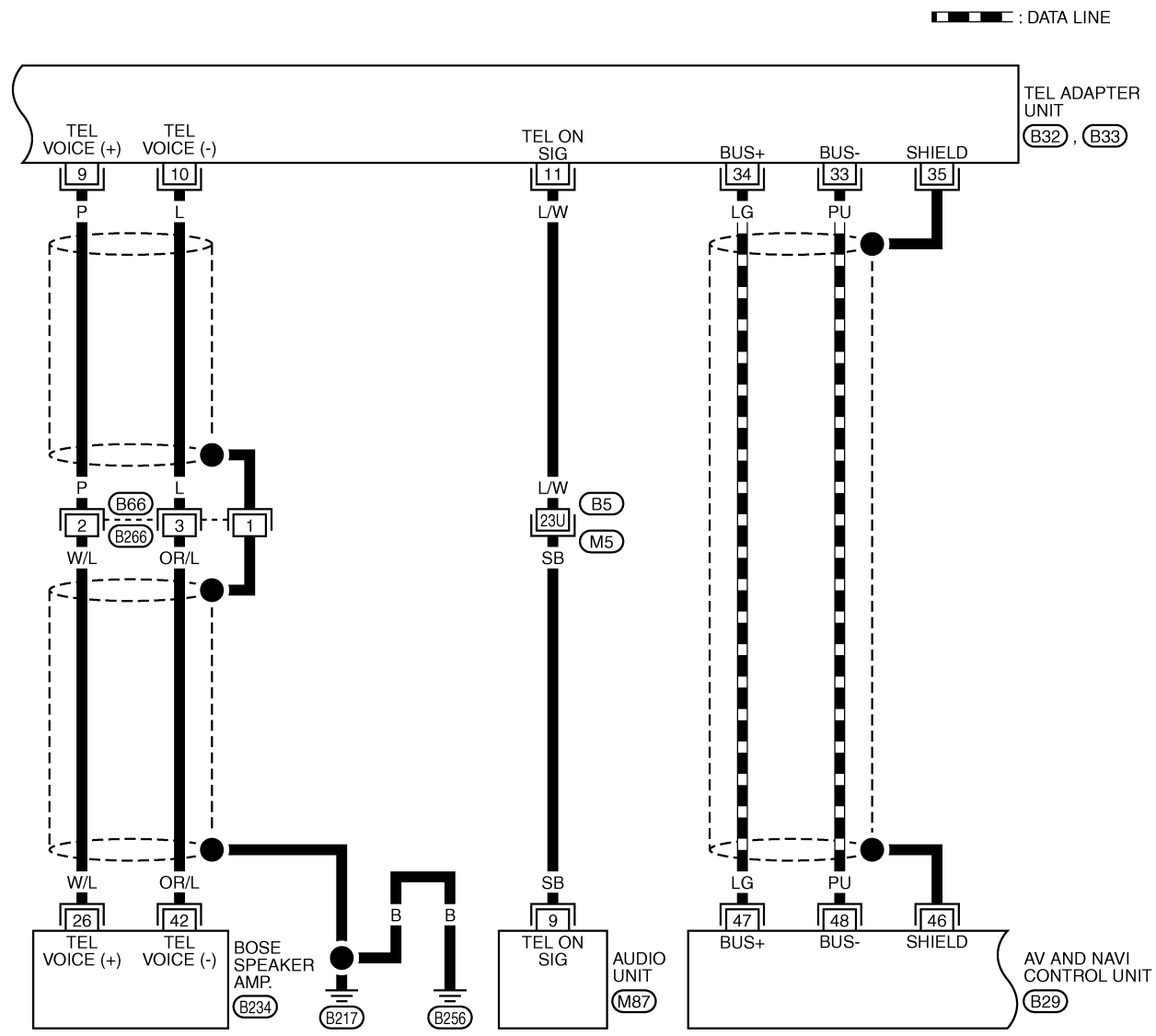
REFER TO THE FOLLOWING.

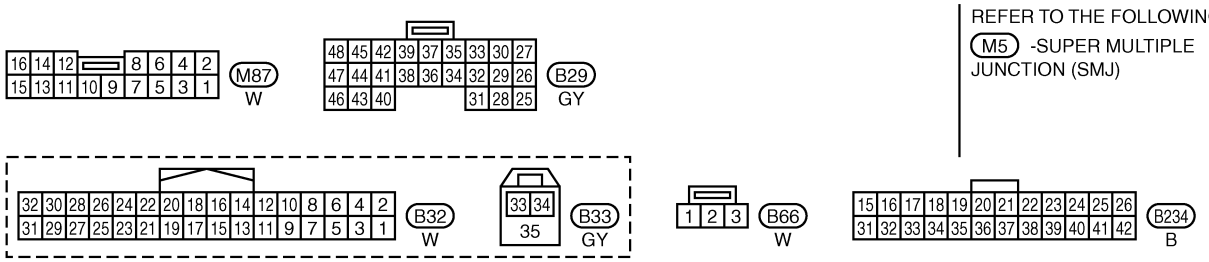
M5 -SUPER MULTIPLE JUNCTION (SMJ)

R1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

TKWM3830E

AV-H/PHON-08

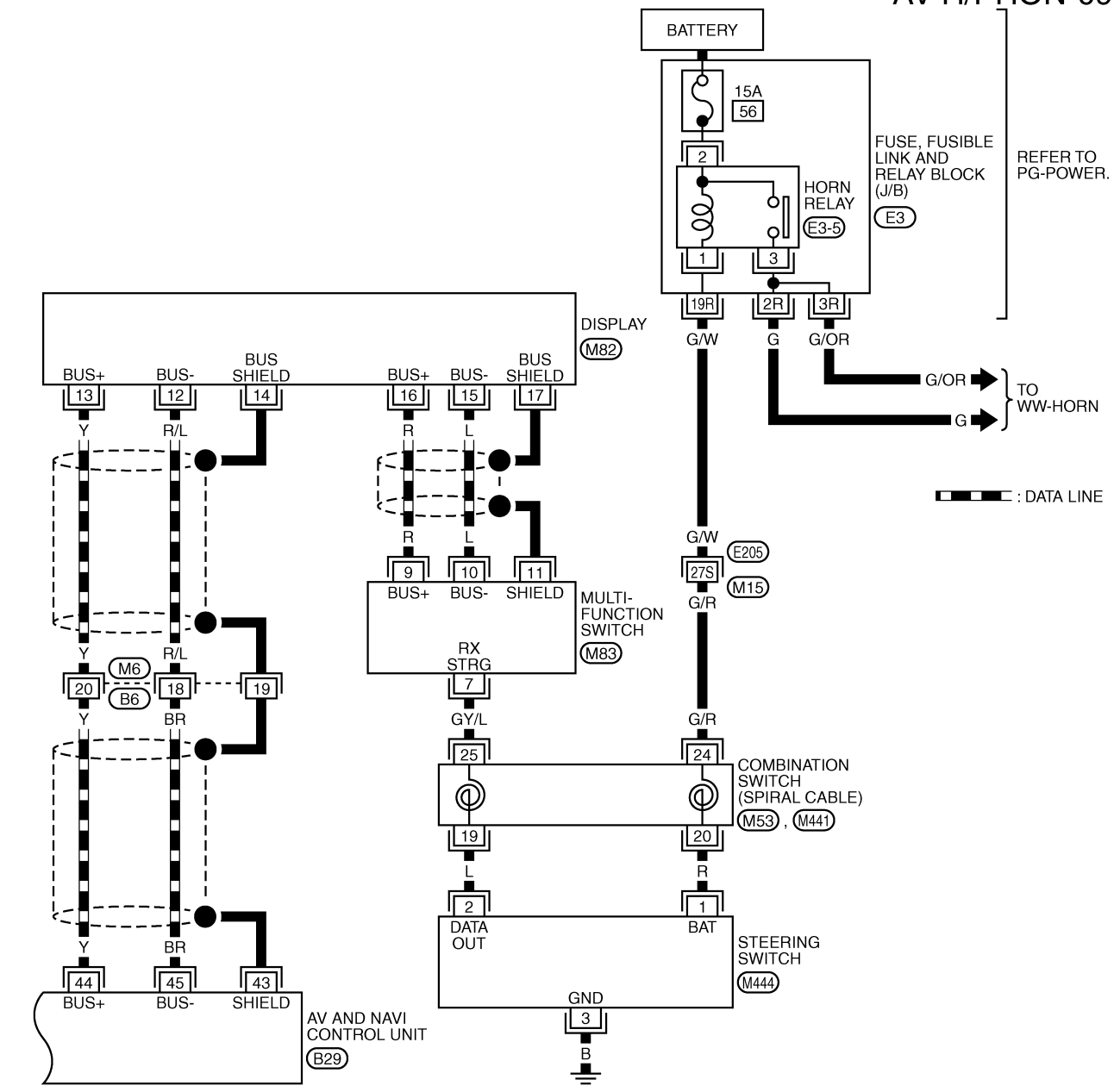




REFER TO THE FOLLOWING.
M5 -SUPER MULTIPLE JUNCTION (SMJ)

TKWM3831E

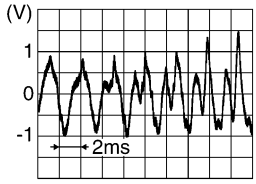
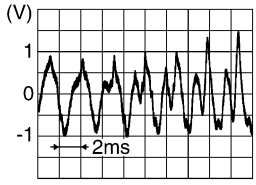
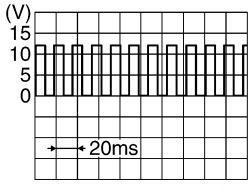
AV-H/PHON-09

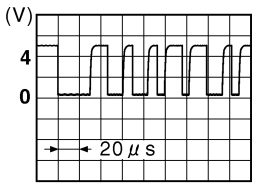
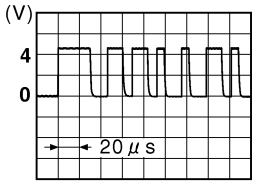


TKWM3832E

Terminals and Reference Value for TEL Adapter Unit

NKS002JZ

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (SB)	Ground	Battery power supply	Input	OFF	—	Battery voltage
2 (L/OR)	Ground	ACC power supply	Input	ACC	—	Battery voltage
3 (W/G)	Ground	Ignition signal	Input	ON	—	Battery voltage
4 (B)	Ground	Ground	—	ON	—	Approx. 0 V
6	—	Shield	—	—	—	—
7 (BR)	8 (G/L)	Microphone signal	Input	ON	Uttering in front of the microphone while using the hands-free phone system.	 SKIB3609E
9 (P)	10 (L)	TEL voice signal	Output	ON	Receiving the party's voice while using the hands-free phone system.	 SKIB3609E
11 (L/W)	Ground	TEL ON signal	Output	ON	While using hands-free phone system or voice activated control system	Approx. 0 V
					Except while using hands-free phone system and voice activated control system (*1)	Approx. 12 V (*1)
					Except while using hands-free phone system (*2)	Approx. 5 V (*2)
12 (LG)	Ground	TEL switch signal A	Input	ON	Press and hold button	Approx. 0 V
					Other than the above	Approx. 5 V
13 (GY)	Ground	TEL switch signal B	Input	ON	Press and hold button	Approx. 0 V
					Other than the above	Approx. 5 V
14 (B)	Ground	Ground	—	ON	—	Approx. 0 V
15 (PU)	Ground	Indicator signal	Output	ON	Microphone indicator ON, and lighting switch OFF	Approx. 1.3 V
					Microphone indicator ON, and lighting switch ON	Approx. 0.8 V
					Microphone unit indicator OFF	Approx. 12 V
28 (BR/W)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 PKIA1935E

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
29 (W)	Ground	Microphone VCC	Output	ON	—	Approx. 5 V
33 (PU)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
34 (LG)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
35	—	Shield	—	—	—	—
41	—	TEL antenna signal	—	—	—	—

*1: With voice activated control system
*2: Without voice activated control system

Terminals and Reference Value for Voice Activated Control Module

NKS002K0

Refer to DI-210, "Terminals and Reference Values for Voice Activated Control Module" .

Special Note for Trouble Diagnosis

NKS002Q3

When the hands-free phone system has a malfunction, check if the cellular phone and the communications circuit between control units have a malfunction (Refer to AV-102, "Self-Diagnosis Mode"), and then start diagnoses. Also, when starting diagnoses, turn on the cellular phone to establish connection with the Bluetooth® .

Self-Diagnosis Function

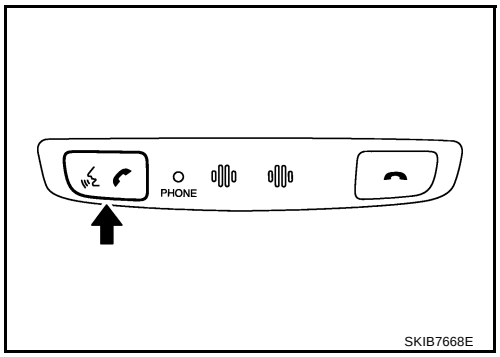
NKS002K2

The followings are diagnosis functions performed by TEL adapter unit.

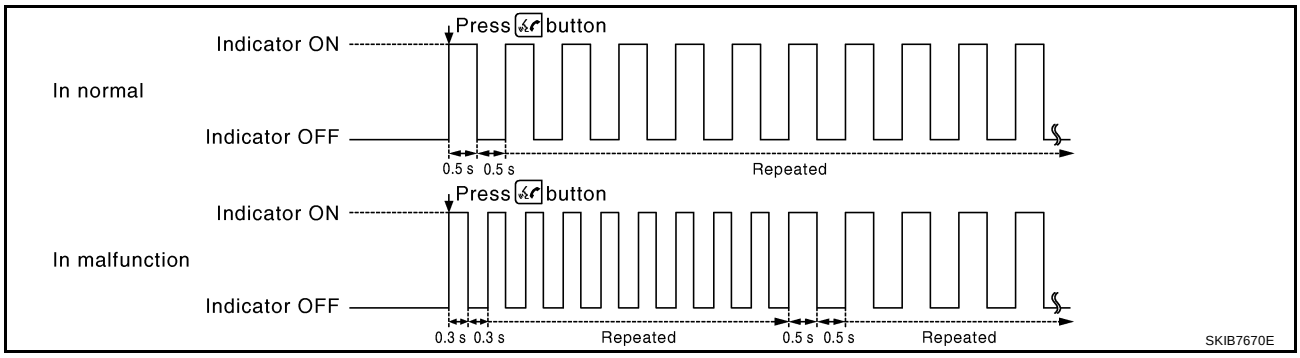
- Performs the unit self-diagnosis and antenna diagnosis, and informs results with the indicator and voice guidance.
- Informs vehicle speed pulse count from the time of key switch ON with voice guidance, and enables to check vehicle speed signal.
- Outputs voice giving to microphone with speaker, and enables to check microphone function.

OPERATION PROCEDURE

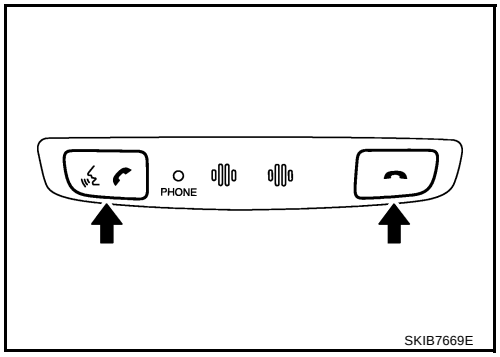
1. Start the engine.
2. Press and hold button for 5 seconds or more.



   - This allows the indicator to blink concurrently with voice guidance outputs, and determines if there is any current error in the state of blinking.
   - When the indicator does not blink, check the microphone power supply circuit, and then repair malfunctioning part.

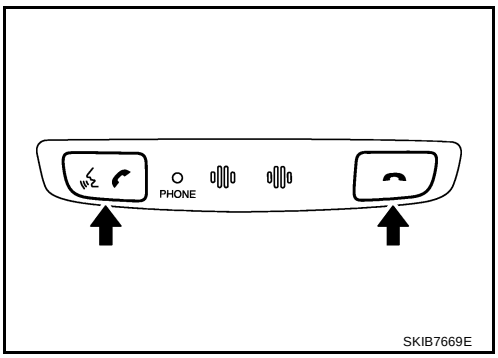


3. Press both and buttons simultaneously while voice guidance outputs.



4. Press both and buttons simultaneously while beep sound outputs.

   NOTE:
   Turn ignition switch OFF and return to Step 1 again if beep sound does not output. Replace TEL adapter unit if beep sound still does not output.



5. Perform the followings.
   - Check how many times indicator flashes with in 5 seconds after pressing and buttons.
   - Inform the malfunction and vehicle speed pulse from the time of ignition switch ON with voice.

   NOTE:
   Vehicle speed pulse is reset to 0 when turning ignition switch OFF.

Number of indicator flashes	Voice guidance	Malfunction	Possible solution
1	Internal failure	TEL adapter unit is malfunctioning	Replace TEL adapter unit
2	Bluetooth antenna open	TEL antenna feeder is open	Replace TEL antenna
3	Bluetooth antenna shorted	TEL antenna feeder is short	

6. Beep sounds (while 1 second) outputs 3 seconds after voice guidance of microphone check.
7. Voice giving to microphone outputs from speaker. Microphone function can be checked.
8. Diagnosis mode exits after a beep sounds.

Hands-Free Phone System Is Not Activated

NKS002LP

Symptom: Hands-free phone system is not activated when pressing button. (Voice dialing or receiving a call is not activated.)

1. CHECK CONDITION

Turn ignition switch ON. Check if microphone indicator blinks.

Does the indicator blink?

YES >> GO TO 2.
NO >> Start on board self-diagnosis. Repair malfunctioning part. Refer to AV-102, "Self-Diagnosis Mode" .

2. CHECK CONDITION

Check if microphone indicator turns ON after the indicator blinks.

Does the indicator switch from blinking to turning ON?

YES >> GO TO 3.
NO >> Start the self-diagnosis of hands-free phone system. Check TEL antenna function. Refer to AV-148, "Self-Diagnosis Function" .

3. CHECK CONDITION

Check if the speaker's voice outputs to the party when dialing cellular phone and uttering to the microphone.

Can the party hear speaker's voice?

YES >> GO TO 4.
NO >> GO TO 6.

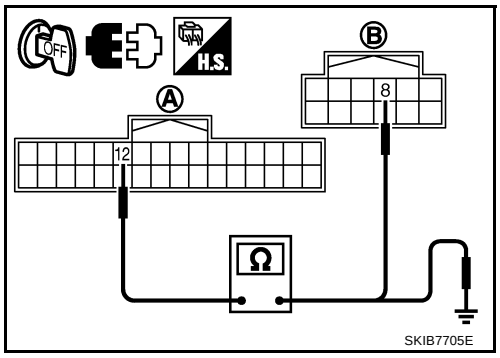
4. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit and microphone connectors.
3. Check continuity between TEL adapter unit harness connector (A) B32 terminal 12 and microphone harness connector (B) R25 terminal 8.

   12 – 8 : Continuity should exist.

4. Check continuity between TEL adapter unit harness connector (A) B32 terminal 12 and ground.

   12 – Ground : Continuity should not exist.



SKIB7705E

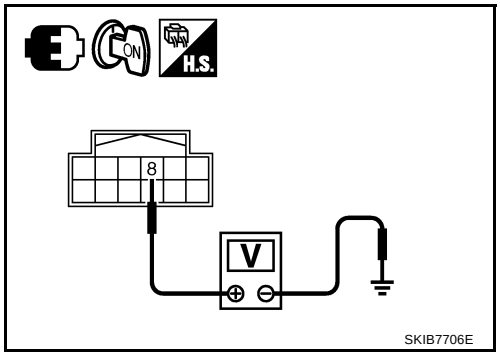
OK or NG

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

5. CHECK TEL SWITCH SIGNAL A

1. Connect TEL adapter unit and microphone connectors.
2. Check voltage between microphone harness connector terminal and ground.

Terminals			Press and hold button	button not pressed
(+)		(–)		
Connector	Terminal			
R25	8	Ground	Approx. 0 V	Approx. 5 V



SKIB7706E

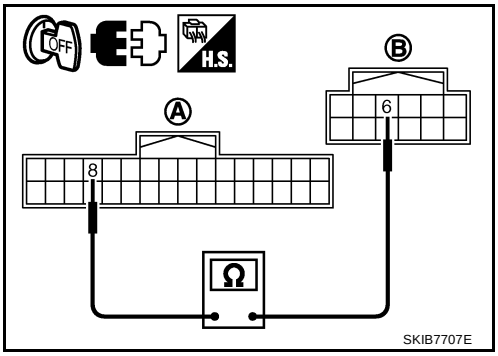
OK or NG

OK >> Replace TEL adapter unit.
NG >> Replace microphone.

6. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit and microphone connectors.
3. Check continuity between TEL adapter unit harness connector (A) B32 terminal 8 and microphone harness connector (B) R25 terminal 6.

8 – 6 : Continuity should exist.



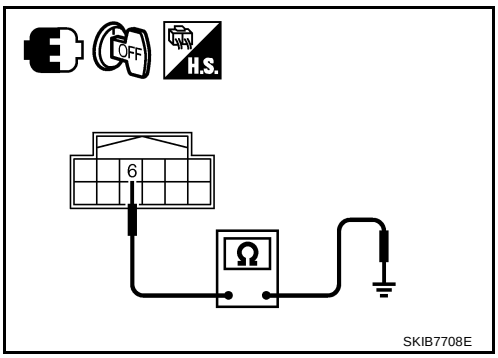
OK or NG

OK >> GO TO 7.
NG >> Repair harness or connector.

7. CHECK MICROPHONE GROUND

1. Connect TEL adapter unit and microphone connectors.
2. Check continuity between microphone harness connector R25 terminal 6 and ground.

6 – Ground : Continuity should exist.



OK or NG

OK >> Replace TEL adapter unit.
NG >> Replace microphone.

Hands-Free Phone System Cannot Transmit The Speaker's Voice to The Party

NKS002LQ

Symptom: Hands-free phone system cannot transmit the speaker's voice to the party, though the party's voice can be heard.

1. HANDS-FREE PHONE SYSTEM SELF-DIAGNOSIS

Start the self-diagnosis of hands-free phone system, and uttering to the microphone.

Can front speaker RH output the speaker's voice?

YES >> Hands-free phone system have no malfunction. Check the symptom with a different cellular phone again.

NO >> GO TO 2.

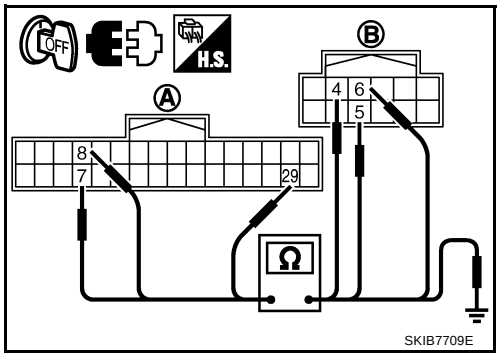
2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit and microphone connectors.
3. Check continuity between TEL adapter unit harness connector (A) B32 terminals 7, 8, 29 and microphone harness connector (B) R25 terminals 5, 6, 4.

7 – 5 : Continuity should exist.
8 – 6 : Continuity should exist.
29 – 4 : Continuity should exist.

4. Check continuity between TEL adapter unit harness connector (A) B32 terminals 7, 29 and ground.

7, 29 – Ground : Continuity should not exist.



OK or NG

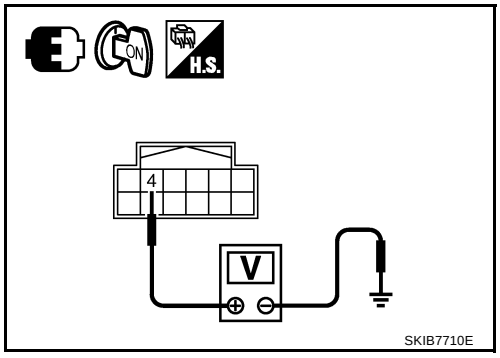
OK >> GO TO 3.

NG >> Repair harness or connector.

3. CHECK MICROPHONE VCC

1. Connect TEL adapter unit and microphone connectors.
2. Turn ignition switch ON.
3. Check voltage between microphone harness connector R25 terminal 4 and ground.

4 – Ground : Approx. 5 V



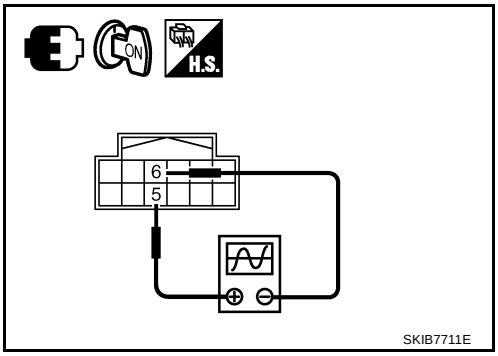
OK or NG

OK >> GO TO 4.

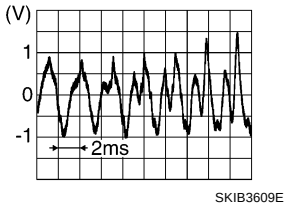
NG >> Replace TEL adapter unit.

4. CHECK MICROPHONE SIGNAL

Uttering in front of the microphone while using the hands-free phone system, check voltage waveform between microphone harness connector R25 terminals 5 and 6 with CONSULT-II or oscilloscope.



5 – 6:



OK or NG

OK >> Replace TEL adapter unit.
NG >> Replace microphone.

Hands-Free Phone System Cannot Transmit The Party's Voice to The Speaker

NKS002LR

Symptom: Hands-free phone system cannot transmit the party's voice to the speaker or cannot make listening tone, though the speaker's voice can be transmitted.

1. NAVIGATION SYSTEM SELF-DIAGNOSIS

Start the self-diagnosis of navigation system. Check the self-diagnosis result.

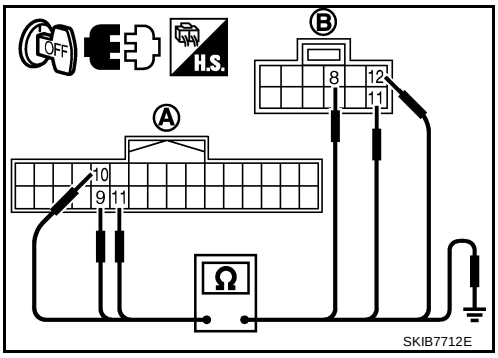
OK or NG

OK >>
- GO TO 2. (With voice activated control system)
- GO TO 9. (Without voice activated control system)

NG >> Repair malfunctioning part.

2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit and voice activated control module connectors.
3. Check continuity between TEL adapter unit harness connector (A) B32 terminals 9, 10, 11 and voice activated control module harness connector (B) B67 terminals 12, 11, 8.



9 – 12 : Continuity should exist.
10 – 11 : Continuity should exist.
11 – 8 : Continuity should exist.

4. Check continuity between TEL adapter unit harness connector (A) B32 terminals 9, 10, 11 and ground.

9, 10, 11 – Ground : Continuity should not exist.

OK or NG

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

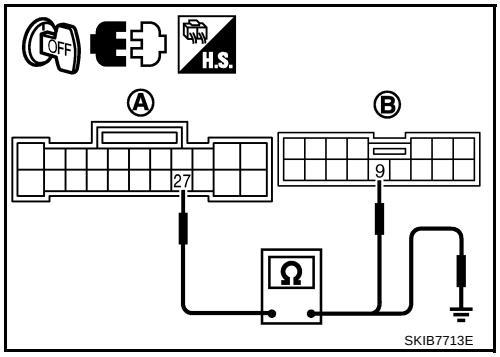
3. CHECK HARNESS

1. Disconnect voice activated control module and audio unit connectors.
2. Check continuity between voice activated control module harness connector (A) B69 terminal 27 and audio unit harness connector (B) M87 terminal 9.

27 – 9 : Continuity should exist.

3. Check continuity between voice activated control module harness connector (A) B69 terminal 27 and ground.

27 – Ground : Continuity should not exist.



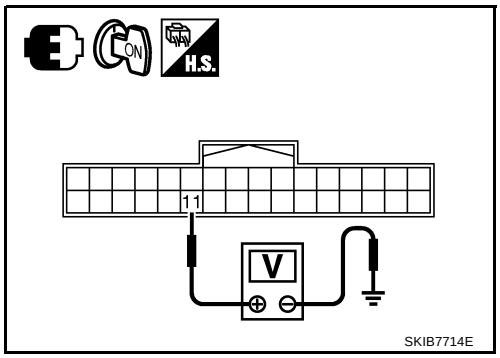
OK or NG

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

4. CHECK TEL ON SIGNAL

1. Connect TEL adapter unit, voice activated control module and audio unit connectors.
2. Turn ignition switch ON.
3. Check voltage between TEL adapter unit harness connector terminal and ground.

Terminals			While using hands-free phone system	Except while using hands-free phone system
(+)		(–)		
Connector	Terminal			
B32	11	Ground	Approx. 0 V	Approx. 12 V



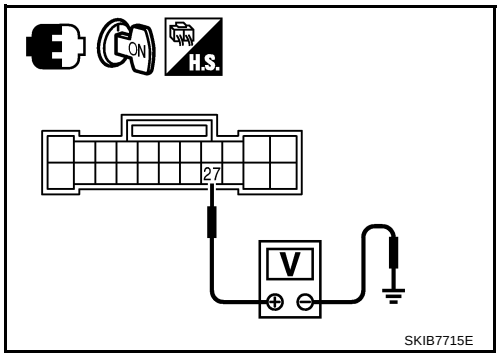
OK or NG

OK >> GO TO 5.
NG >> Replace TEL adapter unit.

5. CHECK TEL ON SIGNAL

Check voltage between voice activated control module harness connector terminal and ground.

Terminals			While using hands-free phone system	Except while using hands-free phone system
(+)		(–)		
Connector	Terminal			
B69	27	Ground	Approx. 0 V	Approx. 5 V



OK or NG

OK >> GO TO 6.
NG >> Replace voice activated control module.

6. CHECK HARNESS

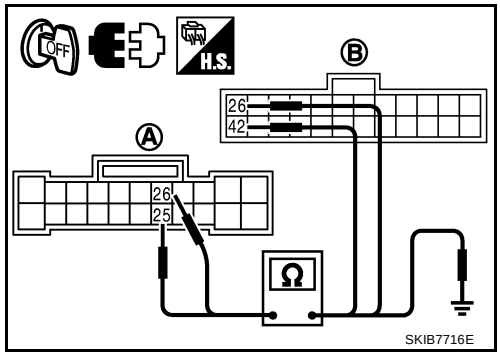
1. Turn ignition switch OFF.
2. Disconnect voice activated control module and BOSE speaker amp. connectors.
3. Check continuity between voice activated control module harness connector (A) B69 terminals 26, 25 and BOSE speaker amp. harness connector (B) B234 terminals 26, 42.

   26 – 26 : Continuity should exist.

   25 – 42 : Continuity should exist.

4. Check continuity between voice activated control module harness connector (A) B69 terminals 26, 25 and ground.

   26, 25 – Ground : Continuity should not exist.



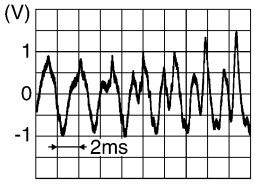
OK or NG

OK >> GO TO 7.
NG >> Repair harness or connector.

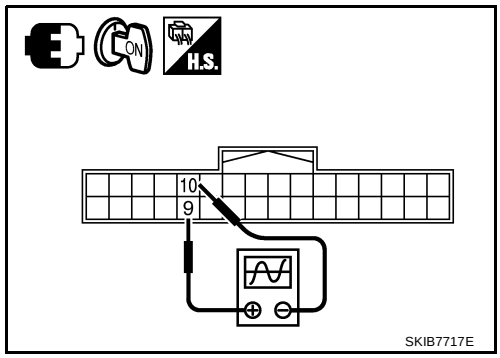
7. CHECK TEL VOICE SIGNAL

1. Connect voice activated control module and BOSE speaker amp. connectors.
2. Turn ignition switch ON.
3. Receiving the party's voice while using the hands-free phone system, check voltage waveform between TEL adapter unit harness connector B32 terminals 9 and 10 with CONSULT-II or oscilloscope.

9 – 10:



SKIB3609E



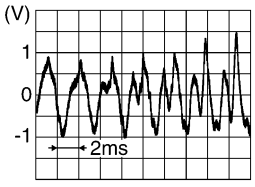
OK or NG

OK >> GO TO 8.
NG >> Replace TEL adapter unit.

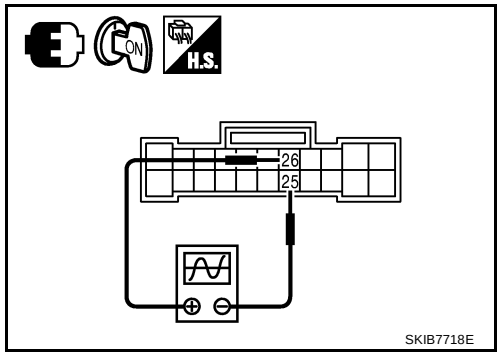
8. CHECK TEL VOICE SIGNAL

Receiving the party's voice while using the hands-free phone system, check voltage waveform between voice activated control module harness connector B69 terminals 26 and 25 with CONSULT-II or oscilloscope.

26 – 25:



SKIB3609E



OK or NG

OK >> Replace BOSE speaker amp.
NG >> Replace voice activated control module.

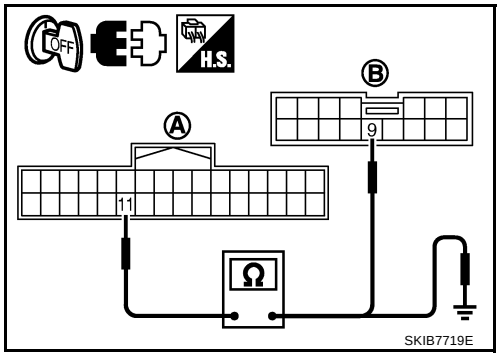
9. CHECK HARNESS

1. Disconnect TEL adapter unit and audio unit connectors.
2. Check continuity between TEL adapter unit harness connector (A) B32 terminal 11 and audio unit harness connector (B) M87 terminal 9.

11 – 9 : Continuity should exist.

3. Check continuity between TEL adapter unit harness connector (A) B32 terminal 11 and ground.

11 – Ground : Continuity should not exist.



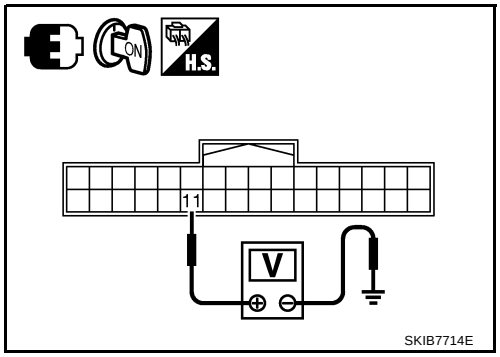
OK or NG

OK >> GO TO 10.
NG >> Repair harness or connector.

10. CHECK TEL ON SIGNAL

1. Connect TEL adapter unit and audio unit connectors.
2. Turn ignition switch ON.
3. Check voltage between TEL adapter unit harness connector terminal and ground.

Terminals			While using hands-free phone system	Except while using hands-free phone system
(+)		(–)		
Connector	Terminal			
B32	11	Ground	Approx. 0 V	Approx. 5 V



OK or NG

OK >> GO TO 11.
NG >> Replace TEL adapter unit.

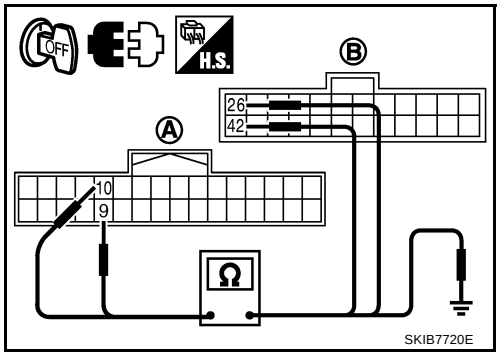
11. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect TEL adapter unit and BOSE speaker amp. connectors.
3. Check continuity between TEL adapter unit harness connector (A) B32 terminals 9, 10 and BOSE speaker amp. harness connector (B) B234 terminals 26, 42.

9 – 26 : Continuity should exist.
10 – 42 : Continuity should exist.

4. Check continuity between TEL adapter unit harness connector (A) B32 terminals 9, 10 and ground.

9, 10 – Ground : Continuity should not exist.

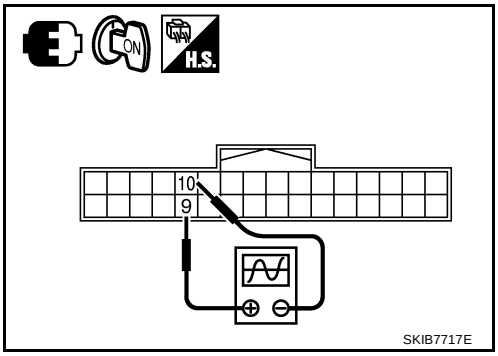


OK or NG

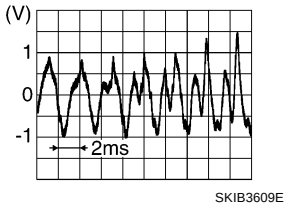
OK >> GO TO 12.
NG >> Repair harness or connector.

12. CHECK TEL VOICE SIGNAL

Receiving the party's voice while using the hands-free phone system, check voltage waveform between TEL adapter unit harness connector B32 terminals 9 and 10 with CONSULT-II or oscilloscope.



9 – 10:



OK or NG

OK >> BOSE speaker amp.
NG >> Replace TEL adapter unit.

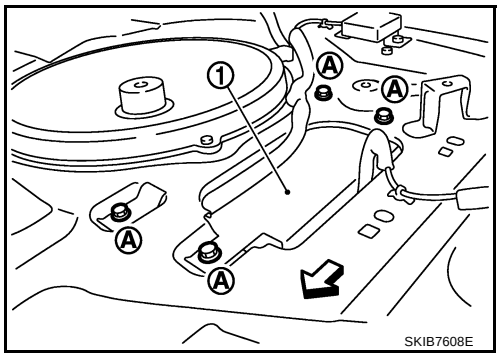
Removal and Installation of TEL Adapter Unit

NKS002K6

REMOVAL

⇦: Vehicle front

1. Remove trunk front finisher. Refer to EI-60, "TRUNK ROOM TRIM & TRUNK LID FINISHER" .
2. Remove rear parcel shelf finisher. Refer to EI-48, "REAR PARCEL SHELF FINISHER" .
3. Remove bolts (A), and remove TEL adapter unit (1) and AV and NAVI control unit from trunk room side.
4. Remove TEL adapter unit from bracket.



INSTALLATION

Installation is the reverse order of removal.

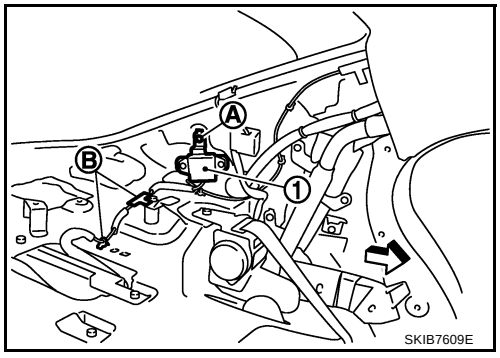
Removal and Installation for TEL Antenna

NKS002K7

REMOVAL

⇦: Vehicle front

1. Remove trunk front finisher. Refer to EI-60, "TRUNK ROOM TRIM & TRUNK LID FINISHER" .
2. Remove rear parcel shelf finisher. Refer to EI-48, "REAR PARCEL SHELF FINISHER" .
3. Disconnect TEL antenna connector from TEL adapter unit.
4. Remove bolt (A) and clips (B), and remove TEL antenna (1).



INSTALLATION

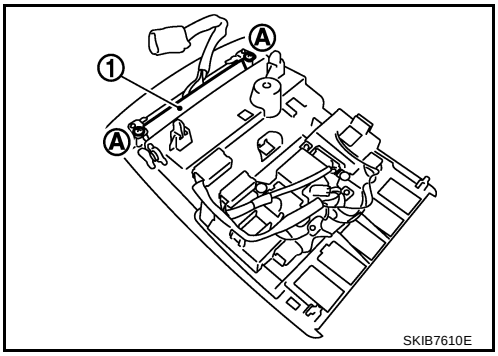
Installation is the reverse order of removal.

Removal and Installation of Microphone (PHONE/SEND and END Buttons)

NKS002K8

REMOVAL

1. Remove front interior lamp. Refer to LT-143, "FRONT INTERIOR LAMP" .
2. Remove screws (A), and remove microphone (and buttons) (1).



INSTALLATION

Installation is the reverse order of removal.

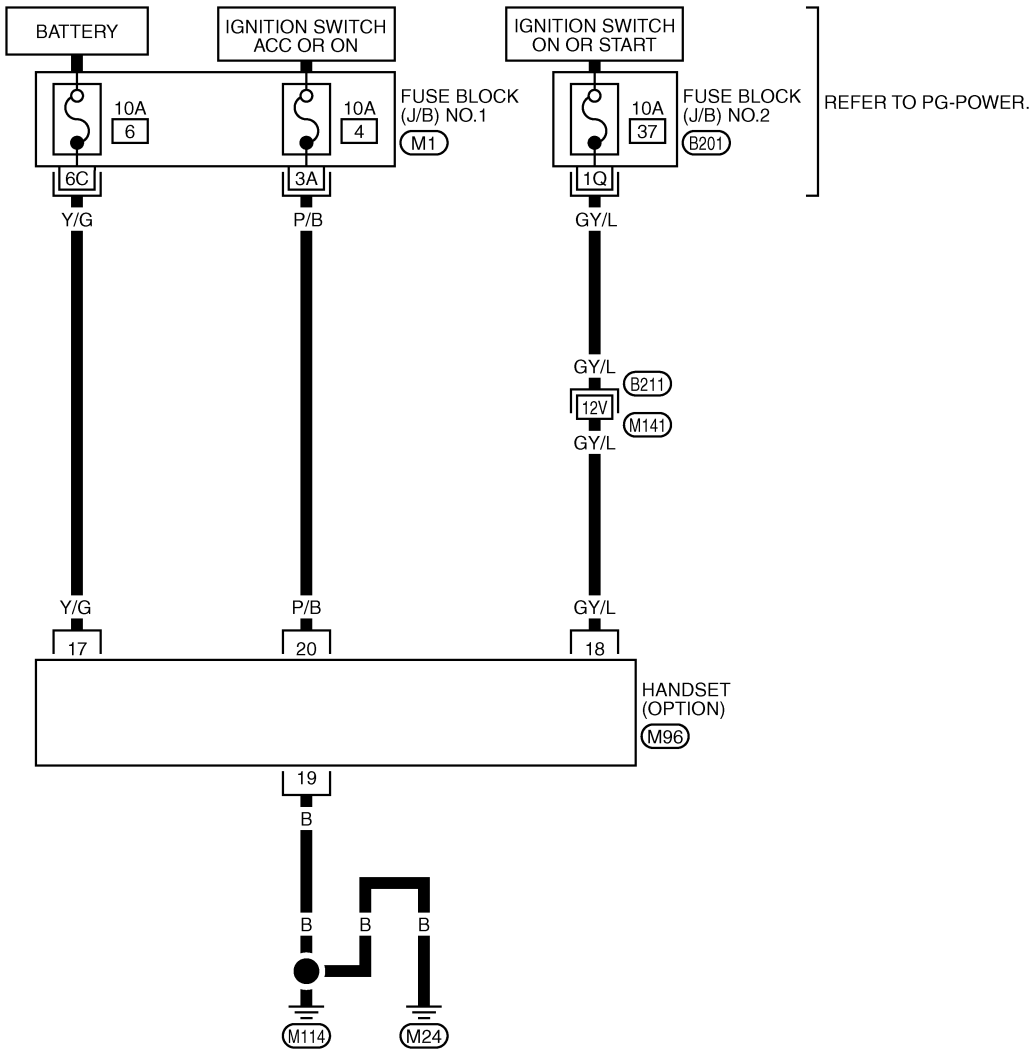
TELEPHONE (PRE WIRE)

PFP:28342

Wiring Diagram — PHONE —

NKS001IK

AV-PHONE-01



20 18
19 17
M96
W

REFER TO THE FOLLOWING.

B211 -SUPER MULTIPLE JUNCTION (SMJ)

M1 -FUSE BLOCK-JUNCTION BOX (J/B) NO.1

B201 -FUSE BLOCK-JUNCTION BOX (J/B) NO.2

TKWM1354E