SECTION AV

AUDIO, VISUAL, NAVIGATION & TELEPHONE SYSTEM

CONTENTS

PRECAUTIONS

PFP:00001

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

NKS0021H

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:

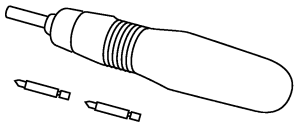
- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper maintenance, including incorrect removal 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.**

PREPARATION

PFP:00002

Commercial Service Tools

NKS0021J

Tool name	Description
Power tool  PBIC0191E	Loosening bolts and nuts

AUDIO

PFP:28111

System Description

NKS0021K

BASE SYSTEM

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

- through 15A fuse [No. 38, located in the fuse and fusible link block]
- to audio unit terminal 6
- to display control unit terminal 1
- to A/C and AV switch terminal 1
- to satellite radio tuner terminal 22 (With satellite radio)
- to option connector for DVD terminal 1.

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

- through 10A fuse [No. 6, located in the fuse block (J/B)]
- to audio unit terminal 10
- to display control unit terminal 10
- to A/C and AV switch terminal 2
- to satellite radio tuner terminal 26 (With satellite radio)
- to option connector for DVD terminal 2.

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

- to A/C and AV switch terminal 5
- to display control unit terminal 3
- to display terminal 1
- to option connector for DVD terminal 3
- through body grounds M14 and M78.

Audio unit and A/C and AV switch are connected by FPC (Flexible Print Circuit).
A/C and audio controller integrates A/C switches and audio switches.
When A/C and audio controller is pressed to audio switch, it sends audio signal to audio unit.
Then audio signals are supplied

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

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

BOSE SYSTEM

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

- through 15A fuse [No. 38, located in the fuse and fusible link block]
- to audio unit terminal 6
- to BOSE speaker amp. terminal 1
- to A/C and AV switch terminal 1
- to display control unit terminal 1
- to satellite radio tuner terminal 22 (With satellite radio)
- to option connector for DVD terminal 1.

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

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

- to A/C and AV switch terminal 2
- to display control unit terminal 10
- to satellite radio tuner terminal 26 (With satellite radio)
- to option connector for DVD terminal 2.

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

- to BOSE speaker amp. terminal 17
- through body grounds B105 and B116,
- to A/C and AV switch terminal 5
- to display control unit terminal 3
- to display terminal 1
- to option connector for DVD terminal 3
- through body grounds M14 and M78.

Audio unit and A/C and AV switch are connected by FPC (Flexible Print Circuit).
A/C and audio controller integrates A/C switches and audio switches.
When A/C and audio controller is pressed to audio switch, it sends audio signal to audio unit.
Then audio signals are supplied

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

Audio signals are amplified by the BOSE speaker amp.
The amplified audio signals are supplied

- through BOSE speaker amp. terminals 2, 3, 9,10,11,12, 13, 14, 15, 16, 18, and 19
- to terminals 1 and 2 of front door speaker LH and RH
- to terminals 1 and 2 of rear door speaker LH and RH
- to terminals 1 and 2 of tweeter LH and RH
- to terminals 2, 3, 4 and 6 of woofer.

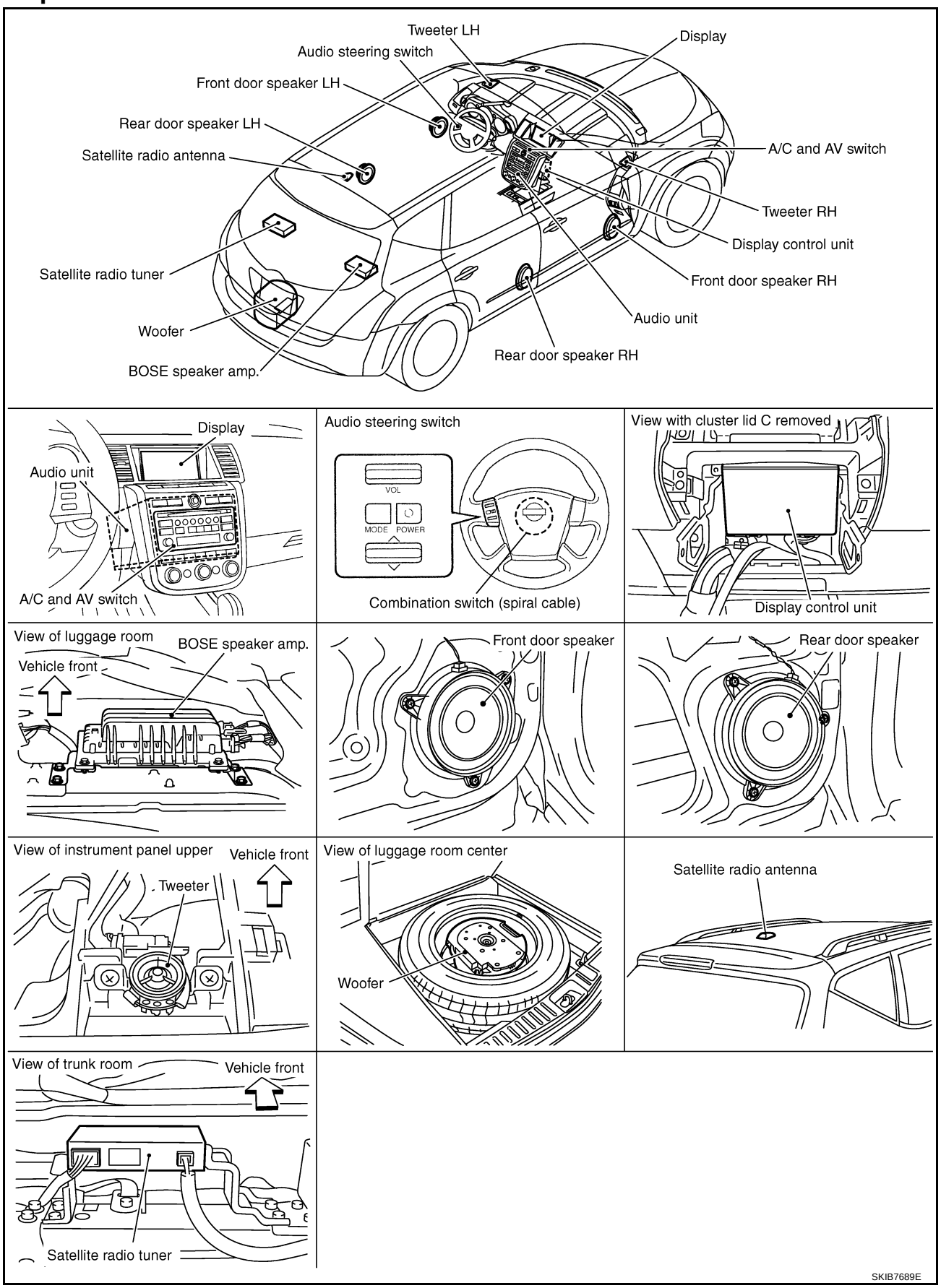
When one of audio steering switch is pressed to volume up, seek up, or mode ON, resistance in audio steering switch circuit changes depending on which button is pressed.
When one of audio steering switch is pressed to volume down, seek down, or power ON, resistance in audio steering switch circuit changes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

SPEED SENSITIVE VOLUME SYSTEM

Volume level of this system goes up and down automatically in proportion to the vehicle speed. And the control level can be selected by the customer. This system is equipped for BOSE system.

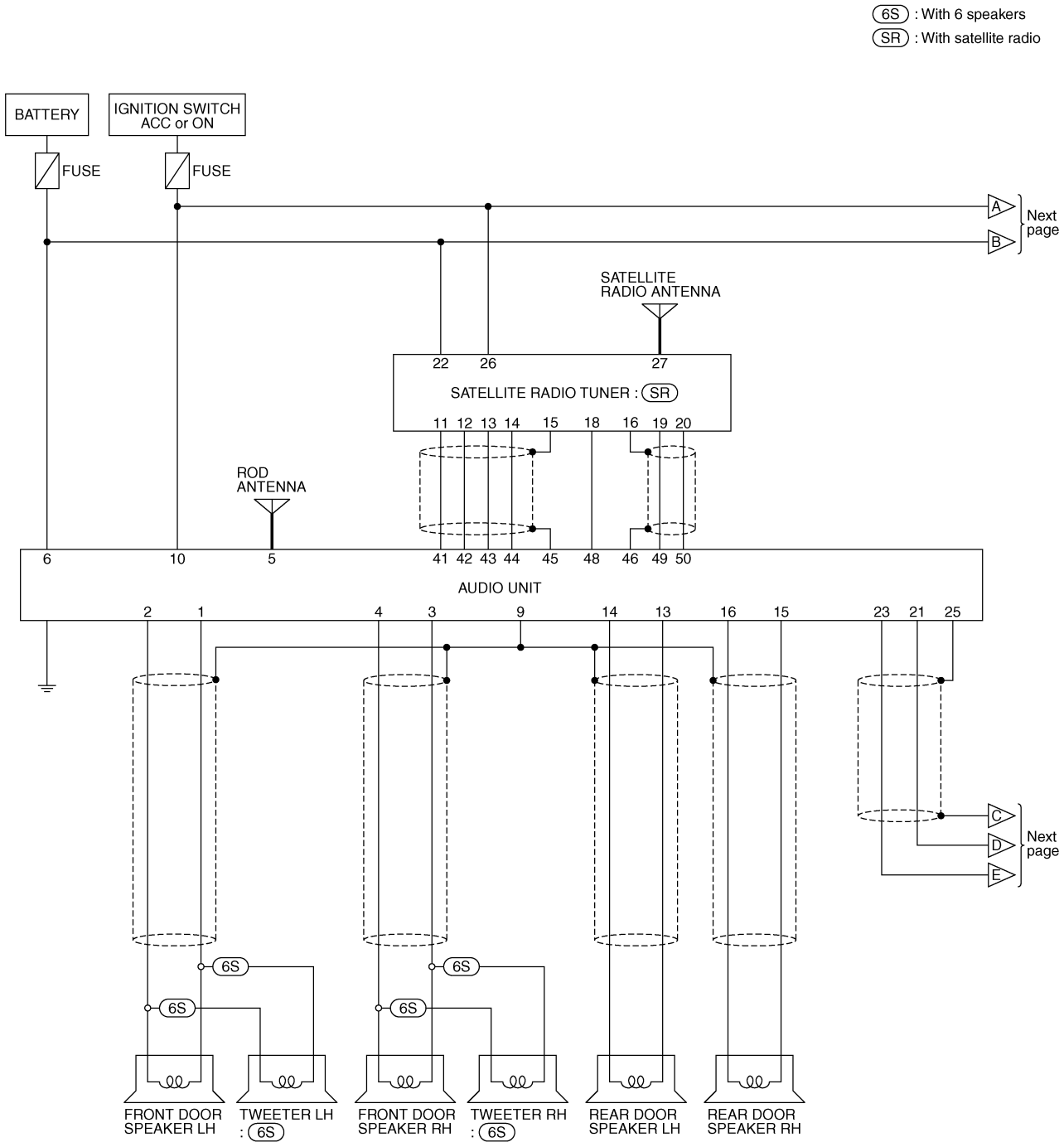
Component Parts Location

NKS0021L

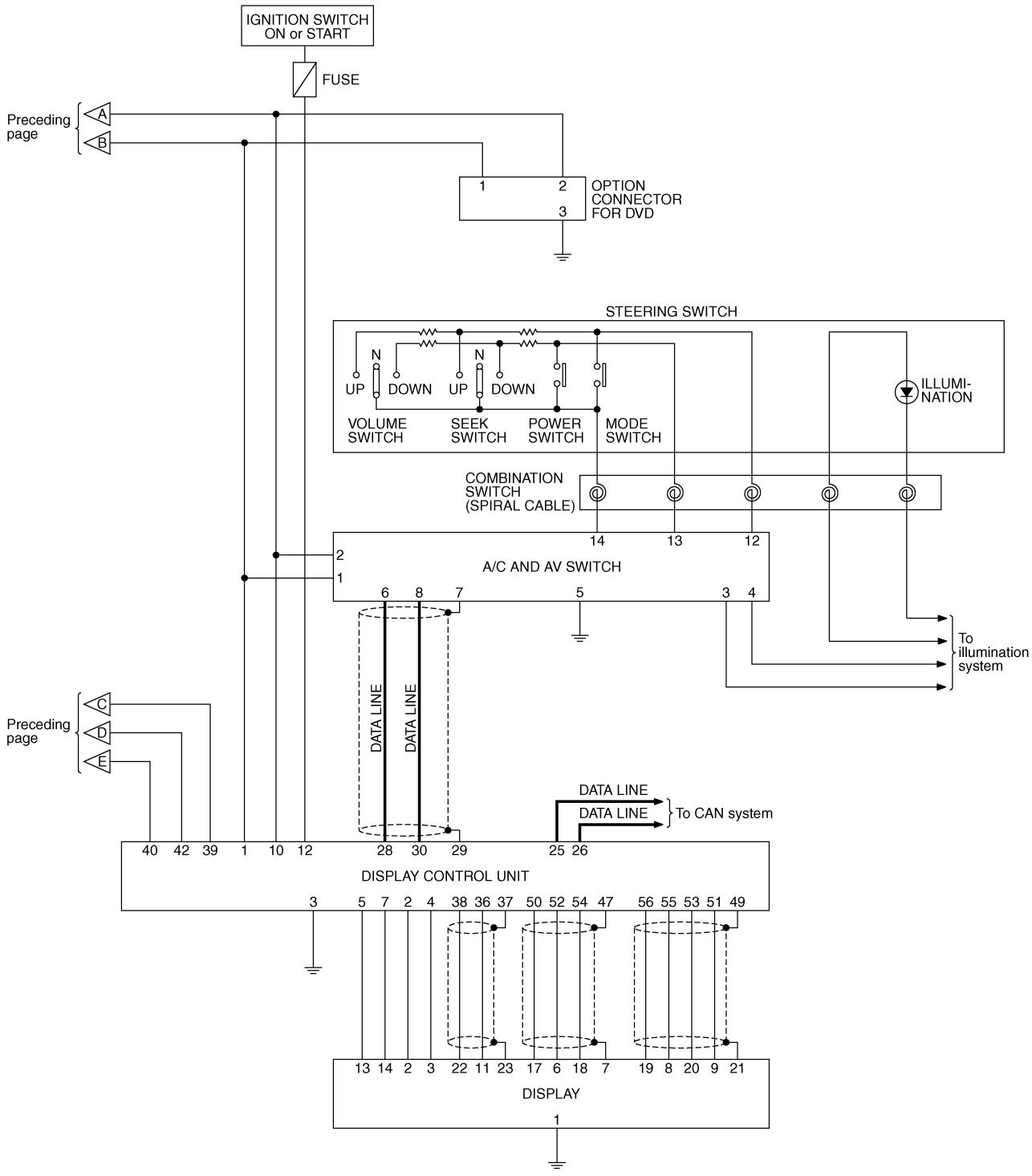


Schematic / Base System

NKS0021M



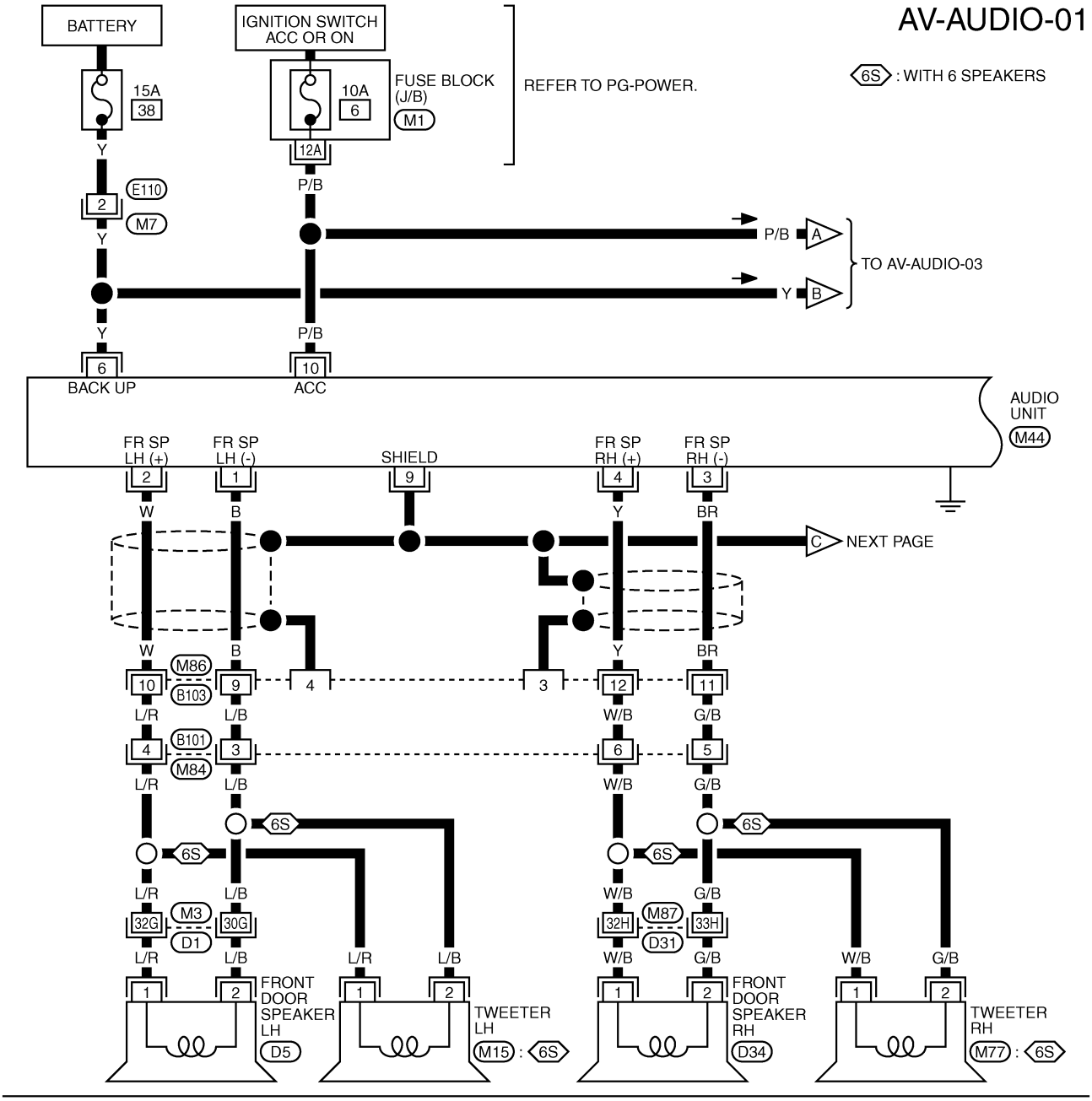
TKWB2628E


IGNITION SWITCH
ON or START
FUSE
Preceding page
A
B
1
2
3
OPTION CONNECTOR FOR DVD
STEERING SWITCH
N
N
UP
DOWN
UP
DOWN
VOLUME SWITCH
SEEK SWITCH
POWER SWITCH
MODE SWITCH
ILLUMI-NATION
COMBINATION SWITCH (SPIRAL CABLE)
14
13
12
2
1
A/C AND AV SWITCH
6
8
7
5
3
4
To illumination system
Preceding page
C
D
E
DATA LINE
DATA LINE
DATA LINE
DATA LINE
To CAN system
40
42
39
1
10
12
28
30
29
25
26
DISPLAY CONTROL UNIT
3
5
7
2
4
38
36
37
50
52
54
47
56
55
53
51
49
13
14
2
3
22
11
23
17
6
18
7
19
8
20
9
21
DISPLAY
1

TKWB2629E

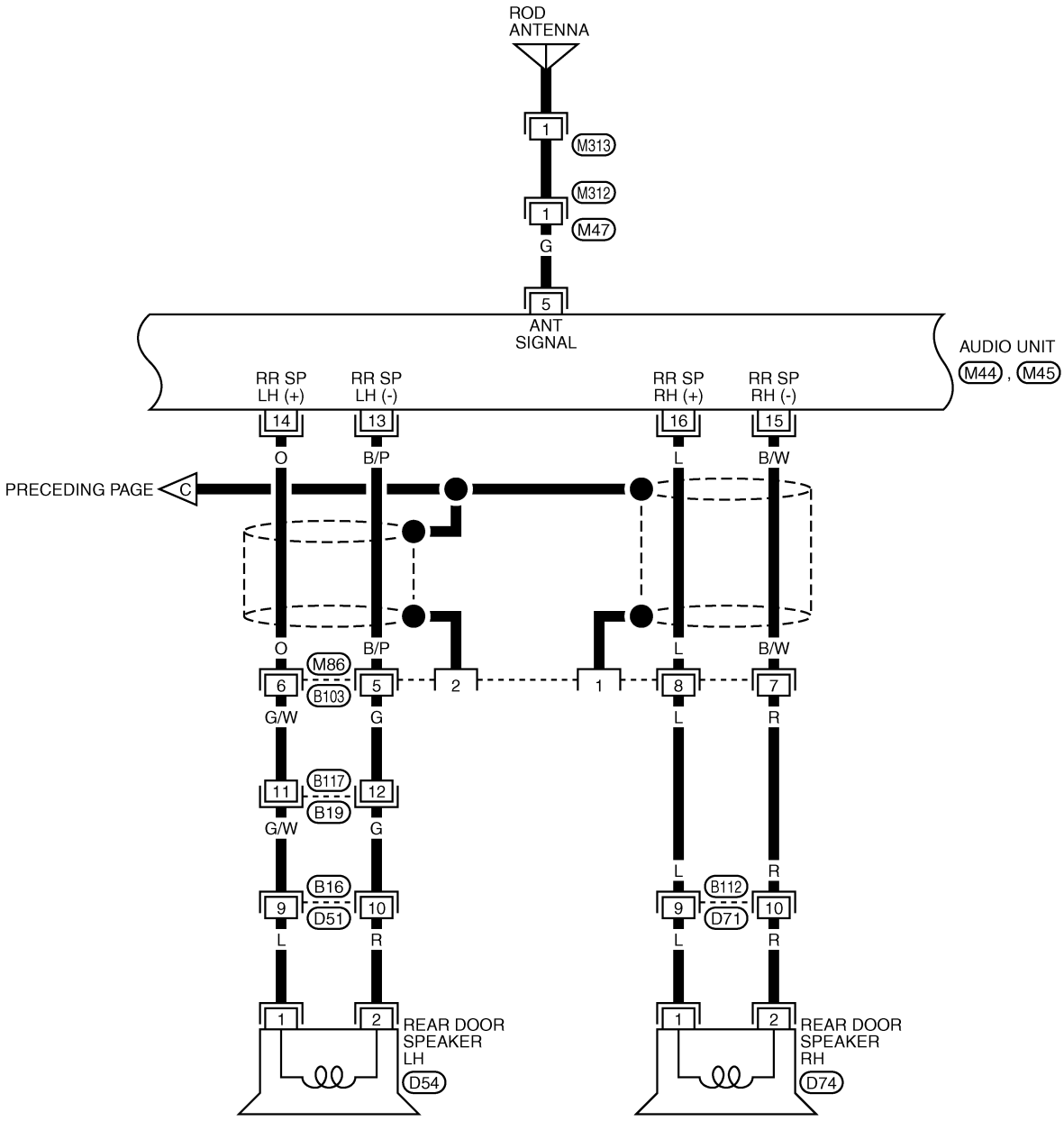
Wiring Diagram — AUDIO — / Base System

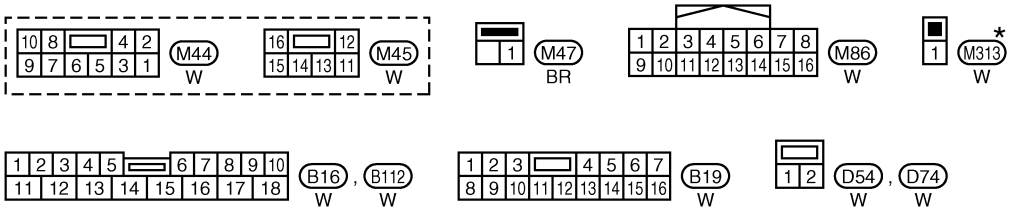
NKS0021N



TKWB2632E

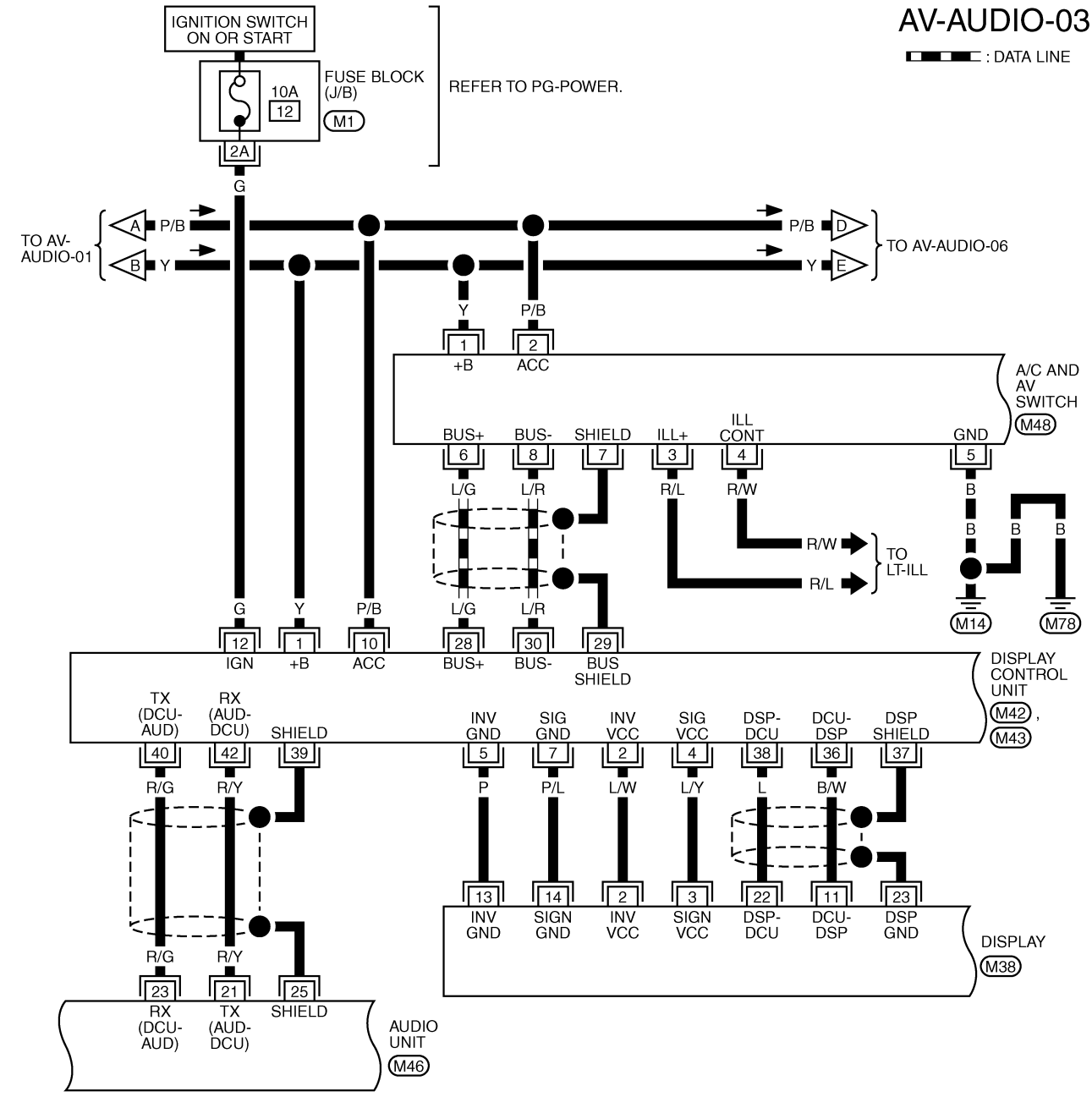
AV-AUDIO-02





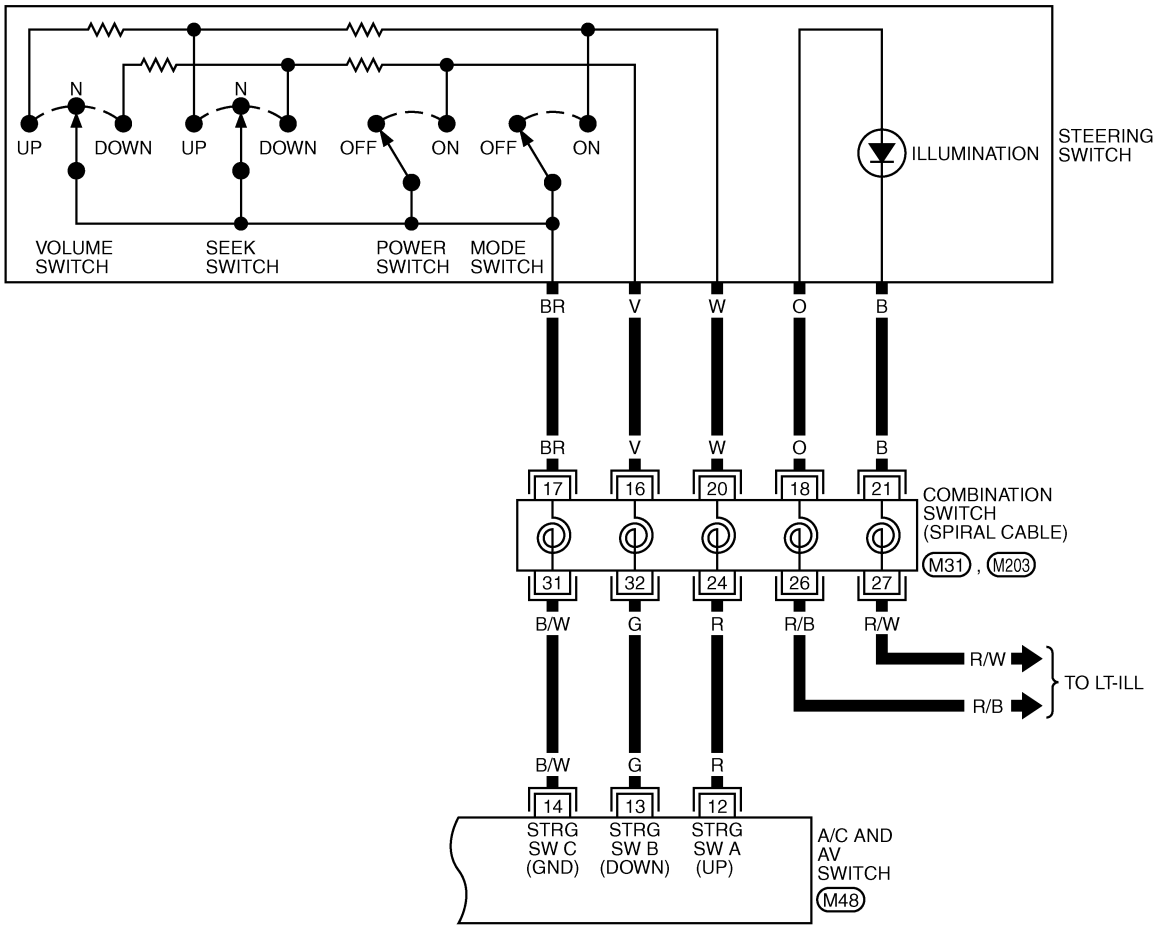
★: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

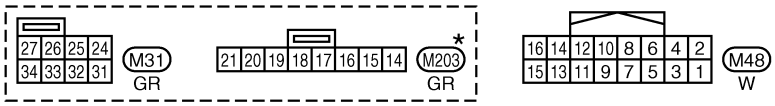
TKWB2633E


AV-AUDIO-03
: DATA LINE
IGNITION SWITCH ON OR START
FUSE BLOCK (J/B)
10A
12
M1
2A
REFER TO PG-POWER.
G
TO AV-AUDIO-01
A
B
P/B
Y
P/B
Y
D
E
TO AV-AUDIO-06
Y
P/B
1
2
+B
ACC
A/C AND AV SWITCH
M48
BUS+
BUS-
SHIELD
ILL+
ILL CONT
GND
6
8
7
3
4
5
L/G
L/R
R/L
R/W
B
R/W
R/L
TO LT-ILL
M14
M78
G
Y
P/B
L/G
L/R
12
1
10
28
30
29
IGN
+B
ACC
BUS+
BUS-
BUS SHIELD
DISPLAY CONTROL UNIT
M42
M43
TX (DCU-AUD)
RX (AUD-DCU)
SHIELD
INV GND
SIG GND
INV VCC
SIG VCC
DSP-DCU
DCU-DSP
DSP SHIELD
40
42
39
5
7
2
4
38
36
37
R/G
R/Y
P
P/L
L/W
L/Y
L
B/W
13
14
2
3
22
11
23
INV GND
SIGN GND
INV VCC
SIGN VCC
DSP-DCU
DCU-DSP
DSP GND
DISPLAY
M38
R/G
R/Y
23
21
25
RX (DCU-AUD)
TX (AUD-DCU)
SHIELD
AUDIO UNIT
M46
M38
W
M42
W
M43
W
M46
W
M48
W
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWB2634E

AV-AUDIO-04

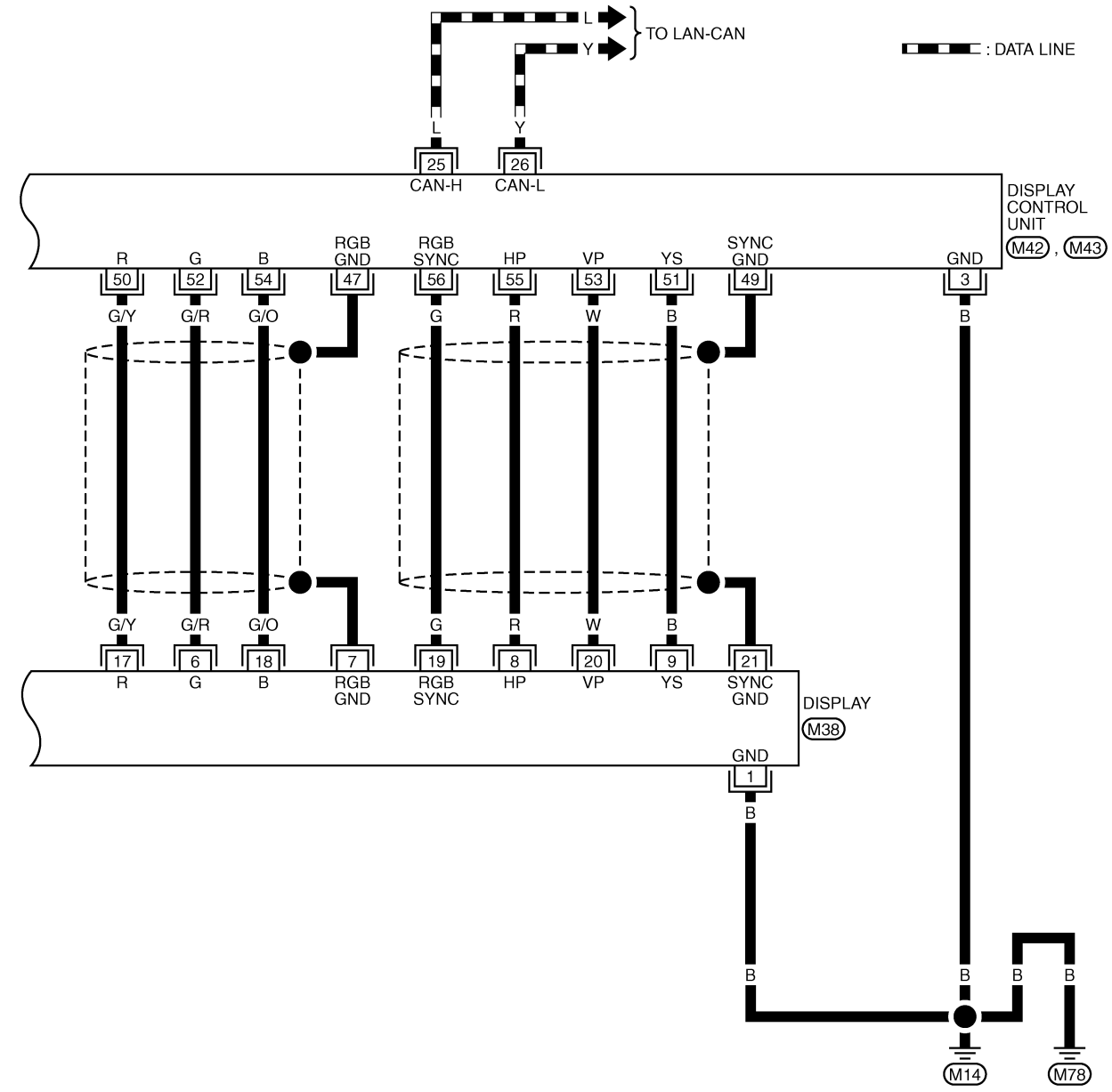


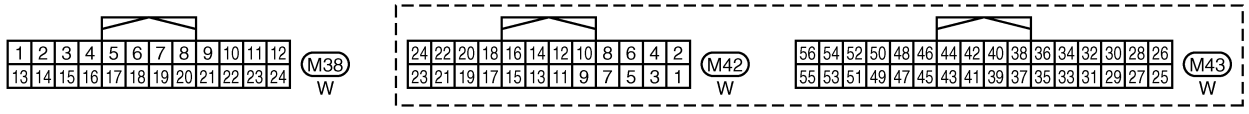


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWB2635E

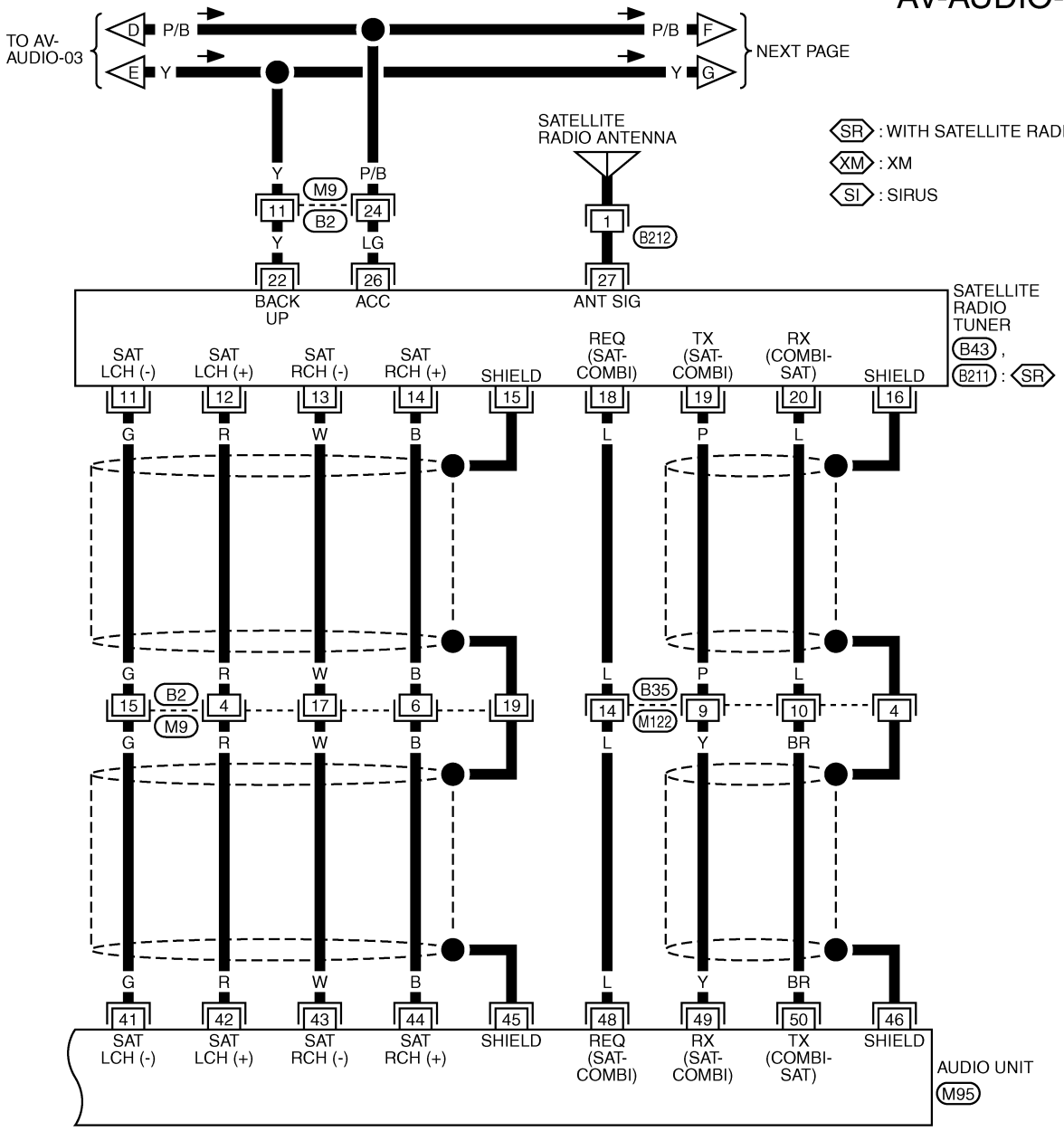
AV-AUDIO-05





TKWB2636E

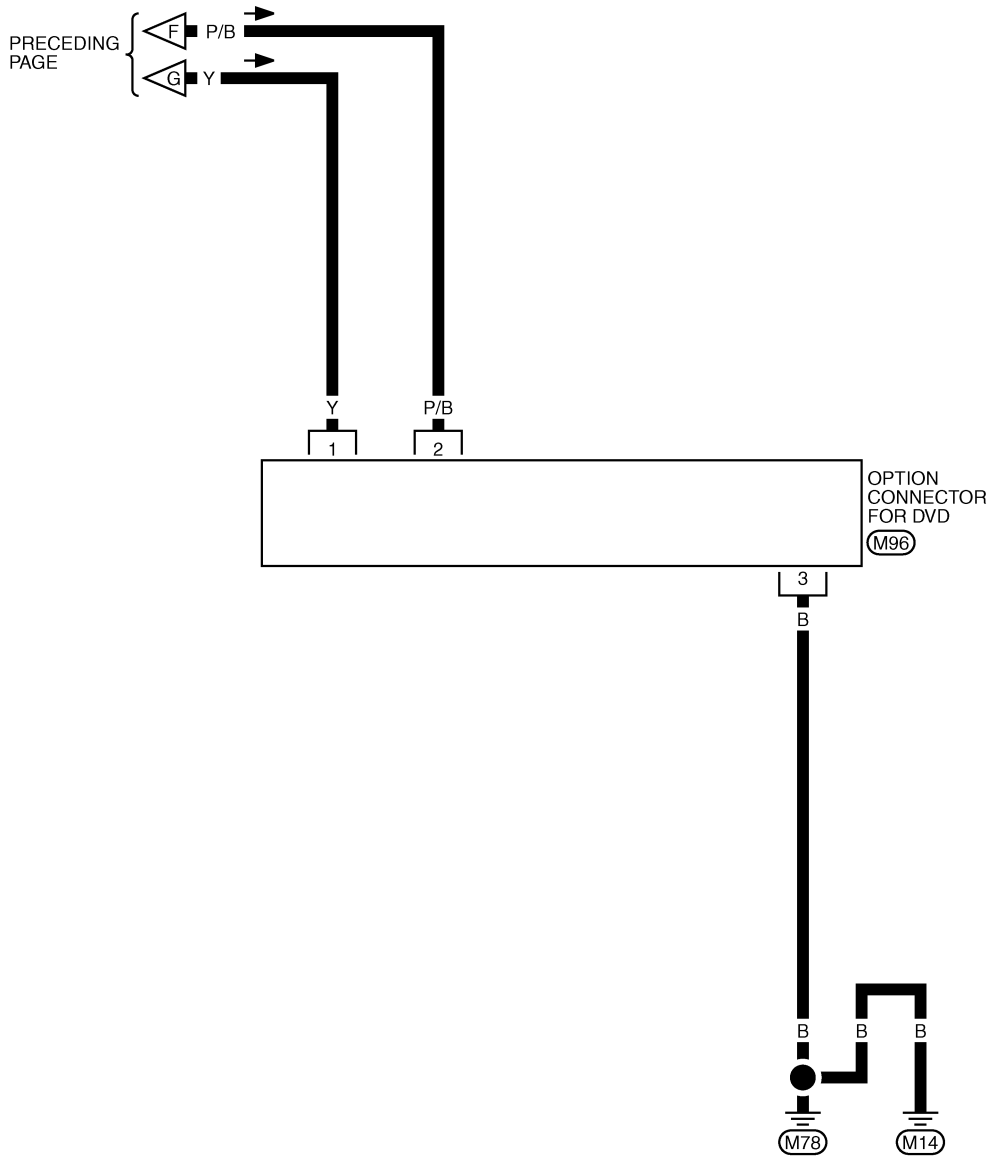
AV-AUDIO-06

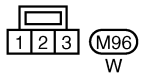


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWB2637E

AV-AUDIO-07

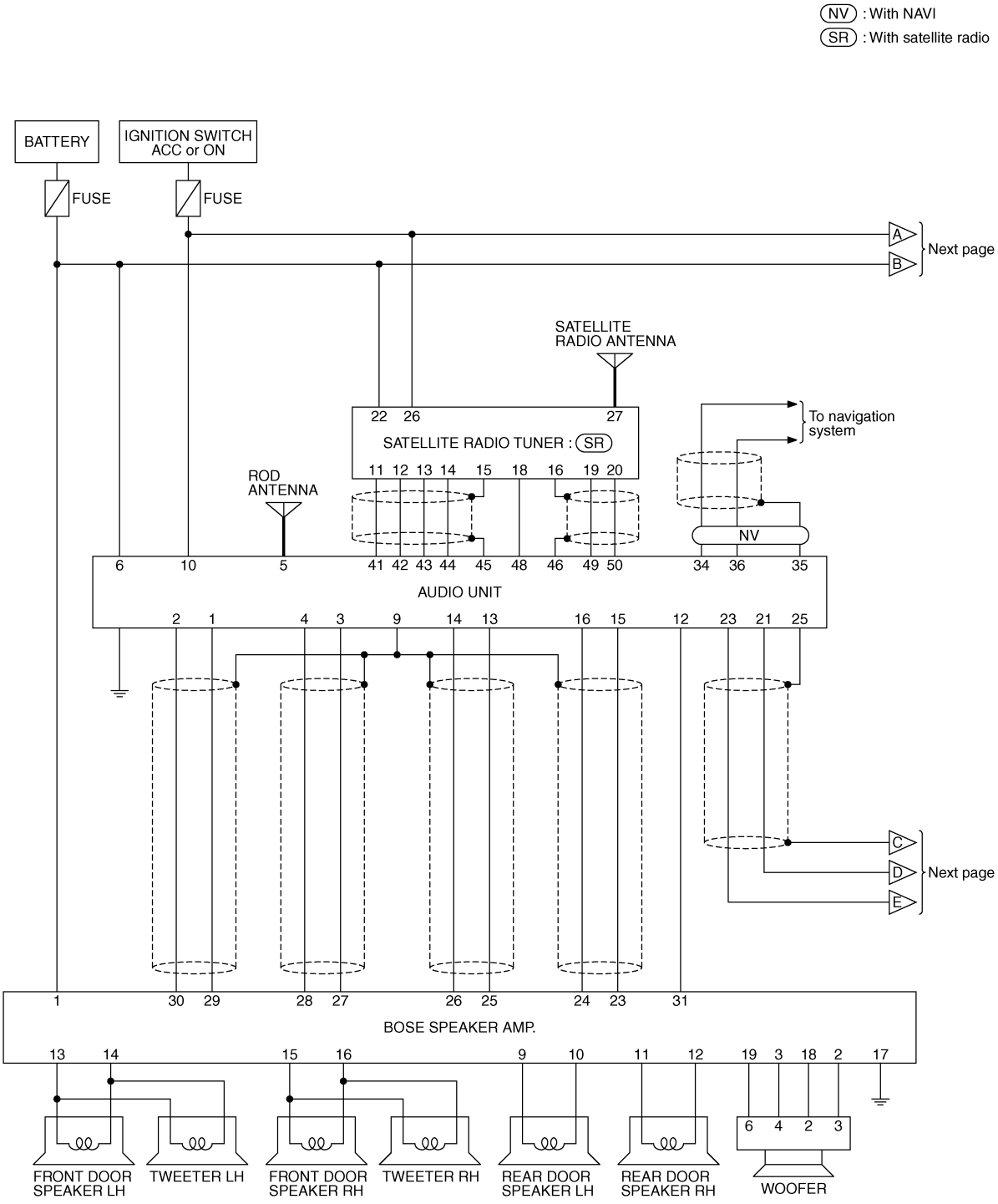




TKWB2638E

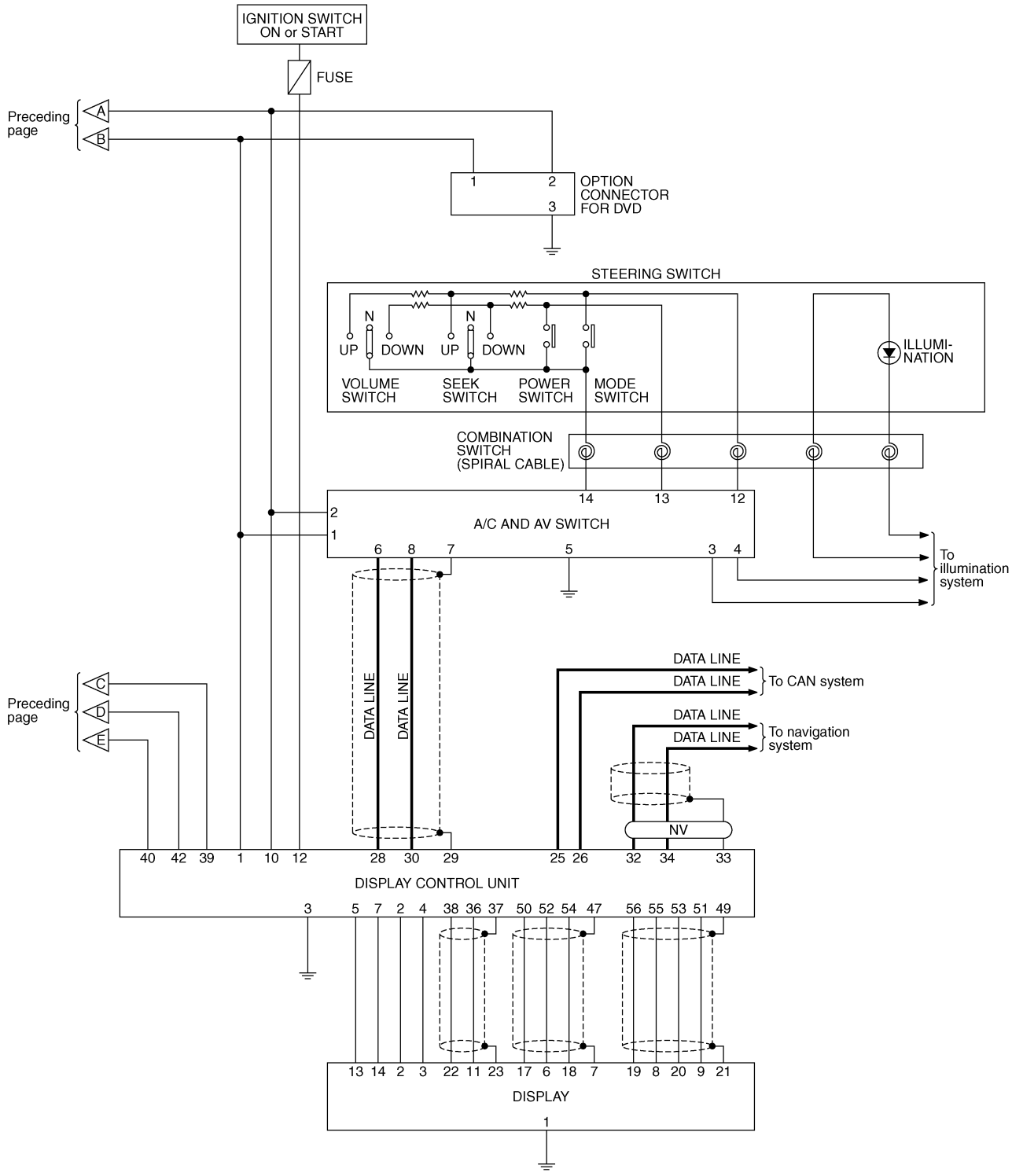
Schematic / BOSE System

NKS002ML



TKWB2630E

NV : With NAVI

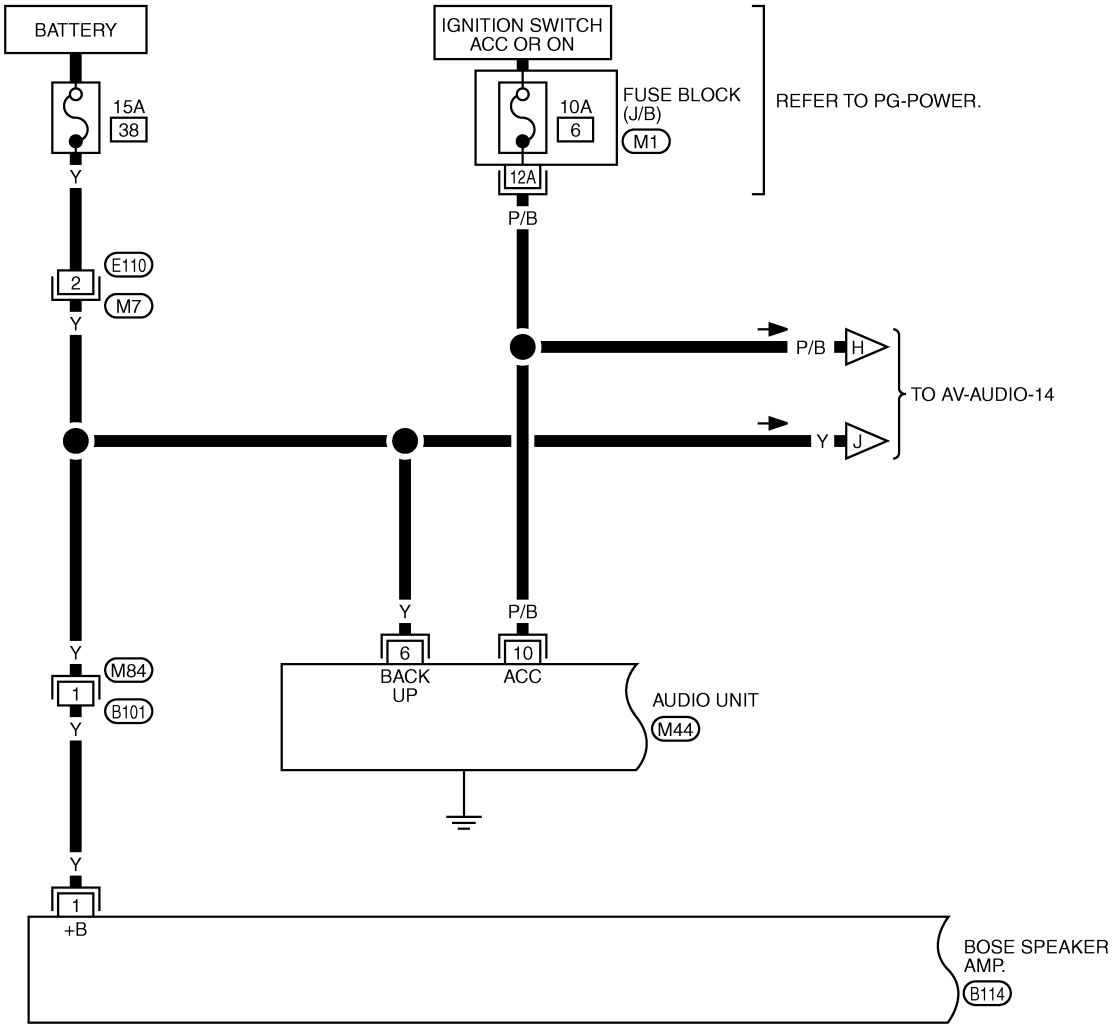


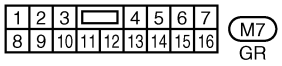
TKWB2631E

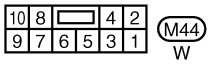
Wiring Diagram — AUDIO — / BOSE System

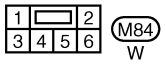
NKS002MM

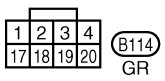
AV-AUDIO-08











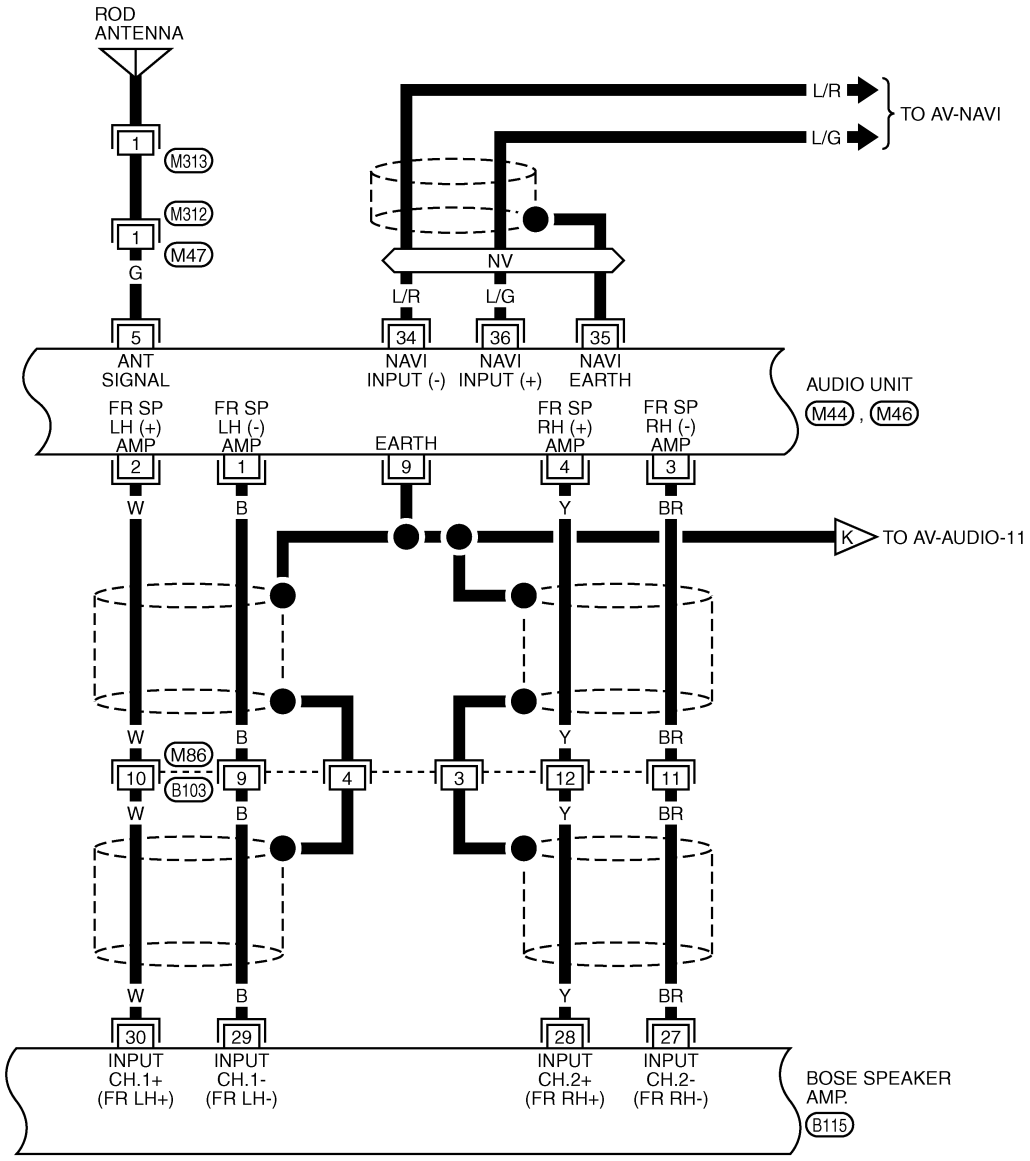
REFER TO THE FOLLOWING.

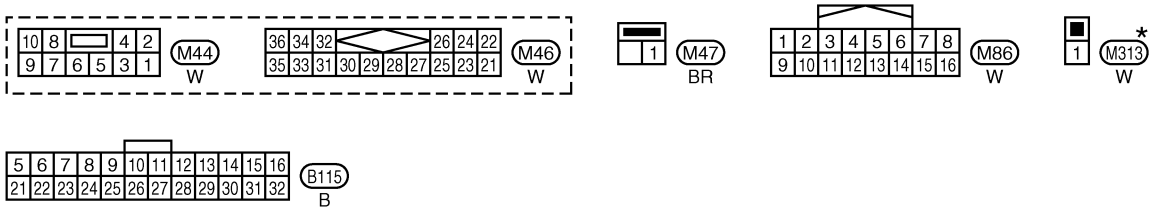
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWB2639E

AV-AUDIO-09

NV : WITH NAVI

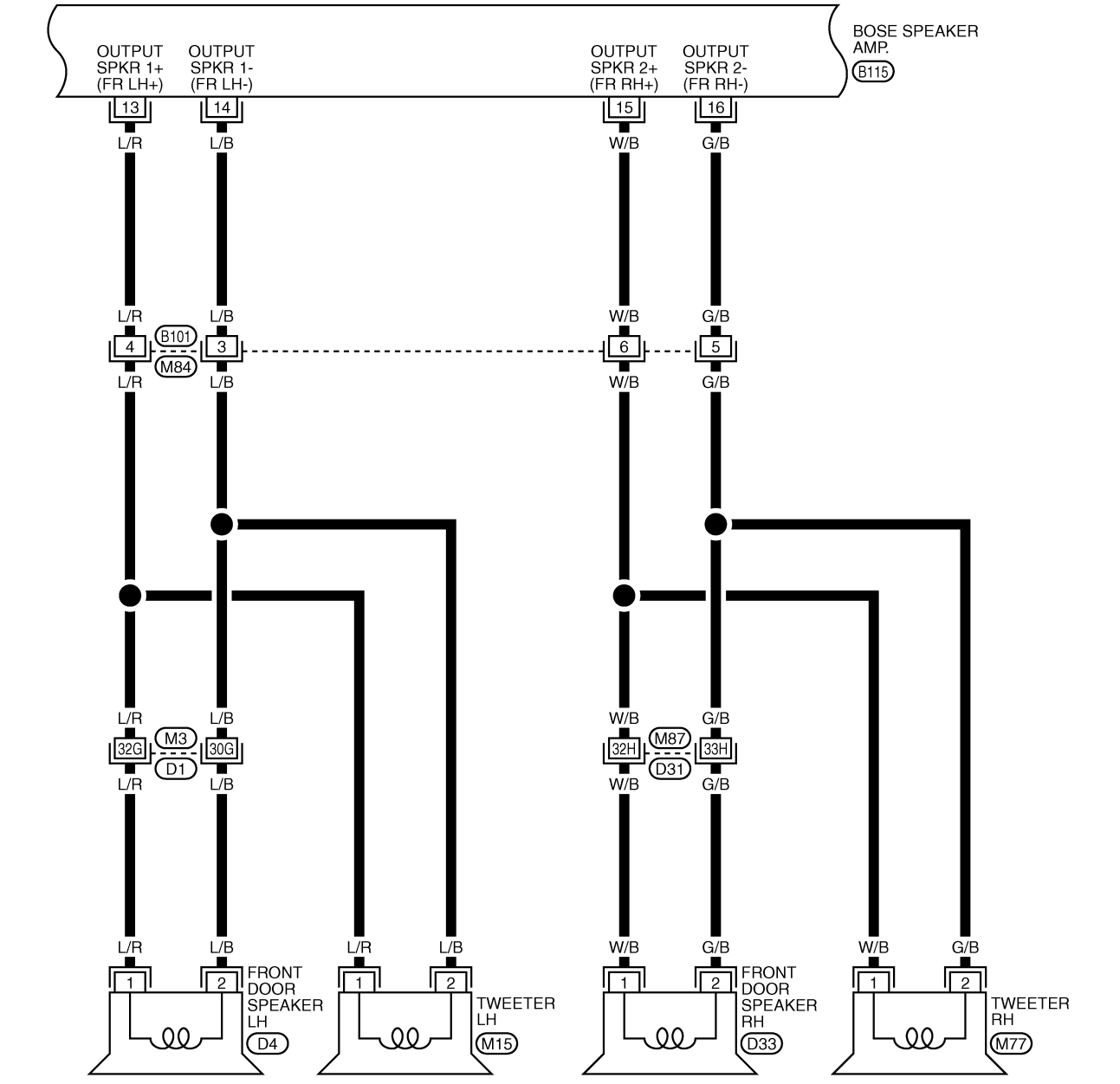


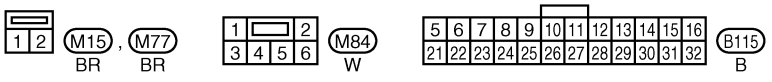


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWB2640E

AV-AUDIO-10

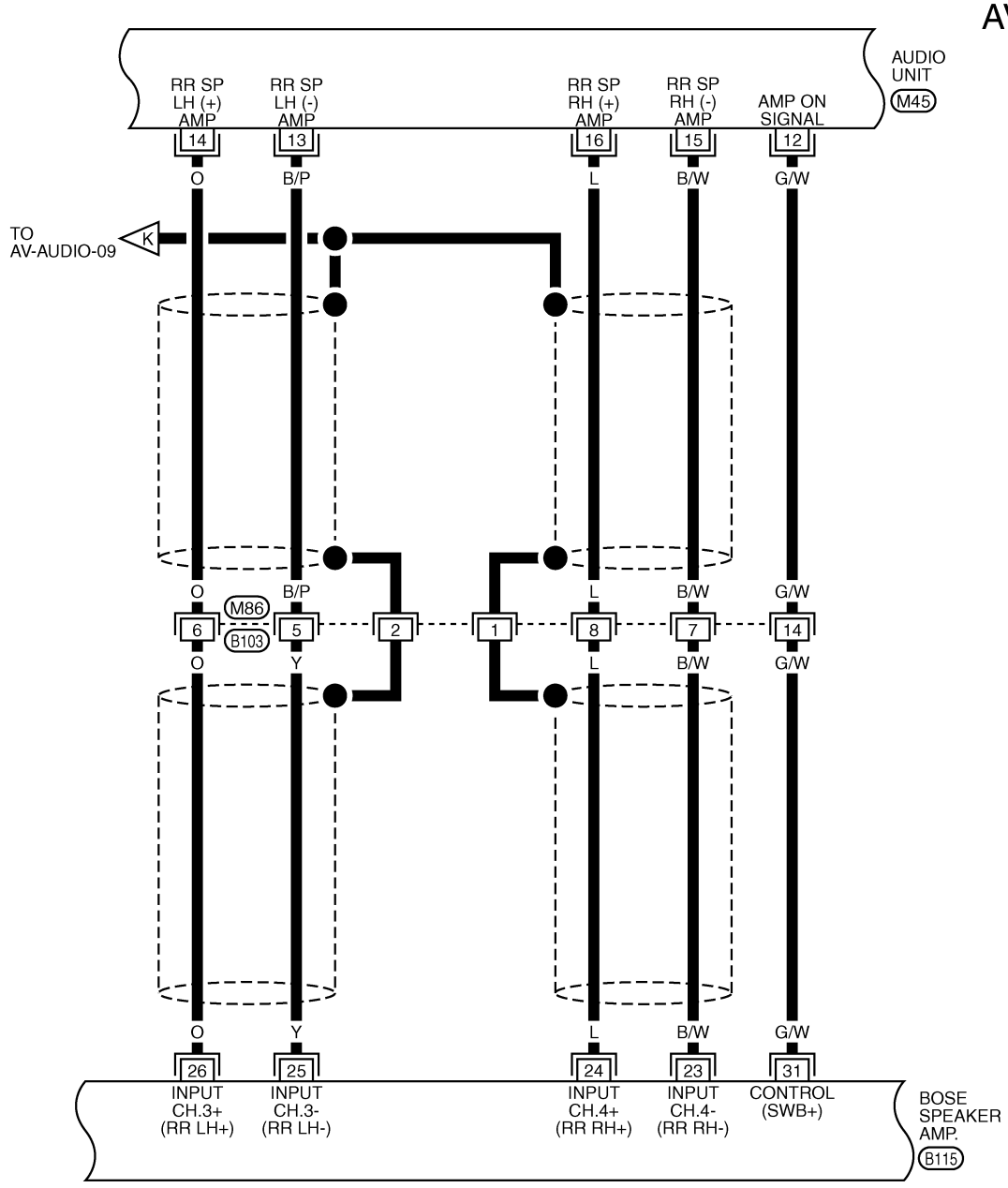


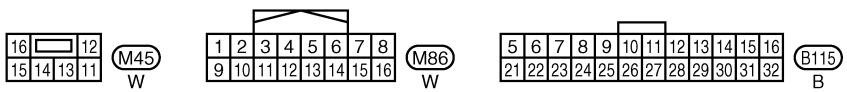


REFER TO THE FOLLOWING.
D1 , D31 -SUPER MULTIPLE JUNCTION (SMJ)

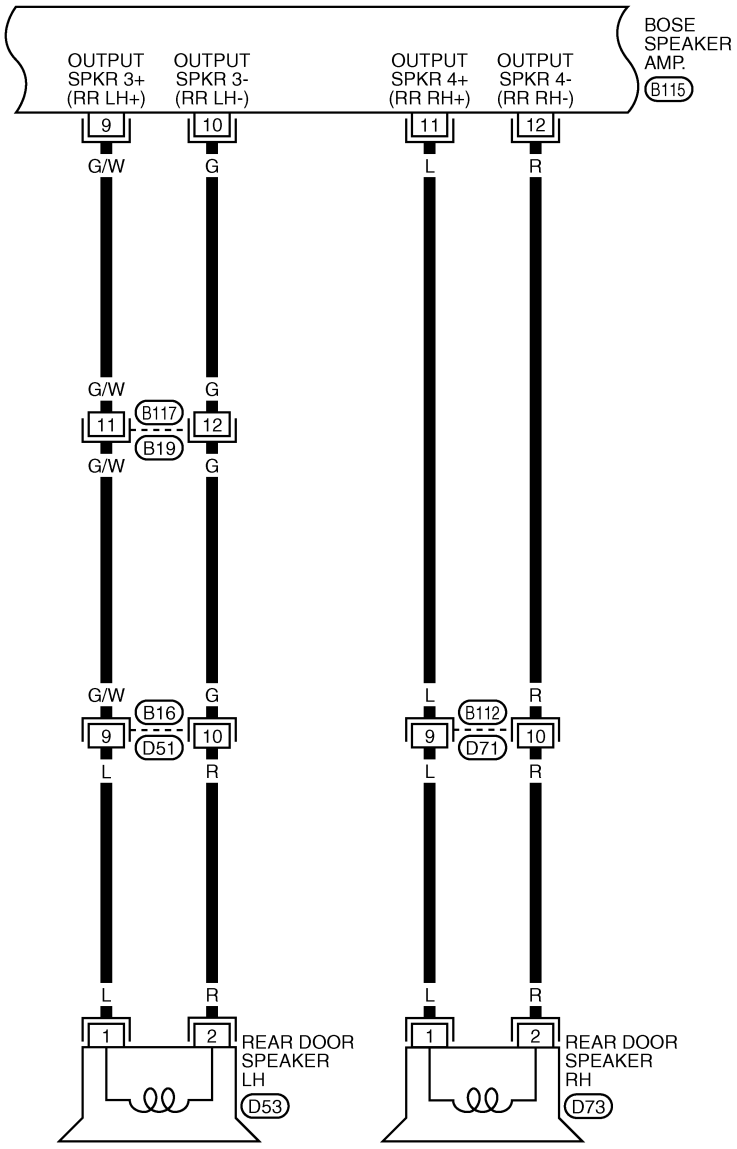
TKWB2641E

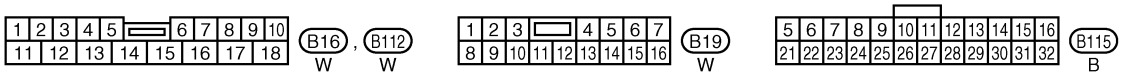
AV-AUDIO-11

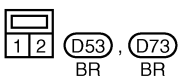




TKWB2642E

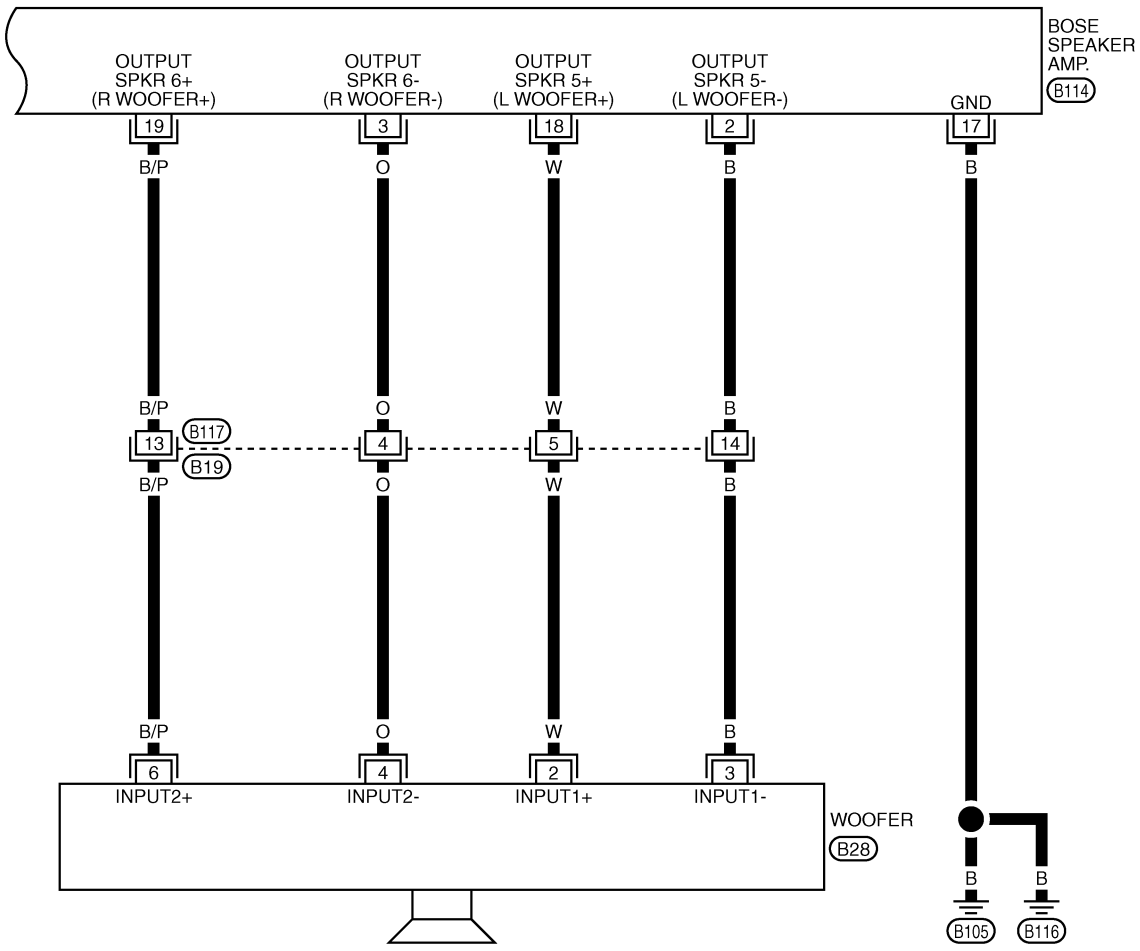

BOSE SPEAKER AMP.
B115
OUTPUT SPKR 3+ (RR LH+)
OUTPUT SPKR 3- (RR LH-)
OUTPUT SPKR 4+ (RR RH+)
OUTPUT SPKR 4- (RR RH-)
9
10
11
12
G/W
G
L
R
B117
B19
B16
D51
B112
D71
REAR DOOR SPEAKER LH
D53
REAR DOOR SPEAKER RH
D73

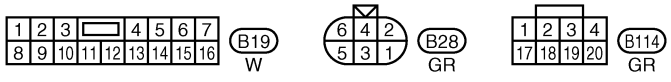

B16
W
B112
W
B19
W
B115
B


D53
BR
D73
BR

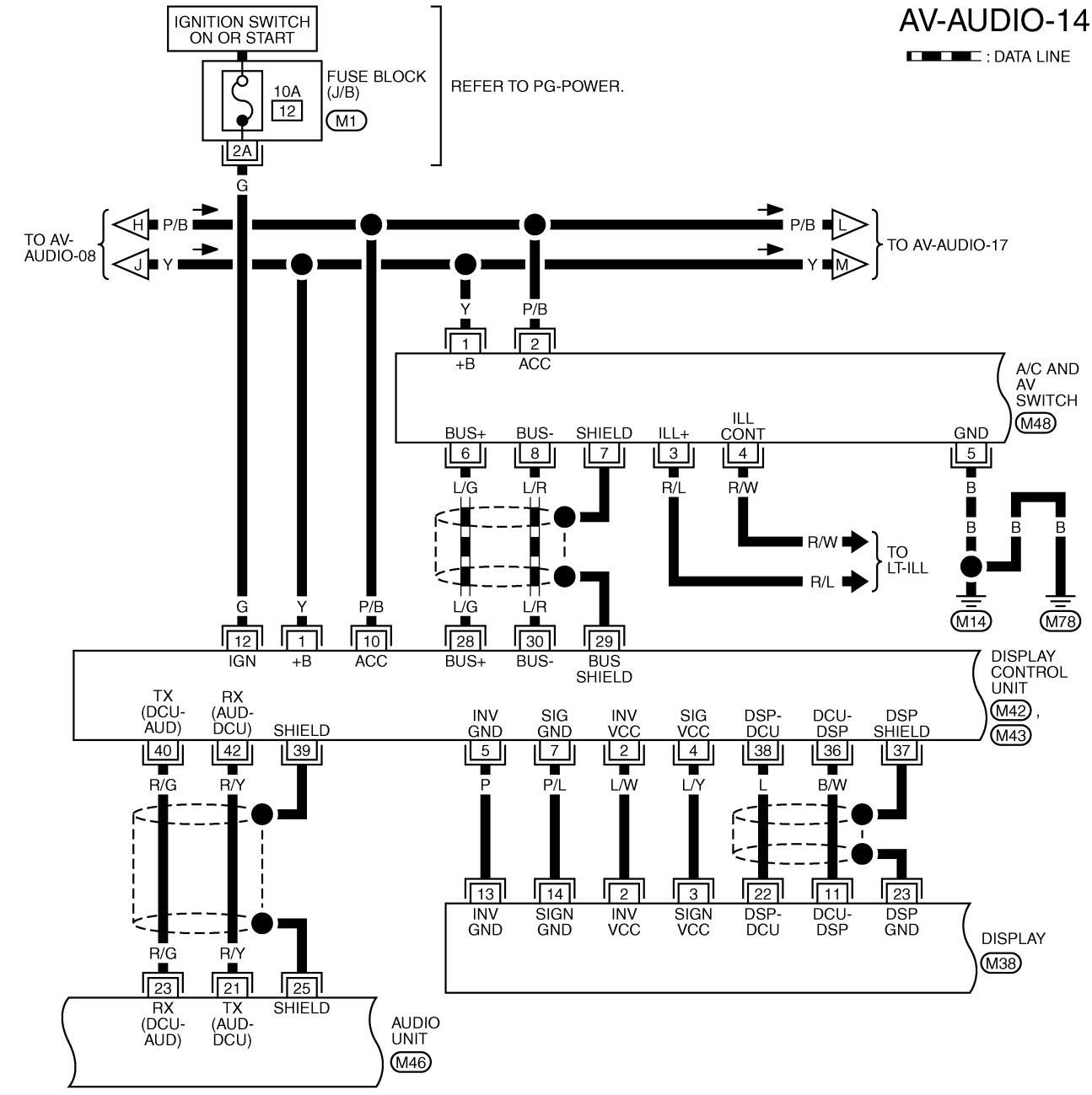
TKWB2643E

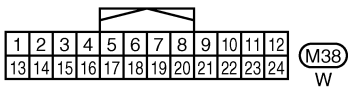
AV-AUDIO-13

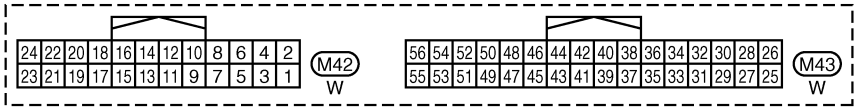


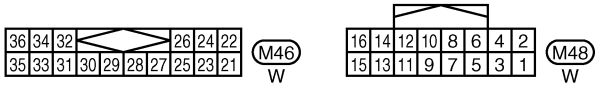


TKWB2644E





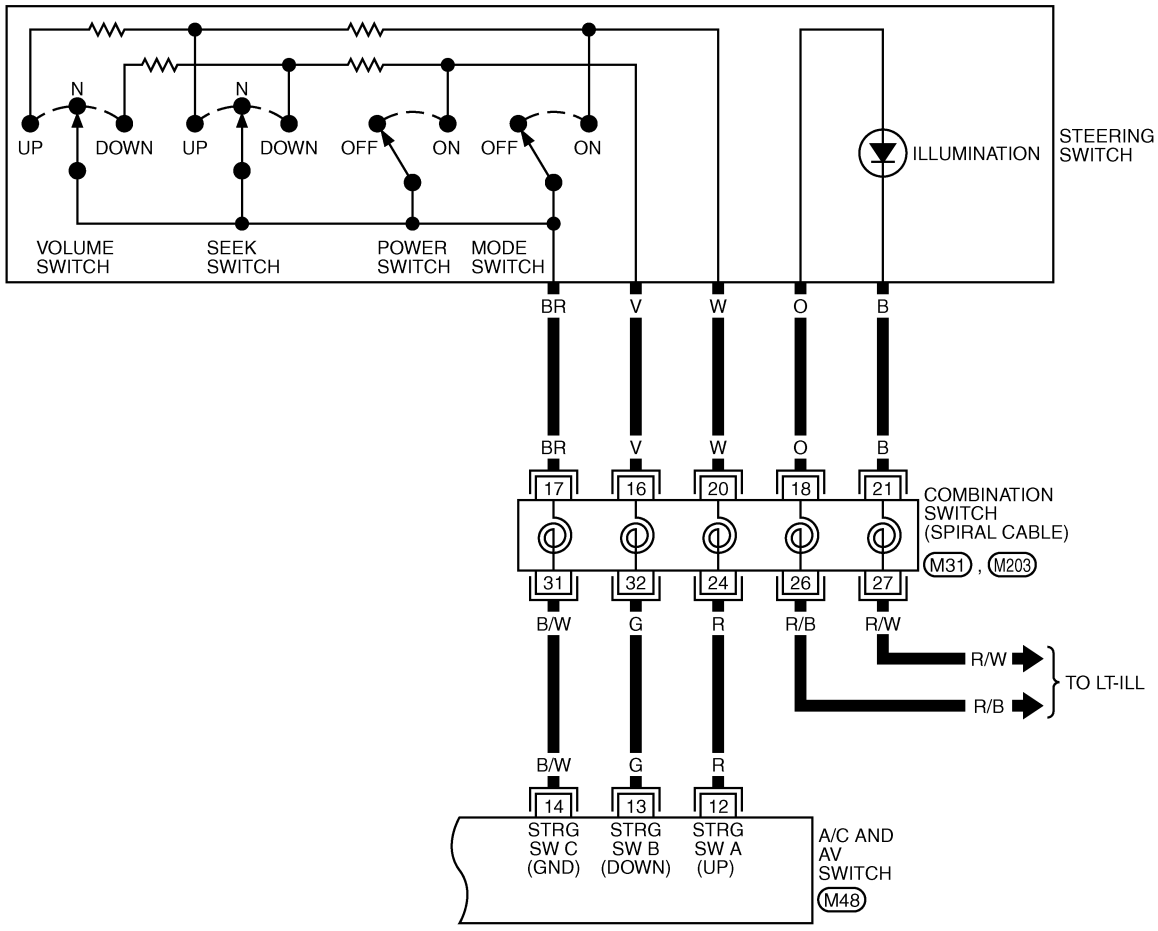


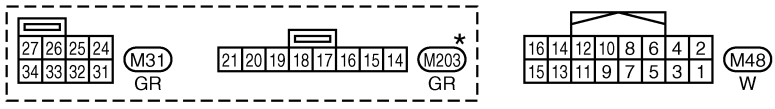


REFER TO THE FOLLOWING.

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

TKWB2645E

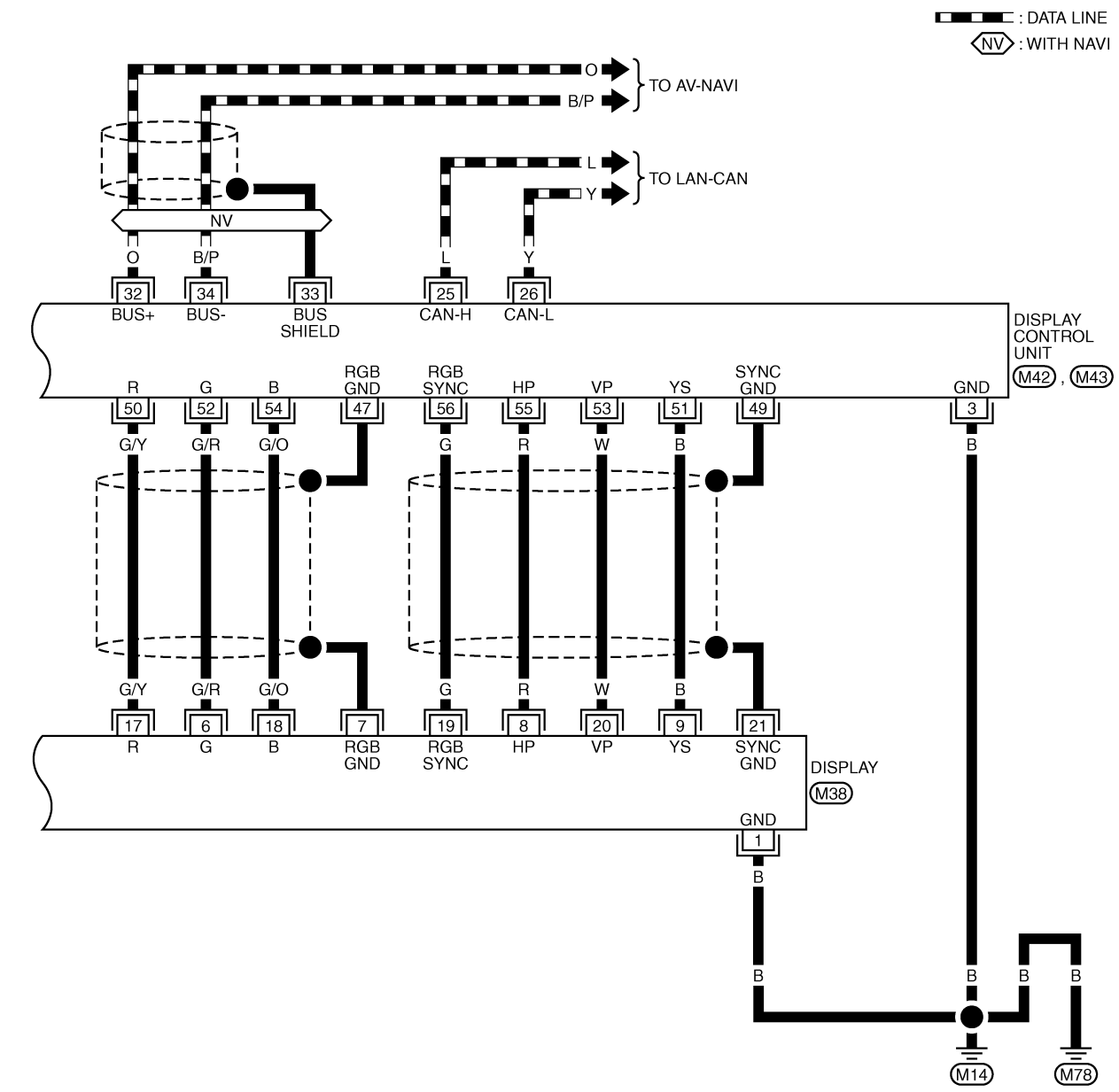


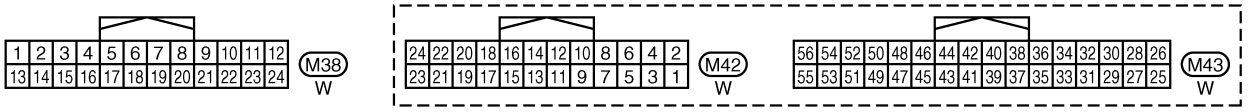


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWB2646E

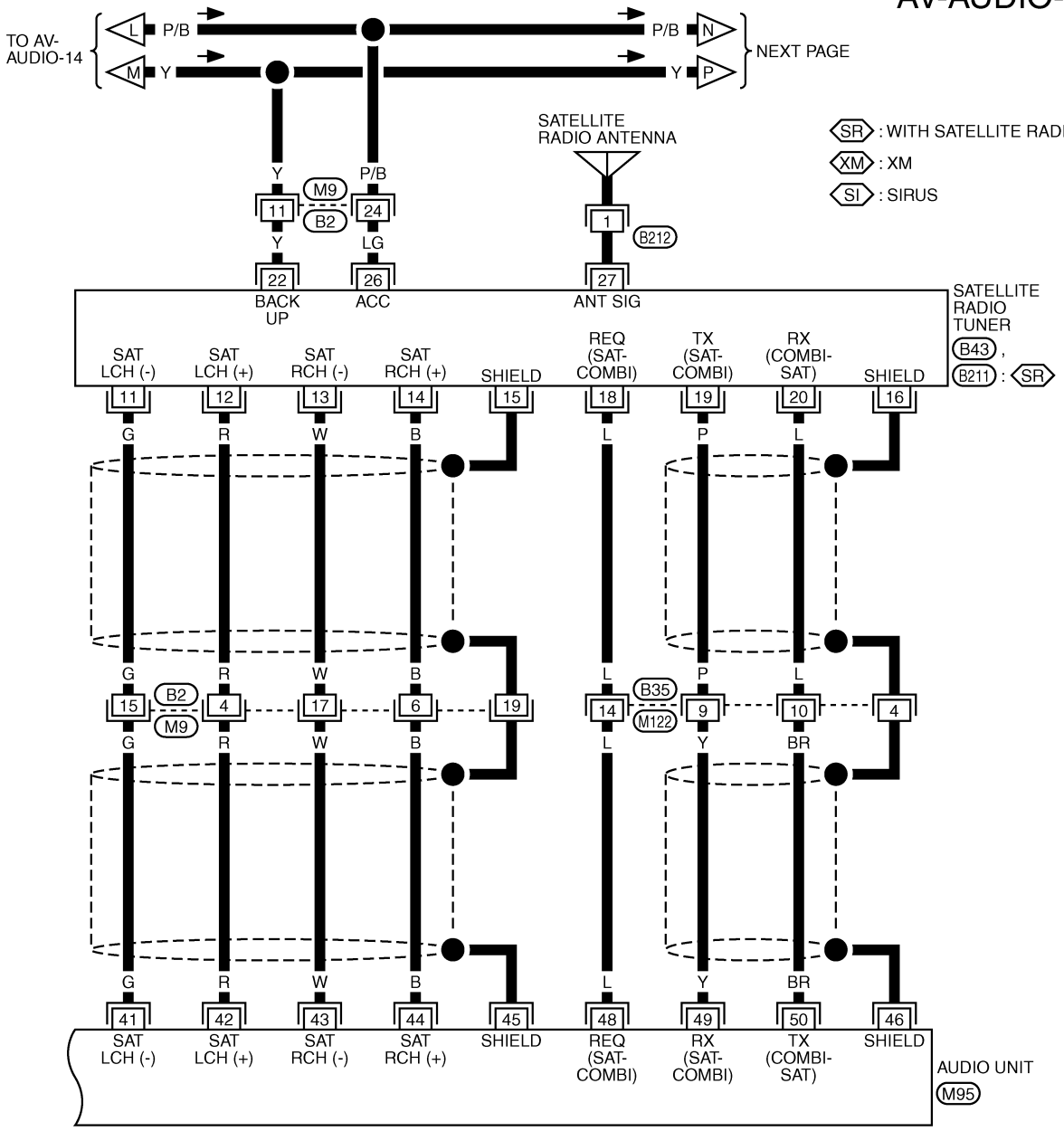
AV-AUDIO-16

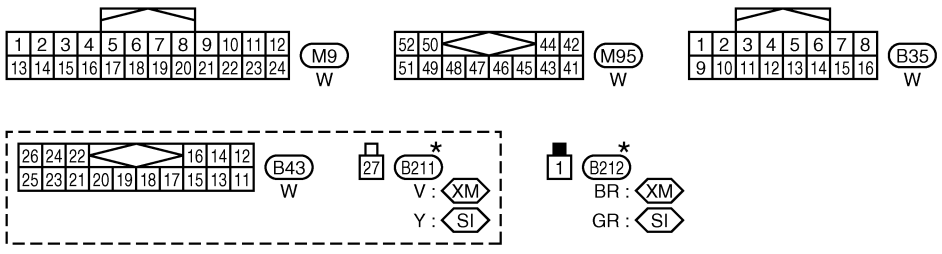




TKWB2647E

AV-AUDIO-17

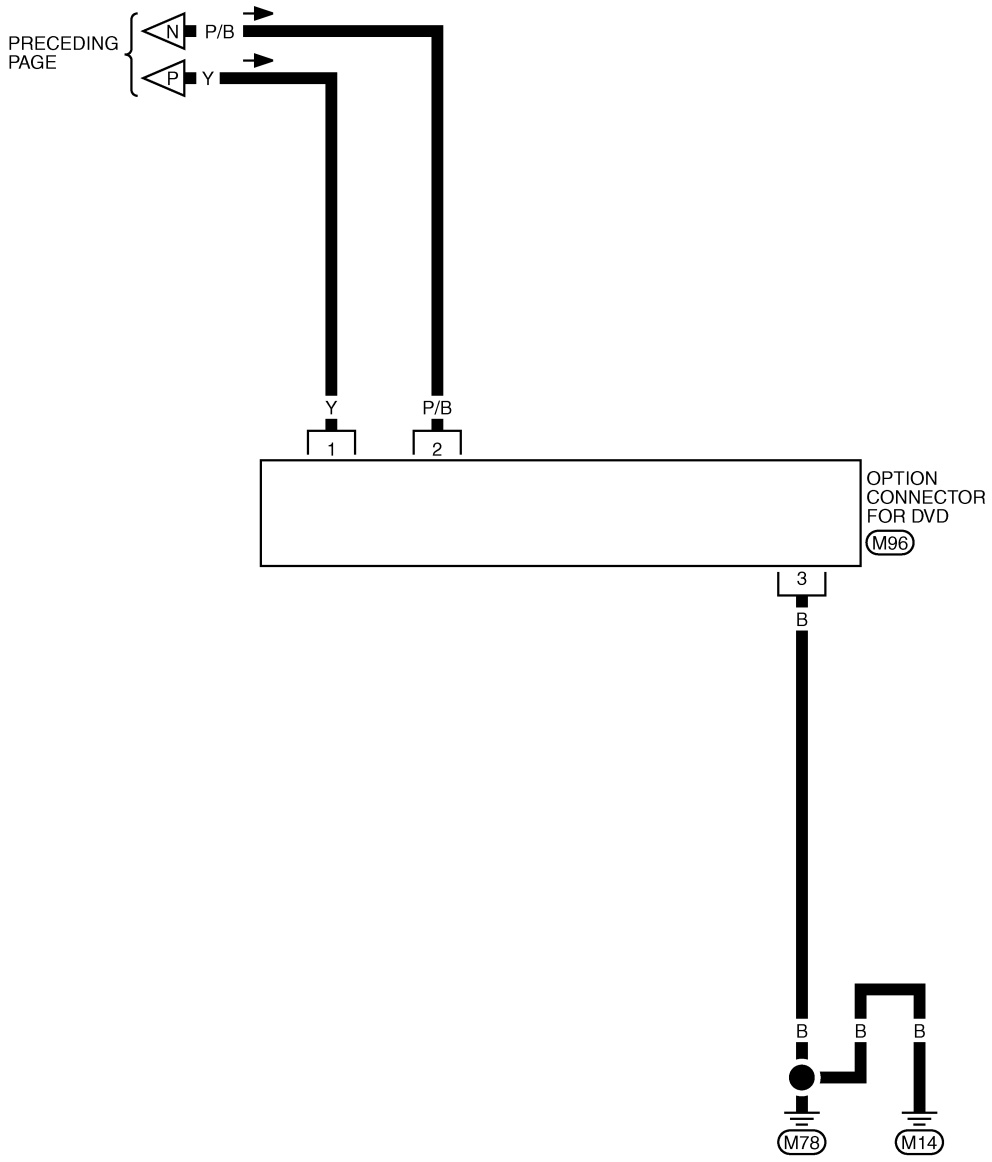


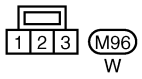


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWB2648E

AV-AUDIO-18

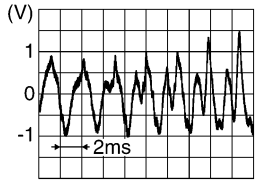
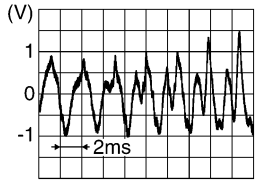
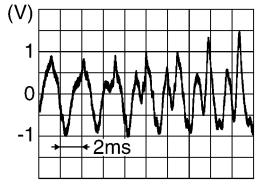
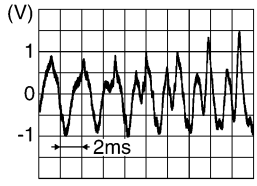
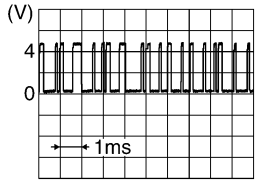
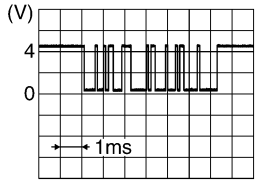


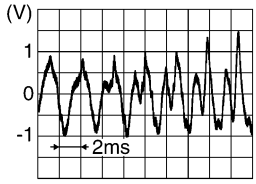
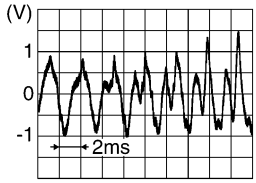
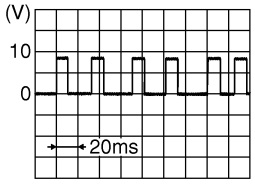
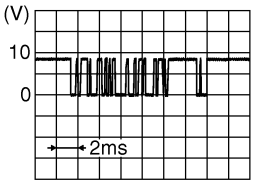
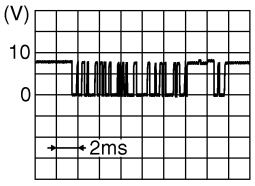


TKWB2649E

Terminals and Reference Value for Audio Unit for Base System

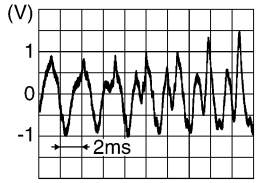
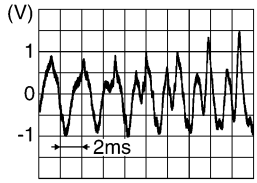
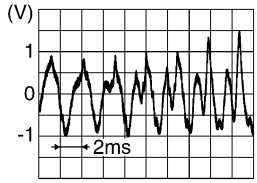
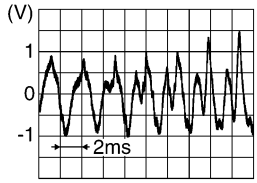
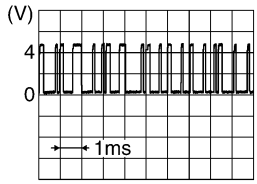
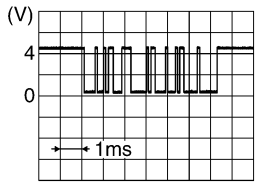
NKS0021O

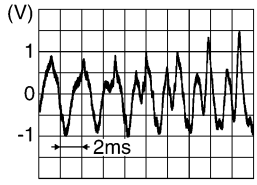
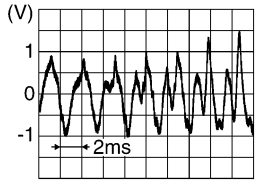
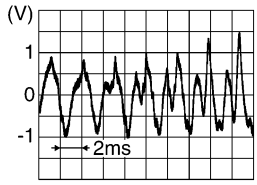
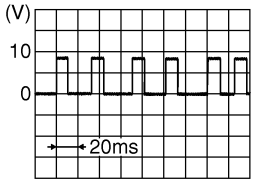
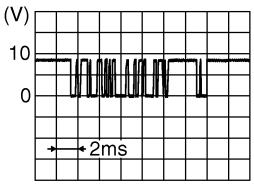
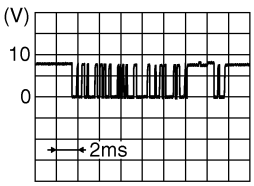
Terminal (Wire color) +	Terminal (Wire color) –	Item	Signal input/ output	Condition: Ignition switch	Condition: Operation	Reference value
2 (W)	1 (B)	Audio signal front door speaker LH	Output	ON	Receive audio signal	 SKIB3609E
4 (Y)	3 (BR)	Audio signal front door speaker RH	Output	ON	Receive audio signal	 SKIB3609E
5 (G)	Ground	Antenna amp. ON signal	Output	ON	—	Approx. 12 V
6 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
9	—	Shield	—	—	—	—
10 (P/B)	Ground	ACC power supply	Input	ACC	—	Battery voltage
14 (O)	13 (B/P)	Audio signal rear door speaker LH	Output	ON	Receive audio signal	 SKIB3609E
16 (L)	15 (B/W)	Audio signal rear door speaker RH	Output	ON	Receive audio signal	 SKIB3609E
21 (R/Y)	Ground	Communication signal (AUDIO-DCU)	Output	ON	Operate audio volume switch	 SKIB3606E
23 (R/G)	Ground	Communication signal (DCU-AUDIO)	Input	ON	Operate audio volume switch	 SKIB3607E
25	—	Shield	—	—	—	—

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
42 (R)	41 (G)	Satellite radio audio signal LH	Input	ON	Receive satellite radio audio signal	 SKIB3609E
44 (B)	43 (W)	Satellite radio audio signal RH	Input	ON	Receive satellite radio audio signal	 SKIB3609E
45	—	Shield	—	—	—	—
46	—	Shield	—	—	—	—
48 (L)	Ground	Communication signal REQ (SAT-AUDIO)	Input	ON	When setting to satellite radio mode	 SKIB7338E
49 (Y)	Ground	Communication signal Rx (SAT-AUDIO)	Input	ON	When setting to satellite radio mode	 SKIB7337E
50 (BR)	Ground	Communication signal Tx (AUDIO-SAT)	Output	ON	When setting to satellite radio mode	 SKIB7336E

Terminals and Reference Value for Audio Unit for BOSE System

NKS0021P

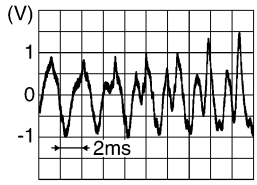
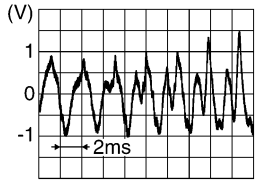
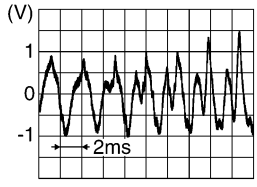
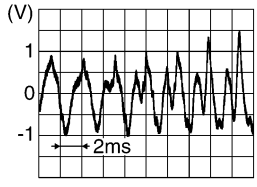
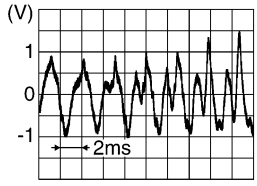
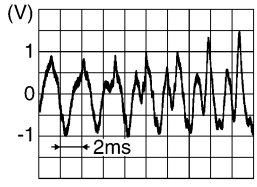
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
2 (W)	1 (B)	Audio signal front LH	Output	ON	Receive audio signal	 SKIB3609E
4 (Y)	3 (BR)	Audio signal front RH	Output	ON	Receive audio signal	 SKIB3609E
5 (G)	Ground	Antenna amp. ON signal	Output	ON	—	Approx. 12 V
6 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
9	—	Shield	—	—	—	—
10 (P/B)	Ground	ACC power supply	Input	ACC	—	Battery voltage
12 (G/W)	Ground	BOSE speaker amp. ON signal	Output	ON	—	Approx. 12 V
14 (O)	13 (B/P)	Audio signal rear LH	Output	ON	Receive audio signal	 SKIB3609E
16 (L)	15 (B/W)	Audio signal rear RH	Output	ON	Receive audio signal	 SKIB3609E
21 (R/Y)	Ground	Communication signal (AUDIO-DCU)	Output	ON	Operate audio volume switch	 SKIB3606E
23 (R/G)	Ground	Communication signal (DCU-AUDIO)	Input	ON	Operate audio volume switch	 SKIB3607E

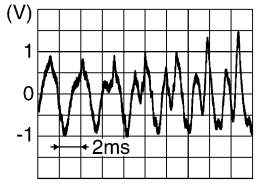
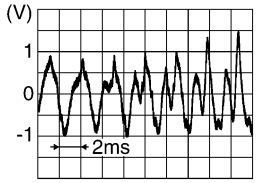
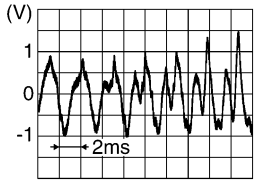
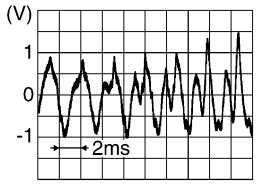
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
25	—	Shield	—	—	—	—
35	—	Shield*	—	—	—	—
36 (L/G)	34 (L/R)	Voice guidance signal*	Input	ON	Press “GUIDE/VOICE” button	 SKIB3609E
42 (R)	41 (G)	Satellite radio audio signal LH	Input	ON	Receive satellite radio audio signal	 SKIB3609E
44 (B)	43 (W)	Satellite radio audio signal RH	Input	ON	Receive satellite radio audio signal	 SKIB3609E
45	—	Shield	—	—	—	—
46	—	Shield	—	—	—	—
48 (L)	Ground	Communication signal REQ (SAT-AUDIO)	Input	ON	When setting to satellite radio mode	 SKIB7338E
49 (Y)	Ground	Communication signal Rx (SAT-AUDIO)	Input	ON	When setting to satellite radio mode	 SKIB7337E
50 (BR)	Ground	Communication signal Tx (AUDIO-SAT)	Output	ON	When setting to satellite radio mode	 SKIB7336E

*: With navigation system

Terminals and Reference Value for BOSE Speaker Amp.

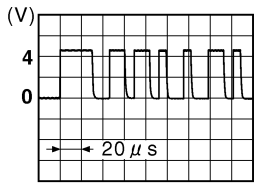
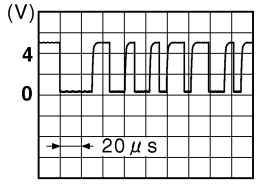
NKS0021Q

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
9 (G/W)	10 (G)	Audio signal rear door speaker LH	Output	ON	Receive audio signal	 SKIB3609E
11 (L)	12 (R)	Audio signal rear door speaker RH	Output	ON	Receive audio signal	 SKIB3609E
13 (L/R)	14 (L/B)	Audio signal front door speaker LH	Output	ON	Receive audio signal	 SKIB3609E
15 (W/B)	16 (G/B)	Audio signal front door speaker RH	Output	ON	Receive audio signal	 SKIB3609E
17 (B)	Ground	Ground	—	ON	—	Approx. 0 V
18 (W)	2 (B)	Audio signal woofer 1	Output	ON	Receive audio signal	 SKIB3609E
19 (B/P)	3 (O)	Audio signal woofer 2	Output	ON	Receive audio signal	 SKIB3609E

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
24 (L)	23 (B/W)	Audio signal rear RH	Input	ON	Receive audio signal	 SKIB3609E
26 (O)	25 (Y)	Audio signal rear LH	Input	ON	Receive audio signal	 SKIB3609E
28 (Y)	27 (BR)	Audio signal front RH	Input	ON	Receive audio signal	 SKIB3609E
30 (W)	29 (B)	Audio signal front LH	Input	ON	Receive audio signal	 SKIB3609E
31 (G/W)	Ground	BOSE speaker amp. ON signal	Input	ON	—	Approx. 12 V

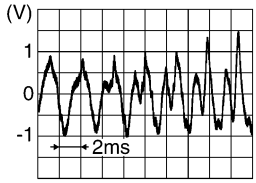
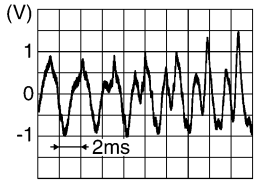
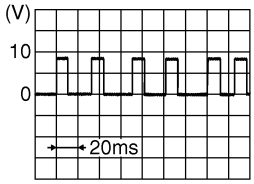
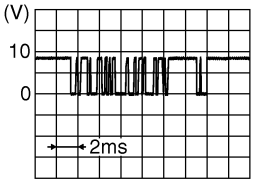
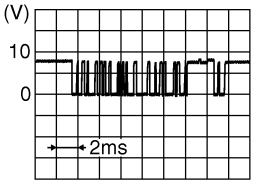
Terminals and Reference Value for A/C and AV Switch

NKS0021R

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
2 (P/B)	Ground	ACC power supply	Input	ACC	—	Battery voltage
3 (R/L)	Ground	Illumination signal	Input	ON	Lighting switch ON	Approx. 12 V
					Lighting switch OFF	Approx. 0 V
4 (R/W)	Ground	Illumination control signal	Input	ON	Illumination control switch is operated by lighting switch in ON position	Changes between approx. 0 and approx. 12 V
5 (B)	Ground	Ground	—	ON	—	Approx. 0 V
6 (L/G)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
7	—	Shield	—	—	—	—
8 (L/R)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
12 (R)	Ground	Remote control A	Input	ON	Press and hold MODE switch	Approx. 0 V
					Press and hold SEEK UP switch	Approx. 1.7 V
					Press and hold VOL UP switch	Approx. 3.3 V
					Except for above	Approx. 5 V
13 (G)	Ground	Remote control B	Input	ON	Press and hold POWER switch	Approx. 0 V
					Press and hold SEEK DOWN switch	Approx. 1.7 V
					Press and hold VOL DOWN switch	Approx. 3.3 V
					Except for above	Approx. 5 V
14 (B/W)	Ground	Remote control ground	—	ON	—	Approx. 0 V

Terminals and Reference Value for Satellite Radio Tuner

NKS002Q6

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
12 (R)	11 (G)	Satellite radio audio signal LH	Output	ON	Receive satellite radio audio signal	 SKIB3609E
14 (B)	13 (W)	Satellite radio audio signal RH	Output	ON	Receive satellite radio audio signal	 SKIB3609E
15	—	Shield	—	—	—	—
16	—	Shield	—	—	—	—
18 (L)	Ground	Communication signal REQ (SAT-AUDIO)	Output	ON	When setting to satellite radio mode	 SKIB7338E
19 (P)	Ground	Communication signal Tx (SAT-AUDIO)	Output	ON	When setting to satellite radio mode	 SKIB7337E
20 (L)	Ground	Communication signal Rx (AUDIO-SAT)	Input	ON	When setting to satellite radio mode	 SKIB7336E
22 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
26 (LG)	Ground	ACC power supply	Input	ACC	—	Battery voltage
27	—	Satellite radio antenna	—	—	—	—

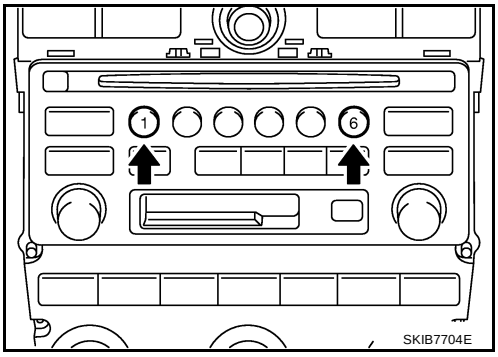
A/C and AV Switch Self-Diagnosis Function

NKS0021S

Performing self-diagnosis makes it possible to check operation of A/C and AV switch indicator (LED) and other switch.

STARTING THE SELF-DIAGNOSIS MODE

1. Turn ignition switch from OFF to ACC.
2. Within 10 seconds press and hold the switches “1” and “6” simultaneously for 3 seconds.



DIAGNOSIS FUNCTION

The following are checked:

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

NOTE:
Impossible to check rear window defogger switch operation (No beep sound even under normal status).

EXITING THE SELF-DIAGNOSIS MODE

- Turn ignition switch OFF.

Trouble Diagnosis

NKS002LS

- 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 A/C and AV switch. If these operations are inoperative with A/C and AV switch, refer to AV-106, "Unable to Operate System with A/C and AV Switch" (Without navigation system), or AV-177, "Unable to Operate System with A/C and AV Switch" (With navigation system).
- Refer to "SERVICE BULLETIN NTB04-119" for the diagnosis of satellite radio.

Symptom	Possible malfunction location
Audio system does not work properly.	● Audio unit power supply circuit ● Communication signal circuit between audio unit and display control unit ● A/C and AV switch ● Audio unit
No sound can be heard from all speakers.	**Base system** ● Audio unit
	BOSE system ● BOSE speaker amp. power supply and ground circuit ● BOSE speaker amp. ON signal circuit ● Audio unit ● BOSE speaker amp.
No sound can be heard from one or several speakers.	**Base system** ● Audio signal circuit between audio unit and speaker ● Speaker ● Tweeter ● Audio unit
	BOSE system ● Audio signal circuit between audio unit and BOSE speaker amp. ● Audio signal circuit between BOSE speaker amp. and speaker ● Speaker ● Tweeter ● Audio unit ● BOSE speaker amp.
No sound can be heard from woofer.	● Audio signal circuit between BOSE speaker amp. and woofer ● Woofer ● BOSE speaker amp.
No sound can be heard from radio or noise is caught.	● Antenna amp. ON signal circuit ● Antenna feeder ● Roof antenna ● Antenna amp. ● Audio unit
Audio steering switch does not operate properly.	● Remote control signal circuit between audio steering switch and A/C and AV switch ● Audio steering switch ● Spiral cable ● A/C and AV switch

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.

Inspection of Power Supply Circuit

NKS0021V

1. CHECK FUSE

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

Unit	Signal	Fuse No.
Audio unit	Battery power supply	38
	Ignition switch ACC or ON	6
BOSE speaker amp.	Battery power supply	38

OK or NG

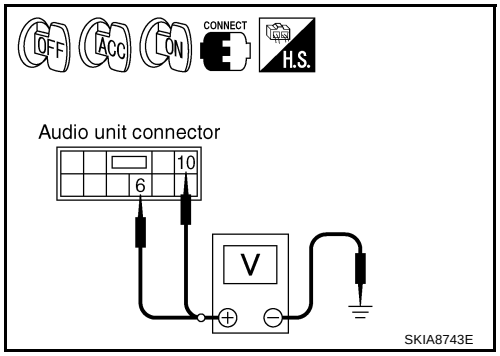
OK >> GO TO 2.

NG >> Be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3, "POWER SUPPLY ROUTING CIRCUIT" .

2. CHECK POWER SUPPLY CIRCUIT

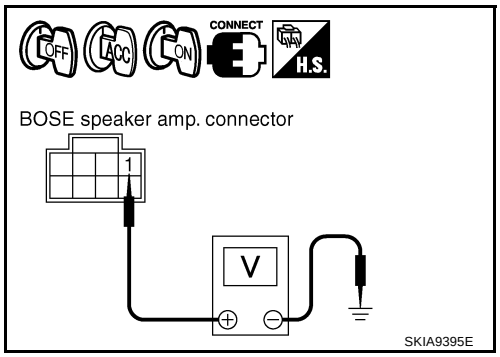
1. Check voltage between audio unit harness connector terminals and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal				
M44	6	Ground	Battery voltage	Battery voltage	Battery voltage
	10	Ground	0 V	Battery voltage	Battery voltage



2. Check voltage between BOSE speaker amp. harness connector terminal and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal				
B114	1	Ground	Battery voltage	Battery voltage	Battery voltage



OK or NG

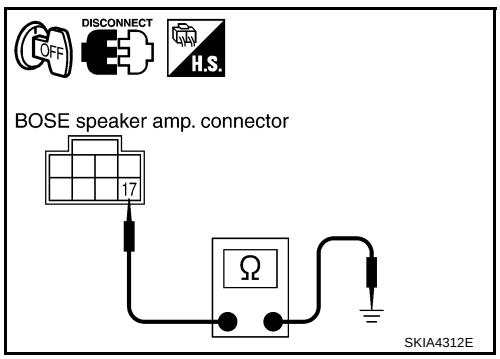
OK >> ● INSPECTION END (Base system)
● GO TO 3 (BOSE system).

NG >> Repair harness or connector.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE speaker amp. connector.
3. Check continuity between BOSE speaker amp. harness connector B114 terminal 17 and ground.

17 – Ground : Continuity should exist.



OK or NG

OK >> INSPECTION END

NG >> Repair harness or connector.

Inspection of Audio Steering Switch

NKS0021X

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

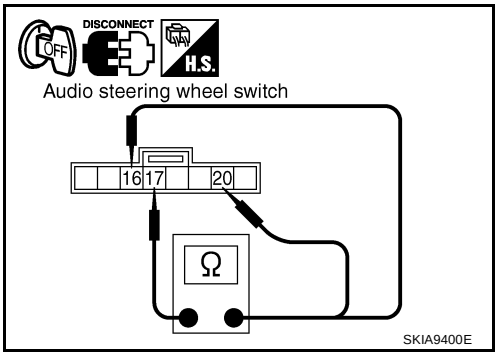
1. Start A/C and AV switch self-diagnosis function. Refer to AV-39, "A/C and AV Switch Self-Diagnosis Function" .
2. Operate audio steering switch.

Does audio steering switch operate normally?

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

2. CHECK AUDIO STEERING SWITCH RESISTANCE

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



Terminal		Signal name	Condition	Resistance (Ω)
16	17	Seek down	Press and hold SEEK DOWN switch	Approx. 165
		Power	Press and hold POWER switch	Approx. 0
		Volume (down)	Press and hold VOL DOWN switch	Approx. 652
20		Seek up	Press and hold SEEK UP switch	Approx. 165
		Mode	Press and hold MODE switch	Approx. 0
		Volume (up)	Press and hold VOL UP switch	Approx. 652

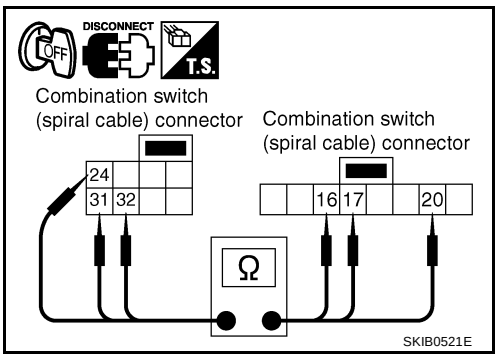
OK or NG

OK >> GO TO 3.
NG >> Replace audio steering switch.

3. CHECK SPIRAL CABLE

1. Disconnect spiral cable connector.
2. Check continuity between combination switch (spiral cable) terminals.

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



OK or NG

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

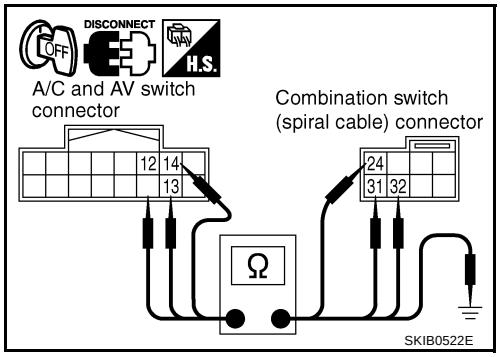
4. CHECK HARNESS

1. Disconnect A/C and AV switch connector.
2. Check continuity between A/C and AV switch harness connector M48 terminals 12, 13, 14 and combination switch (spiral cable) harness connector M31 terminals 24, 32, 31.

12 – 24 : Continuity should exist.
13 – 32 : Continuity should exist.
14 – 31 : Continuity should exist.

3. Check continuity between A/C and AV switch harness connector M48 terminals 12, 13, 14 and ground.

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



OK or NG

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

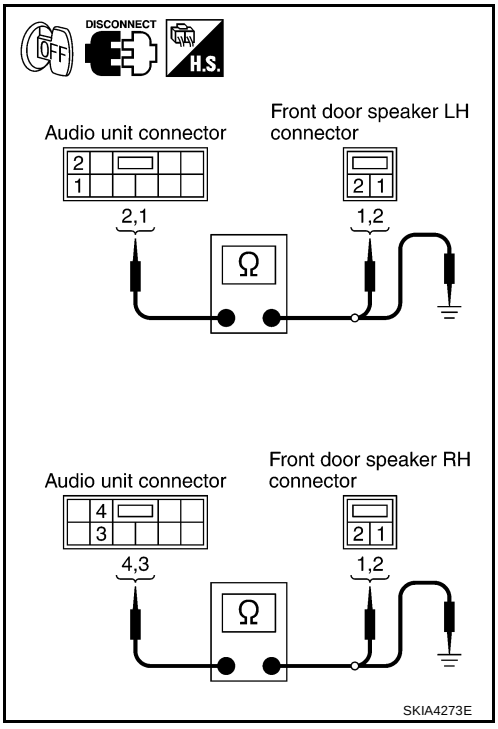
Inspection of Front Door Speaker (Base System)

NKS0021Z

1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect audio unit and front door speaker connectors.
3. Check continuity between audio unit harness connector terminals and front door speaker harness connector terminals.

Terminals				Continuity
Audio unit		Front door speaker		
Connector	Terminal	Connector	Terminal	
M44	2	D5	1	Yes
	1		2	
	4	D34	1	
	3		2	



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

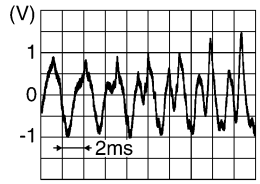
Terminals			Continuity
Audio unit			
Connector	Terminal		
M44	2	Ground	No
	1		
	4		
	3		

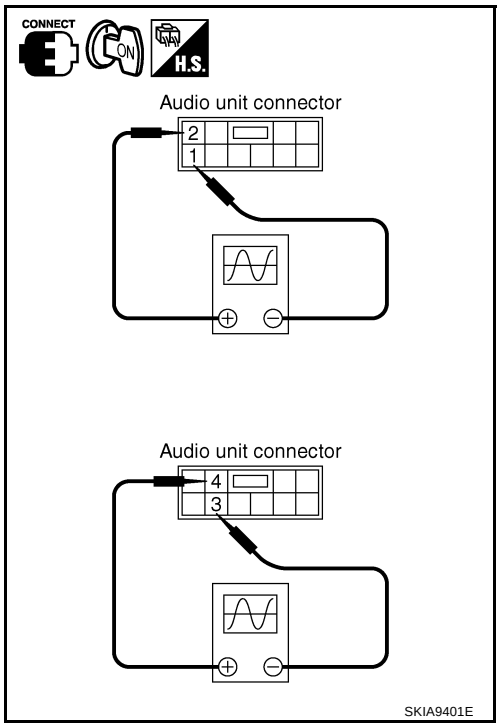
OK or NG

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

2. CHECK FRONT DOOR SPEAKER SIGNAL

1. Connect audio unit and front door speaker connectors.
2. Turn ignition switch ON.
3. Press “POWER” switch.
4. Check voltage waveform between audio unit harness connector terminals and ground with CONSULT-II or oscilloscope.

Terminals				Condition	Reference value
(+)		(–)			
Connector	Terminal	Connector	Terminal		
M44	2	M44	1	Receive audio signal	 SKIB3609E
	4		3		



OK or NG

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

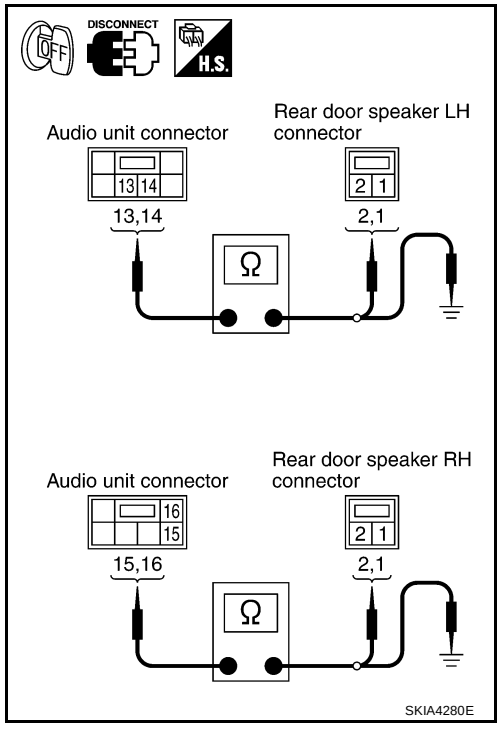
Inspection of Rear Door Speaker (Base System)

NKS00220

1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect audio unit and rear door speaker connectors.
3. Check continuity between audio unit harness connector terminals and rear door speaker harness connector terminals.

Terminals				Continuity
Audio unit		Rear door speaker		
Connector	Terminal	Connector	Terminal	
M45	13	D54	2	Yes
	14		1	
	15	D74	2	
	16		1	



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

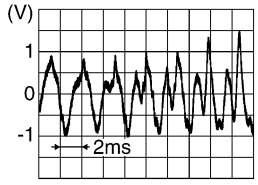
Terminals			Continuity
Audio unit			
Connector	Terminal		
M45	13	Ground	No
	14		
	15		
	16		

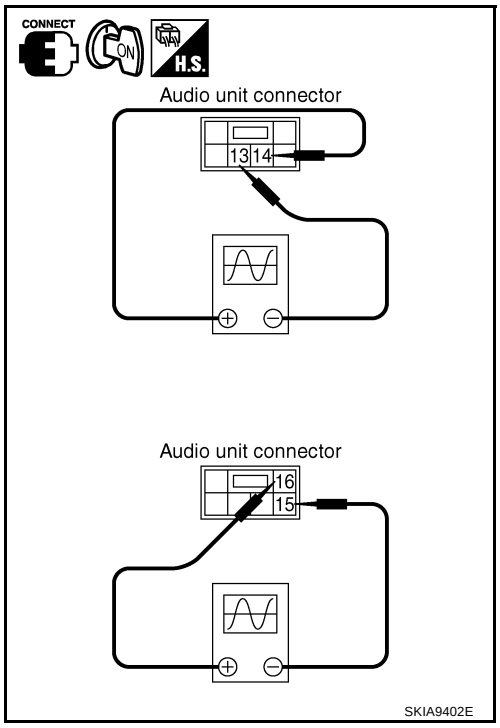
OK or NG

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

2. CHECK REAR DOOR SPEAKER SIGNAL

1. Connect audio unit and rear door speaker connectors.
2. Turn ignition switch ON.
3. Press “POWER” switch.
4. Check voltage waveform audio unit harness connector terminals with CONSULT-II or oscilloscope.

Terminals				Condition	Reference value
(+)		(–)			
Connector	Terminal	Connector	Terminal		
M45	14	M45	13	Receive audio signal	 SKIB3609E
	16		15		



OK or NG

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

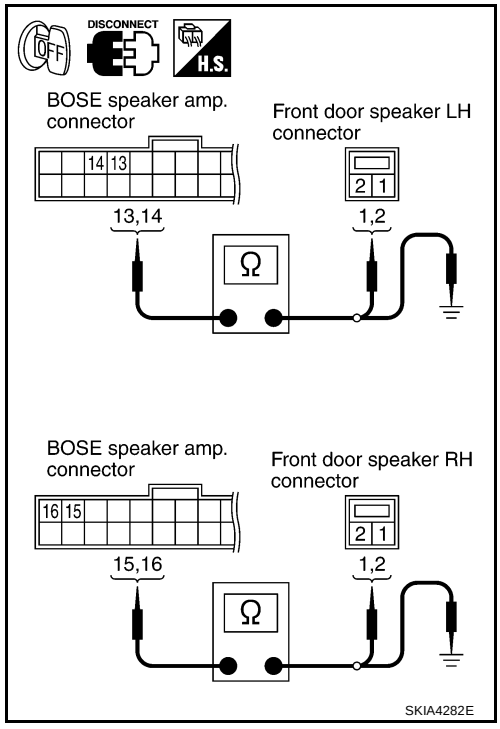
Inspection of Front Door Speaker (BOSE System)

NKS00221

1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect BOSE speaker amp. and front door speaker connectors.
3. Check continuity between BOSE speaker amp. harness connector terminals and front door speaker harness connector terminals.

Terminals				Continuity
BOSE speaker amp.		Front door speaker		
Connector	Terminal	Connector	Terminal	
B115	13	D4	1	Yes
	14		2	
	15	D33	1	
	16		2	



4. Check continuity between BOSE speaker amp. harness connector terminals and ground.

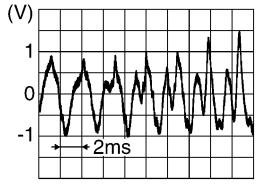
Terminals			Continuity
BOSE speaker amp.		Ground	
Connector	Terminal		
B115	13		No
	14		
	15		
	16		

OK or NG

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

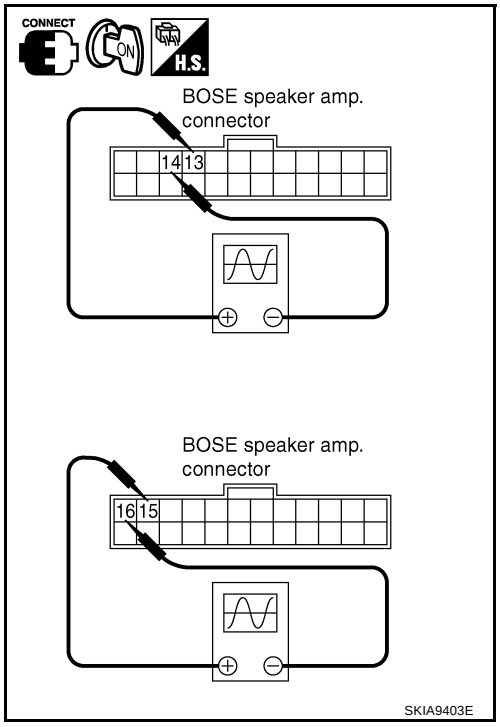
2. CHECK FRONT DOOR SPEAKER SIGNAL

1. Connect BOSE speaker amp. and front door speaker connectors.
2. Turn ignition switch ON.
3. Press “POWER” switch.
4. Check voltage waveform BOSE speaker amp. harness connector terminals with CONSULT-II or oscilloscope.

Terminals				Condition	Reference value
(+)		(–)			
Connector	Terminal	Connector	Terminal		
B115	13	B115	14	Receive audio signal	 SKIB3609E
	15		16		

OK or NG

OK >> Replace front door speaker.
NG >> GO TO 3.



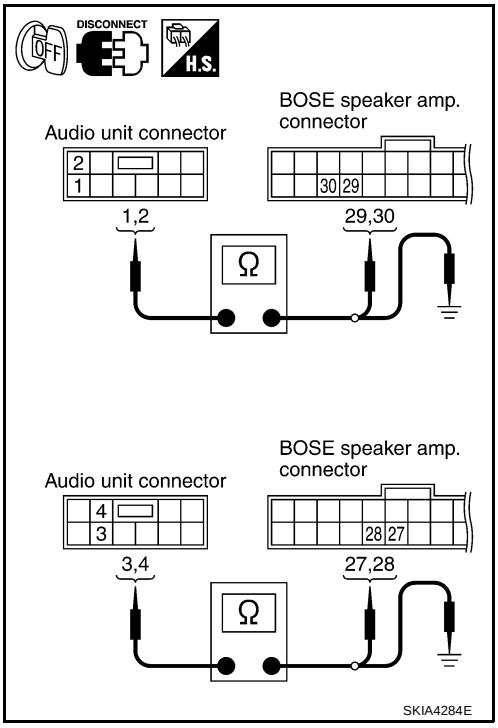
3. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect audio unit and BOSE speaker amp. connectors.
3. Check continuity between audio unit harness connector terminals and BOSE speaker amp. harness connector terminals.

Terminals				Continuity
Audio unit		BOSE speaker amp.		
Connector	Terminal	Connector	Terminal	
M44	1	B115	29	Yes
	2		30	
	3		27	
	4		28	

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

Terminals			Continuity
Audio unit		Ground	
Connector	Terminal		
M44	1		No
	2		
	3		
	4		

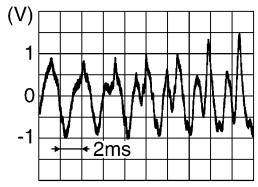


OK or NG

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

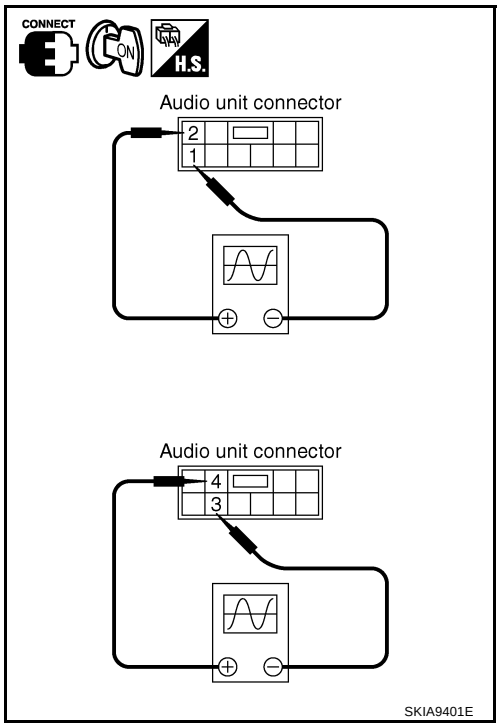
4. CHECK FRONT DOOR SPEAKER SIGNAL

1. Connect audio unit and BOSE speaker amp. connectors.
2. Turn ignition switch ON.
3. Press “POWER” switch.
4. Check voltage waveform audio unit harness connector terminals with CONSULT-II or oscilloscope.

Terminals				Condition	Reference value
(+)		(–)			
Connector	Terminal	Connector	Terminal		
M44	2	M44	1	Receive audio signal	 SKIB3609E
	4		3		

OK or NG

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



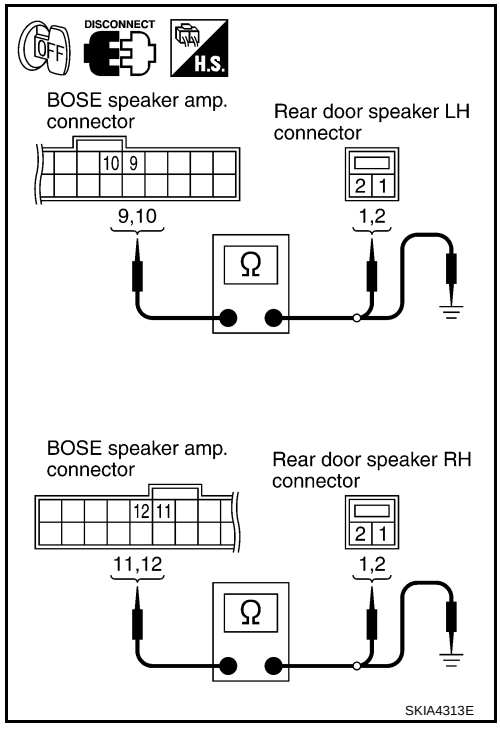
Inspection of Rear Door Speaker (BOSE System)

NKS00222

1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect BOSE speaker amp. and rear door speaker connectors.
3. Check continuity between BOSE speaker amp. harness connector terminals and rear door speaker harness connector terminals.

Terminals				Continuity
BOSE speaker amp.		Rear door speaker		
Connector	Terminal	Connector	Terminal	
B115	9	D53	1	Yes
	10		2	
	11	D73	1	
	12		2	



4. Check continuity between BOSE speaker amp. harness connector terminals and ground.

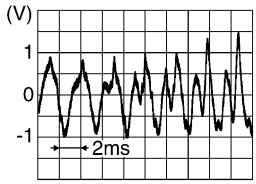
Terminals			Continuity
BOSE speaker amp.		Ground	
Connector	Terminal		
B115	9		No
	10		
	11		
	12		

OK or NG

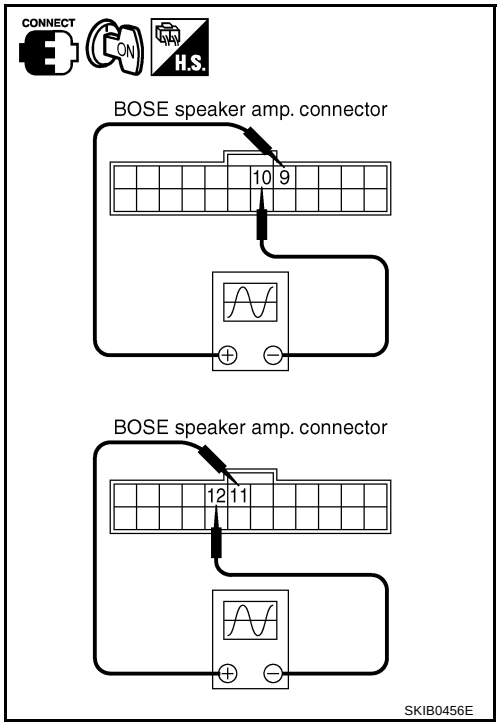
OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK REAR DOOR SPEAKER SIGNAL

1. Connect BOSE speaker amp. and rear door speaker connectors.
2. Turn ignition switch ON.
3. Press “POWER” switch.
4. Check voltage waveform BOSE speaker amp. harness connector terminals with CONSULT-II or oscilloscope.

Terminals				Condition	Reference value
(+)		(–)			
Connector	Terminal	Connector	Terminal		
B115	9	B115	10	Receive audio signal	
	11		12		

SKIB3609E



SKIB0456E

OK or NG

OK >> Replace rear door speaker.
NG >> GO TO 3.

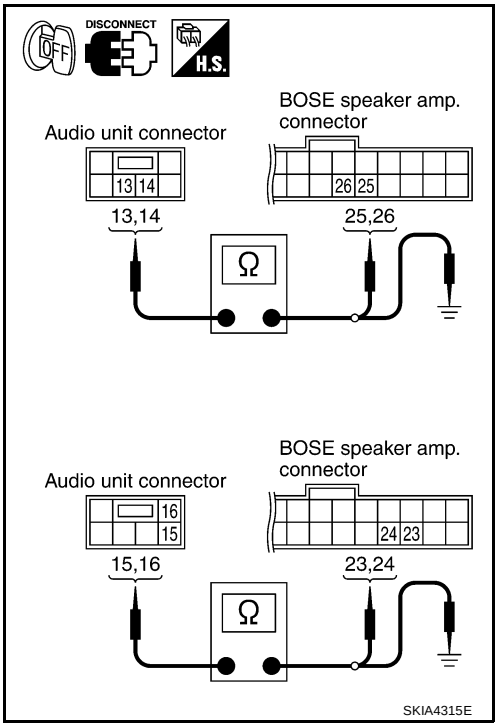
3. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect audio unit and BOSE speaker amp. connectors.
3. Check continuity between audio unit harness connector terminals and BOSE speaker amp. harness connector terminals.

Terminals				Continuity
Audio unit		BOSE speaker amp.		
Connector	Terminal	Connector	Terminal	
M45	13	B115	25	Yes
	14		26	
	15		23	
	16		24	

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

Terminals			Continuity
Audio unit		Ground	
Connector	Terminal		
M45	13		No
	14		
	15		
	16		

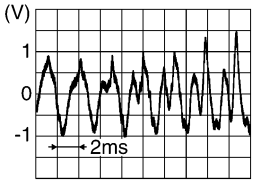


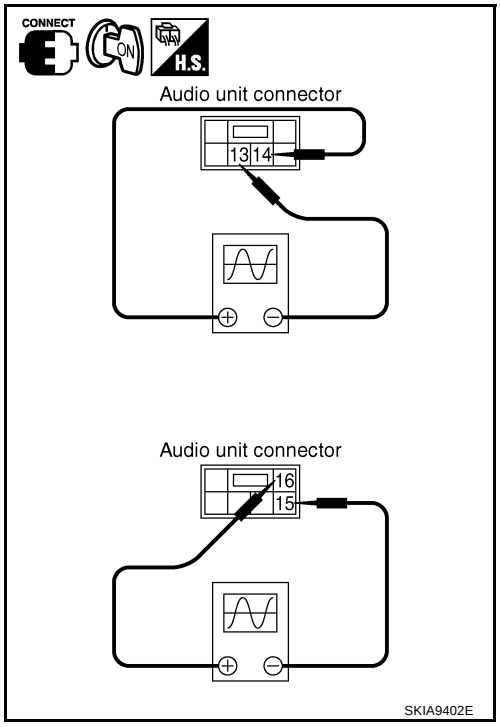
OK or NG

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

4. CHECK REAR DOOR SPEAKER SIGNAL

1. Connect audio unit and BOSE speaker amp. connectors.
2. Turn ignition switch ON.
3. Press “POWER” switch.
4. Check voltage waveform audio unit harness connector terminals with CONSULT-II or oscilloscope.

Terminals				Condition	Reference value
(+)		(–)			
Connector	Terminal	Connector	Terminal		
M45	14	M45	13	Receive audio signal	 SKIB3609E
	16		15		



OK or NG

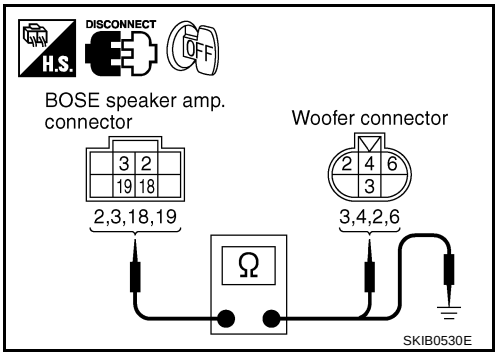
OK >> INSPECTION END
NG >> Replace audio unit.

Inspection of Woofer (BOSE System)

NKS00223

1. CHECK HARNESS

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



Terminals				Continuity
BOSE speaker amp.		Woofer		
Connector	Terminal	Connector	Terminal	
B114	2	B28	3	Yes
	3		4	
	18		2	
	19		6	

4. Check continuity between BOSE speaker amp, harness connector terminals and ground.

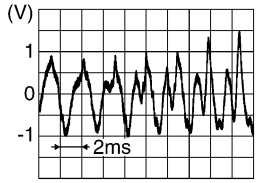
Terminals			Continuity
BOSE speaker amp.			
Connector	Terminal		
B114	2	Ground	No
	3		
	18		
	19		

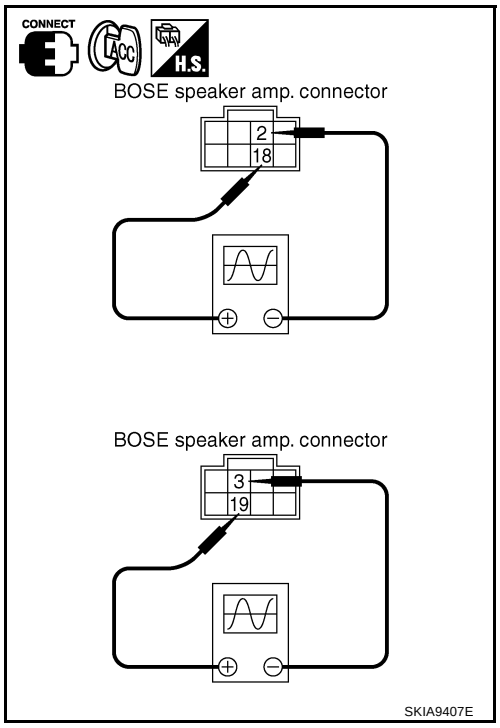
OK or NG

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

2. CHECK WOOFER SIGNAL

1. Connect BOSE speaker amp. and woofer connectors.
2. Turn ignition switch ON.
3. Press “POWER” switch.
4. Check voltage waveform BOSE speaker amp. harness connector terminals with CONSULT-II or oscilloscope.

Terminals				Condition	Reference value
(+)		(–)			
Connector	Terminal	Connector	Terminal		
B114	18	B114	2	Receive audio signal	 SKIB3609E
	19		3		



OK or NG

OK >> INSPECTION END
NG >> Replace BOSE speaker amp.

Locking CD Auto Changer Mechanism

NKS00225

CAUTION:

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

DAMPER LOCK PROCEDURE

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

NOTE:

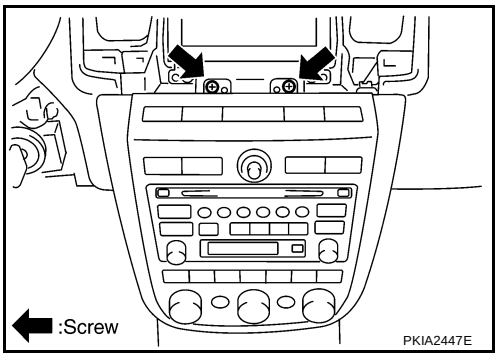
After installing a new or remanufactured CD auto changer unit, switching the CD auto changer unit ON will automatically unlock the mechanism. A special unlocking procedure is not required.

Removal and Installation of Audio Unit

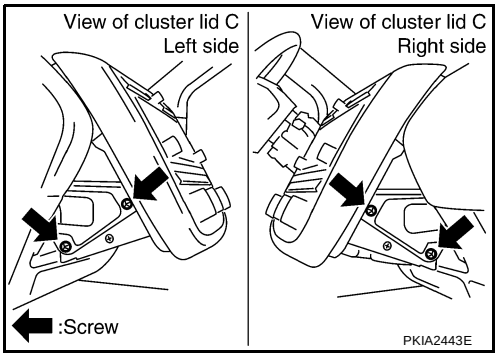
NKS00226

REMOVAL

1. Perform damper lock operation (BOSE system). Refer to AV-59, "Locking CD Auto Changer Mechanism" .
2. Remove center ventilator. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
3. Remove instrument stay cover (LH/RH). Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
4. Remove screws (2).

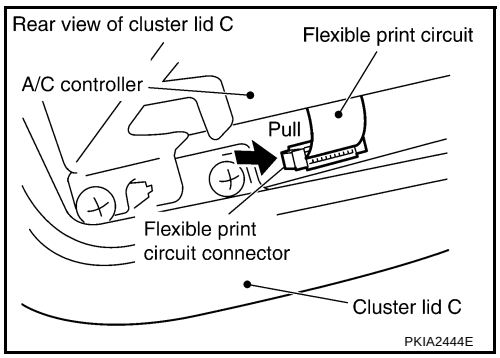


5. Remove screws (4).
6. Remove cluster lid C and audio unit.

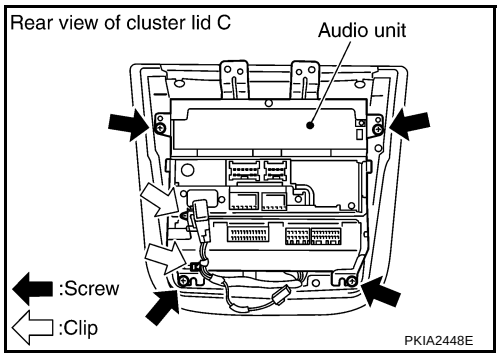


7. Unlock FPC (Flexible Print Circuit) connector lock on A/C and AV switch side.
8. Pull off flexible printed circuit from connector.

CAUTION:
Make sure mating surface of FPC (Flexible Print Circuit) and the direction of connector terminal.

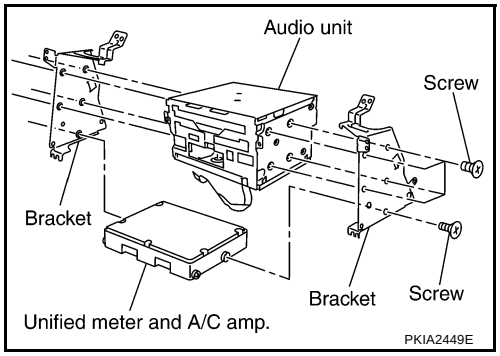


9. Remove screws (4) and clips (2), and remove audio unit from cluster lid C.



10. Remove audio unit screws (8), unified meter and A/C amp. screws (2), and remove brackets.

CAUTION:
- **When carrying audio unit body, do not touch internal mechanism access from cassette tape slot.**
- **Be careful not to allow foreign material to enter from cassette tape slot.**
- **Use appropriate screws for each, as screws for audio unit are different from that for unified meter and A/C amp.**



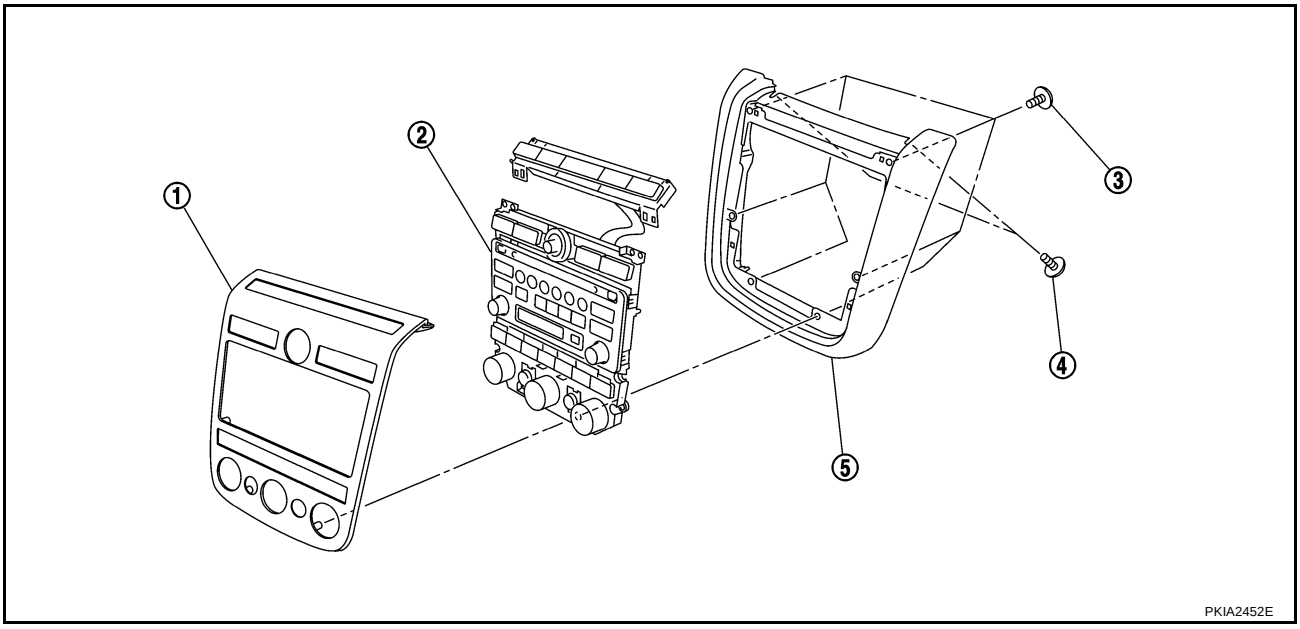
INSTALLATION

Installation is the reverse order of removal.

Removal and Installation for A/C and AV Switch

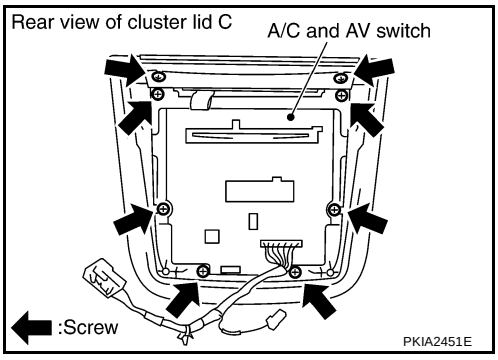
NKS00227

REMOVAL



1. Front finisher
2. A/C and AV switch
3. Screws
4. Screws
5. Cluster lid C

1. Remove audio unit from cluster lid C. Refer to AV-59, "Removal and Installation of Audio Unit" .
2. Remove screws (8), and remove A/C and AV switch.



INSTALLATION

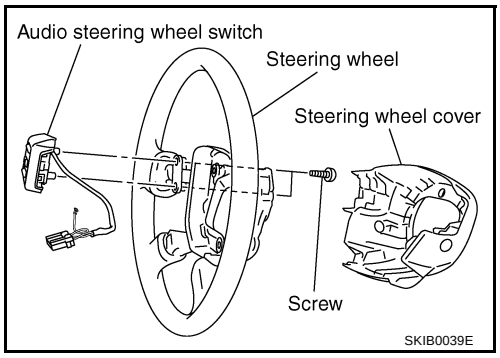
Installation is the reverse order of removal.

Removal and Installation of Audio Steering Switch

NKS00228

REMOVAL

1. Remove steering wheel. Refer to PS-11, "Removal and Installation" .
2. Remove steering wheel cover.
3. Remove screws (2), and remove audio steering switch.



INSTALLATION

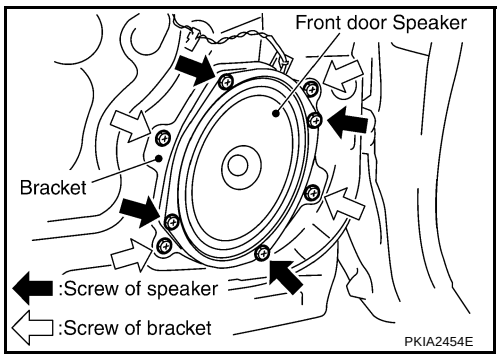
Installation is the reverse order of removal.

Removal and Installation of Front Door Speaker (Base System)

NKS00229

REMOVAL

1. Remove door finisher. Refer to EI-30, "DOOR FINISHER" .
2. Remove screws (4), and remove speaker.
3. Remove screws (4), and remove bracket.



INSTALLATION

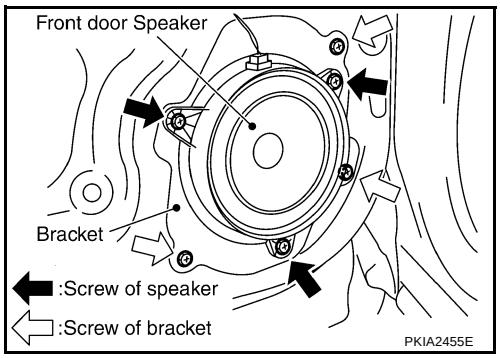
Installation is the reverse order of removal.

Removal and Installation of Front Door Speaker (BOSE System)

NKS0022A

REMOVAL

1. Remove door finisher. Refer to EI-30, "DOOR FINISHER" .
2. Remove screws (3), and remove speaker.
3. Remove screws (3), and remove bracket.



INSTALLATION

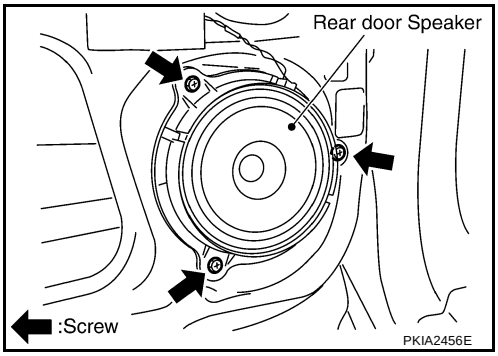
Installation is the reverse order of removal.

Removal and Installation of Rear Door Speaker (Base System)

NKS0022B

REMOVAL

1. Remove door finisher. Refer to EI-30, "DOOR FINISHER" .
2. Remove screws (3), and remove speaker.



INSTALLATION

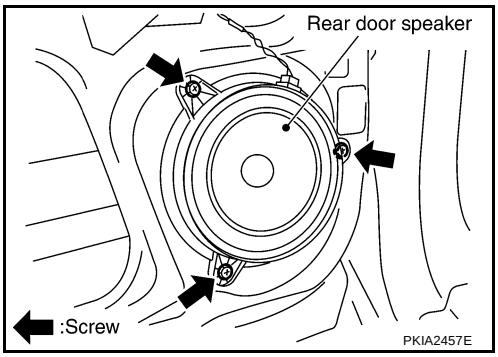
Installation is the reverse order of removal.

Removal and Installation of Rear Door Speaker (BOSE System)

NKS0022C

REMOVAL

1. Remove door finisher. Refer to EI-30, "DOOR FINISHER" .
2. Remove screws (3), and remove speaker.



INSTALLATION

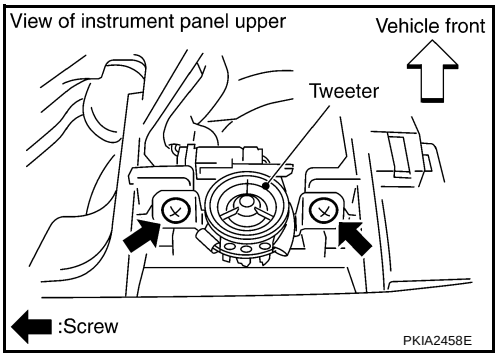
Installation is the reverse order of removal.

Removal and Installation of Tweeter

NKS0022D

REMOVAL

1. Remove side ventilator assembly. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove instrument side finisher. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
3. Remove screws (2), and remove tweeter.



INSTALLATION

Installation is the reverse order of removal.

Removal and Installation of Woofer

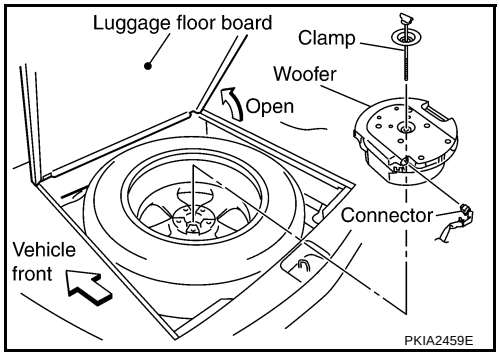
NKS0022E

REMOVAL

1. Open luggage floor finisher (center). Refer to EI-37, "LUGGAGE FLOOR TRIM" .
2. Remove woofer clamp, and disconnect woofer connector.
3. Remove woofer.

CAUTION:

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



INSTALLATION

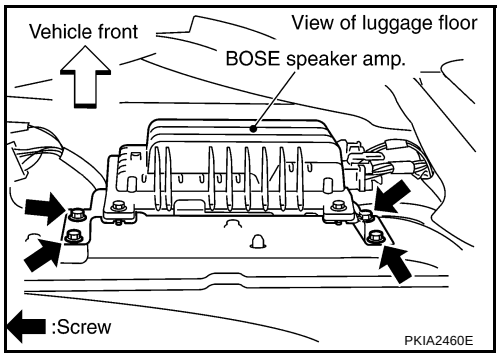
Installation is the reverse order of removal.

Removal and Installation of BOSE Speaker Amp.

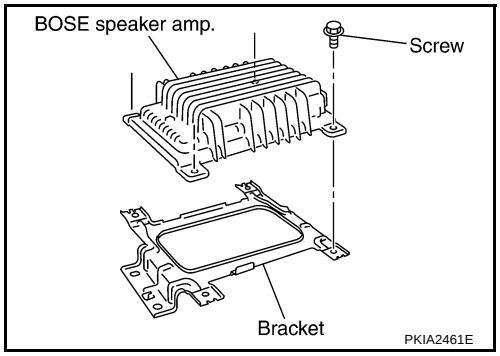
NKS0022F

REMOVAL

1. Remove luggage floor finisher (front). Refer to EI-37, "LUGGAGE FLOOR TRIM" .
2. Remove screws (4) and connectors (2), and remove BOSE speaker amp. from luggage floor.



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



INSTALLATION

Installation is the reverse order of removal.

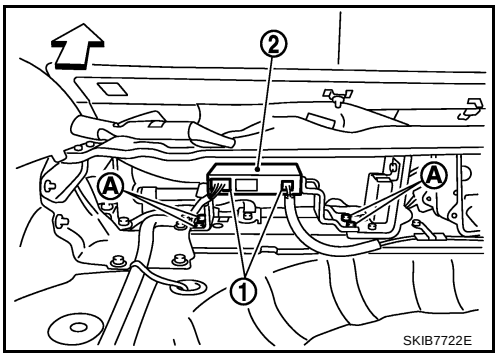
Removal and Installation of Satellite Radio Tuner

NKS002LZ

⇦: Vehicle front

REMOVAL

1. Remove luggage floor finisher (front). Refer to EI-37, "LUGGAGE FLOOR TRIM" .
2. Remove screws (A) and connectors (1), and remove satellite radio tuner (2) from luggage floor.



INSTALLATION

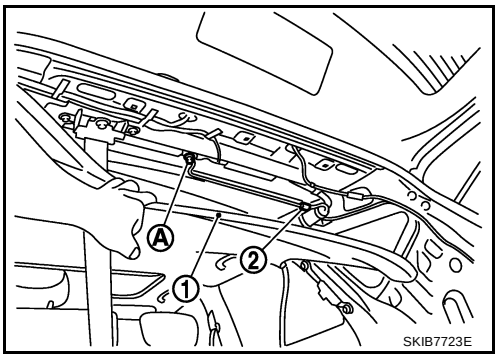
Installation is the reverse order of removal.

Removal and Installation of Satellite Radio Antenna

NKS002MN

REMOVAL

1. Remove luggage side finisher. Refer to EI-37, "LUGGAGE FLOOR TRIM" .
2. Remove assist grip (rear). Refer to EI-35, "HEADLINING" .
3. Pull down headlining (1) and obtain space for work between vehicle and headlining.
4. Remove nut (A), and then disconnect connector (2).
5. 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)

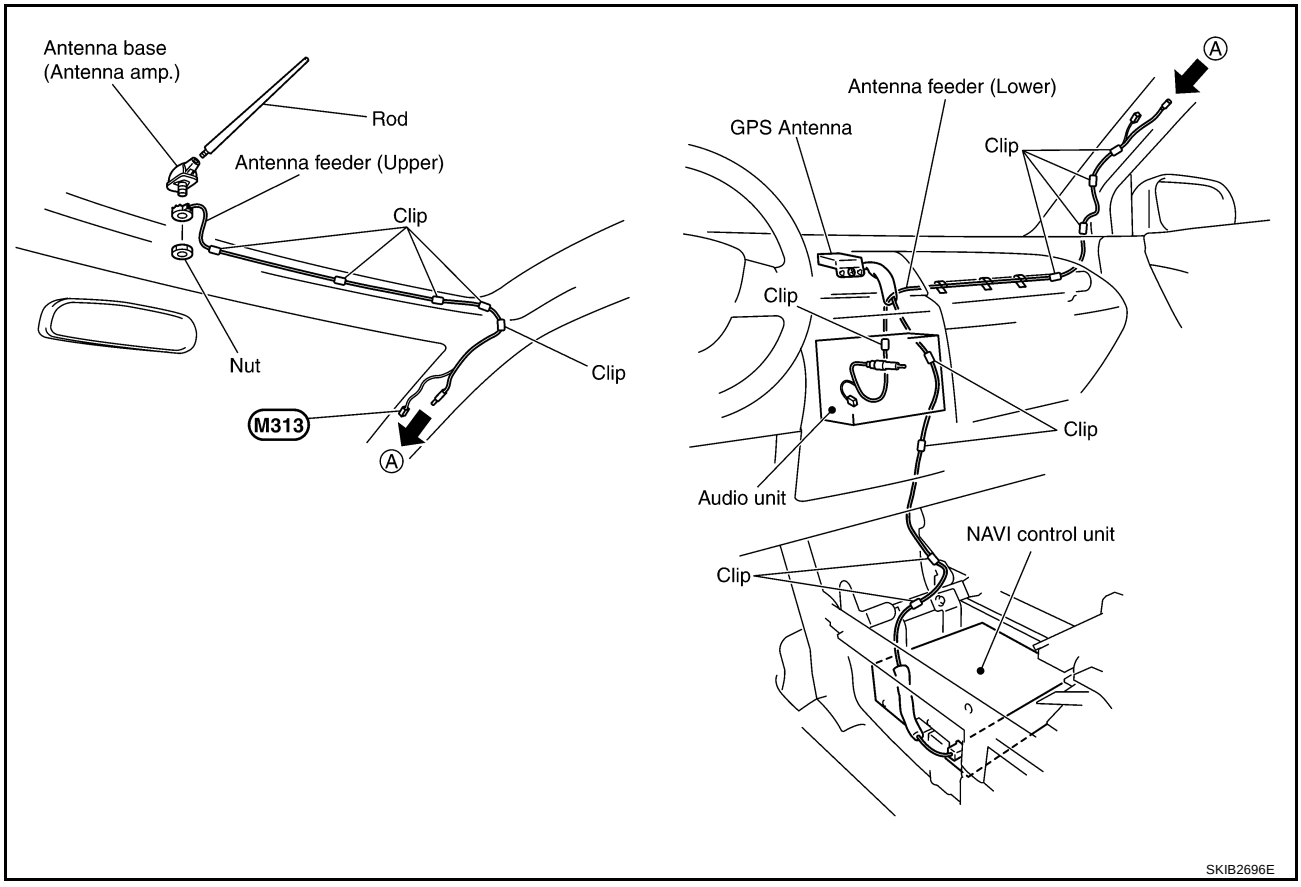
ANTENNA

PFP:28200

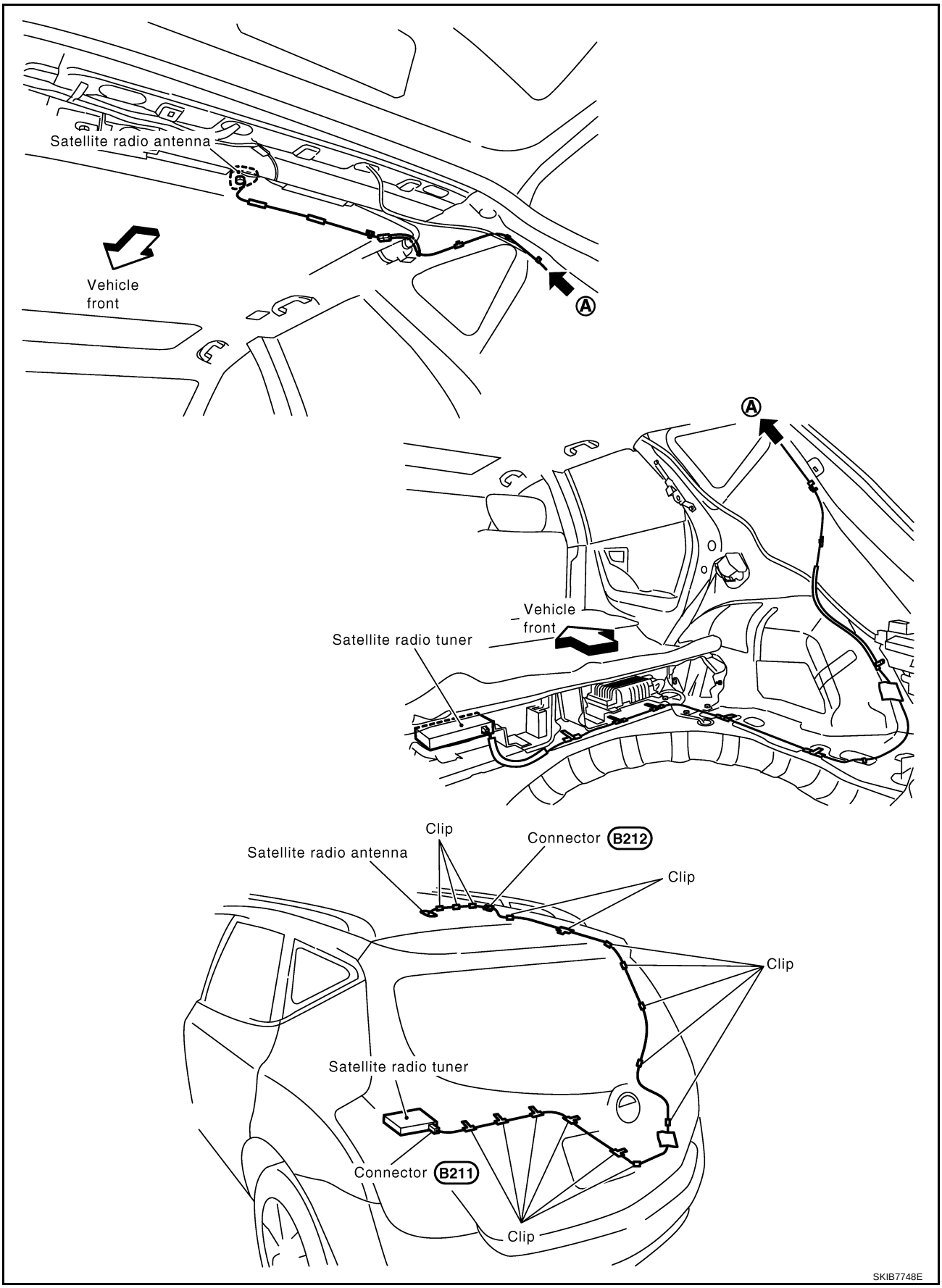
Location of Antenna

NKS0022G

RADIO ANTENNA AND GPS ANTENNA



SATELLITE RADIO ANTENNA

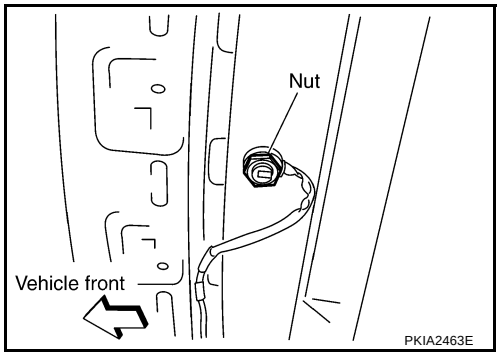


Removal and Installation of Roof Antenna

NKS0022H

REMOVAL

1. Remove headlining. Refer to EI-35, "HEADLINING" .
2. Remove nut and antenna base.



3. Remove instrument panel. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
4. Remove antenna feeder (upper) and antenna feeder (lower).
5. Remove clips (5), and separate antenna feeder (upper) from vehicle.

INSTALLATION

Installation is the reverse order of removal.

Removal and Installation of Satellite Radio Antenna

NKS002M9

Refer to AV-65, "Removal and Installation of Satellite Radio Antenna" .

INTEGRATED DISPLAY SYSTEM

PFP:28090

System Description

NKS002QE

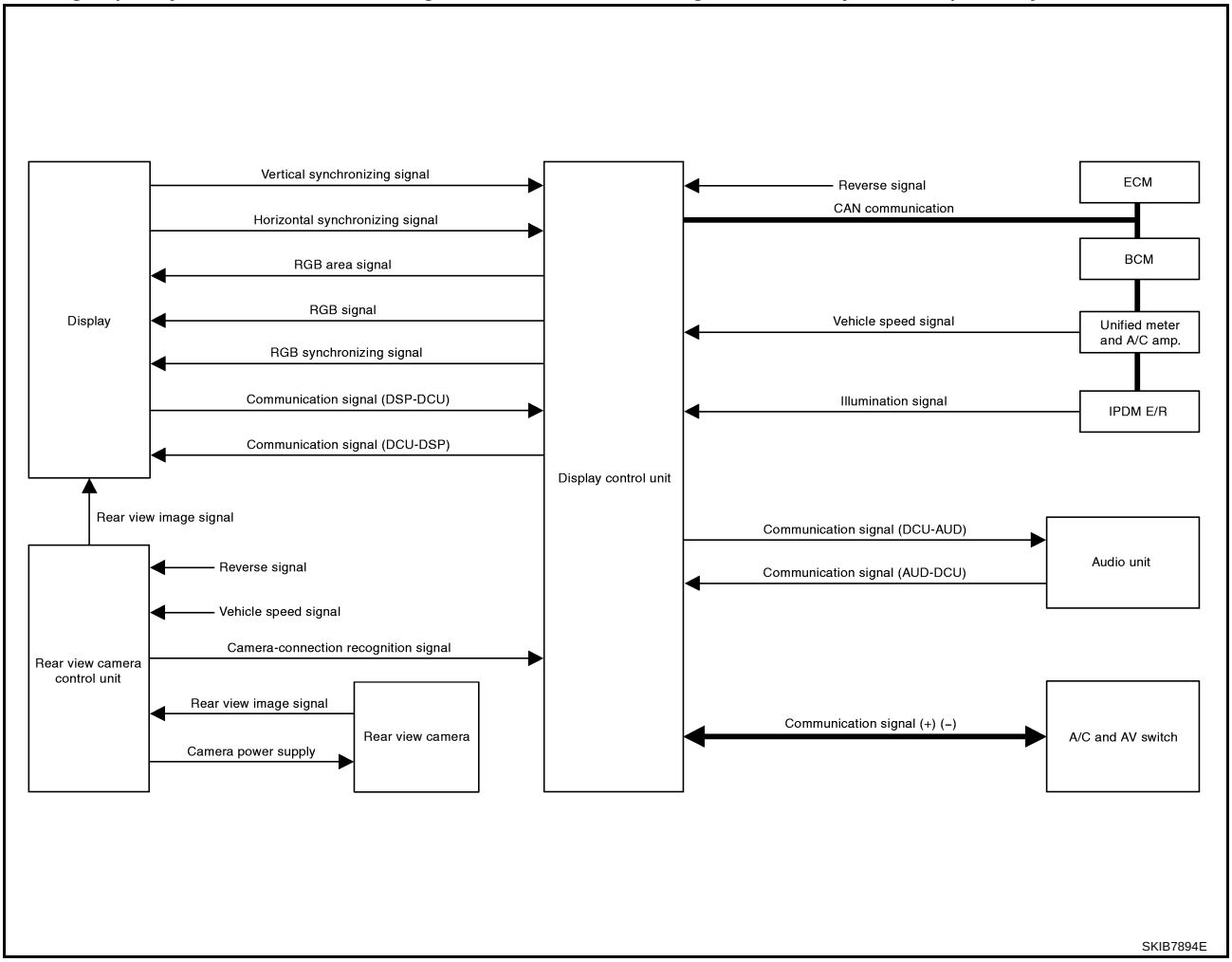
For system operation information, refer to Owner's Manual.

INTEGRATED DISPLAY SYSTEM

- Each control unit that comprises the system is connected with a communication circuit. It transmits/receives data signals including request signals and response signals, and controls the system.
- The display control unit transmits/receives data signals to/from each control unit with CAN communication. It performs an arithmetical operation on fuel information values by using data obtained from the control units, and then displays the calculated values on the screen.
- The display control unit receives door switch signals from the BCM with CAN communication, and displays a warning on the screen when driving over the set speed with a door half-shut.
- The display control unit receives vehicle speed signals that are transmitted from the unified meter and A/C amp., performs an arithmetical operation on drive information values, and then displays the calculated values on the screen.
- The images displayed on the monitor screen contain display control unit-generated RGB images, and rear view images transmitted from the rear view camera control unit.
- The display control unit controls image switching and image quality adjustments by communications with the display.

REAR VIEW MONITOR

- A rear view monitor was set to vehicle, which can check rearward on screen when backing up the vehicle.
- For easier recognition of the vehicle width and the distance to the objects, the guide lines of distances and rear are combined with the rear view image.
- Image quality of the rear view image and of the RGB image can be adjusted separately.

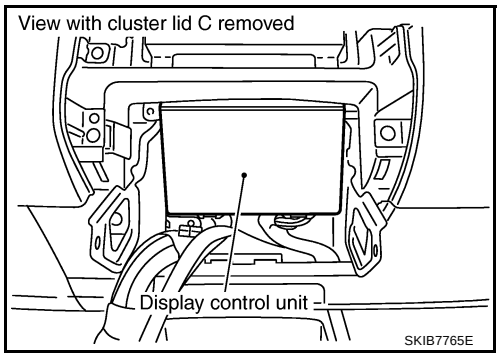


Component Description

NKS002QF

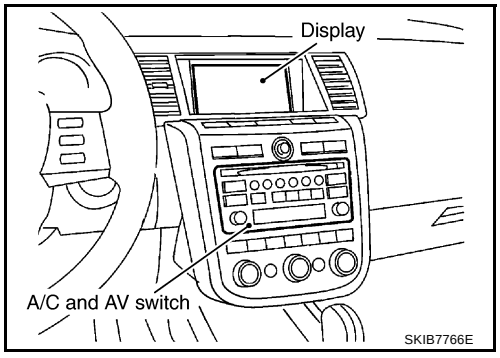
DISPLAY CONTROL UNIT

- Display control unit draws a status of the audio and air conditioner, a TRIP screen, a FUEL ECONOMY screen, etc., and transmits the image signals to the display screen.
- It receives operation signals of audio and air conditioner from A/C and AV switch, and transmits the operation signal of audio to the audio unit via the communication line and transmits the operation signal of air conditioner to the meter and A/C amp. via CAN communication.



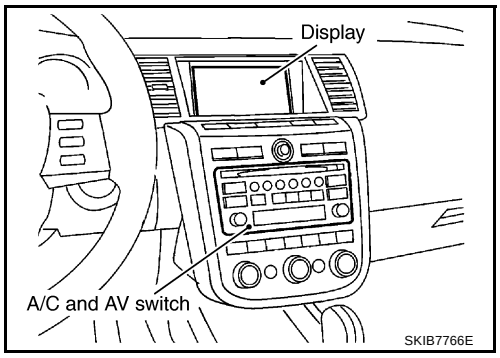
DISPLAY

- Images on the display include RGB image and rear view image displayed when setting the select lever to R range.
- Display control unit controls images on the display.



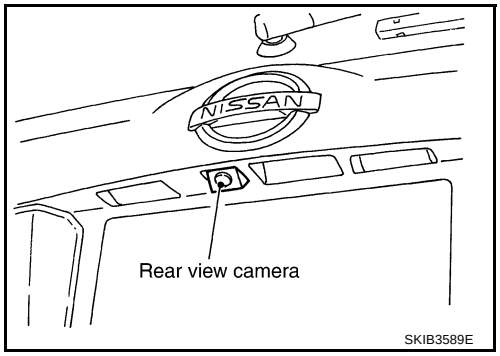
A/C AND AV SWITCH

- A/C and AV switch, an integrated combination of audio and air conditioner switches, are adopted.
- Operation signal of audio is transmitted to the audio unit through display control unit with the communication line. Operation signal of air conditioner is transmitted to meter and A/C amp. through display control unit with CAN communication.



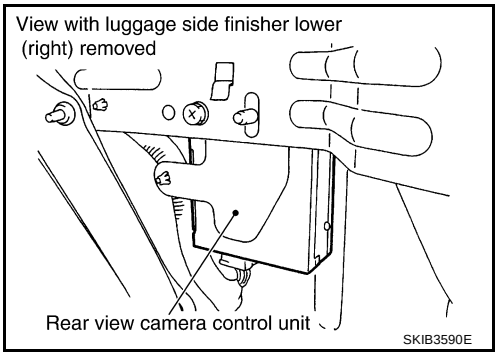
REAR VIEW CAMERA

- Rear view camera transmits rear view image signals to the display screen through the rear view camera control unit, when reverse signal is input.
- The rear view image is a mirror image reversed left and right that is the same as seeing rear side with a room mirror.



REAR VIEW CAMERA CONTROL UNIT

- Rear view camera control unit supplies power to the rear view camera, and then transmits the rear view image from the rear view camera to the display screen when reverse signal is input.
- Guiding lines of vehicle width and distance from rear end are composited and displayed on rear view image.



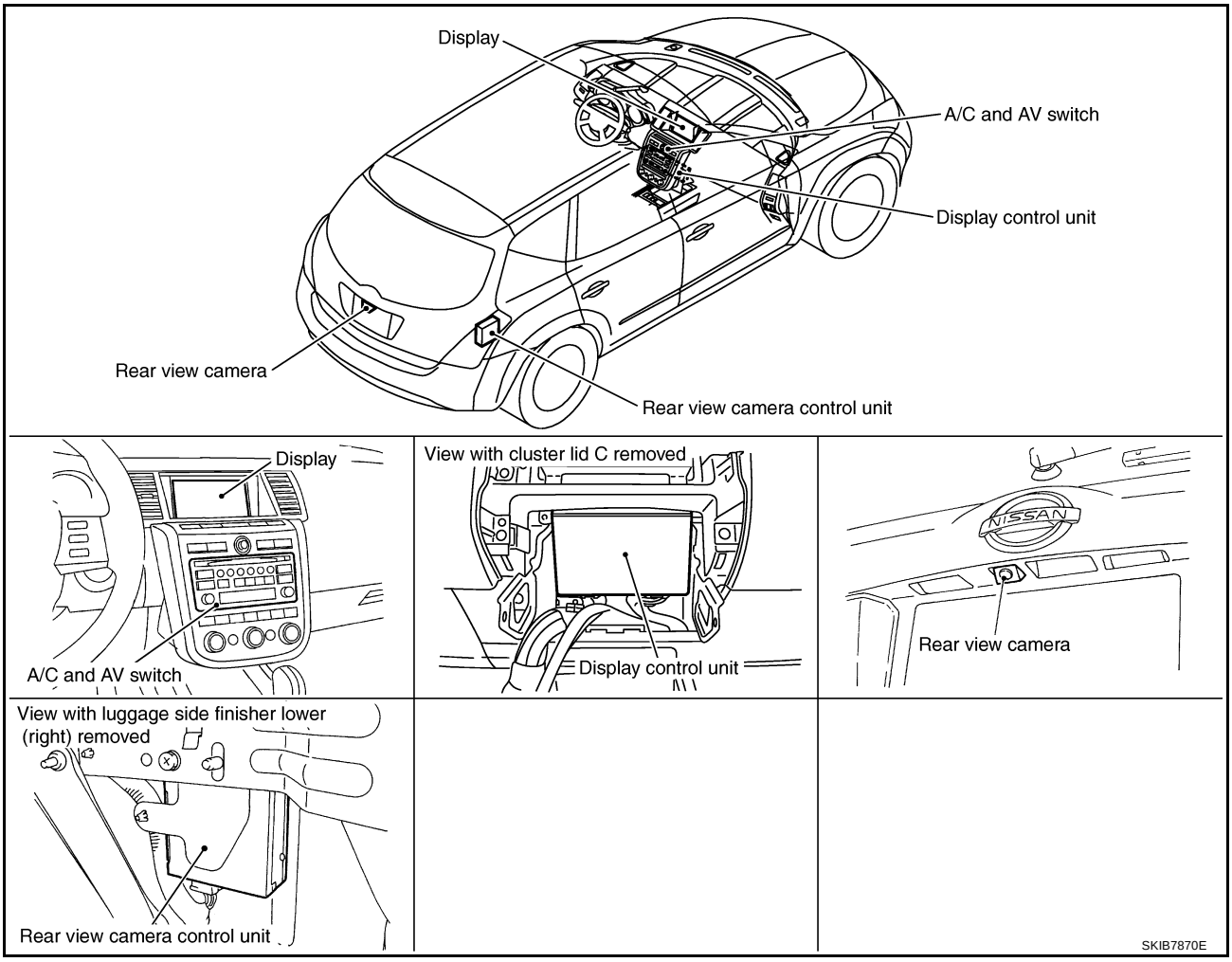
CAN Communication Unit

NKS002QG

Refer to LAN-49, "CAN System Specification Chart" .

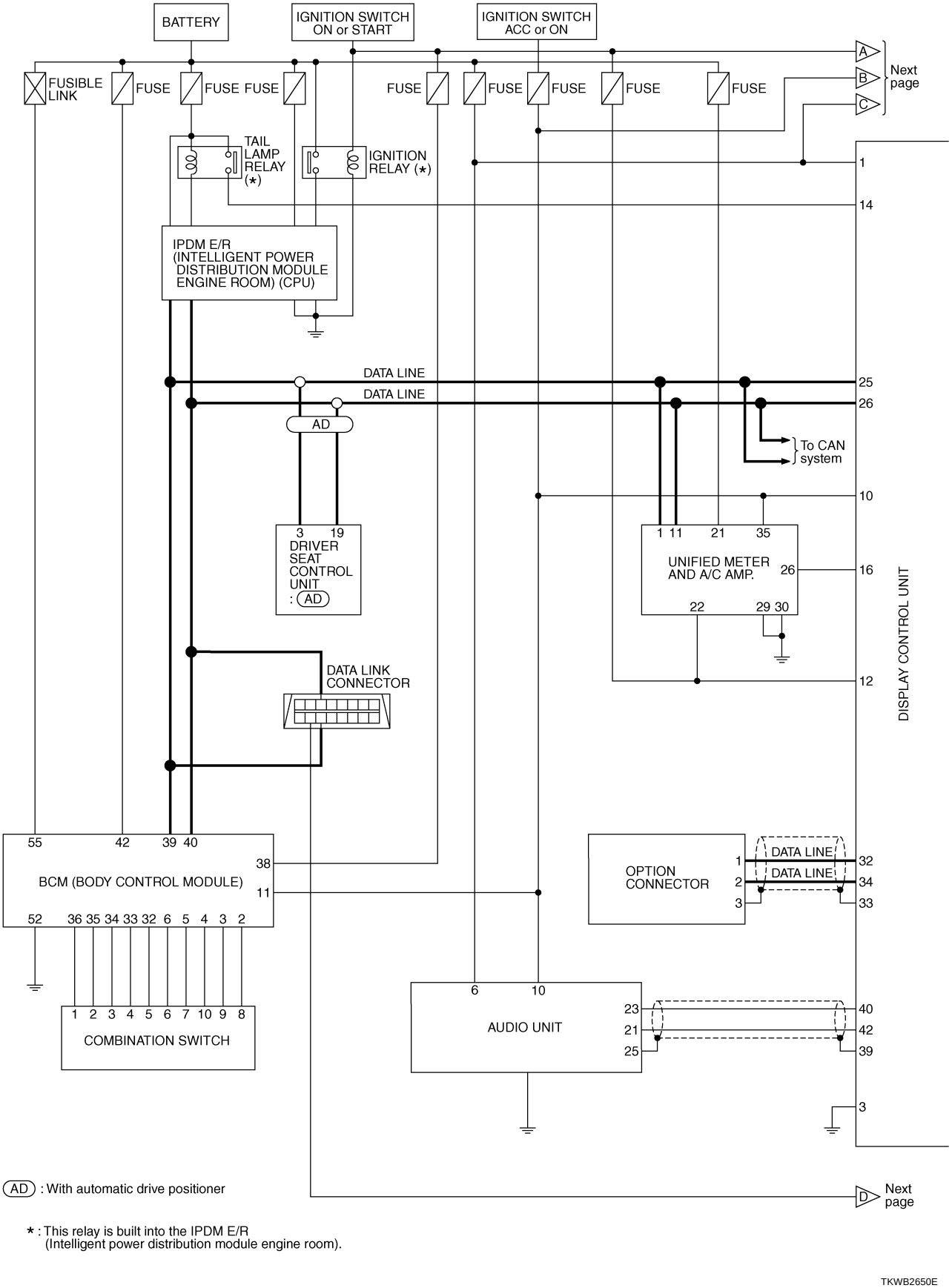
Component Parts Location

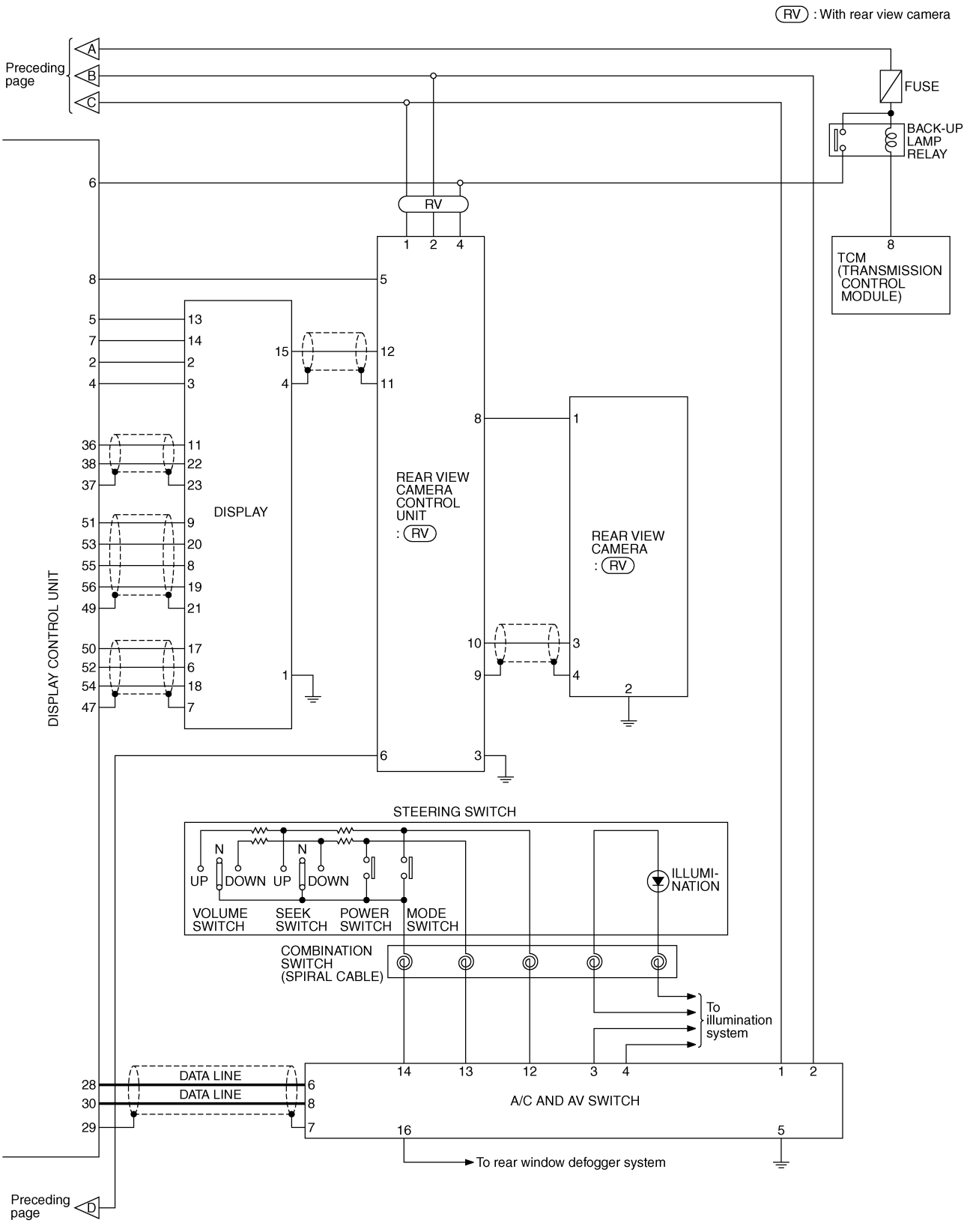
NKS002QH



Schematic — INF/D —

NKS0022N



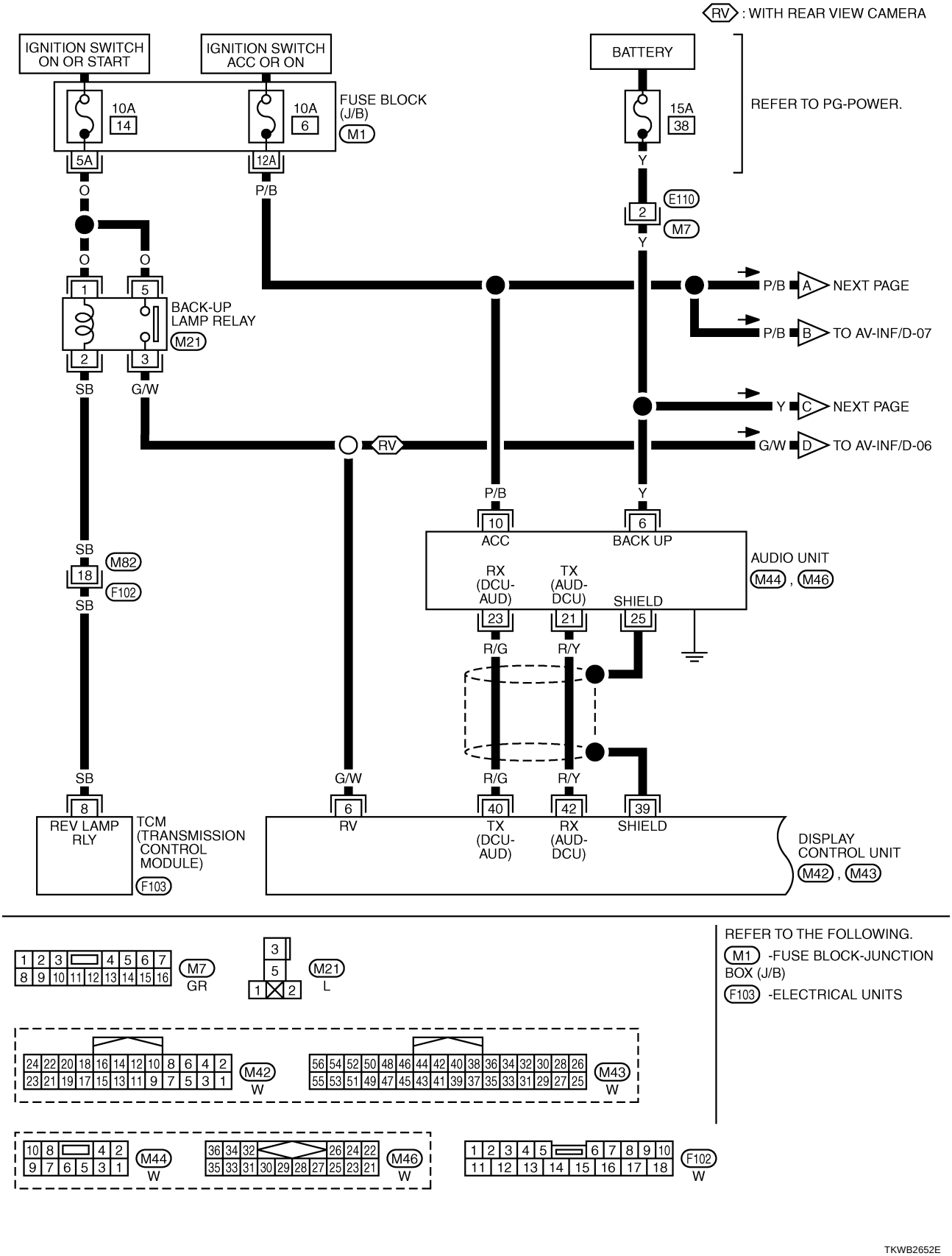

RV : With rear view camera
Preceding page
A
B
C
FUSE
BACK-UP LAMP RELAY
TCM (TRANSMISSION CONTROL MODULE)
RV
1 2 4
8
5
6
DISPLAY CONTROL UNIT
DISPLAY
REAR VIEW CAMERA CONTROL UNIT : RV
REAR VIEW CAMERA : RV
STEERING SWITCH
UP DOWN UP DOWN
VOLUME SWITCH
SEEK SWITCH
POWER SWITCH
MODE SWITCH
ILLUMI-NATION
COMBINATION SWITCH (SPIRAL CABLE)
To illumination system
DATA LINE
DATA LINE
A/C AND AV SWITCH
To rear window defogger system
Preceding page
D

TKWB2651E

Wiring Diagram — INF/D —

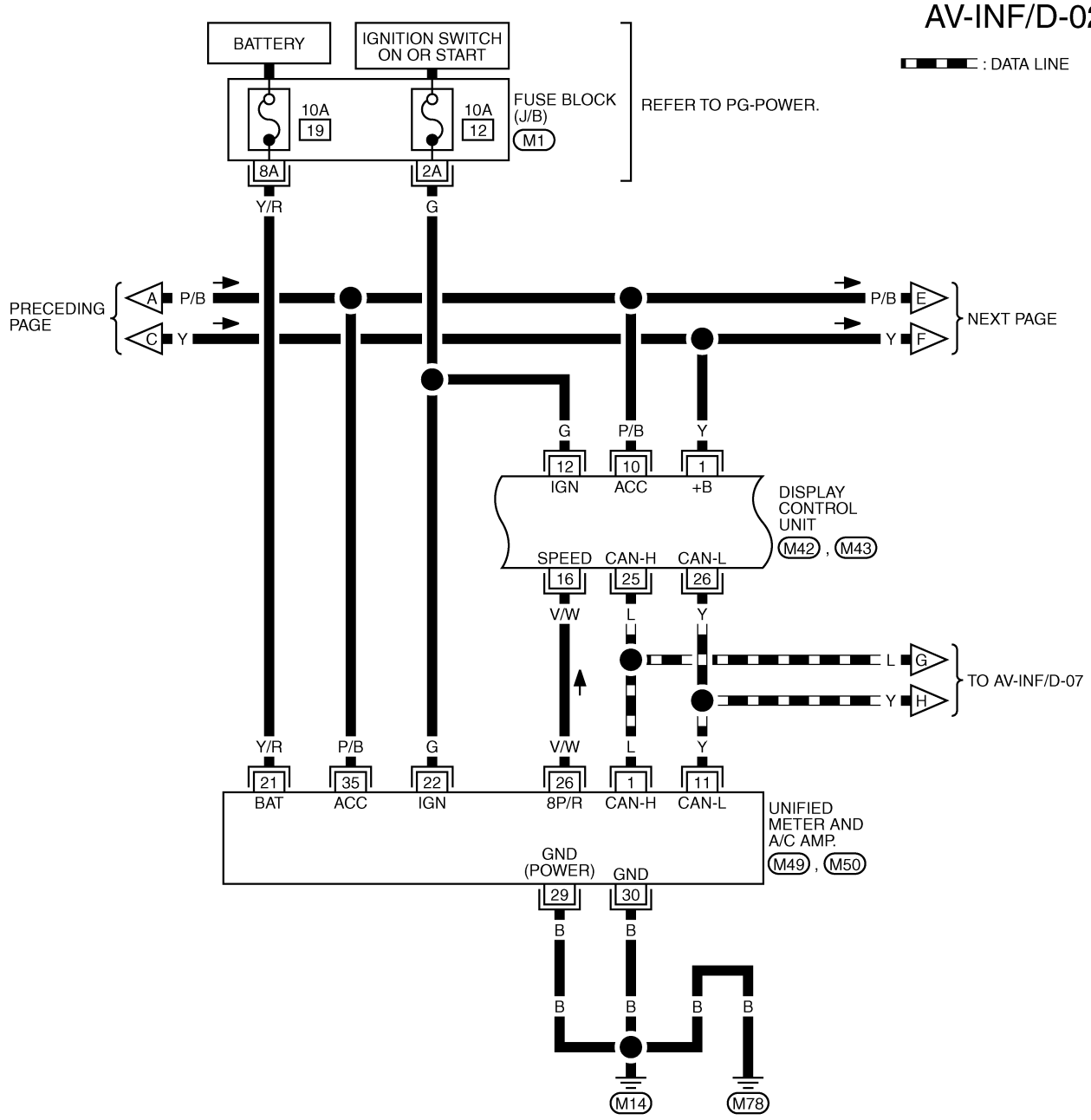
NKS0022O

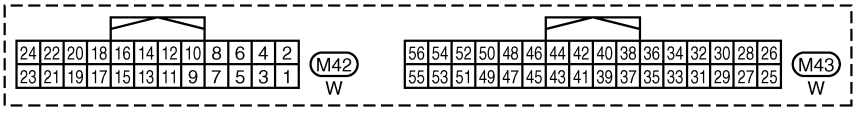
AV-INF/D-01

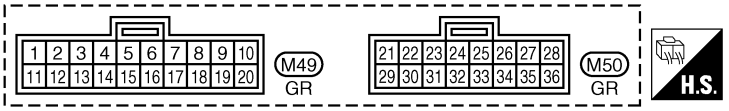


TKWB2652E

AV-INF/D-02



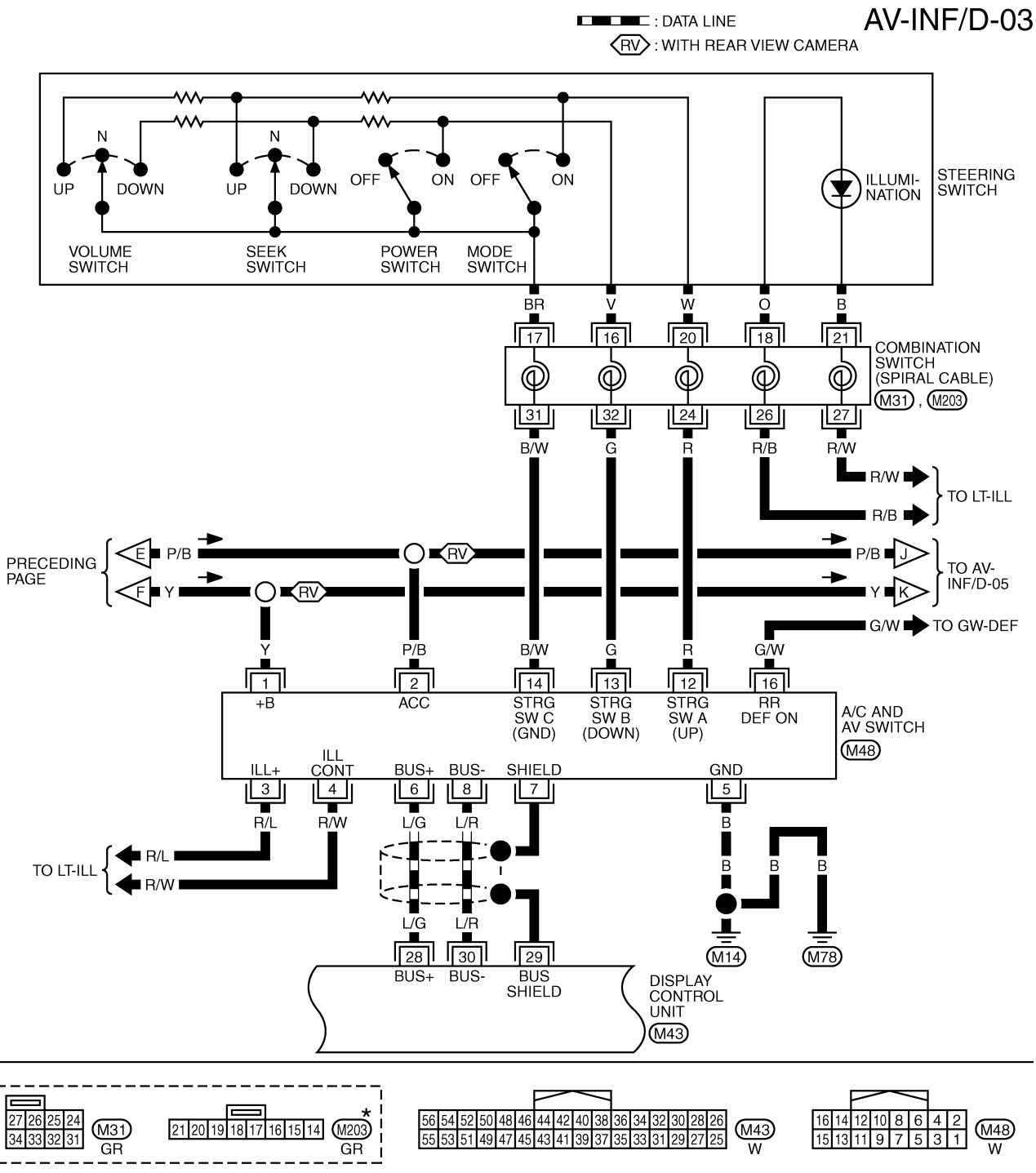




REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWB2653E

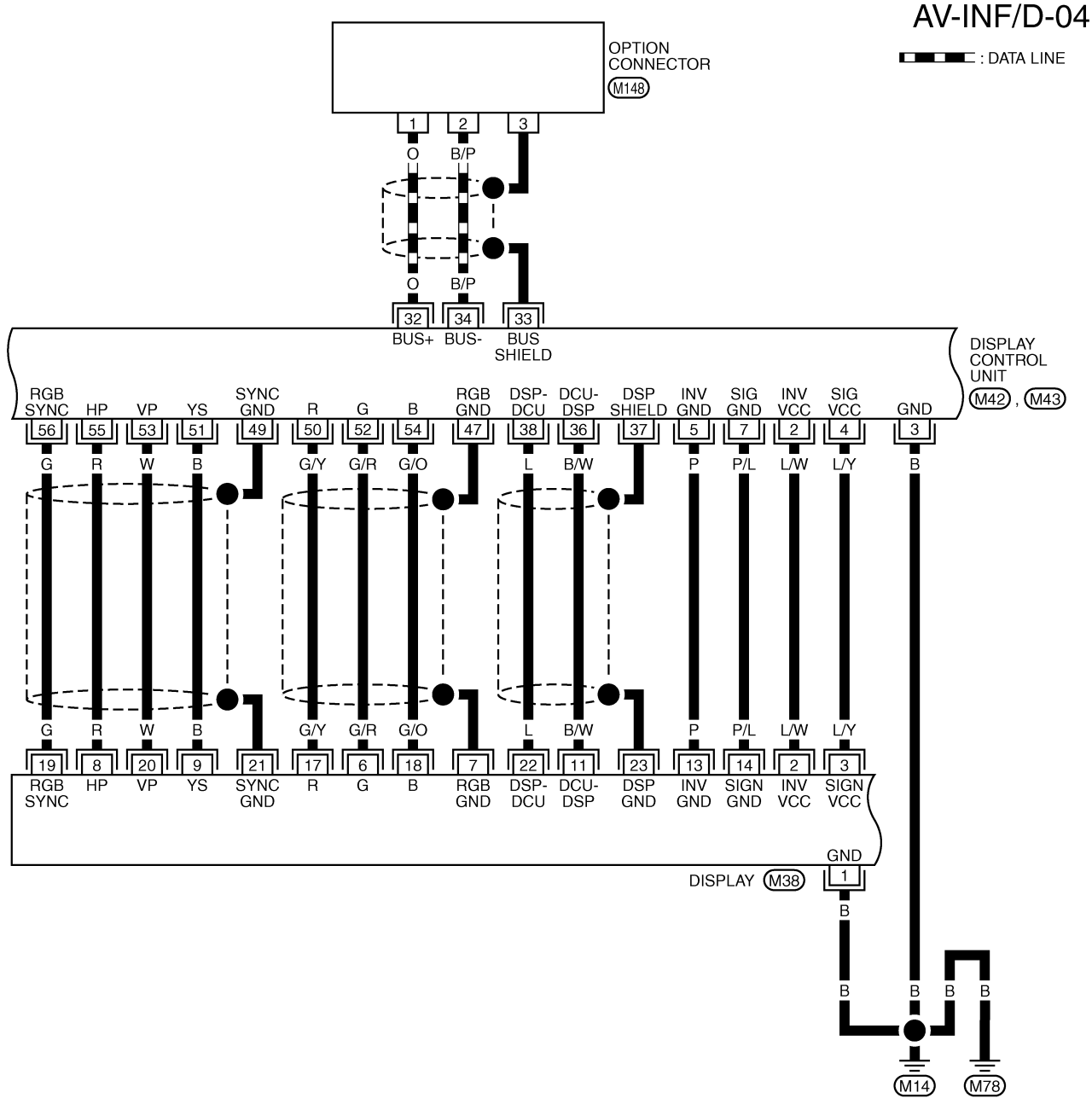
AV-INF/D-03

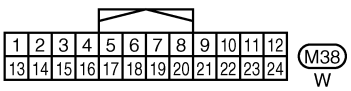


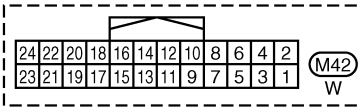
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

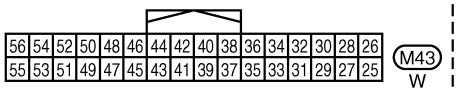
TKWB2654E

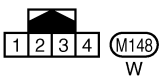
AV-INF/D-04







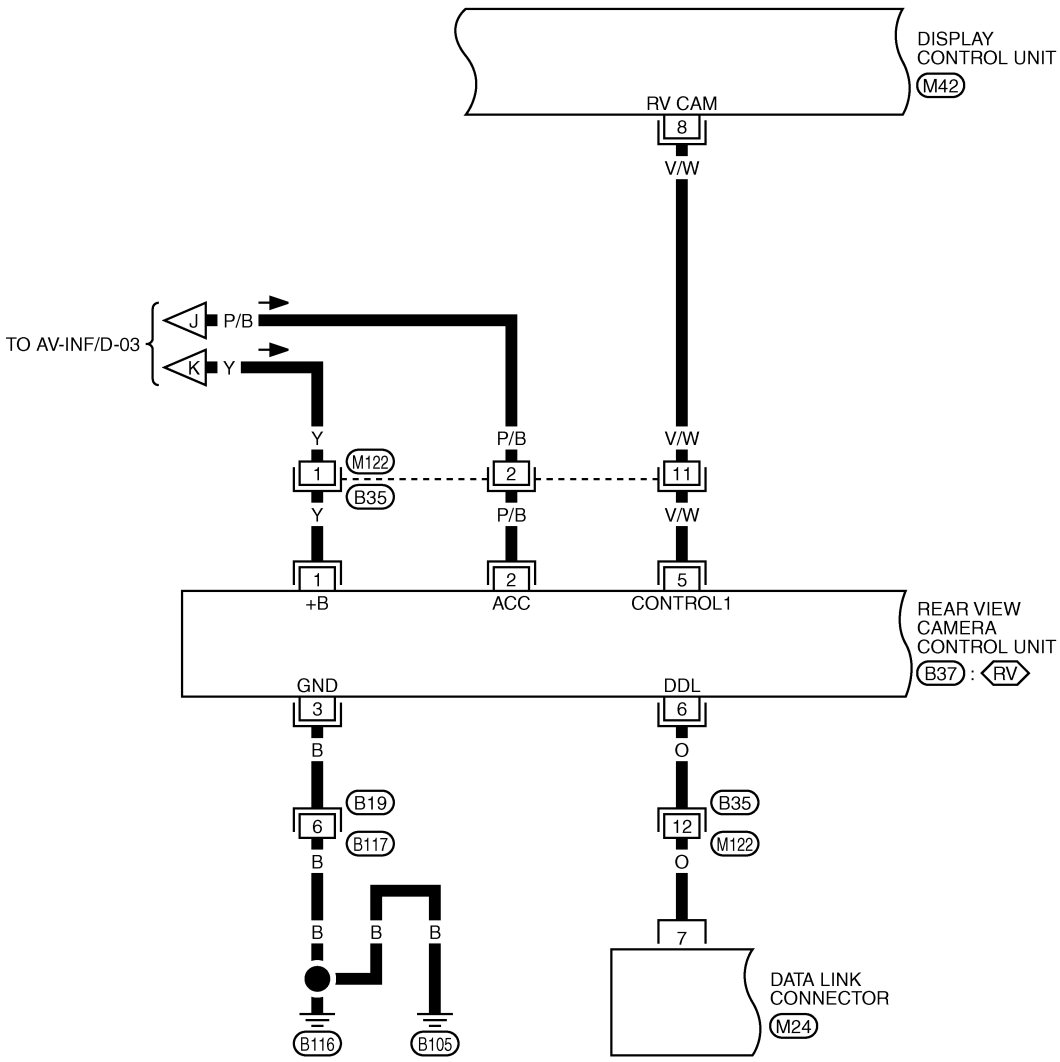


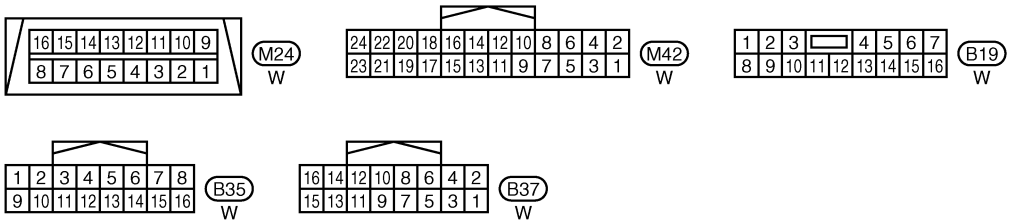


TKWB2655E

AV-INF/D-05

RV : WITH REAR VIEW CAMERA

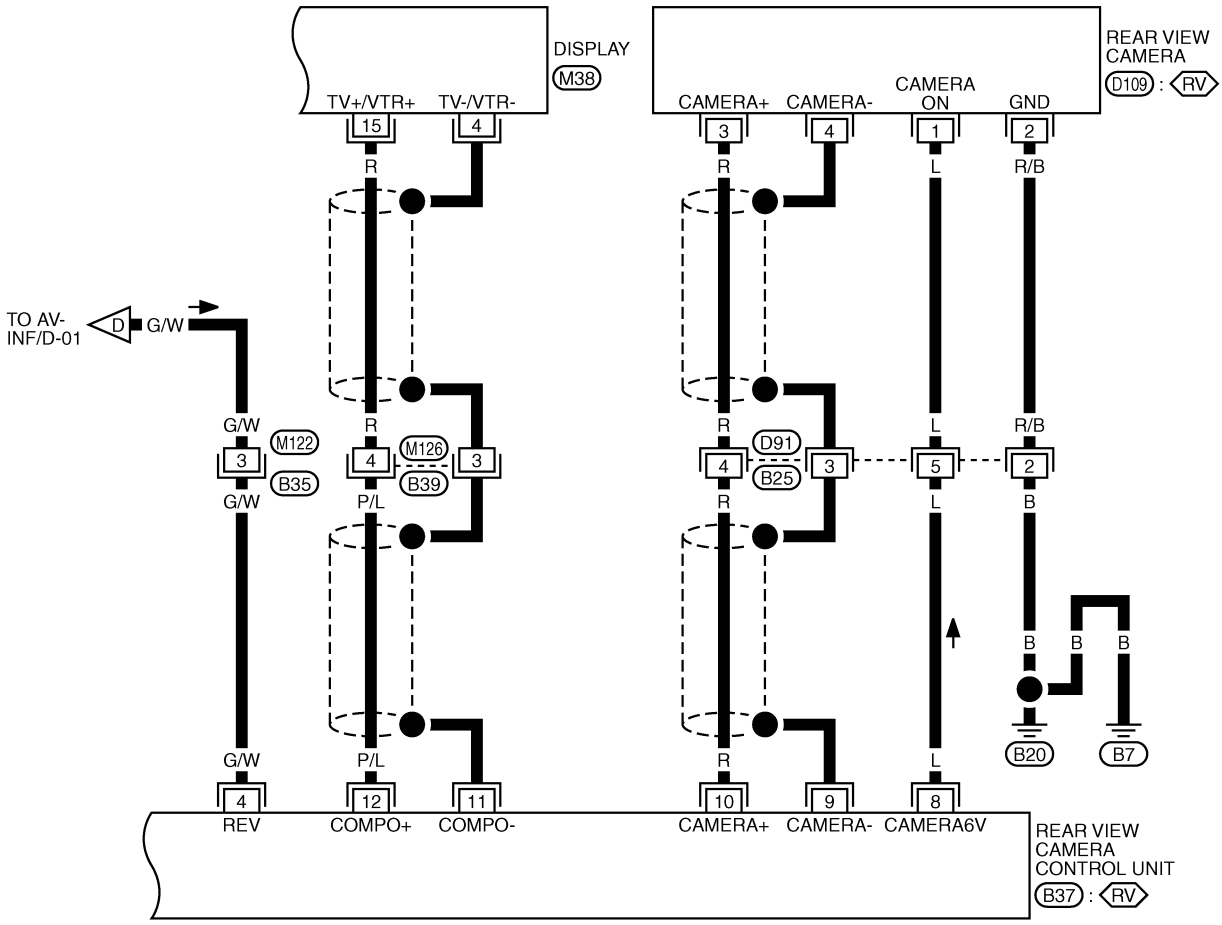


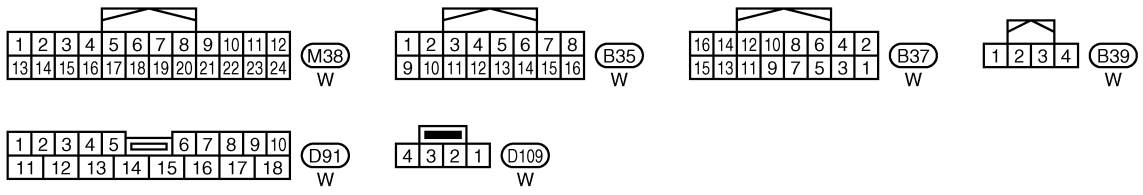


TKWB2656E

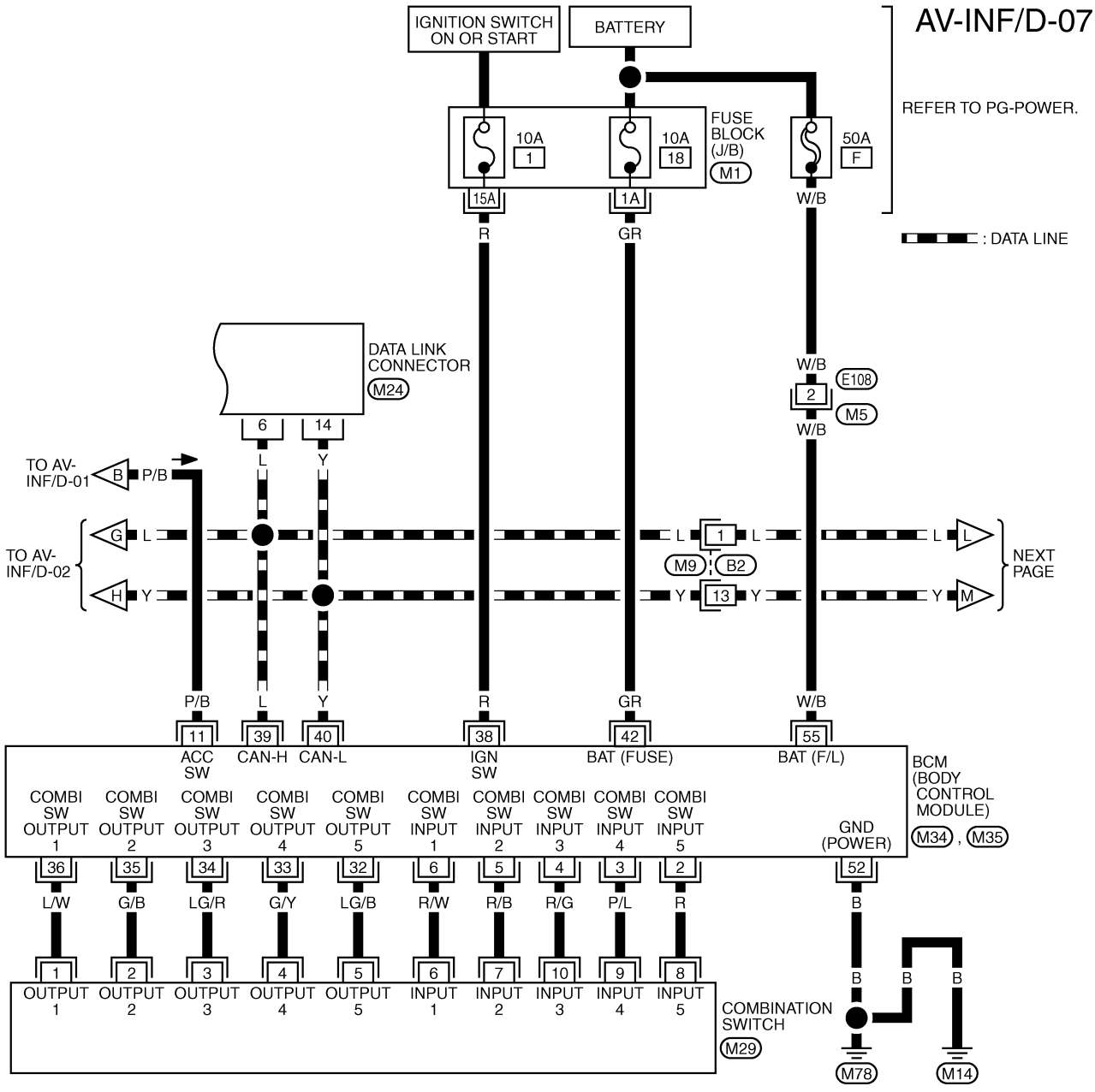
AV-INF/D-06

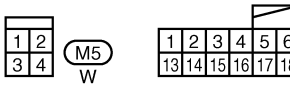
RV : WITH REAR VIEW CAMERA

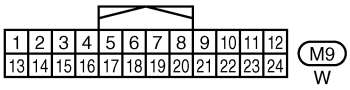


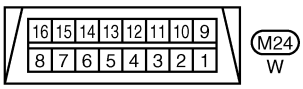


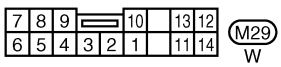
TKWB2657E









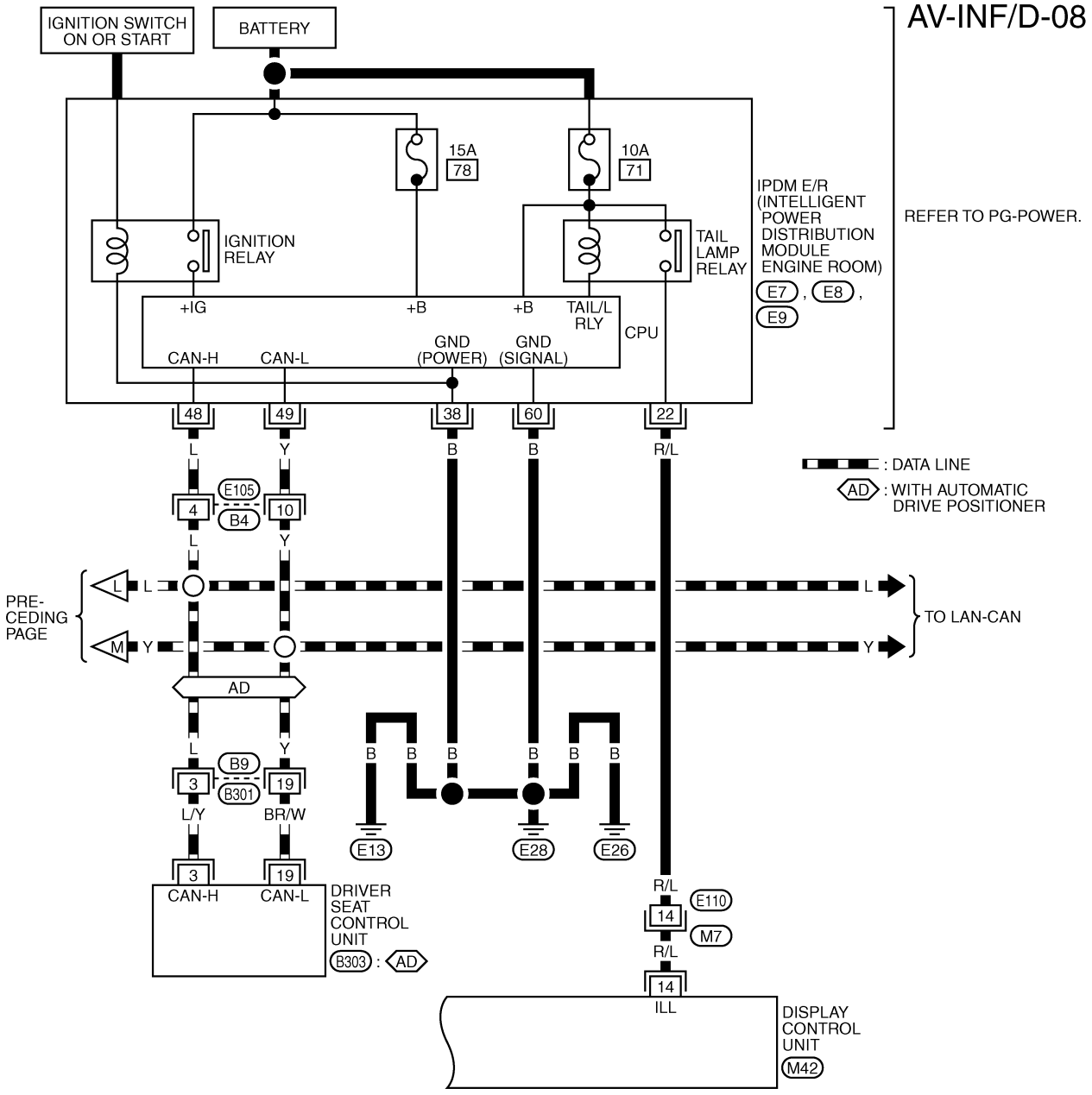


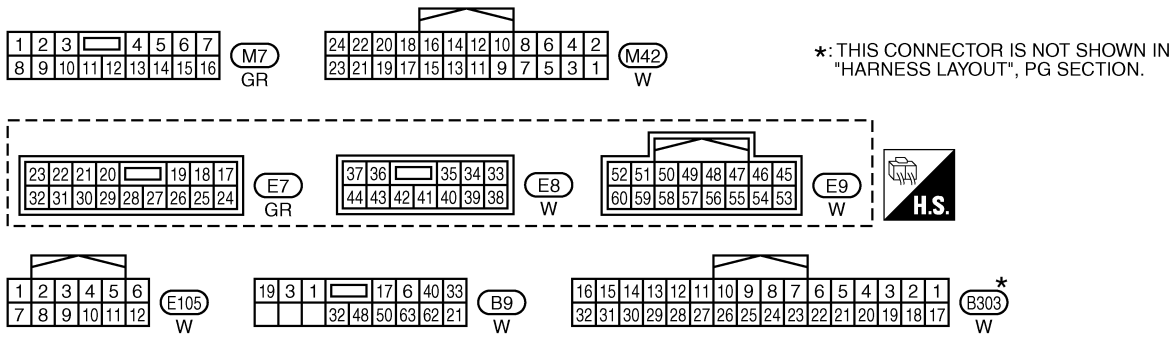
REFER TO THE FOLLOWING.

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

M34 , M35 -ELECTRICAL UNITS

TKWB2658E

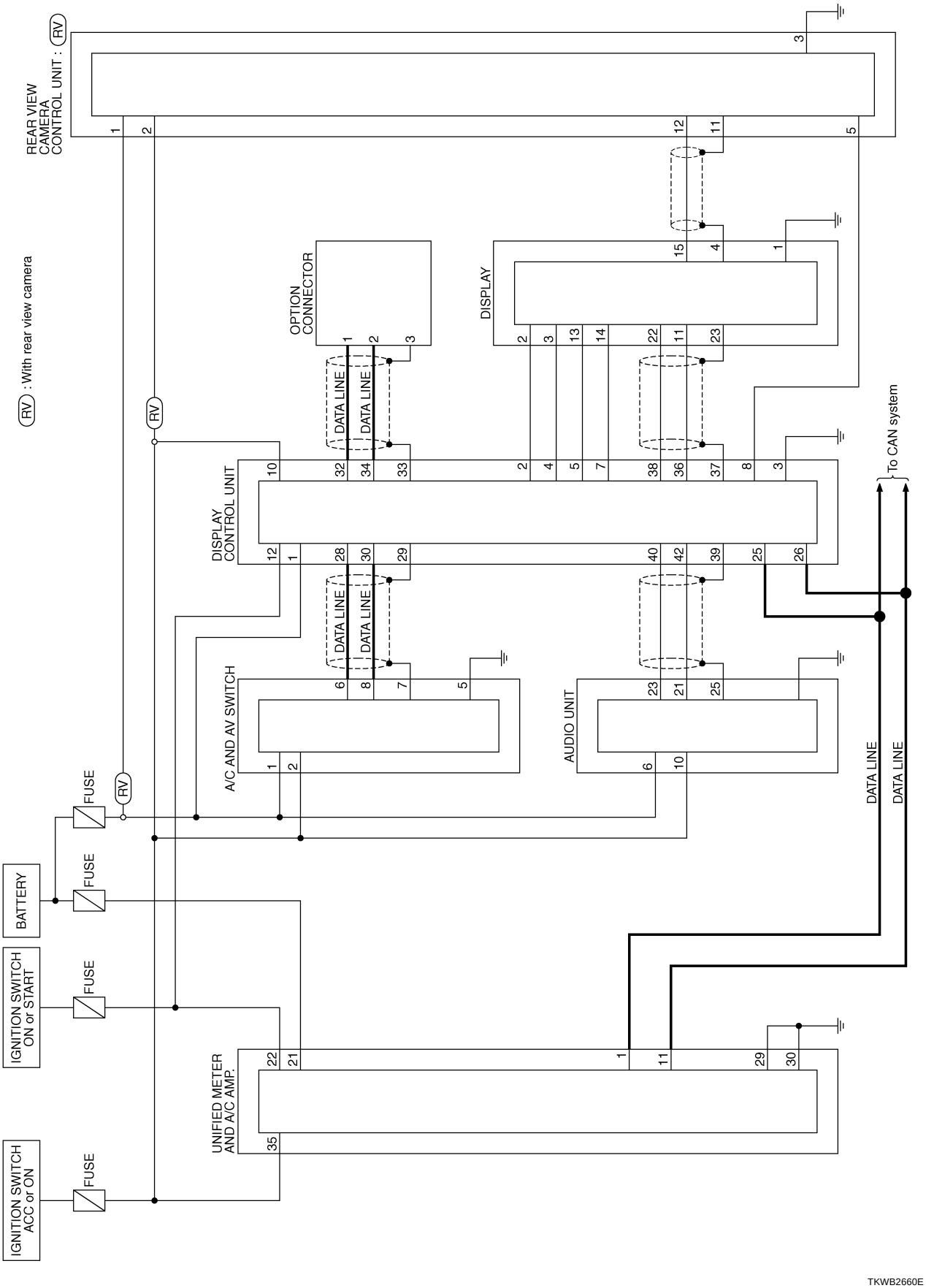

AV-INF/D-08
IGNITION SWITCH ON OR START
BATTERY
15A 78
10A 71
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E7, E8, E9
REFER TO PG-POWER.
IGNITION RELAY
TAIL LAMP RELAY
+IG
+B
+B
TAIL/L RLY
CPU
CAN-H
CAN-L
GND (POWER)
GND (SIGNAL)
48
49
38
60
22
L
Y
B
B
R/L
: DATA LINE
AD : WITH AUTOMATIC DRIVE POSITIONER
E105
4
B4
10
PRE-CEDING PAGE
TO LAN-CAN
AD
B9
3
B301
19
L/Y
BR/W
E13
E28
E26
DRIVER SEAT CONTROL UNIT
B303 : AD
E110
14
M7
ILL
DISPLAY CONTROL UNIT
M42


M7 GR
M42 W
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
E7 GR
E8 W
E9 W
H.S.
E105 W
B9 W
B303 W

TKWB2659E

Schematic — COMM —

NKS002RI



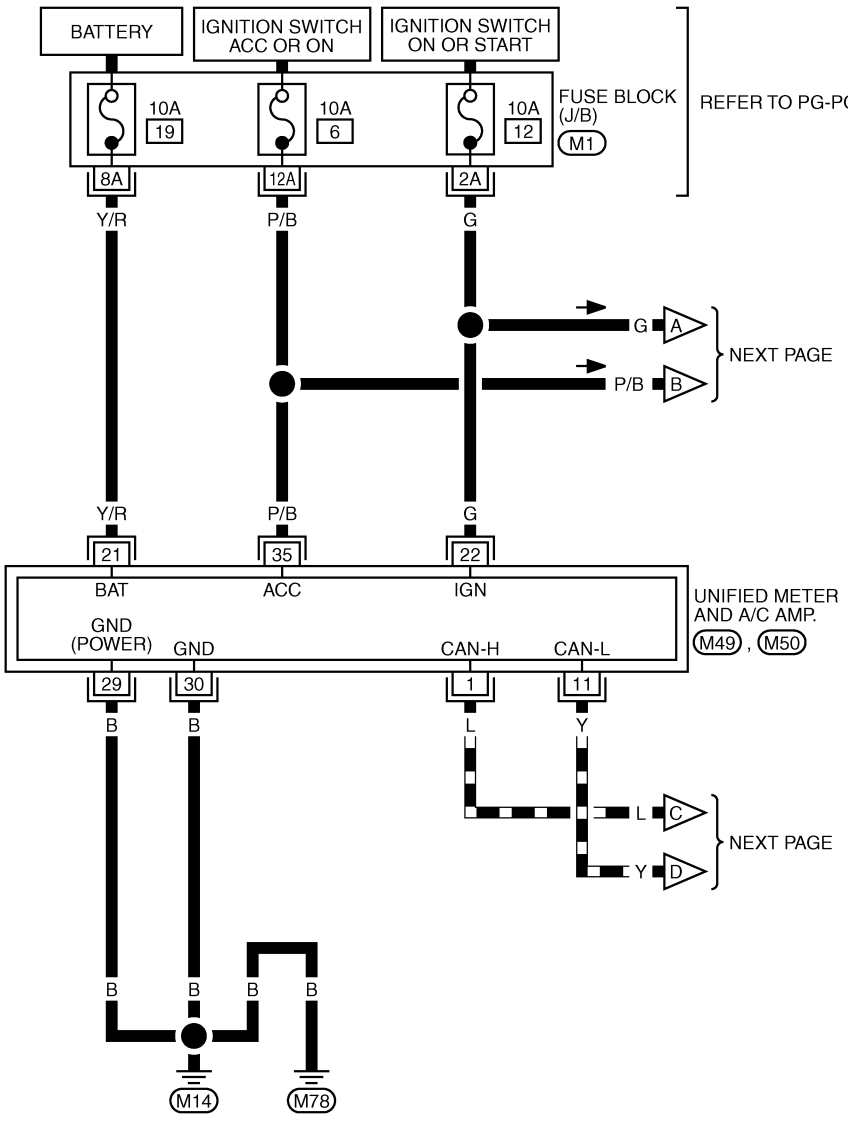
TKWB2660E

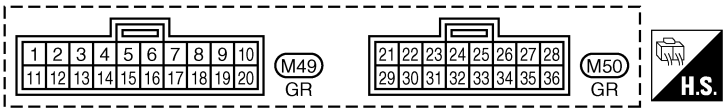
Wiring Diagram — COMM —

NKS0022P

AV-COMM-01

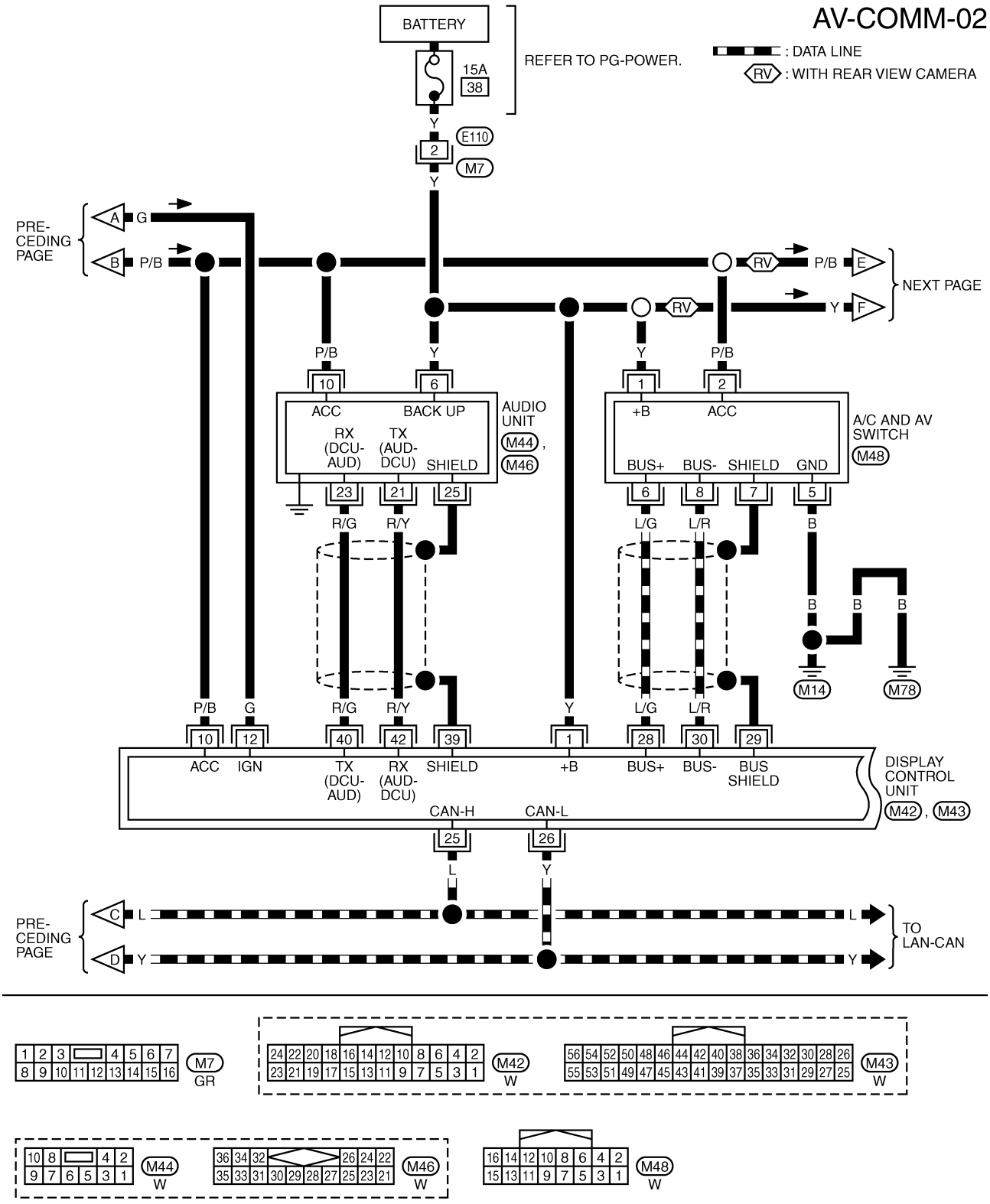
: DATA LINE





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

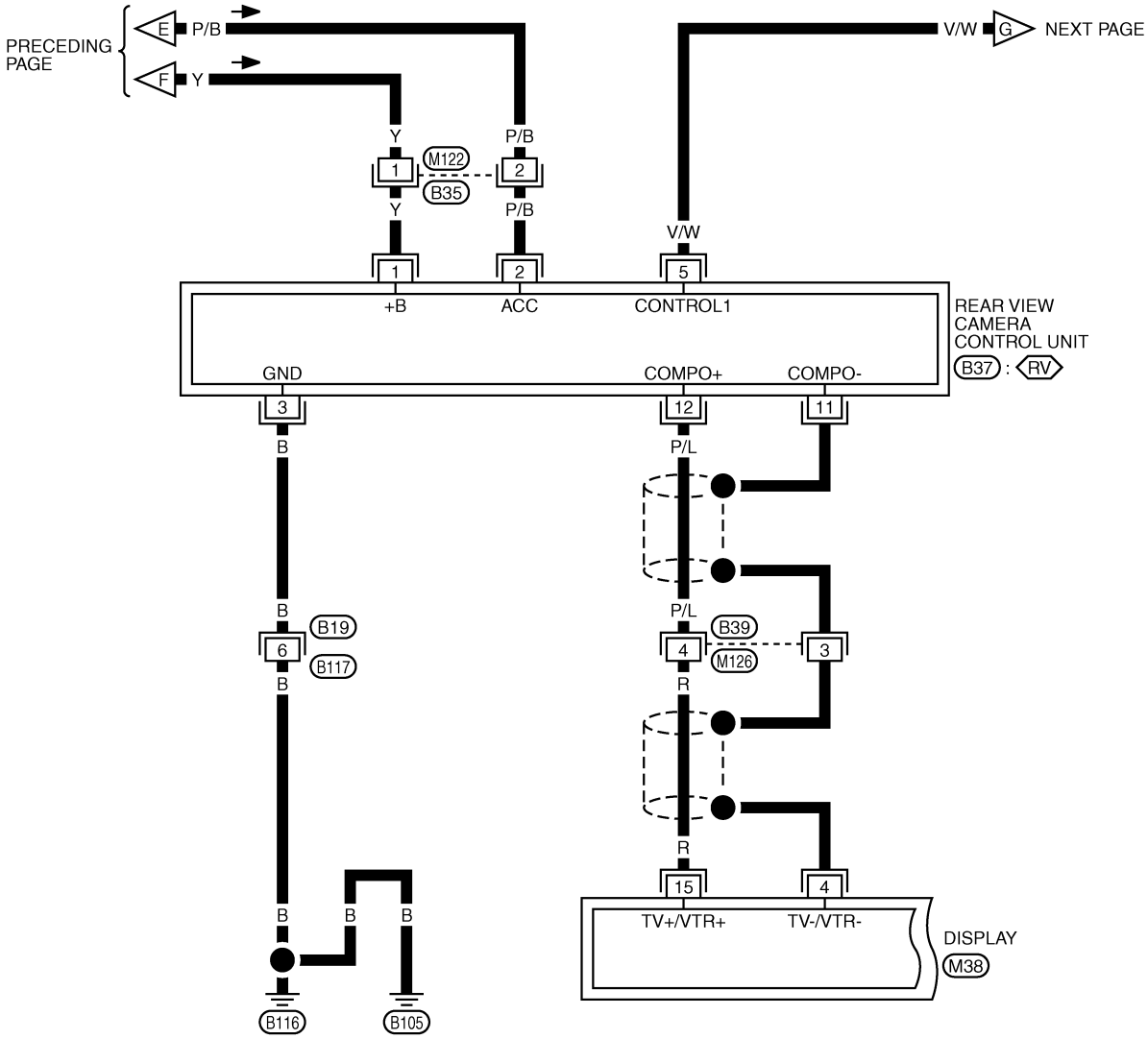
TKWB2661E

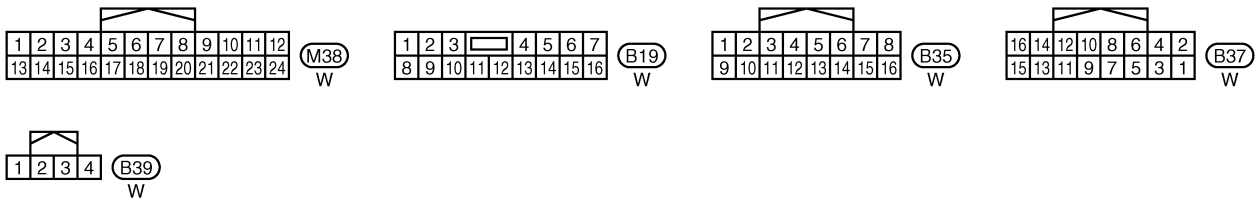

AV-COMM-02
: DATA LINE
RV : WITH REAR VIEW CAMERA
BATTERY
15A
38
REFER TO PG-POWER.
E110
M7
PRE-CEDING PAGE
NEXT PAGE
AUDIO UNIT
M44, M46
ACC
BACK UP
RX (DCU-AUD)
TX (AUD-DCU)
SHIELD
A/C AND AV SWITCH
M48
+B
BUS+
BUS-
GND
DISPLAY CONTROL UNIT
M42, M43
IGN
BUS SHIELD
CAN-H
CAN-L
TO LAN-CAN
M14
M78
M7 GR
M42 W
M43 W
M44 W
M46 W
M48 W

TKWB2662E

AV-COMM-03

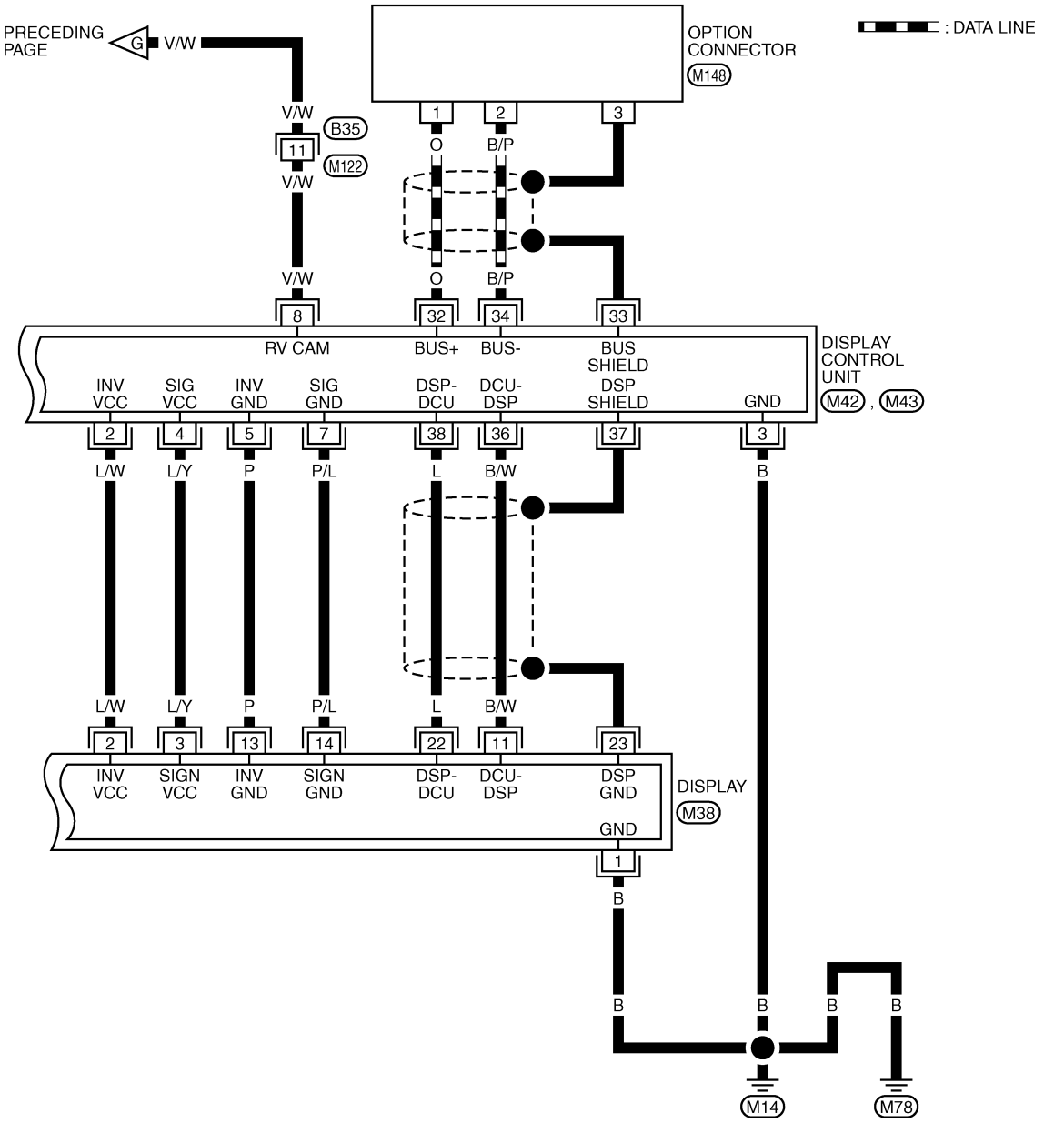
RV : WITH REAR VIEW CAMERA

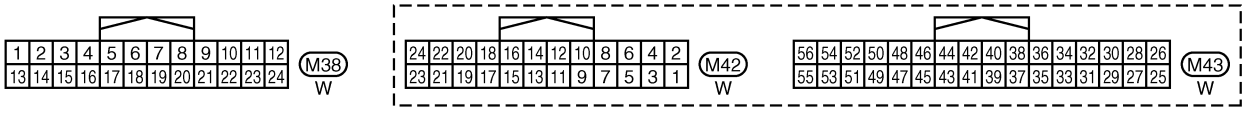


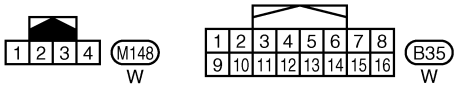


TKWB2663E

AV-COMM-04



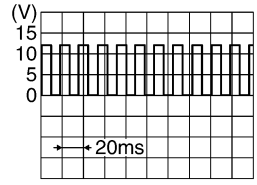
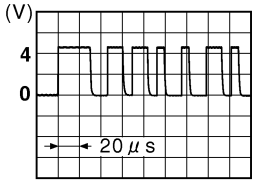
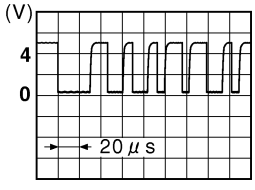


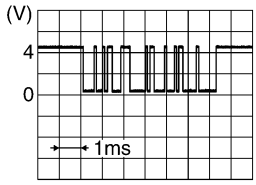
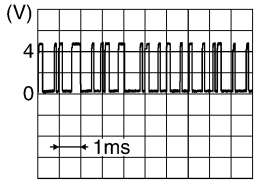
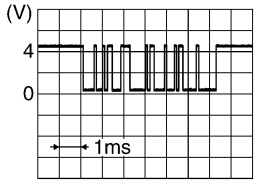
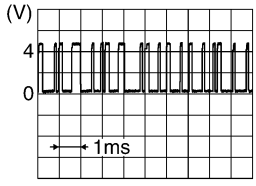
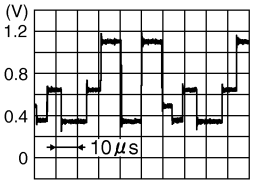


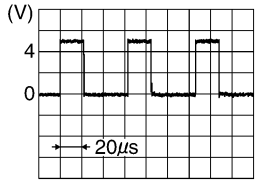
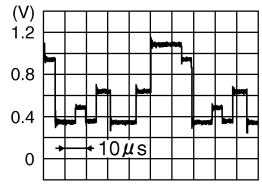
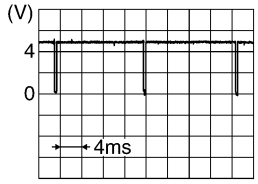
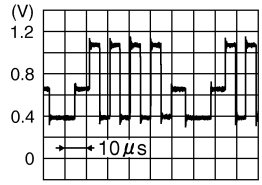
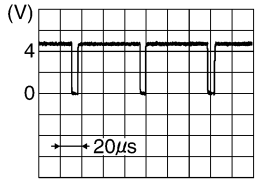
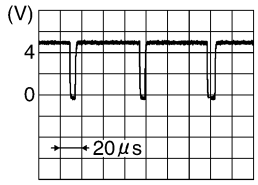
TKWB2664E

Terminals and Reference Value for Display Control Unit

NKS002QJ

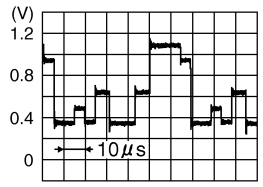
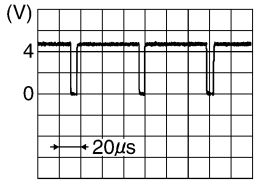
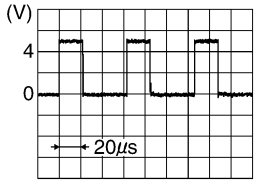
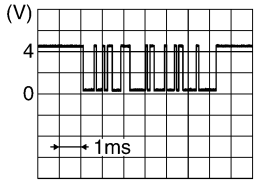
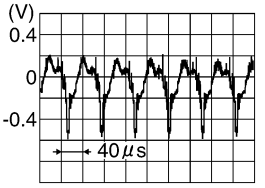
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
2 (L/W)	Ground	Power supply (Inverter)	Output	ON	—	Approx. 9 V
3 (B)	Ground	Ground	—	ON	—	Approx. 0 V
4 (L/Y)	Ground	Power supply (Signal)	Output	ON	—	Approx. 9 V
5 (P)	Ground	Ground (Inverter)	—	ON	—	Approx. 0 V
6 (G/W)	Ground	Reverse signal	Input	ON	Selector lever in R position	Approx. 12 V
					Selector lever except in R position	Approx. 0 V
7 (P/L)	Ground	Ground (Signal)	—	ON	—	Approx. 0 V
8 (V/W)	Ground	Camera-connection recognition signal	Input	ON	Connected to rear view camera control unit connector	Approx. 0 V
					Not connected to rear view camera control unit connector	Approx. 5 V
10 (P/B)	Ground	ACC power supply	Input	ACC	—	Battery voltage
12 (G)	Ground	Ignition signal	Input	ON	—	Battery voltage
14 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch ON	Approx. 12 V
					Lighting switch OFF	Approx. 0 V
16 (V/W)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 25 MPH (40 km/h)	**NOTE:** Maximum voltage may be 5 V due to specifications (connected units).  PKIA1935E
25 (L)	—	CAN-H	—	—	—	—
26 (Y)	—	CAN-L	—	—	—	—
28 (L/G)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
29	—	Shield	—	—	—	—
30 (L/R)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E

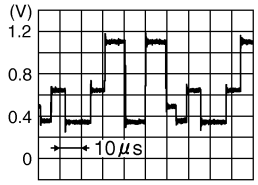
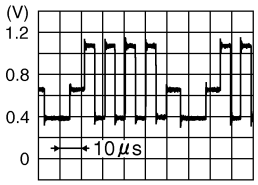
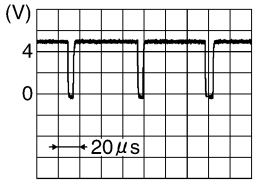
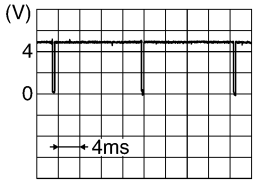
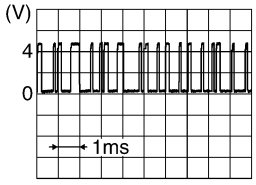
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
32 (O)	—	Communication signal (+)	—	—	—	—
33	—	Shield	—	—	—	—
34 (B/P)	—	Communication signal (–)	—	—	—	—
36 (B/W)	Ground	Communication signal (DCU-DSP)	Output	ON	—	 SKIB3607E
37	—	Shield	—	—	—	—
38 (L)	Ground	Communication signal (DSP-DCU)	Input	ON	—	 SKIB3606E
39	—	Shield	—	—	—	—
40 (R/G)	Ground	Communication signal (DCU-AUD)	Output	ON	Operate audio volume switch	 SKIB3607E
42 (R/Y)	Ground	Communication signal (AUD-DCU)	Input	ON	Operate audio volume switch	 SKIB3606E
47	—	Shield	—	—	—	—
49	—	Shield	—	—	—	—
50 (G/Y)	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	 SKIB7769E

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
51 (B)	Ground	RGB area (YS) signal	Output	ON	Set the selector lever in R position, and then display the rear view image	 SKIB3599E
52 (G/R)	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	 SKIB7770E
53 (W)	Ground	Vertical synchronizing (VP) signal	Input	ON	—	 SKIB3598E
54 (G/O)	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	 SKIB7771E
55 (R)	Ground	Horizontal synchronizing (HP) signal	Input	ON	—	 SKIB3601E
56 (G)	Ground	RGB synchronizing signal	Output	ON	When displaying RGB image	 SKIB3603E

Terminals and Reference Value for Display

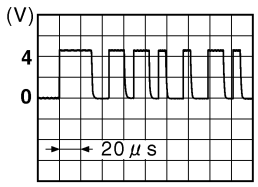
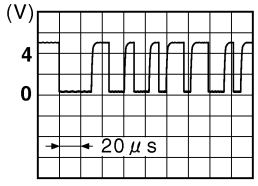
NKS002QK

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (B)	Ground	Ground	—	ON	—	Approx. 0 V
2 (L/W)	Ground	Power supply (Inverter)	Input	ON	—	Approx. 9 V
3 (L/Y)	Ground	Power supply (Signal)	Input	ON	—	Approx. 9 V
4	—	Shield	—	—	—	—
6 (G/R)	Ground	RGB signal (G: green)	Input	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Display Color Spectrum Bar” on Display Diagnosis screen	 SKIB7770E
7	—	Shield	—	—	—	—
8 (R)	Ground	Horizontal synchronizing (HP) signal	Output	ON	—	 SKIB3601E
9 (B)	Ground	RGB area (YS) signal	Input	ON	Set the selector lever in R position, and then display the rear view image	 SKIB3599E
11 (B/W)	Ground	Communication signal (DCU-DSP)	Input	ON	—	 SKIB3607E
13 (P)	Ground	Ground (Inverter)	—	ON	—	Approx. 0 V
14 (P/L)	Ground	Ground (Signal)	—	ON	—	Approx. 0 V
15 (R)	Ground	Rear view image signal	Input	ON	Set the selector lever in R position, and then display the rear view image	 SKIB3608E

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
17 (G/Y)	Ground	RGB signal (R: red)	Input	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Display Color Spectrum Bar” on Display Diagnosis screen	 SKIB7769E
18 (G/O)	Ground	RGB signal (B: blue)	Input	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Display Color Spectrum Bar” on Display Diagnosis screen	 SKIB7771E
19 (G)	Ground	RGB synchronizing signal	Input	ON	When displaying RGB image	 SKIB3603E
20 (W)	Ground	Vertical synchronizing (VP) signal	Output	ON	—	 SKIB3598E
21	—	Shield	—	—	—	—
22 (L)	Ground	Communication signal (DSP-DCU)	Output	ON	—	 SKIB3606E
23	—	Shield	—	—	—	—

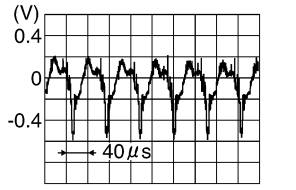
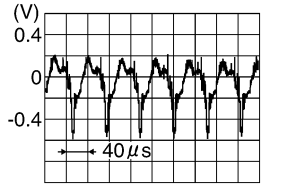
Terminals and Reference Value for A/C and AV Switch

NKS002QL

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
2 (P/B)	Ground	ACC power supply	Input	ACC	—	Battery voltage
3 (R/L)	Ground	Illumination signal	Input	ON	Lighting switch ON	Approx. 12 V
					Lighting switch OFF	Approx. 0 V
4 (R/W)	Ground	Illumination control signal	Input	ON	Illumination control switch is operated by lighting switch in ON position	Changes between approx. 0 and approx. 12 V
5 (B)	Ground	Ground	—	ON	—	Approx. 0 V
6 (L/G)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
7	—	Shield	—	—	—	—
8 (L/R)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
12 (R)	Ground	Remote control A	Input	ON	Press and hold MODE switch	Approx. 0 V
					Press and hold SEEK UP switch	Approx. 1.7 V
					Press and hold VOL UP switch	Approx. 3.3 V
					Except for above	Approx. 5 V
13 (G)	Ground	Remote control B	Input	ON	Press and hold POWER switch	Approx. 0 V
					Press and hold SEEK DOWN switch	Approx. 1.7 V
					Press and hold VOL DOWN switch	Approx. 3.3 V
					Except for above	Approx. 5 V
14 (B/W)	Ground	Remote control ground	—	ON	—	Approx. 0 V
16 (G/W)	Ground	Rear window defogger ON signal	Output	ON	Press and hold rear window defogger button	Approx. 0 V
					Except for above	Approx. 5 V

Terminals and Reference Value for Rear View Camera Control Unit

NKS002QM

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
2 (P/B)	Ground	ACC power supply	Input	ACC	—	Battery voltage
3 (B)	Ground	Ground	—	ON	—	Approx. 0 V
4 (G/W)	Ground	Reverse signal	Input	ON	Selector lever in R position	Approx. 12 V
					Other than selector lever in R position	Approx. 0 V
5 (V/W)	Ground	Camera-connection recognition signal	Output	ON	—	Approx. 0 V
6 (O)	—	Data transmit/receive signal	—	—	—	—
8 (L)	Ground	Camera power supply	Output	ON	Set the selector lever in R position, and then display the rear view image	Approx. 6 V
9	—	Shield	—	—	—	—
10 (R)	Ground	Rear view image signal	Input	ON	Set the selector lever in R position, and then display the rear view image	 SKIB3608E
11	—	Shield	—	—	—	—
12 (P/L)	Ground	Rear view image signal	Output	ON	Set the selector lever in R position, and then display the rear view image	 SKIB3608E

Special Note for Trouble Diagnosis

NKS002QN

Prior to performing trouble diagnosis, make sure there are no corresponding description in the “Example of Symptoms Possible No Malfunction”. Refer to AV-120, "Example of Symptoms Possible No Malfunction" .

On Board Self-Diagnosis Function

NKS002QO

DESCRIPTION

- Trouble diagnosis function of this 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 cannot be performed by the system), confirmation of preset value, and an error history.

DIAGNOSIS ITEM

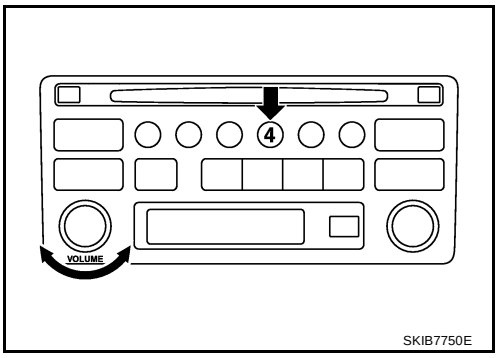
Mode		Description
Self Diagnosis (DCU)		● Display control unit diagnosis ● Analyzes connection between the display control unit and each unit, and operation of each unit.
Confirmation/ Adjustment	Display Diagnosis	Color tone and shading of the display control unit-generated image can be checked by the display of a color bar and a gray scale.
	Vehicle Signals	Diagnosis of signals that are input to display control unit can be performed for Vehicle Speed, IGN, Reverse and Light.
	Auto Climate Control	Refer to ATC-47, "Self-diagnosis Function" .
CAN DIAG SUPPOPT MONITOR		The transmitting/receiving of CAN communication can be monitored.

Self-Diagnosis Mode (DCU)

NKS002QP

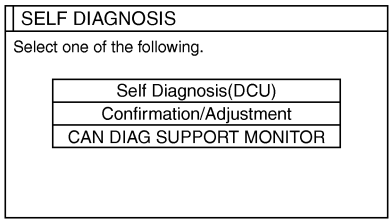
OPERATION PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “4” 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 “BACK” button.



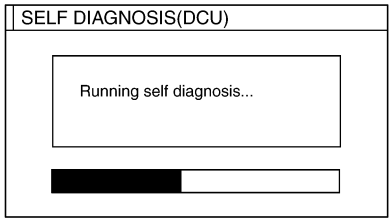
SKIB7750E

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



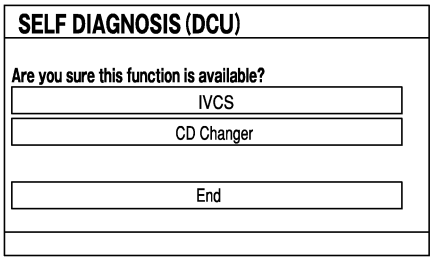
SKIB7871E

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



SKIA4208E

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.



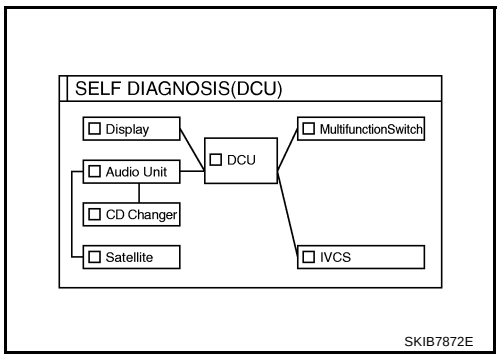
SKIB7751E

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

   Green : No malfunctioning.

   Gray : Cannot be judged by self-diagnosis results.

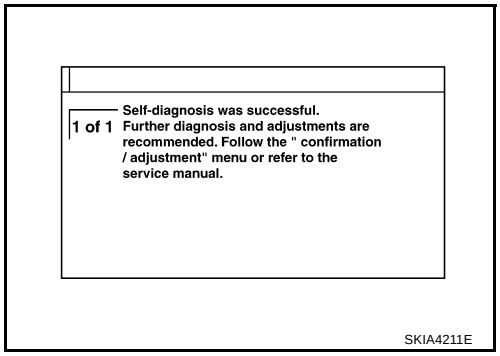
   Red : Unit is malfunctioning.



NOTE:

- Satellite = Satellite radio tuner
- DCU = Display control unit
- Multifunction switch = A/C and AV switch
- 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.
	DCU	Display	Audio Unit	Satellite	
Red	×				1
Gray		×			2
			×	×	3
				×	4

- When A/C and AV switch has a malfunction, the self-diagnosis cannot be started. Refer to AV-106, "Unable to Operate System with A/C and AV Switch" .
- When display has a malfunction, the self-diagnosis cannnot be started. Refer to AV-108, "All Images Are Not Displayed" .

Self-Diagnosis Codes

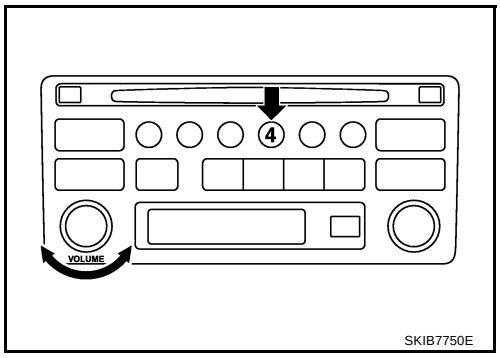
Diagnosis No.	Possible cause	Action to take
1	Display control unit malfunction is detected.	Replace display control unit.
2	Malfunction is detected on communication signal between display control unit and display.	1. Check communication circuit between display control unit and display. 2. Check communication signal between display control unit and display. 3. If the results from the above checkup show no malfunction, replace either display control unit or display, and then start self-diagnosis. 4. If self-diagnosis results still show any malfunction, replace the other unit.
3	● Audio unit power supply circuit malfunction is detected. ● Malfunction is detected on communication signal between display control unit and audio unit.	1. Check audio unit power supply circuit. 2. Check communication circuit between display control unit and audio unit. 3. Check communication signal between display control unit and audio unit. 4. If the results from the above checkup show no malfunction, replace either display control unit or audio unit, and then start self-diagnosis. 5. If self-diagnosis results still show any malfunction, replace the other unit.
4	● Satellite radio tuner power supply and ground circuit malfunction is detected. ● Malfunction is detected on communication signal between audio unit and satellite radio tuner.	1. Check satellite radio tuner power supply and ground circuit. 2. Check communication circuit between audio unit and satellite radio tuner. 3. Check communication signal between audio unit and satellite radio tuner. 4. If the results from the above checkup show no malfunction, replace either audio unit or satellite radio tuner, and then start self-diagnosis. 5. If self-diagnosis results still show any malfunction, replace the other unit.

Confirmation/Adjustment Mode

NKS002QR

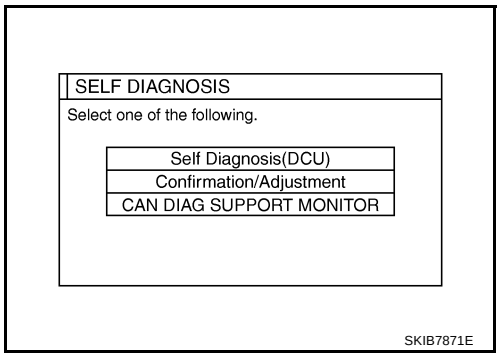
OPERATION PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “4” 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 “BACK” button.



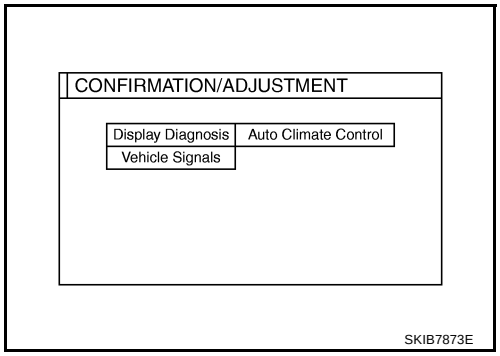
SKIB7750E

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



SKIB7871E

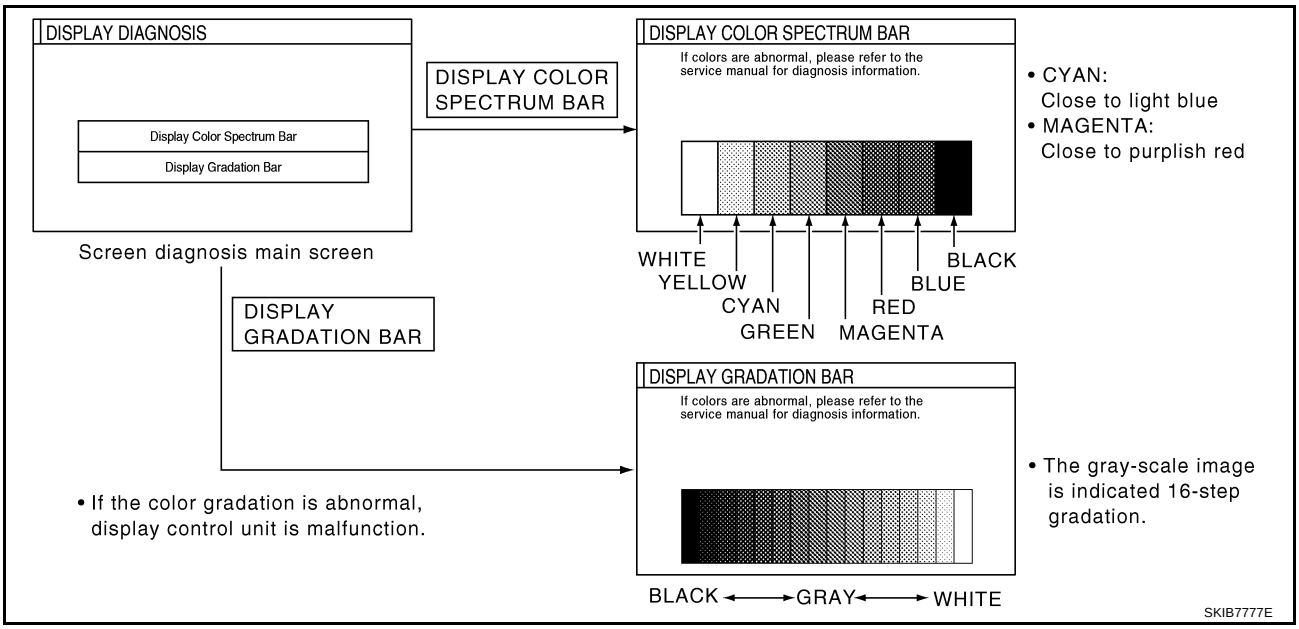
6. Each diagnosis is shown by selecting each screen switch on Confirmation/Adjustment screen.



SKIB7873E

DISPLAY DIAGNOSIS

Color tone and shading of the display control unit-generated image can be checked by the display of a color bar and a gray scale.



- 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

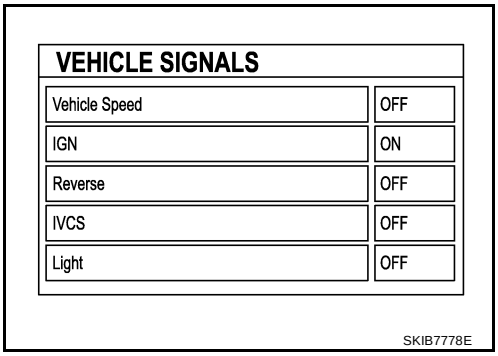
VEHICLE SIGNALS

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

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

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

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



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	
IGN	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	
IVCS	OFF	—	This vehicle does not use it.
Light	ON	Lighting switch ON	—
	OFF	Lighting switch OFF	

AUTO CLIMATE CONTROL

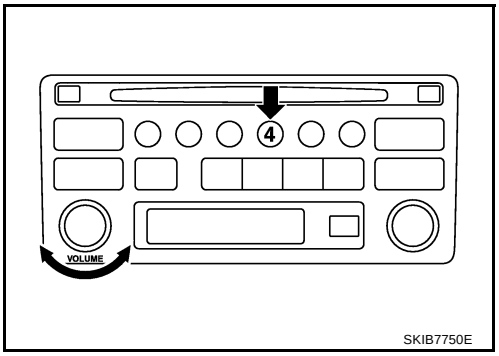
Refer to ATC-47, "Self-diagnosis Function" .

CAN DIAG SUPPORT MONITOR

NKS002QS

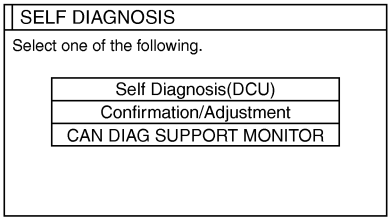
OPERATION PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “4” 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 “BACK” button.



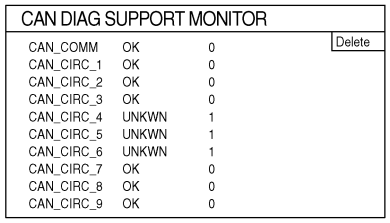
SKIB7750E

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



SKIB7871E

6. The transmitting/receiving of CAN communication can be monitored.



SKIA4288E

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

NOTE:
Counter shows the status of CAN communication.

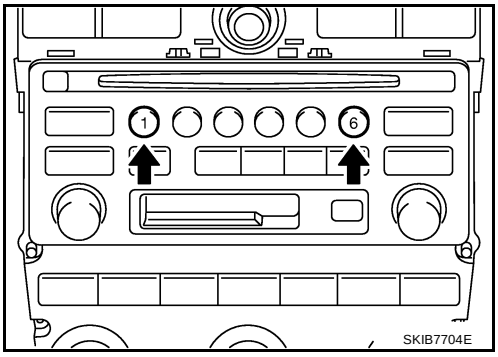
A/C and AV Switch Self-Diagnosis Function

NKS002QT

Performing self-diagnosis makes it possible to check operation of A/C and AV switch indicator (LED) and other switch.

STARTING THE SELF-DIAGNOSIS MODE

1. Turn ignition switch from OFF to ACC.
2. Within 10 seconds press and hold the switches “1” and “6” simultaneously for 3 seconds.



DIAGNOSIS FUNCTION

The following are checked:

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

NOTE:
Impossible to check rear window defogger switch operation (No beep sound even under normal status).

EXITING THE SELF-DIAGNOSIS MODE

- Turn ignition switch OFF.

CONSULT-II Functions (REAR VIEW CAMERA)

NKS002QU

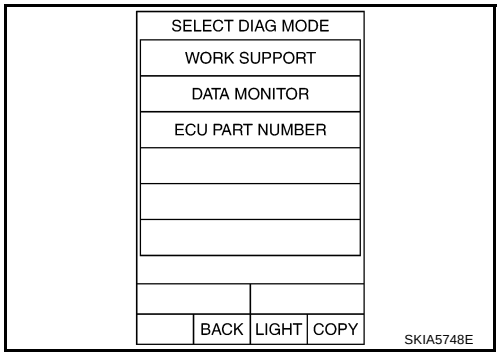
CONSULT-II can display each diagnostic item using the diagnostic test modes shown following.

Diagnosis part	Check Item, Diagnosis Mode	Description
REAR VIEW CAMERA	WORK SUPPORT	It can adjust the vehicle width and distance guiding lines that overlap camera image.
	DATA MONITOR	Displays input data for rear view camera control unit in real-time.
	ECU PART NUMBER	Displays rear view camera control unit part number.

CONSULT-II BASIC OPERATION PROCEDURE

Refer to GI-37, "CONSULT-II Start Procedure" .

1. Touch any of “WORK SUPPORT”, “DATA MONITOR”, and “ECU PART NUMBER” on “SELECT DIAG MODE” screen.



WORK SUPPORT

Operation Procedure

1. Touch “WORK SUPPORT” on “SELECT DIAG MODE” screen.
2. Touch “SELECT GUIDELINE PATTERN” or “ADJ GUIDELINE POSITION” on “SELECT WORK ITEM” screen.

Item	Description
SELECT GUIDELINE PATTERN	The opening of the vehicle width and distance guiding lines can be selected from 2 patterns.
ADJ GUIDELINE POSITION	Make fine adjustment to the vehicle width and distance guiding lines upper/lower/left/right

For details, refer to AV-103, "Vehicle Width and Distance Guiding Line Correction" .

DATA MONITOR

Operation Procedure

1. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
2. Touch either “ALL SIGNALS” or “SELECTION FROM MENU” on “SELECT MONITOR ITEM” screen.

Item	Description
ALL SIGNALS	Monitors all the signal.
SELECTION FROM MENU	Selects and monitors individual items.

3. When “SELECTION FROM MENU” is selected, touch individual items to be monitored. When “ALL SIGNALS” is selected, all the items will be monitored.
4. Touch “START”.
5. Touch “RECORD” while monitoring, then the status of the monitored item can be recorded. To stop recording, touch “STOP”.

Display Item List

Item	Description
R POSI SIG [ON/OFF]	“ON (Selector lever R position)/OFF (other than R position)” status as judged from the reverse signal is displayed.

Vehicle Width and Distance Guiding Line Correction

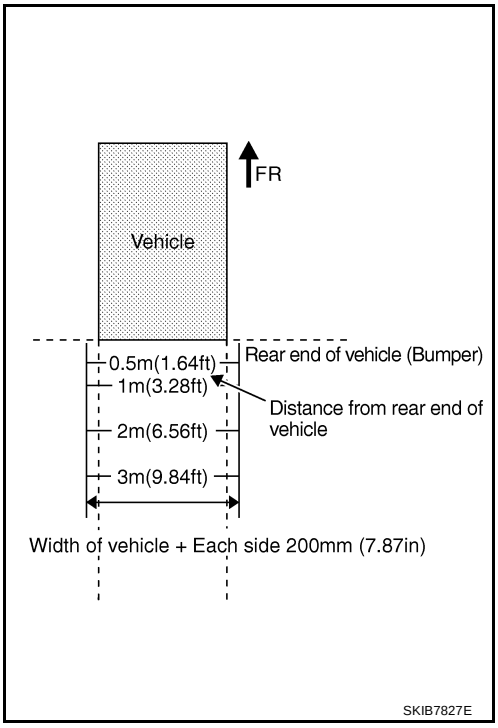
NKS002QV

DESCRIPTION

CONSULT-II is used to modify the guiding lines of the width of vehicle and the distance from rear end of vehicle on the rear view monitor when these lines are derated from the actual width and/or distance, because of rear view camera replacement, etc.

VEHICLE WIDTH AND DISTANCE GUIDING LINE CORRECTION PROCEDURE

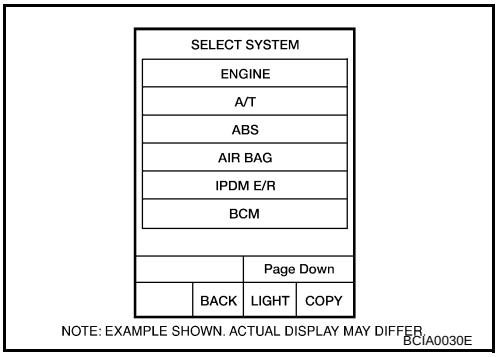
1. Create a correction line to modify the guiding lines inside monitors. Draw lines on the rearward area of the vehicle passing through the following points: 200 mm (7.87 in) from both sides of the vehicle, and 0.5 m (1.64 ft), 1 m (3.28 ft), 2 m (6.56 ft), and 3 m (9.84 ft) from the rear end of the bumper.



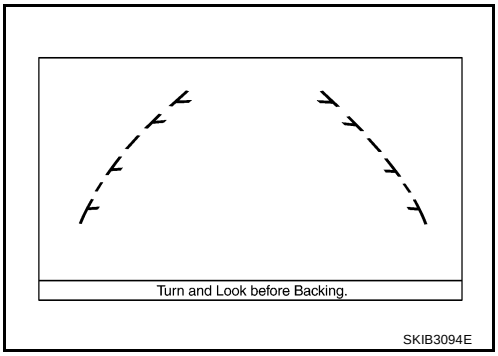
2. Connect CONSULT-II and CONSULT-II CONVERTER, and then touch “REARVIEW CAMERA” on “SELECT SYSTEM” screen.

WARNING:

Correct the guiding line with the engine stopped for safety.

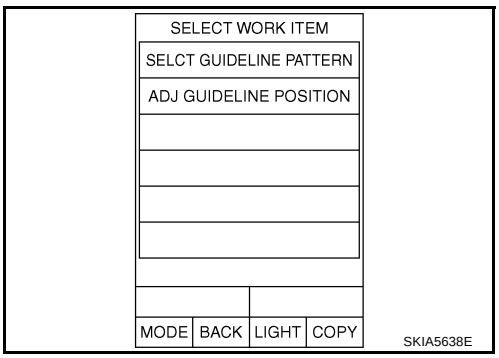


3. Shift selector lever to R position.



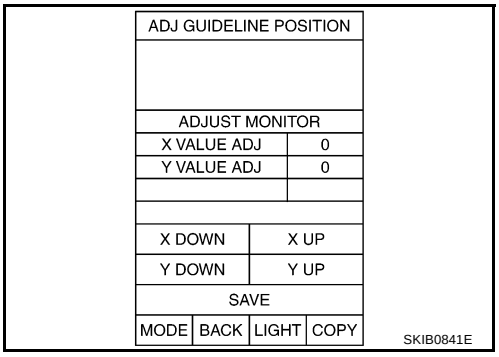
4. Touch “ADJ GUIDELINE POSITION” on “SELECT WORK ITEM” screen.

   NOTE:
   When starting “ADJ GUIDELINE POSITION” mode, vehicle width guiding lines may move horizontally. It is normal.



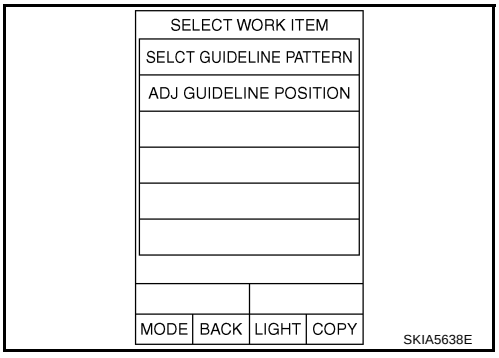
5. Touch “X UP”, “X DOWN”, “Y UP”, and “Y DOWN” so as to align with a correction line created, and then adjust the guiding lines.

Adjustment direction	ADJUST MONITOR	
LEFT/RIGHT	X VALUE ADJ	–8 - 8
UP/DOWN	Y VALUE ADJ	–8 - 8



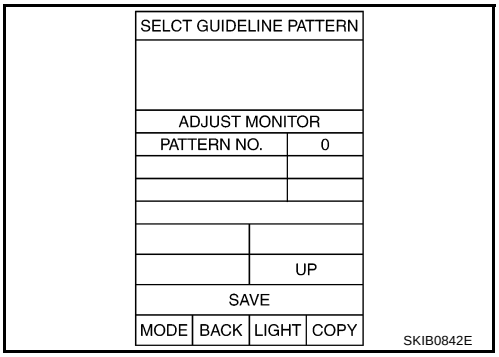
6. If the guiding lines align with the correction lines, touch “SAVE” so as to fix the lines, and then end the correction by touching “END”. GO TO 7 if the guiding lines do not align with the correction lines.

7. Touch “SELECT GUIDELINE PATTERN” on SELECT WORK ITEM screen.



8. Change the pattern of the guiding lines by touching “UP” or “DOWN”. [Select from among 2 patterns (“PATTERN NO. 0 or 1”) of the guiding lines.]
9. Fix the pattern of the guiding lines by touching “SAVE”.
10. End the correction by touching “END”.

    NOTE:
    If the setting value is changed on “SELECT GUIDELINE PATTERN” and “ADJ GUIDELINE POSITION”, the change is not reflected at the next starting if “SAVE” is not touched.



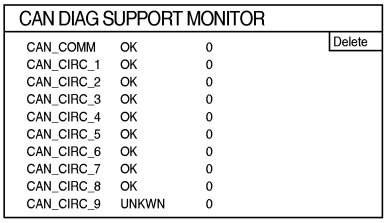
CAN Communication Check

NKS002QW

1. CHECK MONITOR DESCRIPTION

1. Start self-diagnosis of DCU. Refer to AV-95, "Self-Diagnosis Mode (DCU)" .
2. Select “CAN DIAG SUPPORT MONITOR”. Refer to AV-100, "CAN DIAG SUPPORT MONITOR" .

(Example)



PKIB6080E

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

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

CAN DIAG SUPPORT MONITOR Check Sheet

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

>> After filling in CAN DIAG SUPPORT MONITOR Check Sheet, GO TO LAN-3, "Precautions When Using CONSULT-II" .

Unable to Operate System with A/C and AV Switch

NKS002QX

Symptom: Unable to operate A/C system and audio system with A/C and AV switch. (Unable to start self-diagnosis.)

1. CHECK CONDITION

1. Turn ignition switch ON.
2. Check if an image is displayed on the screen.

Is an image displayed on the screen?

YES >> GO TO 2.
NO >> Repair malfunctioning part. Refer to AV-108, "All Images Are Not Displayed" .

2. SELF-DIAGNOSIS OF A/C AND AV SWITCH

Start self-diagnosis of A/C and AV switch, and check the self-diagnosis result. Refer to AV-101, "A/C and AV Switch Self-Diagnosis Function" .

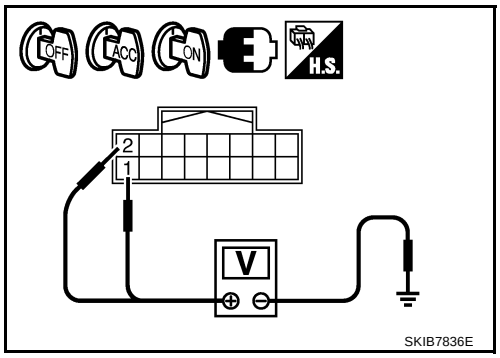
OK or NG

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

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

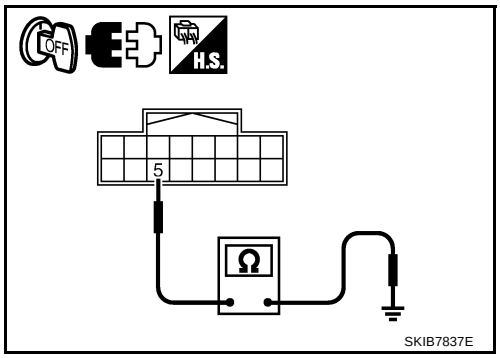
1. Check voltage between A/C and AV switch harness connector terminals and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal				
M48	1	Ground	Battery voltage	Battery voltage	Battery voltage
	2		0 V	Battery voltage	Battery voltage



2. Turn ignition switch OFF.
3. Disconnect A/C and AV switch connector.
4. Check continuity between A/C and AV switch harness connector M48 terminal 5 and ground.

5 – Ground : Continuity should exist.



OK or NG

OK >> Replace A/C and AV switch.
NG >> Repair harness or connector.

4. CHECK HARNESS

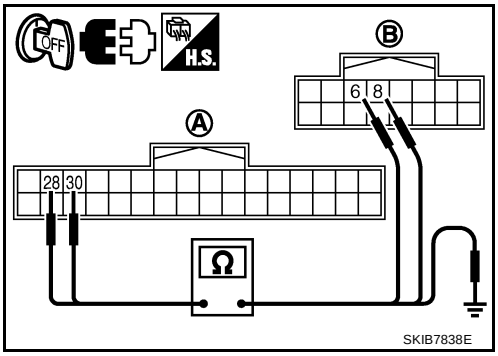
1. Turn ignition switch OFF.
2. Disconnect display control unit and A/C and AV switch connectors.
3. Check continuity between display control unit harness connector (A) M43 terminals 28, 30 and A/C and AV switch harness connector (B) M48 terminals 6, 8.

   28 – 6 : Continuity should exist.

   30 – 8 : Continuity should exist.

4. Check continuity between display control unit harness connector (A) M43 terminals 28, 30 and ground.

   28, 30 – Ground : Continuity should not exist.



OK or NG

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

5. CHECK A/C AND AV SWITCH AND DISPLAY CONTROL UNIT

1. Replace A/C and AV switch or display control unit.
2. Make sure that A/C system and audio system can be operated by A/C and AV switch.

OK or NG

OK >> INSPECTION END
NG >> Replace the other unit.

All Images Are Not Displayed

NKS002QY

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

1. CHECK CONDITION

When operating audio and air conditioner, make sure that they operate correctly.

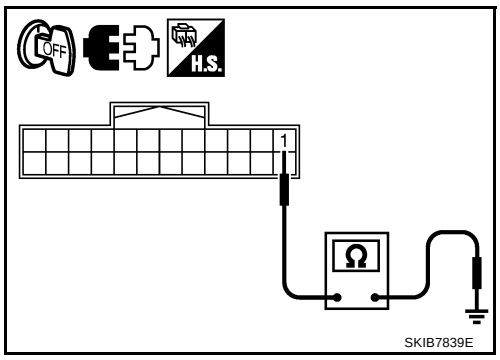
Do audio and air conditioner operate normally?

YES >> GO TO 2.
NO >> GO TO 5.

2. CHECK DISPLAY GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display connector.
3. Check continuity between display harness connector M38 terminal 1 and ground.

1 – Ground : Continuity should exist.



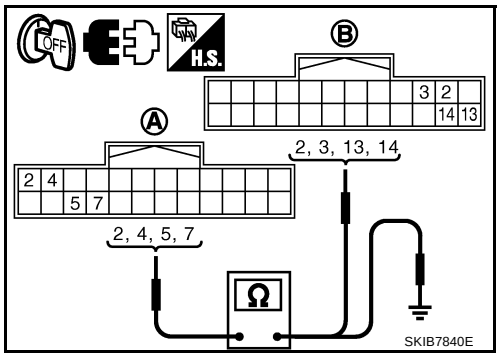
OK or NG

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

3. CHECK HARNESS

1. Disconnect display control unit connector.
2. Check continuity between display control unit harness connector (A) M42 terminals 2, 4, 5, 7 and display harness connector (B) M38 terminals 2, 3, 13, 14.

2 – 2 : Continuity should exist.
4 – 3 : Continuity should exist.
5 – 13 : Continuity should exist.
7 – 14 : Continuity should exist.



3. Check continuity between display control unit harness connector (A) M42 terminals 2, 4 and ground.

2, 4 – Ground : Continuity should not exist.

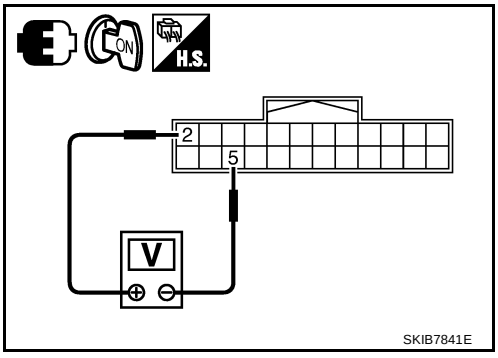
OK or NG

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

4. CHECK DISPLAY POWER SUPPLY AND GROUND CIRCUIT (INVERTER AND SIGNAL)

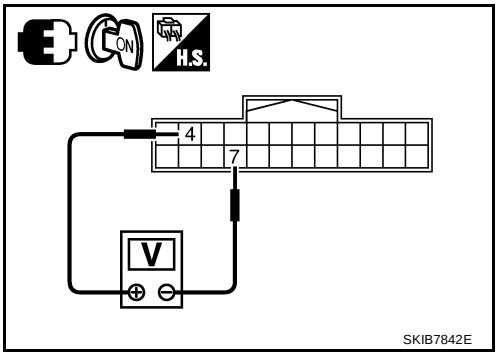
1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. Check voltage between display control unit harness connector M42 terminals 2 and 5.

2 – 5 : Approx. 9 V



4. Check voltage between display control unit harness connector M42 terminals 4 and 7.

4 – 7 : Approx. 9 V



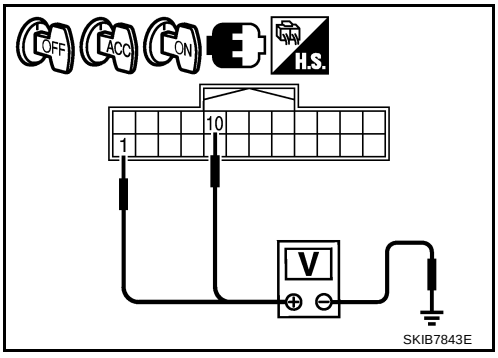
OK or NG

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

5. CHECK DISPLAY CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

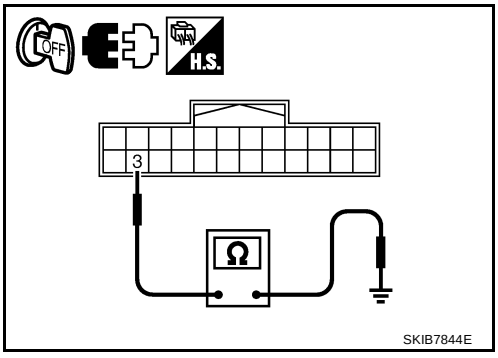
1. Check voltage between display control unit harness connector terminals and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal				
M42	1	Ground	Battery voltage	Battery voltage	Battery voltage
	10		0 V	Battery voltage	Battery voltage



2. Turn ignition switch OFF.
3. Disconnect display control unit connector.
4. Check continuity between display control unit harness connector M42 terminal 3 and ground.

3 – Ground : Continuity should exist.



OK or NG

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

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

NKS002QZ

Symptom: Rear view image is not displayed when selector lever is set in R position. (RGB image is displayed.)

1. CHECK CONDITION

1. Turn ignition switch ON.
2. Check if the screen holds current display or shows nothing but warning message when shifting selector lever to R position.

Does the screen change?

YES >> GO TO 2.
NO >> GO TO 12.

2. CONSULT-II FUNCTIONS

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. Refer to AV-102, "CONSULT-II BASIC OPERATION PROCEDURE" .
2. Check if “REARVIEW CAMERA” is shown on the SELECT SYSTEM screen.

Is “REARVIEW CAMERA” shown?

YES >> GO TO 3.
NO >> Check rear view camera control unit power supply and ground circuit, and repair malfunctioning part.

3. CONSULT-II FUNCTIONS

Check if reverse signals input to the rear view camera control unit are normal with DATA MONITOR. Refer to AV-102, "DATA MONITOR" .

OK or NG

OK >> GO TO 4.
NG >> Check rear view camera control unit reverse signal circuit, and repair malfunctioning part.

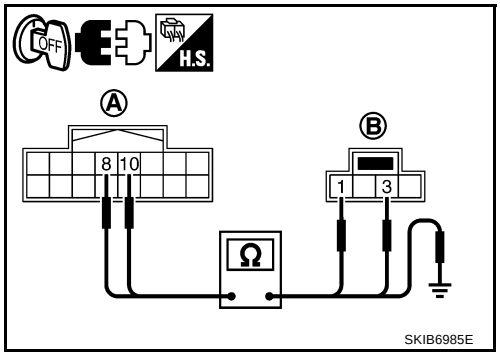
4. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect rear view camera control unit and rear view camera connectors.
3. Check continuity between rear view camera control unit harness connector (A) B37 terminals 8, 10 and rear view camera harness connector (B) D109 terminals 1, 3.

   8 – 1 : Continuity should exist.
   10 – 3 : Continuity should exist.

4. Check continuity between rear view camera control unit harness connector (A) B37 terminals 8, 10 and ground.

   8, 10 – Ground : Continuity should not exist.



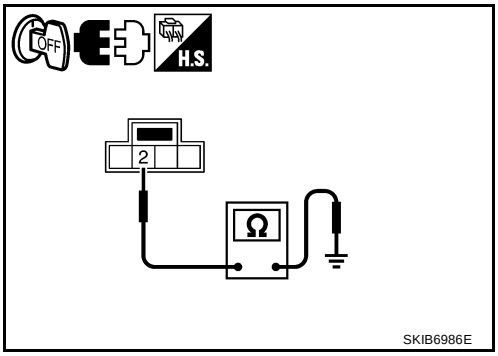
OK or NG

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

5. CHECK REAR VIEW CAMERA GROUND CIRCUIT

Check continuity between rear view camera harness connector D109 terminal 2 and ground.

2 – Ground : Continuity should exist.



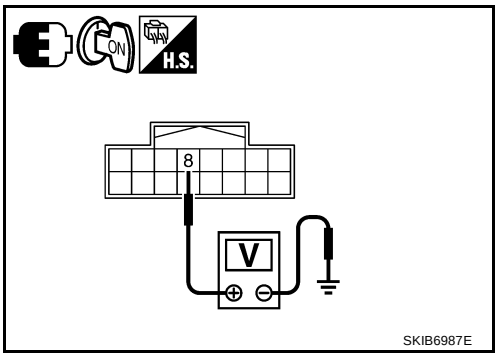
OK or NG

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

6. CHECK REAR VIEW CAMERA POWER SUPPLY CIRCUIT

1. Connect rear view camera control unit and rear view camera connectors.
2. Turn ignition switch ON.
3. When displaying rear view image, check voltage between rear view camera control unit harness connector B37 terminal 8 and ground.

8 – Ground : Approx. 6 V



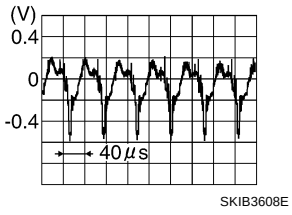
OK or NG

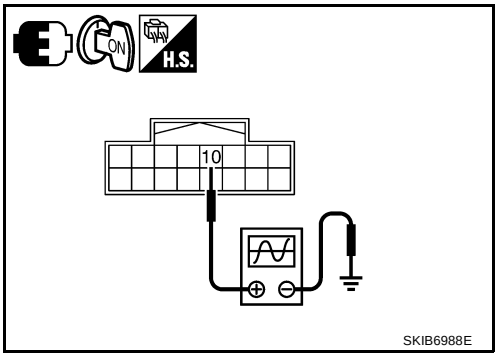
OK >> GO TO 7.
NG >> Replace rear view camera control unit.

7. CHECK REAR VIEW IMAGE SIGNAL

When displaying rear view image, check voltage waveform between rear view camera control unit harness connector B37 terminal 10 and ground with CONSULT-II or oscilloscope.

10 – Ground:





OK or NG

OK >> GO TO 8.
NG >> Replace rear view camera.

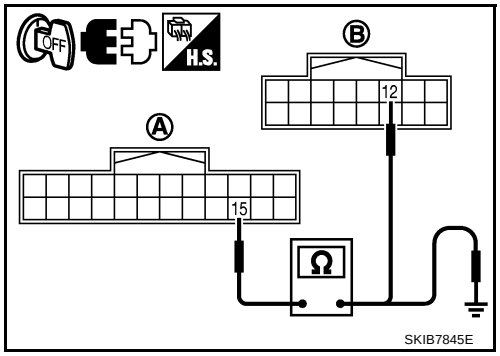
8. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display and rear view camera control unit connectors.
3. Check continuity between display harness connector (A) M38 terminal 15 and rear view camera control unit harness connector (B) B37 terminal 12.

15 – 12 : Continuity should exist.

4. Check continuity between display harness connector (A) M38 terminal 15 and ground.

15 – Ground : Continuity should not exist.



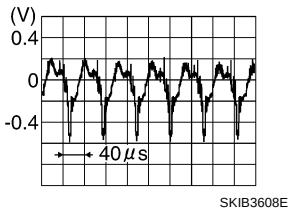
OK or NG

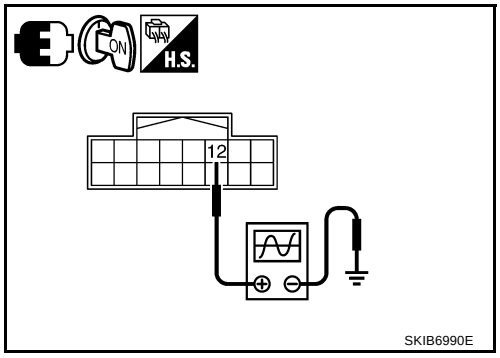
OK >> GO TO 9.
NG >> Repair harness or connector.

9. CHECK REAR VIEW IMAGE SIGNAL

1. Connect display and rear view camera control unit connectors.
2. Turn ignition switch ON.
3. When displaying rear view image, check voltage waveform between rear view camera control unit harness connector B37 terminal 12 and ground with CONSULT-II or oscilloscope.

12 – Ground:





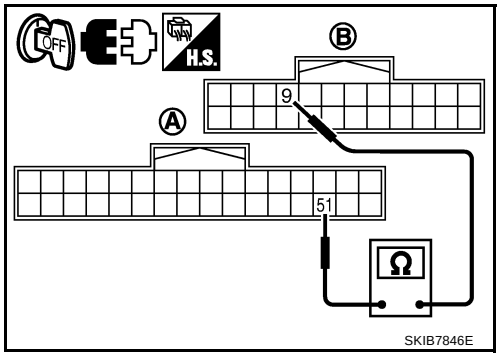
OK or NG

OK >> GO TO 10.
NG >> Replace rear view camera control unit.

10. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit and display connectors.
3. Check continuity between display control unit harness connector (A) M43 terminal 51 and display harness connector (B) M38 terminal 9.

51 – 9 : Continuity should not exist.

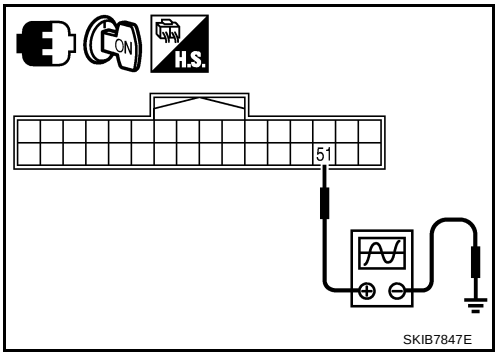


OK or NG

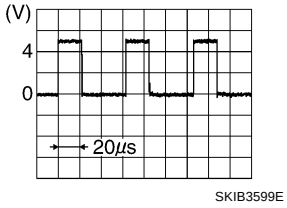
OK >> GO TO 11.
NG >> Repair harness or connector.

11. CHECK RGB AREA (YS) SIGNAL

1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. When displaying rear view image, check voltage waveform between display control unit harness connector M43 terminal 51 and ground with CONSULT-ll or oscilloscope.



51 – Ground:



OK or NG

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

12. SELF-DIAGNOSIS OF DCU

Start self-diagnosis of DCU, and check the self-diagnosis result. Refer to AV-95, "Self-Diagnosis Mode (DCU)".

OK or NG

OK >> GO TO 13.
NG >> Repair malfunctioning part.

13. CHECK DISPLAY CONTROL UNIT REVERSE SIGNAL

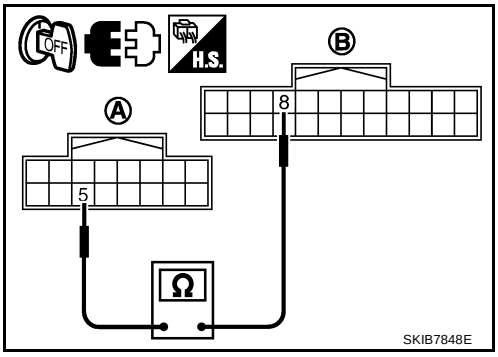
Select “Vehicle Signals” of Confirmation/Adjustment mode, and check the reverse signal inputting to display control unit. Refer to AV-99, "VEHICLE SIGNALS" .

OK or NG

OK >> GO TO 14.
NG >> Check display control unit reverse signal circuit, and repair malfunctioning part.

14. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect rear view camera control unit and display control unit connectors.
3. Check continuity between rear view camera control unit harness connector (A) B37 terminal 5 and display control unit harness connector (B) M42 terminal 8.



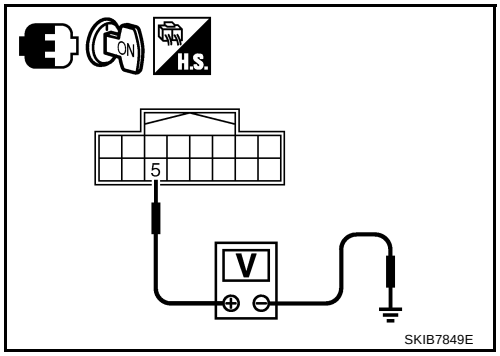
5 – 8 : Continuity should exist.

OK or NG

OK >> GO TO 15.
NG >> Repair harness or connector.

15. CHECK CAMERA-CONNECTION RECOGNITION SIGNAL

1. Connect rear view camera control unit and display control unit connectors.
2. Turn ignition switch ON.
3. Check voltage between rear view camera control unit harness connector B37 terminal 5 and ground.



5 – Ground : Approx. 0 V

OK or NG

OK >> Replace display control unit.
NG >> Replace rear view camera control unit.

When Displaying Rear View Image, Warning Message Rolls or Is Not Displayed

NKS002R0

Symptom: When displaying rear view image, warning message rolls or is not displayed. At this time, with pressing the “SETTING” button, SETTING menu rolls or is not displayed.

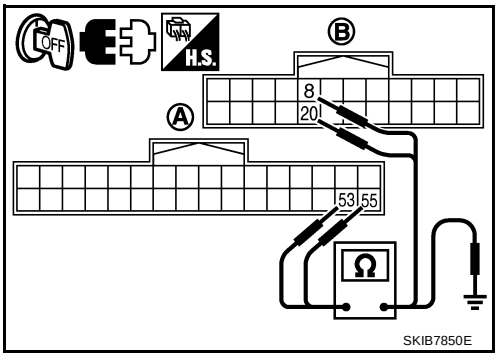
1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit and display connectors.
3. Check continuity between display control unit harness connector (A) M43 terminals 53, 55 and display harness connector (B) M38 terminals 20, 8.

53 – 20 : Continuity should exist.
55 – 8 : Continuity should exist.

4. Check continuity between display control unit harness connector (A) M43 terminals 53, 55 and ground.

53, 55 – Ground : Continuity should not exist.



SKIB7850E

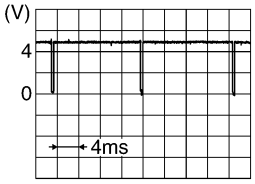
OK or NG

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

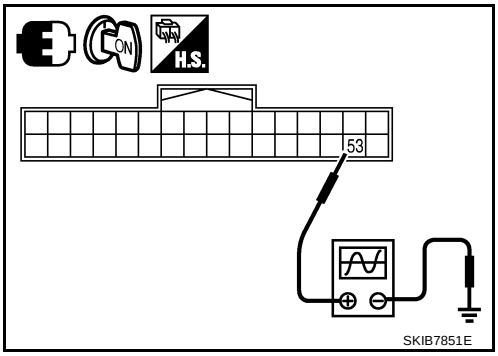
2. CHECK VERTICAL SYNCHRONIZING (VP) SIGNAL

1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. Check voltage waveform between display control unit harness connector M43 terminal 53 and ground with CONSULT-II or oscilloscope.

53 – Ground:



SKIB3598E



SKIB7851E

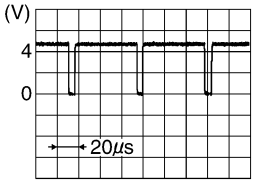
OK or NG

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

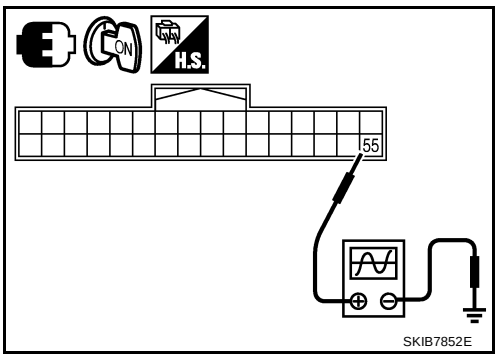
3. CHECK HORIZONTAL SYNCHRONIZING (HP) SIGNAL

Check voltage waveform between display control unit harness connector M43 terminal 55 and ground with CONSULT-II or oscilloscope.

55 – Ground:



SKIB3601E



SKIB7852E

OK or NG

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

Tint Is Strange for The RGB Image

NKS002R2

Symptom: Tint of all RGB images is strange.

1. CHECK HARNESS

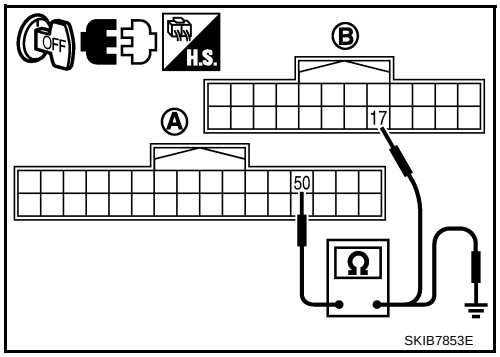
1. Turn ignition switch OFF.
2. Disconnect display control unit and display connectors.
3. Check the malfunctioning circuit according to the symptoms.

- **Light blue (Cyan) tinged screen**
  Check continuity between display control unit harness connector (A) M43 terminal 50 and display harness connector (B) M38 terminal 17.

  50 – 17 : Continuity should exist.

  Check continuity between display control unit harness connector (A) M43 terminal 50 and ground.

  50 – Ground : Continuity should not exist.

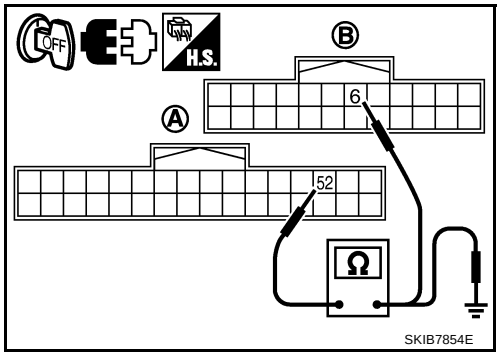


- **Purple (Magenta) tinged screen**
  Check continuity between display control unit harness connector (A) M43 terminal 52 and display harness connector (B) M38 terminal 6.

  52 – 6 : Continuity should exist.

  Check continuity between display control unit harness connector (A) M43 terminal 52 and ground.

  52 – Ground : Continuity should not exist.

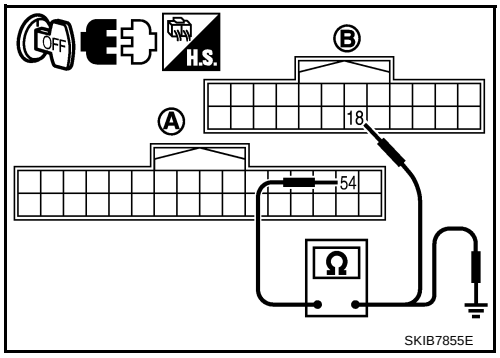


- **Yellow tinged screen**
  Check continuity between display control unit harness connector (A) M43 terminal 54 and display harness connector (B) M38 terminal 18.

  54 – 18 : Continuity should exist.

  Check continuity between display control unit harness connector (A) M43 terminal 54 and ground.

  54 – Ground : Continuity should not exist.



OK or NG

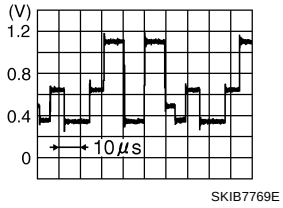
OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK RGB SIGNAL

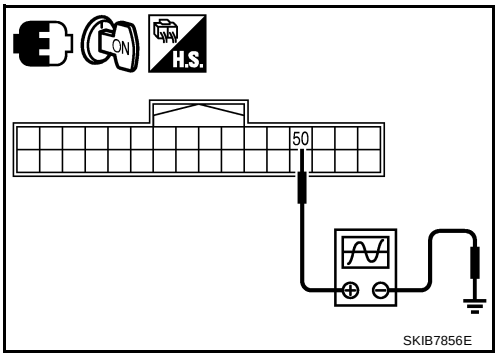
1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. Start Confirmation/Adjustment mode. Refer to AV-98, "Confirmation/Adjustment Mode" .
4. Display color bar by selecting “Display Color Spectrum Bar” on Display Diagnosis screen. Refer to AV-99, "DISPLAY DIAGNOSIS" .
5. Check the malfunctioning circuit according to the symptoms.

- **Light blue (Cyan) tinged screen**
  Check voltage waveform between display control unit harness connector M43 terminal 50 and ground with CONSULT-II or oscilloscope.

50 – Ground:



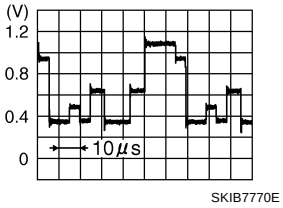
SKIB7769E



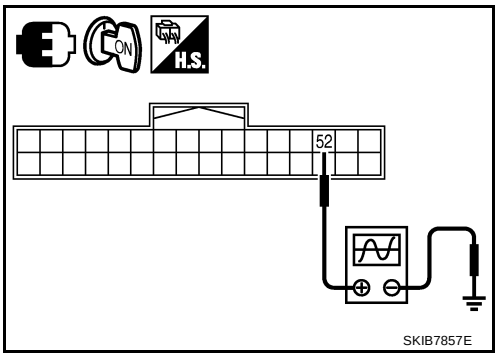
SKIB7856E

- **Purple (Magenta) tinged screen**
  Check voltage waveform between display control unit harness connector M43 terminal 52 and ground with CONSULT-II or oscilloscope.

52 – Ground:



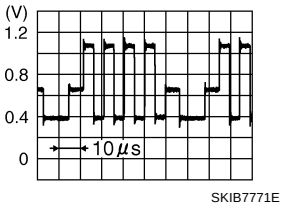
SKIB7770E



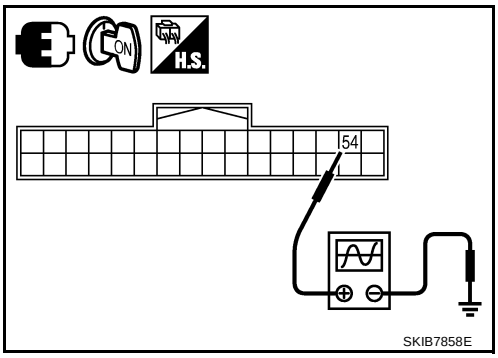
SKIB7857E

- **Yellow tinged screen**
  Check voltage waveform between display control unit harness connector M43 terminal 54 and ground with CONSULT-II or oscilloscope.

54 – Ground:



SKIB7771E



SKIB7858E

OK or NG

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

RGB Image Is Rolling

NKS002R4

Symptom: RGB image is rolling.

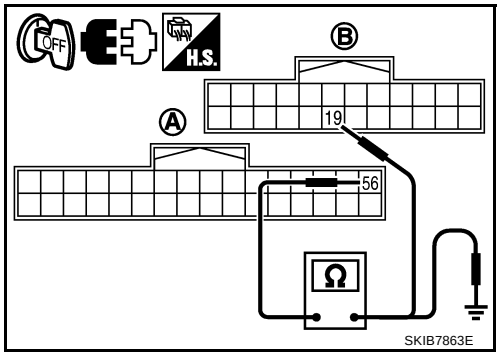
1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit and display connectors.
3. Check continuity between display control unit harness connector (A) M43 terminal 56 and display harness connector (B) M38 terminal 19.

56 – 19 : Continuity should exist.

4. Check continuity between display control unit harness connector (A) M43 terminal 56 and ground.

56 – Ground : Continuity should not exist.



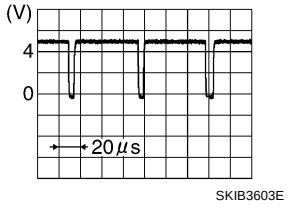
OK or NG

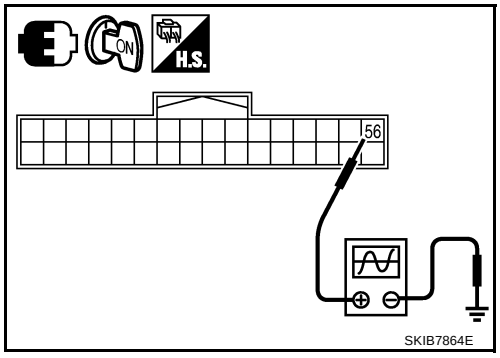
OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK RGB SYNCHRONIZING SIGNAL

1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. When displaying RGB image, check voltage waveform between display control unit harness connector M43 terminal 56 and ground with CONSULT-II or oscilloscope.

56 – Ground:





OK or NG

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

Values for All Items in The TRIP Screen Do Not Change

NKS002R5

Symptom: Values for items, “Elapsed Time”, “Driving Distance” and “Average Speed” in the TRIP screen do not change. FUEL ECONOMY screen is not displayed when pressing “FUEL ECON” button.

1. CHECK DISPLAY CONTROL UNIT IGNITION SIGNAL

Select “Vehicle Signals” in Confirmation/Adjustment mode, and check the ignition signal inputting to display control unit. Refer to AV-99, "VEHICLE SIGNALS" .

OK or NG

OK >> Replace display control unit.
NG >> Check display control unit ignition signal circuit, and repair malfunctioning part.

Values for Items, “Driving Distance” and “Average Speed” Do Not Change

NKS002R6

Symptom: Values for Items, "Driving Distance" and "Average Speed" do not change. (The Value for "Elapsed Time" Changes.)

1. CHECK DISPLAY CONTROL UNIT VEHICLE SPEED SIGNAL

Select “Vehicle Signals” in Confirmation/Adjustment mode, and check the vehicle speed signal inputting to display control unit. Refer to AV-99, "VEHICLE SIGNALS" .

OK or NG

OK >> Replace display control unit.
NG >> Check display control unit vehicle speed signal circuit, and repair malfunctioning part.

Values for All Items in The FUEL ECONOMY Screen Do Not Change

NKS002R7

Symptom: Values for items, “Average Fuel Economy” and “Distance to Empty” in the FUEL ECONOMY screen do not change.

1. CHECK CONDITION

Check if values for all items in the TRIP screen change properly.

OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning part. Refer to AV-119, "Values for All Items in The TRIP Screen Do Not Change" or AV-119, "Values for Items, “Driving Distance” and “Average Speed” Do Not Change" .

2. CHECK CAN COMMUNICATION

Check CAN communication. Refer to AV-105, "CAN Communication Check" .

OK or NG

OK >> Replace display control unit.
NG >> After filling out CAN DIAG SUPPORT MONITOR check sheet, GO TO LAN-3, "Precautions When Using CONSULT-II" .

Example of Symptoms Possible No Malfunction

NKS002R9

For system operation information, refer to Owner's Manual.

DISPLAY

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The display is turned off.	Press and hold the ☀/☽ button to turn on the display.
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, then operate the this system.
The screen does not switch to the night screen even after turning on the headlights.	The daytime screen was set the last time the headlights were turned on.	Set the screen to the night screen mode using ☀/☽ button when turning on the headlights.

REAR VIEW MONITOR

Symptom	Possible cause	Possible solution
Rear view monitor image is not shown.	Selector lever is not set to R position.	Shift the selector lever to R position.
Rear view monitor image is fuzzy.	The front glass of the camera lens is dirty.	Wipe it with a soft wet cloth lightly.
	Adherence of raindrops or snow.	Wipe it with a soft cloth lightly.
	The lens is illuminated directly by sunlight or light from headlight of cars behind.	The fuzzy image recovers when the light is covered.

Removal and Installation of A/C and AV Switch

NKS002RC

Refer to AV-61, "Removal and Installation for A/C and AV Switch" .

Removal and Installation of Audio Steering Switch

NKS002RD

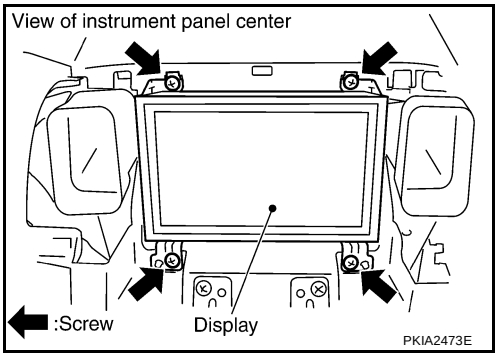
Refer to AV-62, "Removal and Installation of Audio Steering Switch" .

Removal and Installation of Display

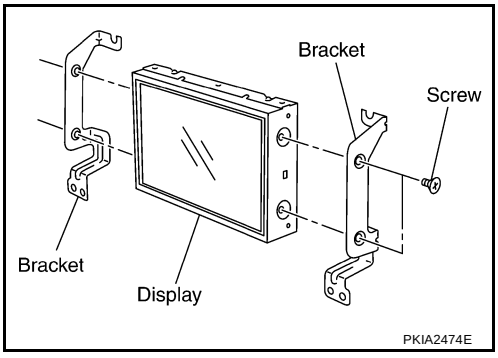
NKS002RE

REMOVAL

1. Remove center ventilator. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove screws (4), and remove display.



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



INSTALLATION

Installation is the reverse order of removal.

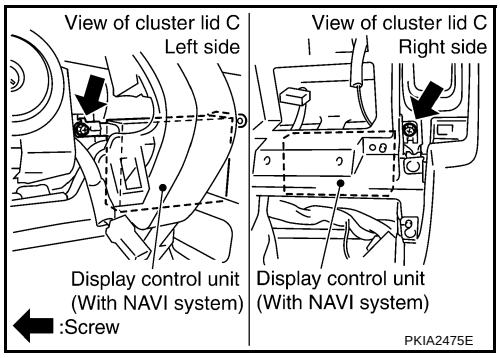
Removal and Installation of Display Control Unit

NKS002RF

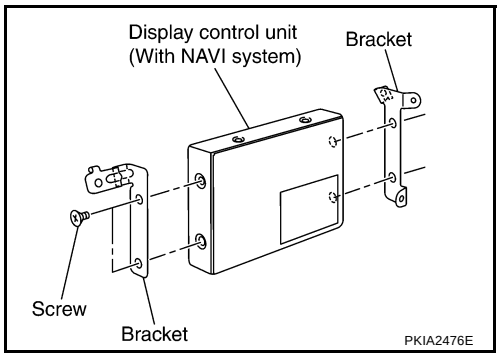
REMOVAL

1. Remove cluster lid C. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove steering lock escutcheon. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
3. Remove screws (2), and remove display control unit.

   CAUTION:
   See the figure attached, when install or remove screws for display control unit.



4. Remove screws (4), and remove brackets.



INSTALLATION

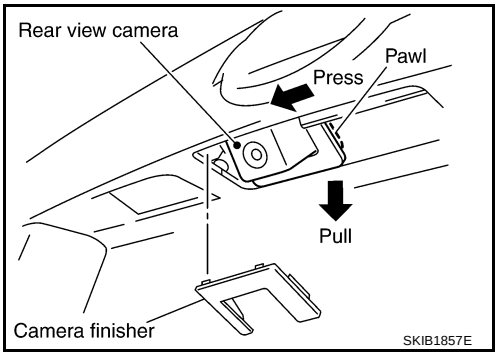
Installation is the reverse order of removal.

Removal and Installation of Rear View Camera

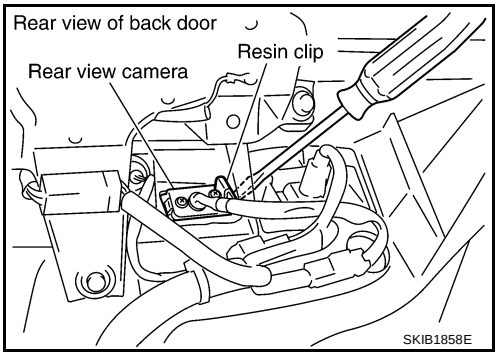
NKS002RG

REMOVAL

1. Remove back door trim. Refer to EI-39, "BACK DOOR TRIM" .
2. Unhook two pawls to remove the camera finisher from the back door. Pull the right pawl out with pressing the rear view camera to the left.



3. Press the resin clip from the inside of the back door with a minus screwdriver etc. Remove the rear view camera from the back door.
4. Disconnect connector.



INSTALLATION

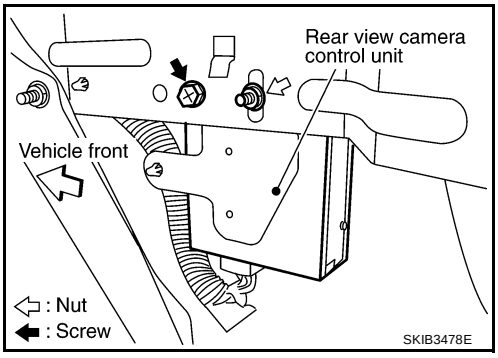
Installation is the reverse order of removal.
Adjust the vehicle width and distance guiding line referring to AV-103, "Vehicle Width and Distance Guiding Line Correction" if there is a difference after installing rear view camera.

Removal and Installation of Rear View Camera Control Unit

NKS002RH

REMOVAL

1. Remove luggage floor spacer (right). Refer to EI-37, "LUGGAGE FLOOR TRIM" .
2. Remove screw and nut.
3. Disconnect connector, and remove rear view camera control unit.



INSTALLATION

Installation is the reverse order of removal.

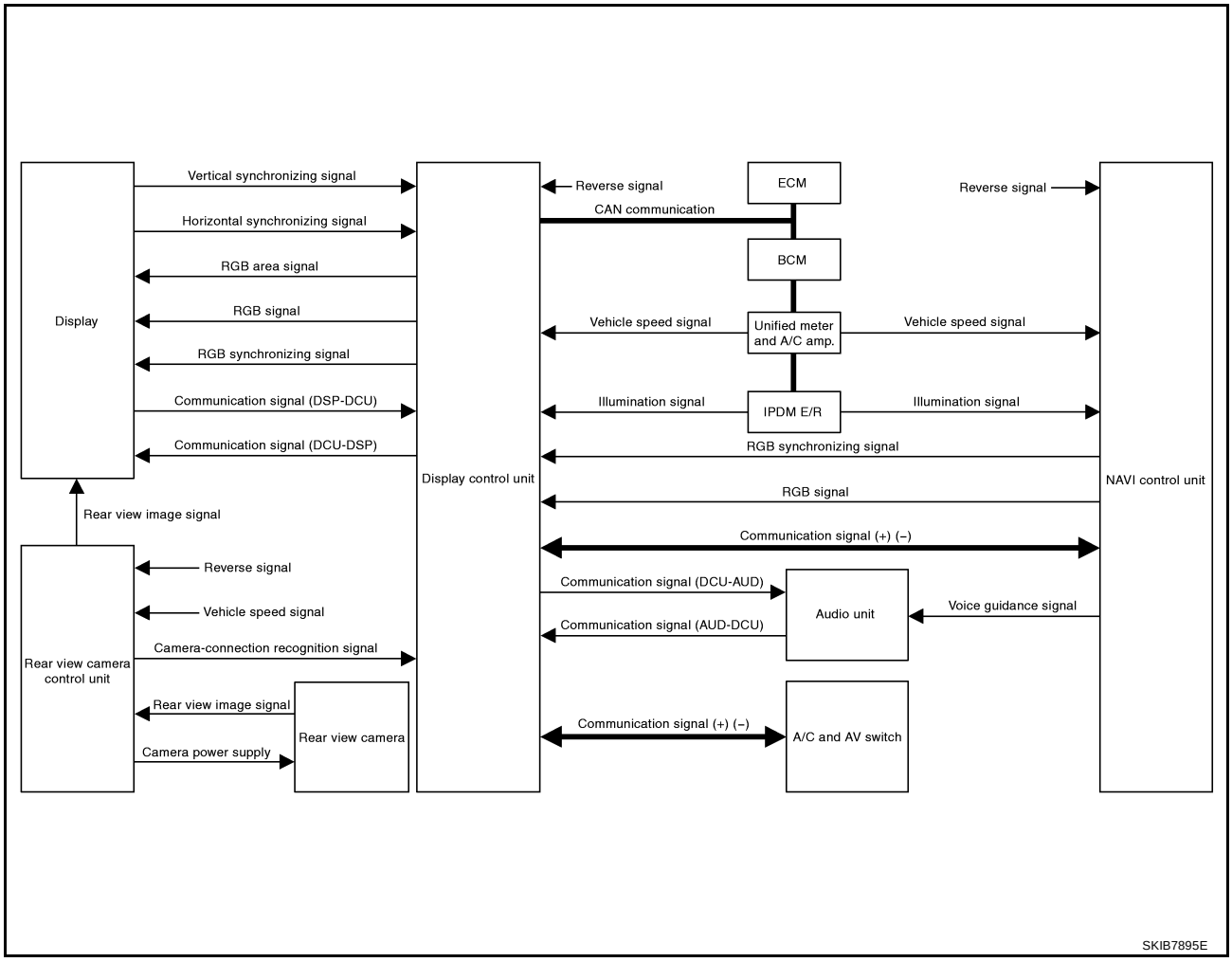
NAVIGATION SYSTEM

PFP:25915

System Description

NKS00239

- For Navigation System operation information, refer to Navigation System Owner's Manual.
- Each control unit that comprises the system is connected with a communication circuit. It transmits/receives data signals including request signals and response signals, and controls the system.
- The display control unit transmits/receives data signals to/from each control unit with CAN communication. It performs an arithmetical operation on fuel information values by using data obtained from the control units, and then displays the calculated values on the screen.
- The display control unit receives door switch signals from the BCM with CAN communication, and displays a warning on the screen when driving over the set speed with a door half-shut.
- The display control unit receives vehicle speed signals that are transmitted from the unified meter and A/C amp., performs an arithmetical operation on drive information values, and then displays the calculated values on the screen.
- The images displayed on the monitor screen contain NAVI control unit-generated RGB images, display control unit-generated RGB images, and rear view images transmitted from the rear view camera control unit.
- The display control unit controls image switching and image quality adjustments by communications with the display.

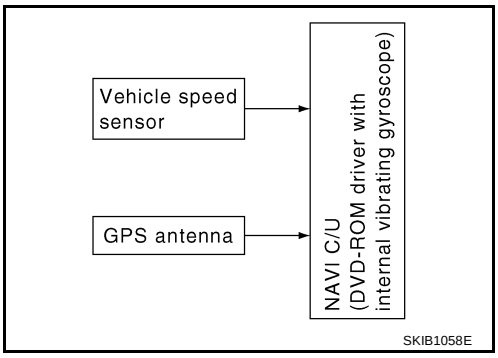


NAVIGATION SYSTEM

Location Detection Principle

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

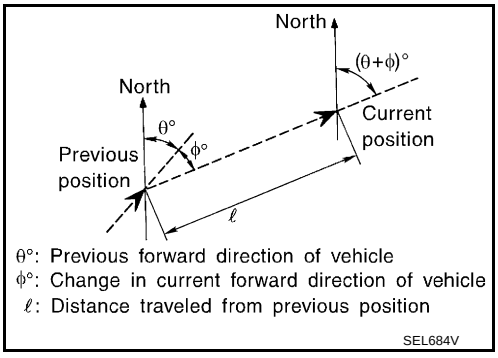
- Travel distance of the vehicle as determined by the vehicle speed sensor
- Turning angle of the vehicle as determined by the gyroscope (angular velocity sensor)
- Direction of vehicle travel as determined by the GPS antenna (GPS information)



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.



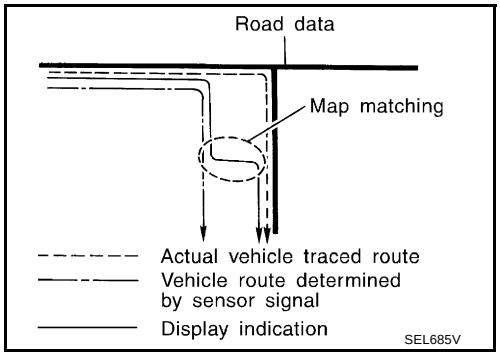
Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	Can detect the vehicle's turning angle quite accurately.	Direction errors may accumulate when vehicle is driven for long distances without stopping.
GPS antenna (GPS information)	Can detect the vehicle's travel direction (North/South/East/West).	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

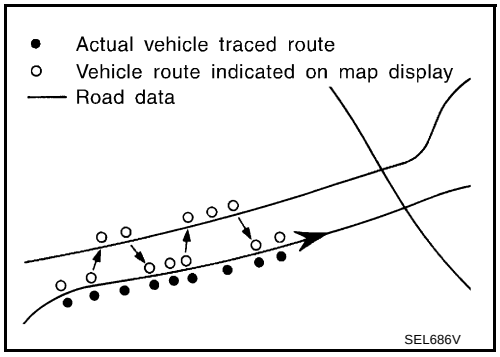
Map-matching compares a current location detected by the method in the “Location Detection Principle” with a road map data from DVD-ROM stored in DVD-ROM drive.

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

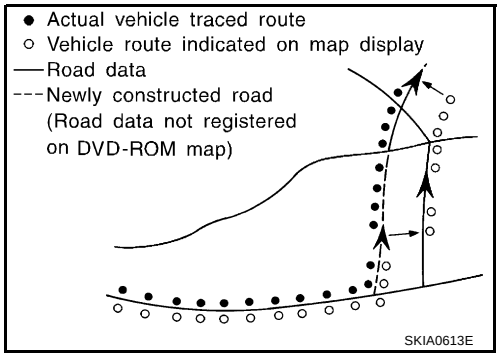


The vehicle position may not be corrected under the following circumstances and after driving for a certain time when GPS information is difficult to receive. In this case, the current-location mark on the display must be corrected manually.

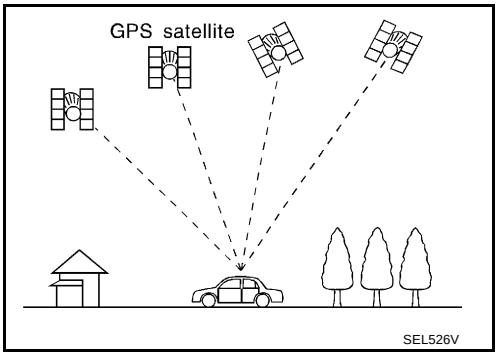
- In map-matching, alternative routes are prepared and prioritized in addition to the road judged currently driven. Due to the distance and/or direction error, the incorrect road may be prioritized and current-location mark may be repositioned to the wrong road.
  When two roads are running in parallel, 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.

REAR VIEW MONITOR

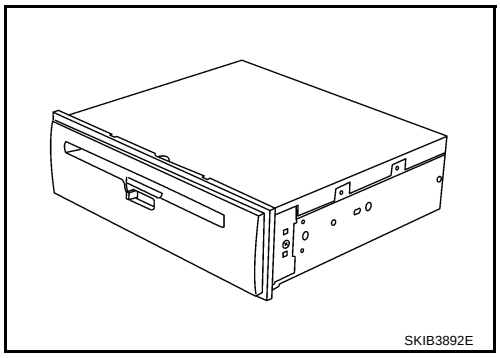
- A rear view monitor was set to vehicle, which can check rearward on screen when backing up the vehicle.
- For easier recognition of the vehicle width and the distance to the objects, the guide lines of distances and rear are combined with the rear view image.
- Image quality of the rear view image and of the navigation screen can be adjusted separately.

Component Description

NKS0023A

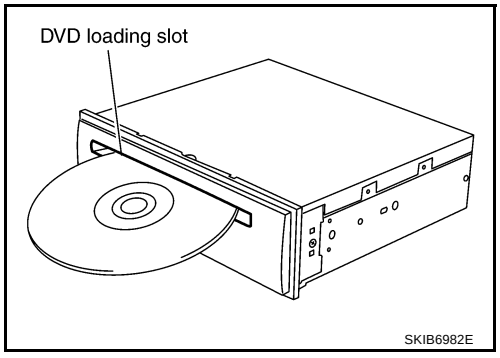
NAVI CONTROL UNIT

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


SKIB3892E

DVD-ROM Drive

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



SKIB6982E

DVD-ROM

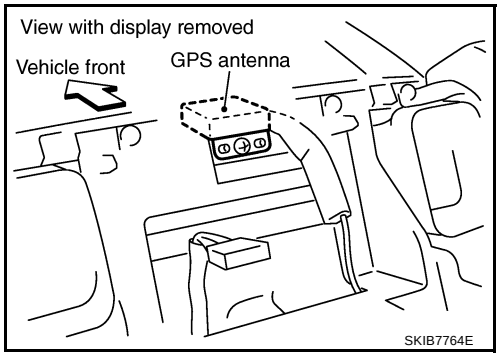
- The DVD-ROM has maps, traffic control regulations, and other pertinent information.
- To improve DVD-ROM map matching and route determination functions, the DVD-ROM uses an exclusive Nissan format. Therefore, the use of a DVD-ROM provided by other manufacturers cannot be used.

Gyro (Angular Speed Sensor)

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

GPS ANTENNA

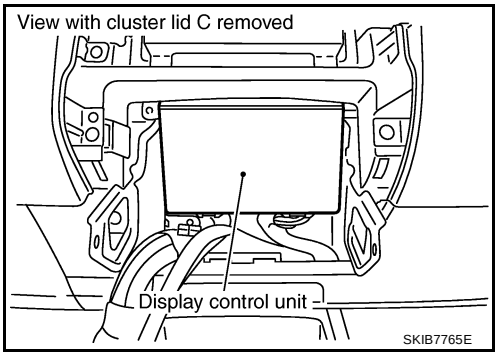
The GPS antenna receives and amplifies the radio waves from the GPS satellites, and then transmits the GPS signal to NAVI control unit.



SKIB7764E

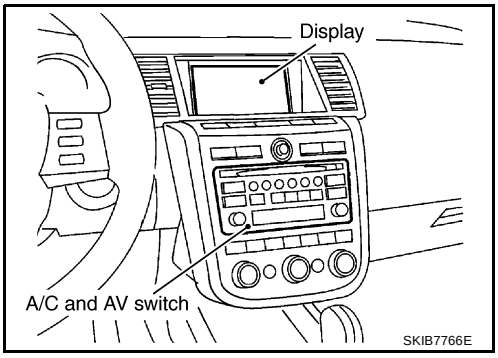
DISPLAY CONTROL UNIT

- Display control unit draws a status of the audio and air conditioner, a TRIP screen, a FUEL ECONOMY screen, etc., and transmits the image signals to the display screen.
- It receives operation signals of audio and air conditioner from A/C and AV switch, and transmits the operation signal of audio to the audio unit via the communication line and transmits the operation signal of air conditioner to the meter and A/C amp. via CAN communication.



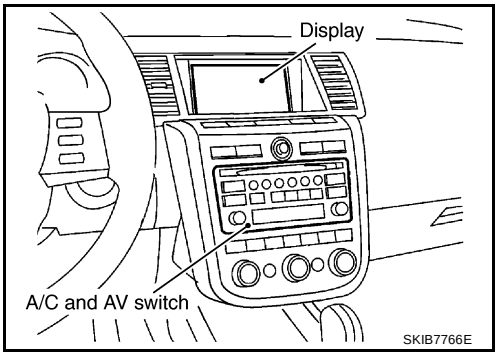
DISPLAY

- Images on the display include RGB image such as map screen and rear view image displayed when setting the select lever to R range.
- Display control unit controls images on the display.



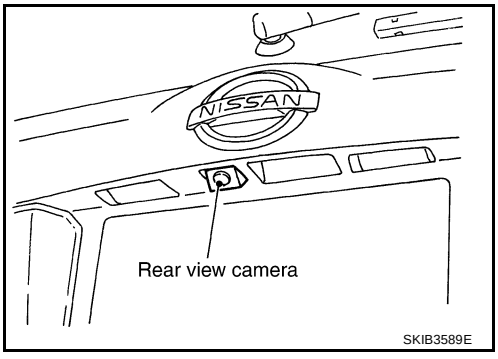
A/C AND AV SWITCH

- A/C and AV switch, an integrated combination of audio and air conditioner switches, are adopted.
- Operation signal of audio is transmitted to the audio unit through display control unit with the communication line. Operation signal of air conditioner is transmitted to meter and A/C amp. through display control unit with CAN communication.



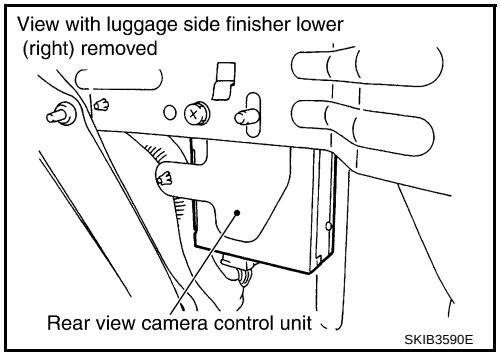
REAR VIEW CAMERA

- Rear view camera transmits rear view image signals to the display screen through the rear view camera control unit, when reverse signal is input.
- The rear view image is a mirror image reversed left and right that is the same as seeing rear side with a room mirror.



REAR VIEW CAMERA CONTROL UNIT

- Rear view camera control unit supplies power to the rear view camera, and then transmits the rear view image from the rear view camera to the display screen when reverse signal is input.
- Guiding lines of vehicle width and distance from rear end are composited and displayed on rear view image.



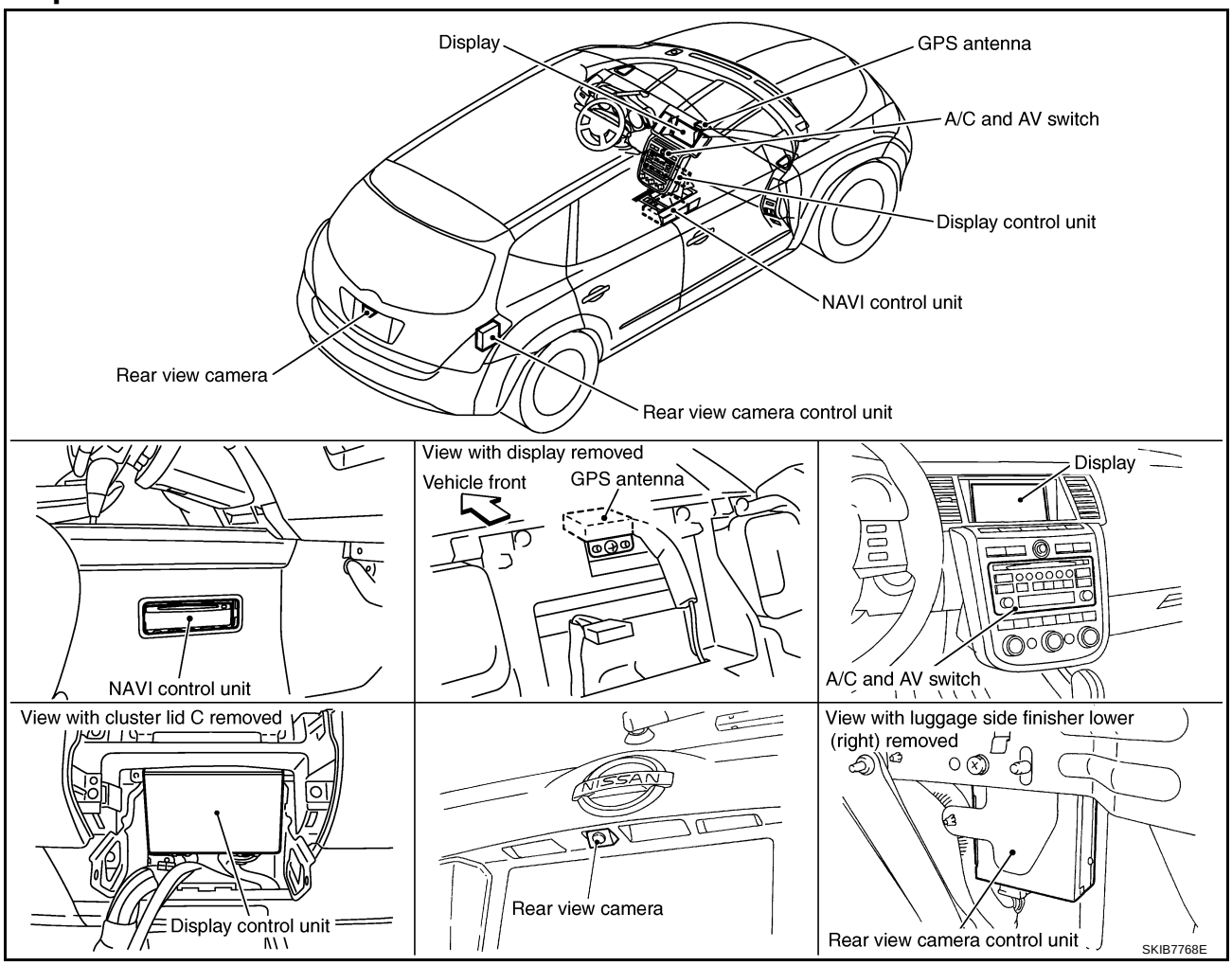
CAN Communication Unit

NKS0023D

Refer to LAN-49, "CAN System Specification Chart" .

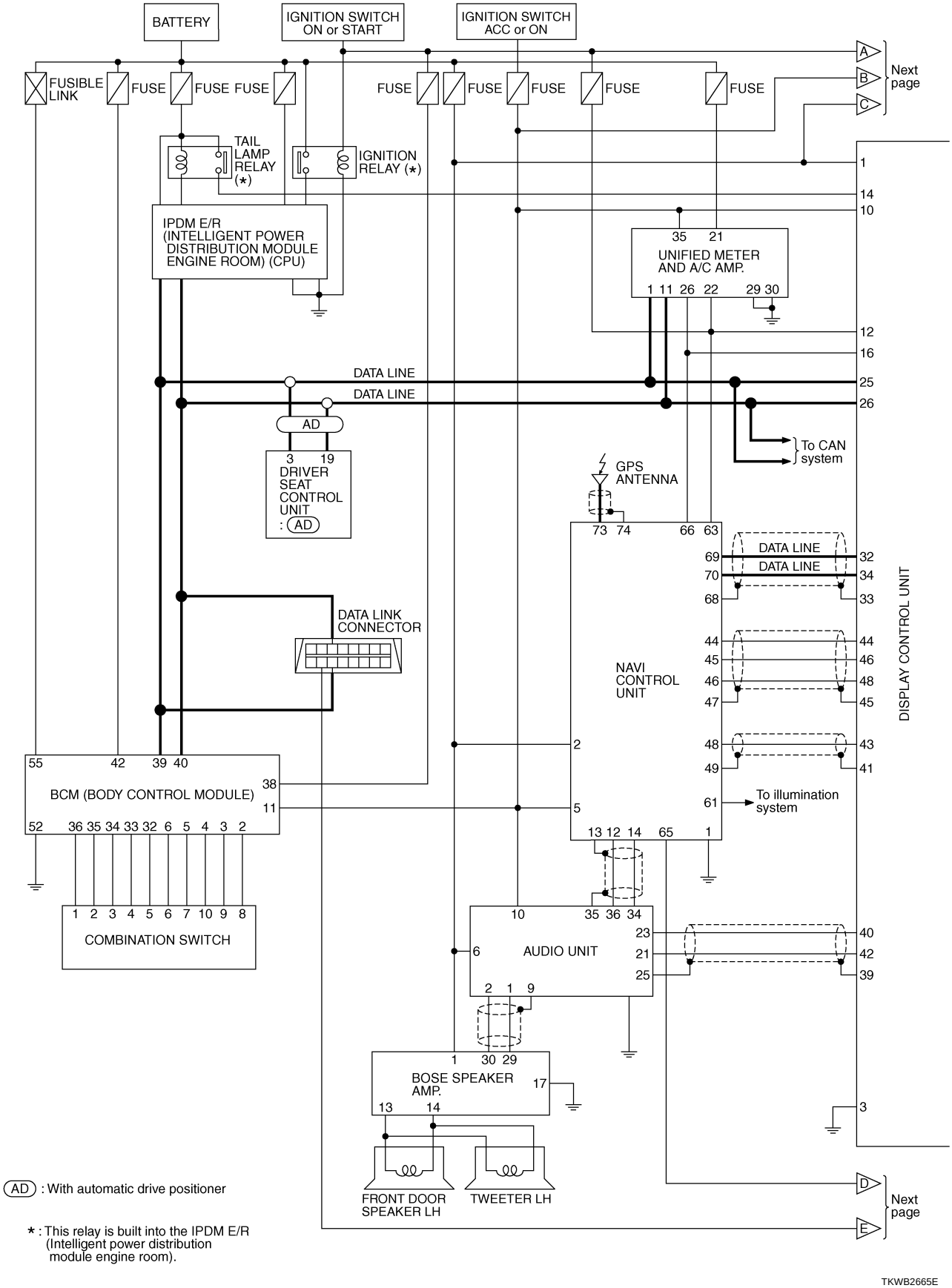
Component Parts Location

NKS0023E



Schematic — NAVI —

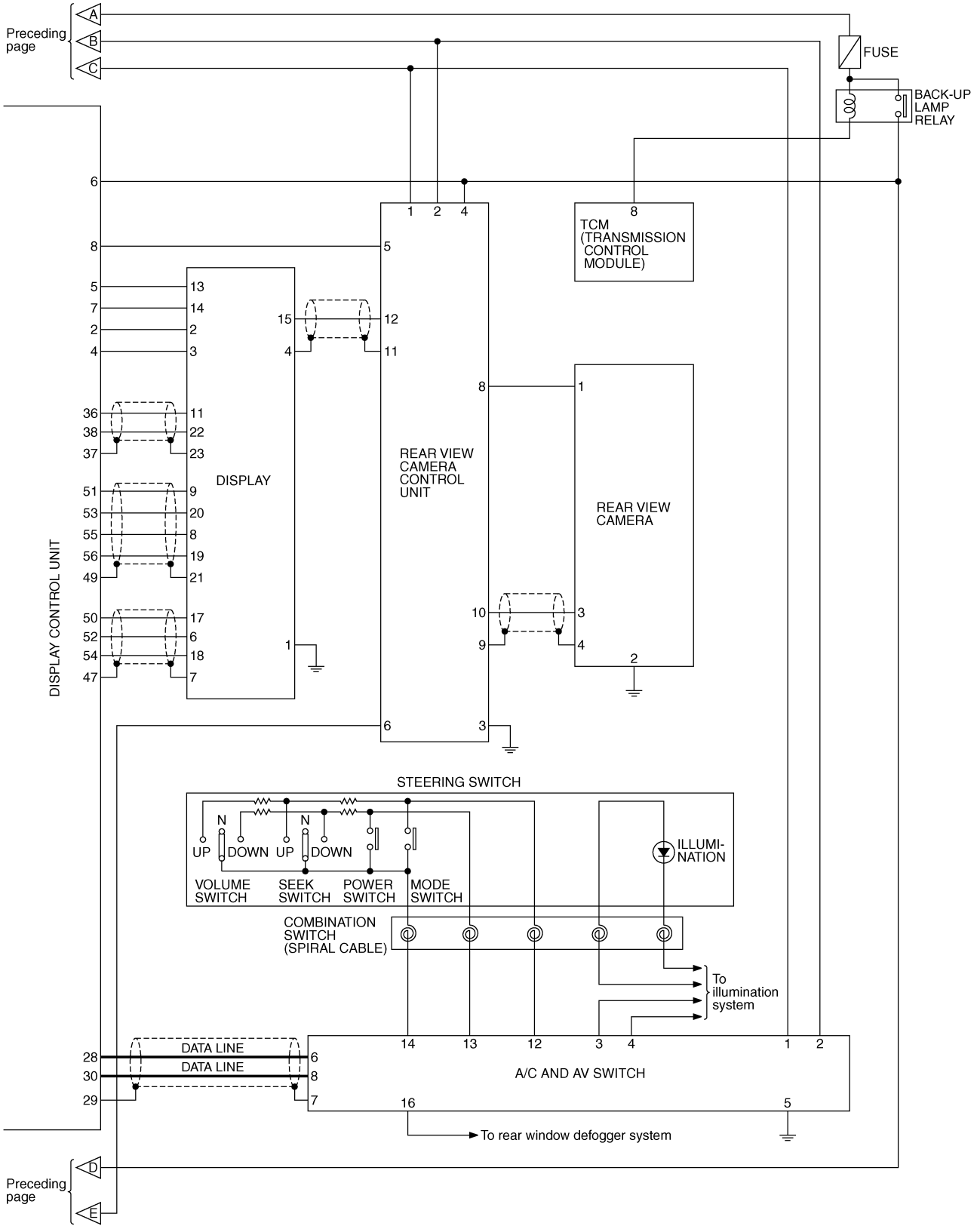
NKS0023F



AD : With automatic drive positioner

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

TKWB2665E

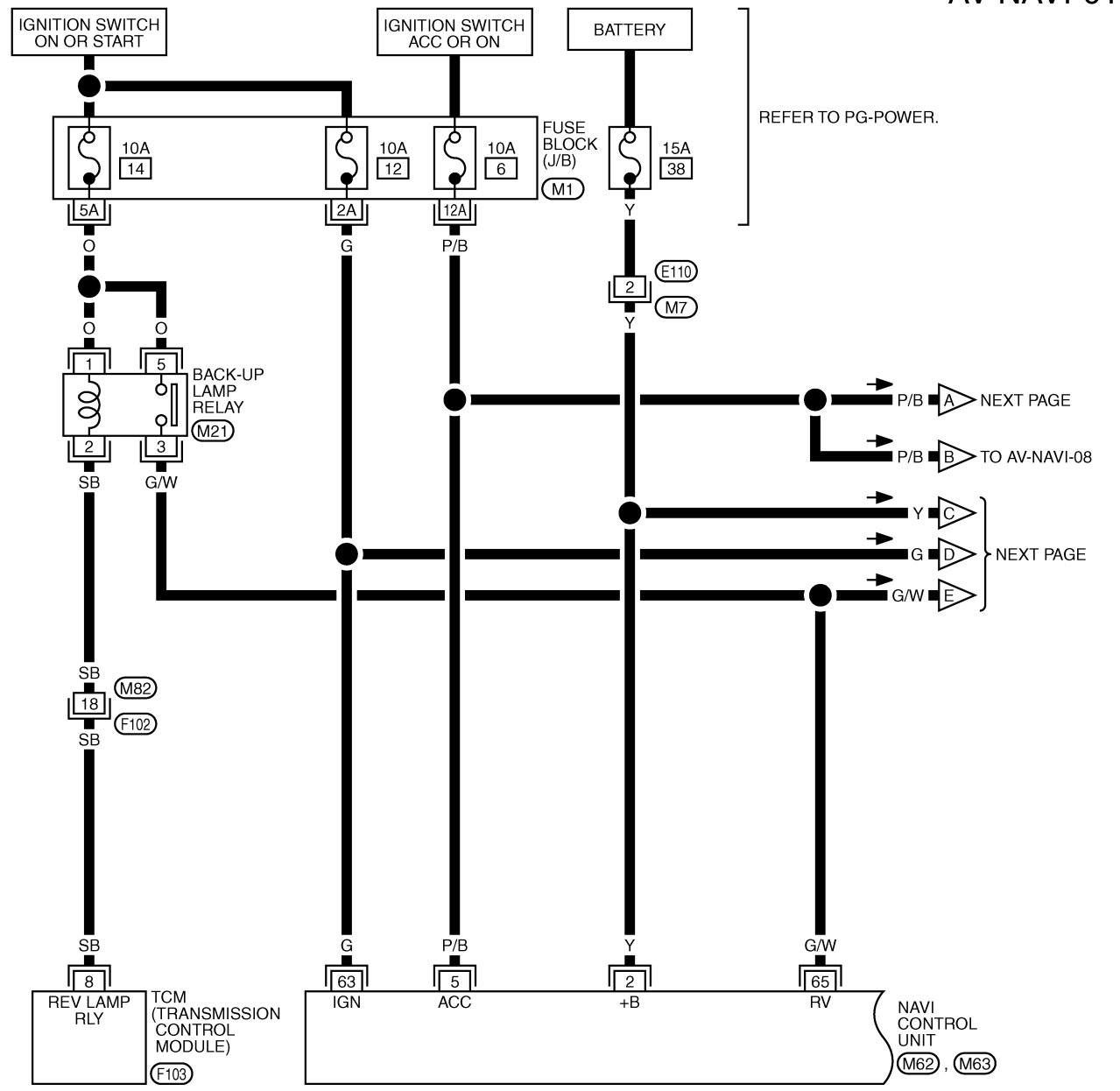

Preceding page
A
B
C
FUSE
BACK-UP LAMP RELAY
TCM (TRANSMISSION CONTROL MODULE)
DISPLAY CONTROL UNIT
DISPLAY
REAR VIEW CAMERA CONTROL UNIT
REAR VIEW CAMERA
STEERING SWITCH
UP
DOWN
VOLUME SWITCH
SEEK SWITCH
POWER SWITCH
MODE SWITCH
ILLUMI-NATION
COMBINATION SWITCH (SPIRAL CABLE)
To illumination system
DATA LINE
DATA LINE
A/C AND AV SWITCH
To rear window defogger system
Preceding page
D
E

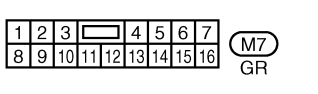
TKWB2666E

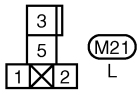
Wiring Diagram — NAVI —

NKS0023G

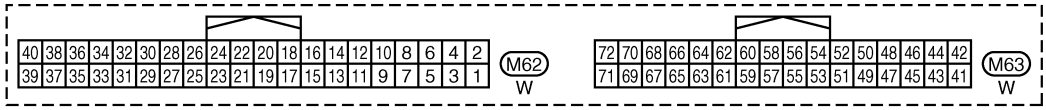
AV-NAVI-01

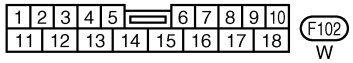




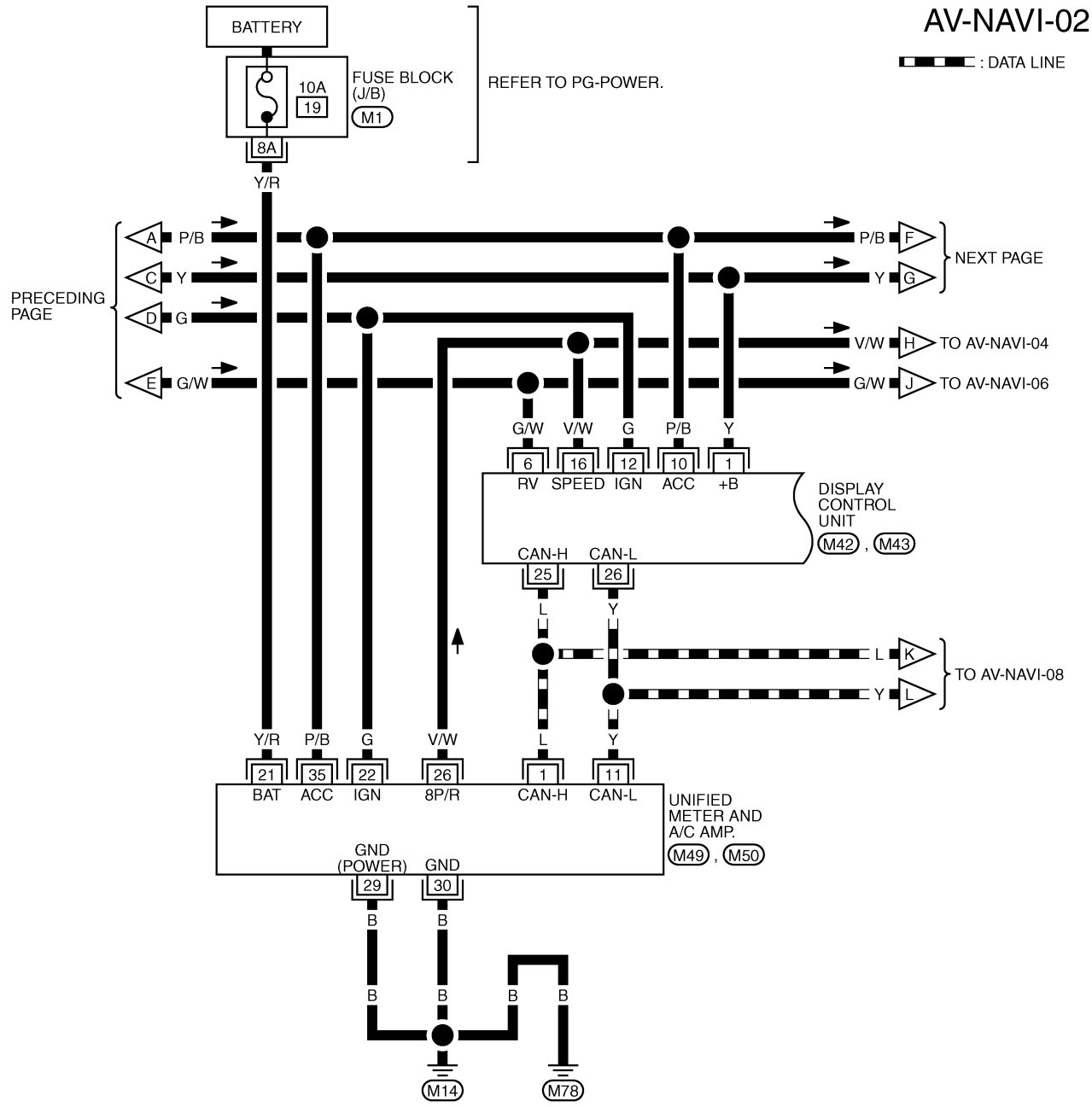


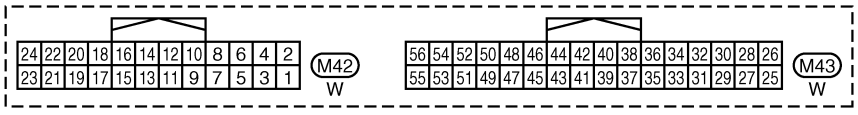
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)
F103 -ELECTRICAL UNITS

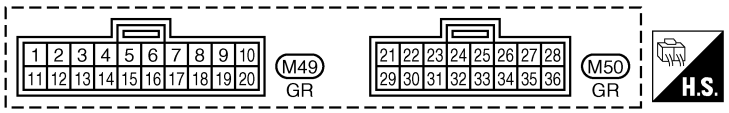




TKWB2667E





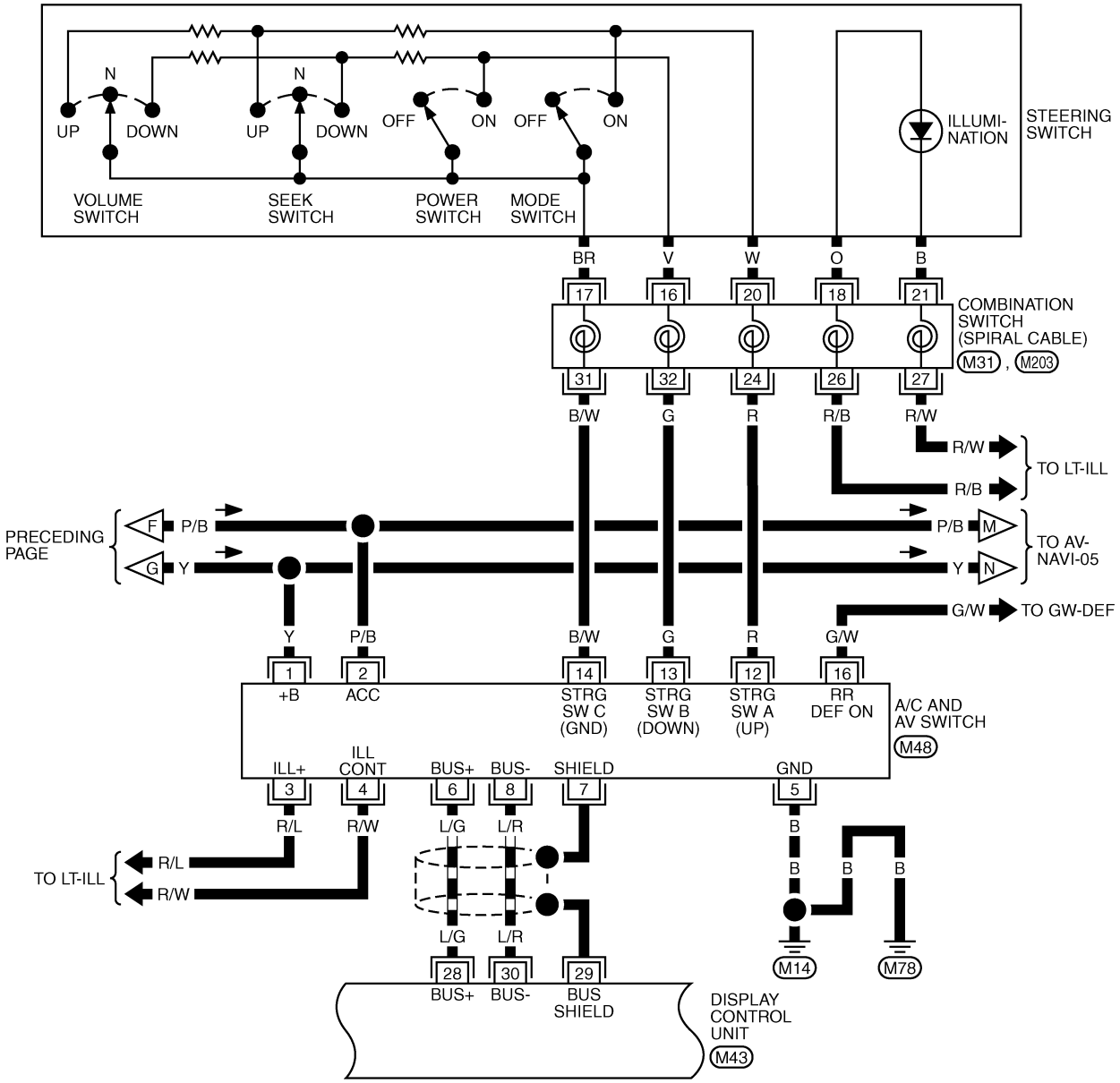


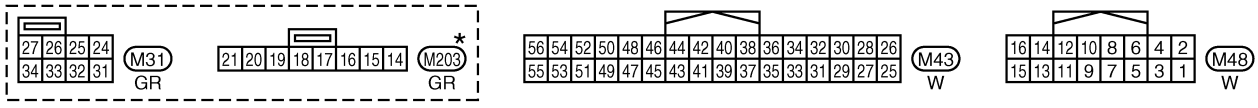
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

TKWB2668E

AV-NAVI-03

: DATA LINE

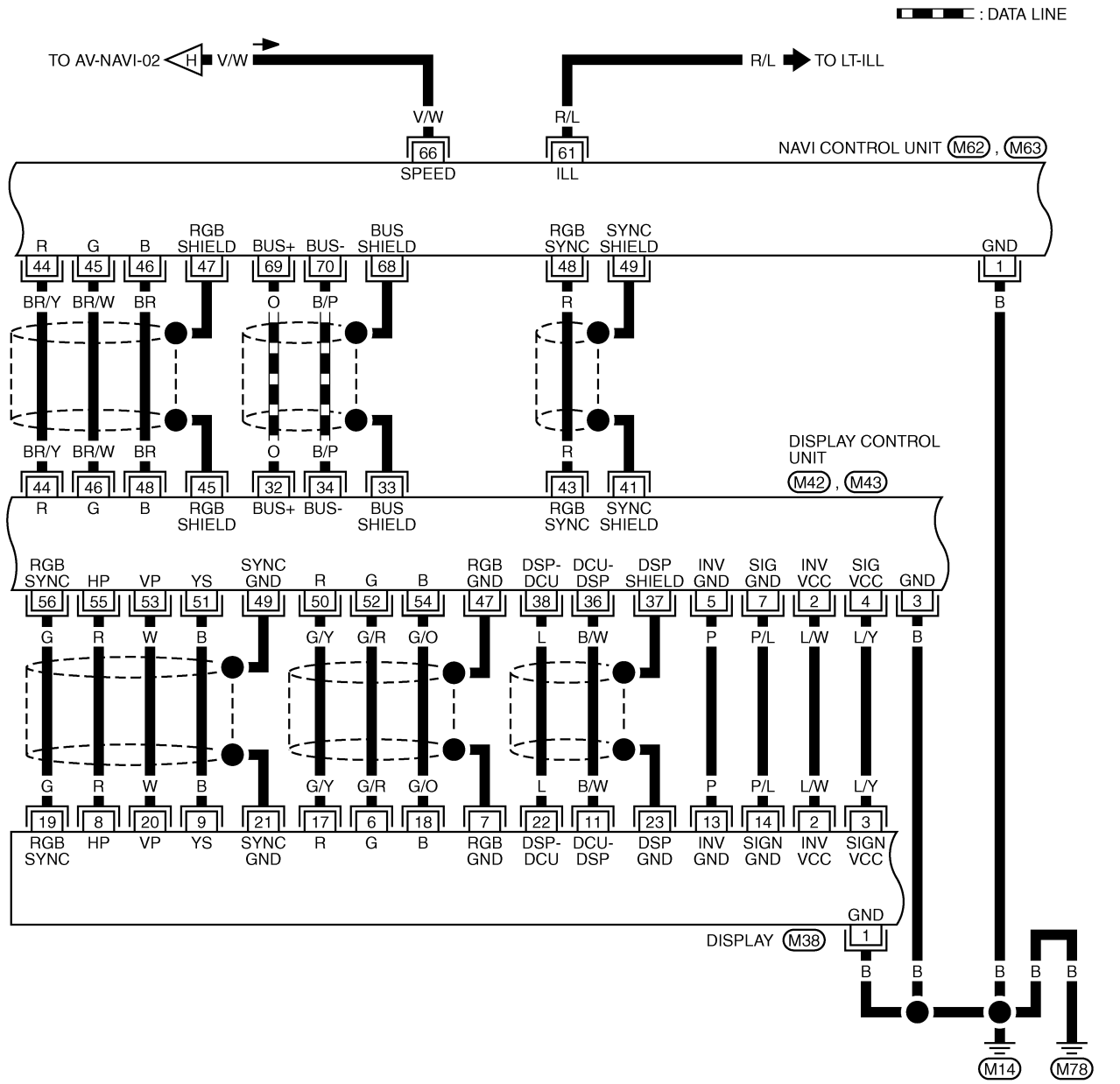


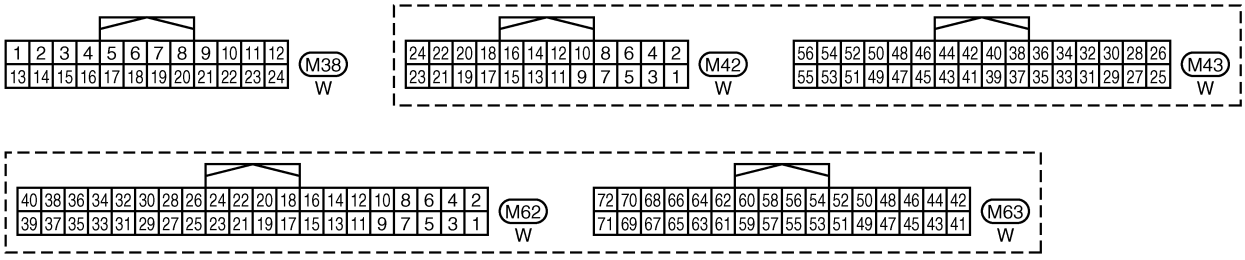


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

TKWB2669E

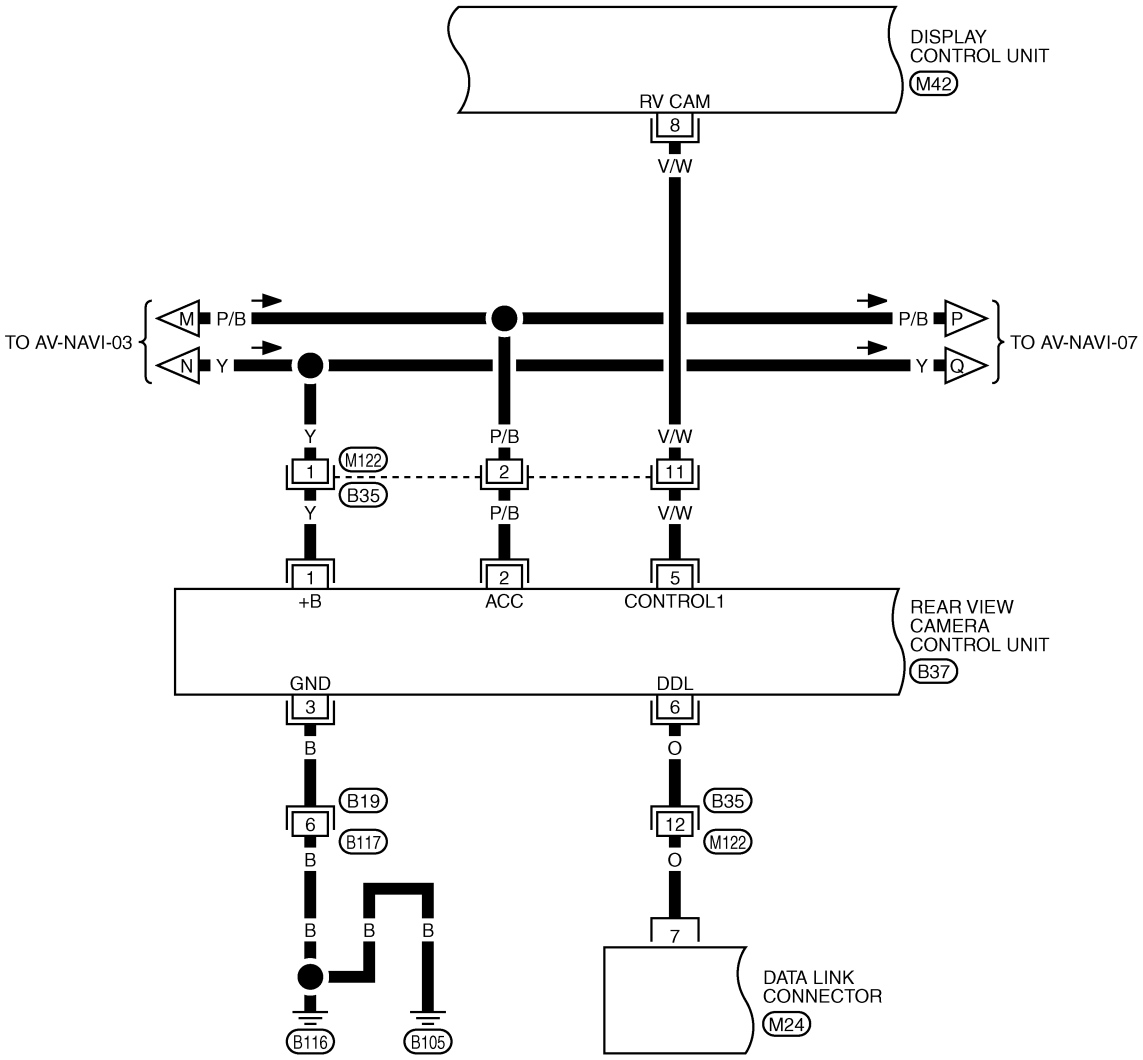
AV-NAVI-04

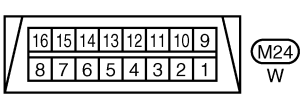


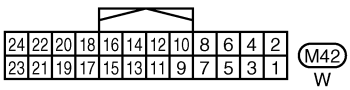


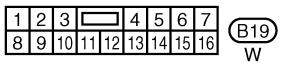
TKWB2670E

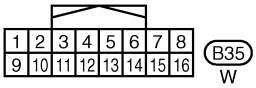
AV-NAVI-05

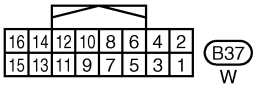






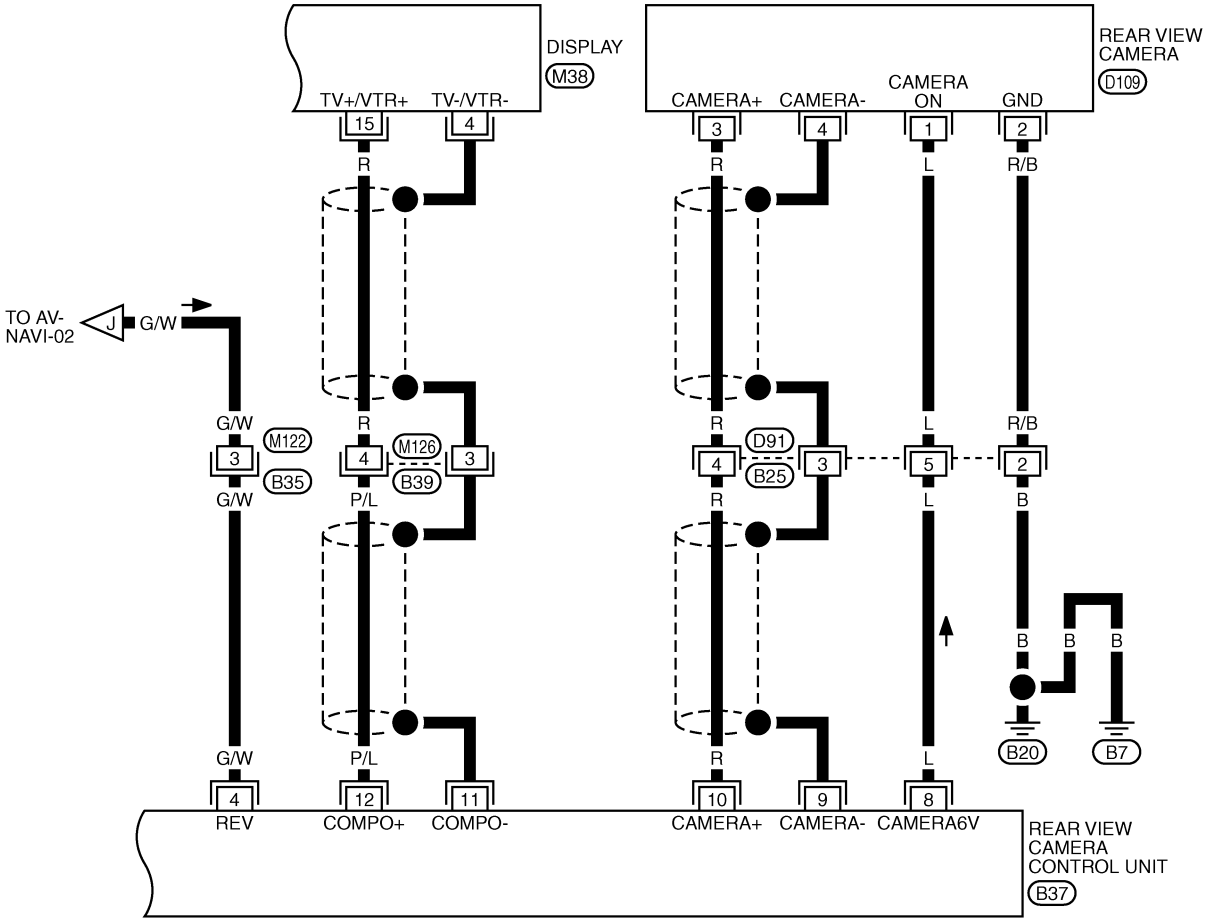


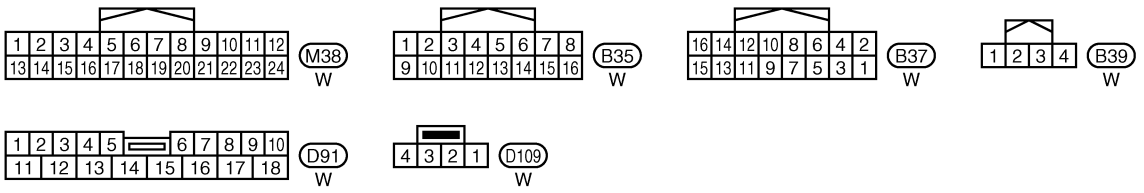




TKWB0908E

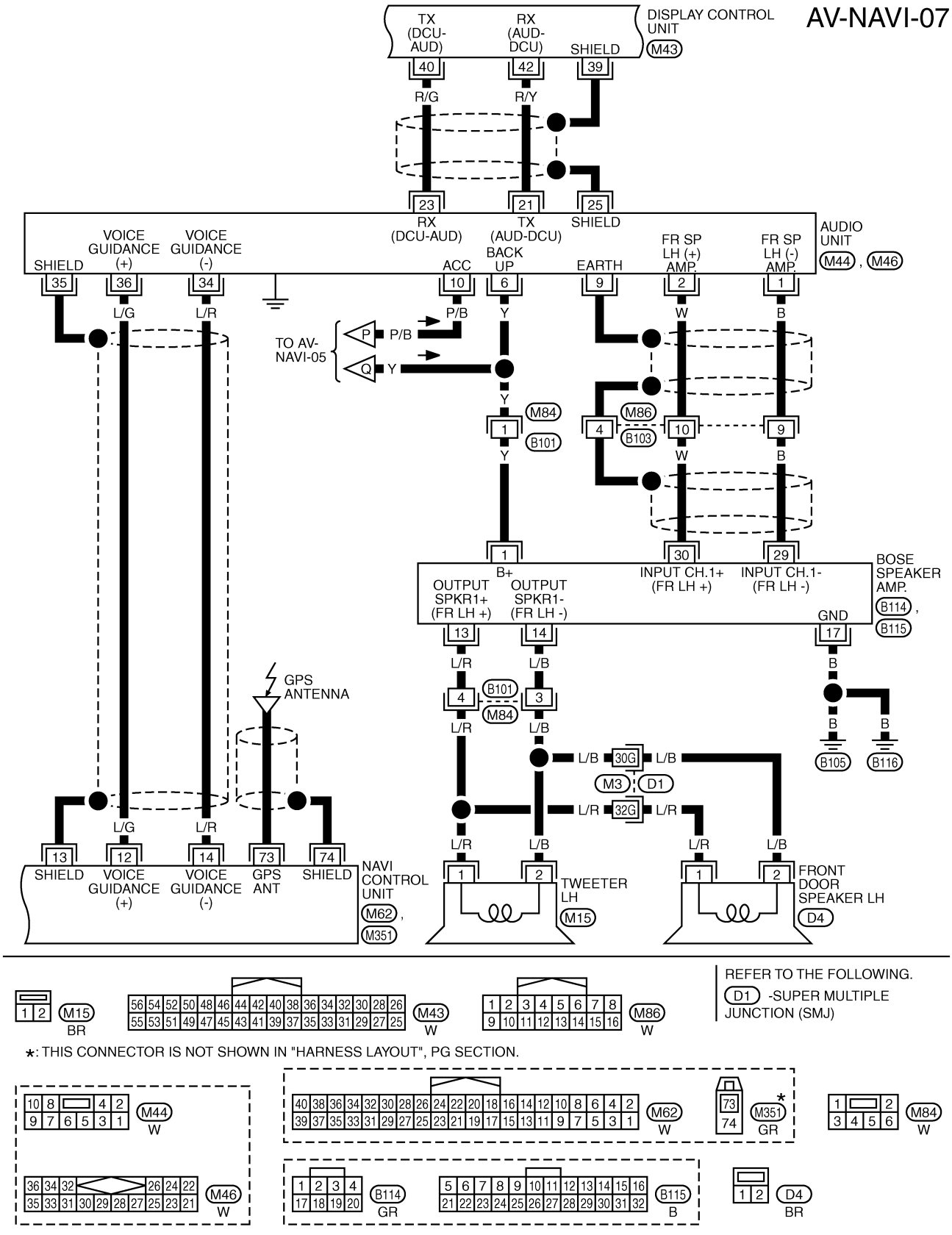
AV-NAVI-06



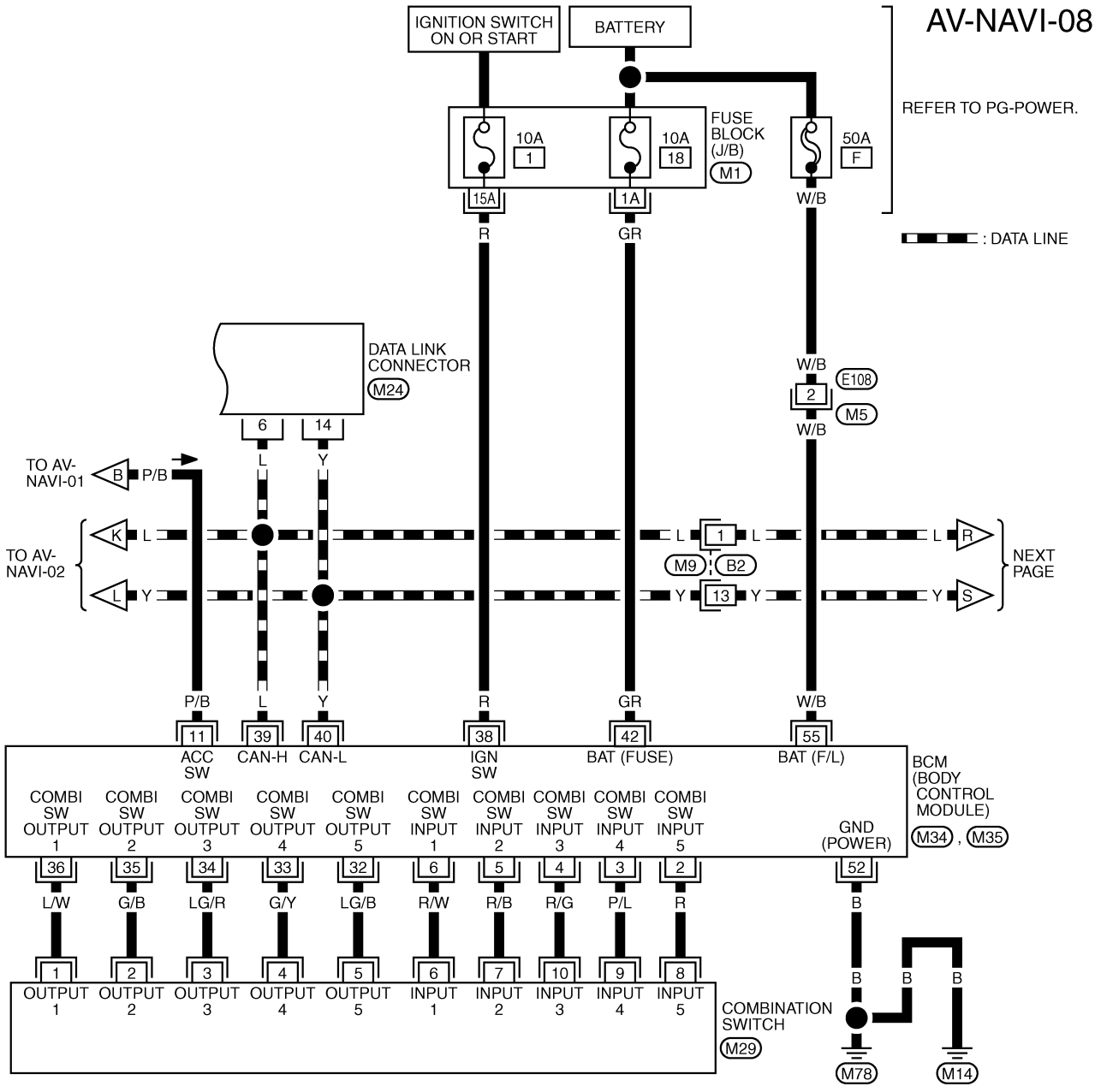


TKWB2671E

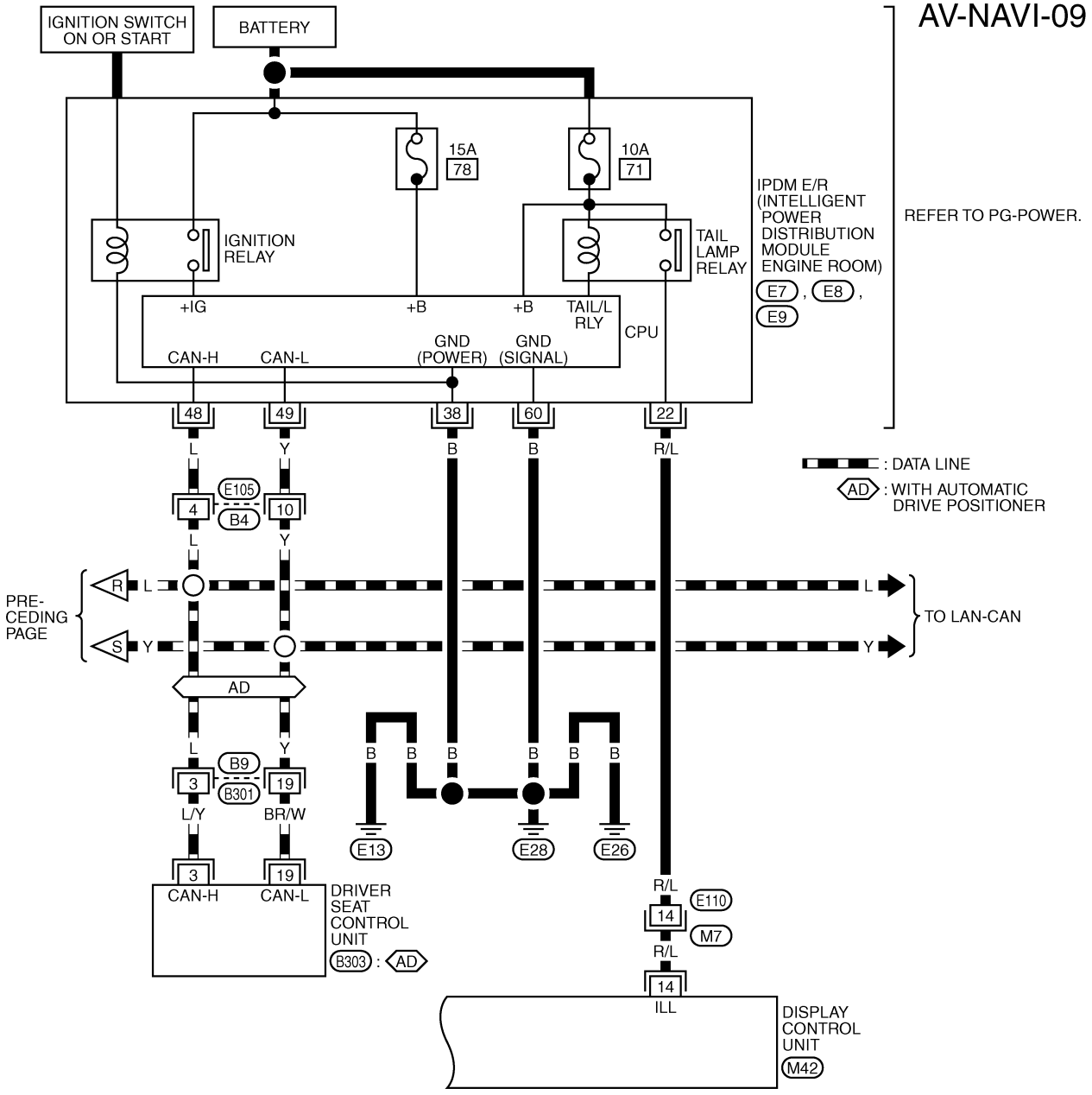
AV-NAVI-07

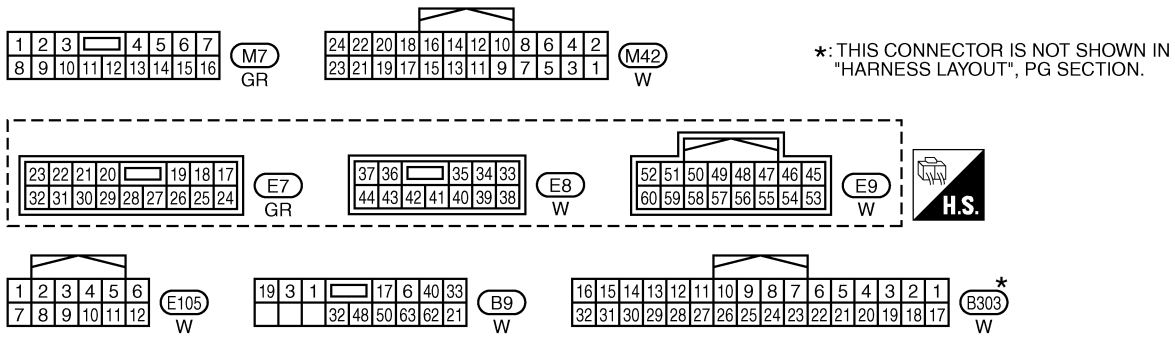


TKWB2672E


AV-NAVI-08
IGNITION SWITCH ON OR START
BATTERY
REFER TO PG-POWER.
FUSE BLOCK (J/B) M1
10A 1
10A 18
50A F
15A
1A
W/B
R
GR
: DATA LINE
DATA LINK CONNECTOR M24
6
14
L
Y
W/B E108
2
M5
W/B
TO AV-NAVI-01
B P/B
TO AV-NAVI-02
K L
L Y
M9 B2
1
13
NEXT PAGE
P/B
L
Y
R
GR
W/B
11
39
40
38
42
55
ACC SW
CAN-H
CAN-L
IGN SW
BAT (FUSE)
BAT (F/L)
BCM (BODY CONTROL MODULE) M34 , M35
COMBI SW OUTPUT 1
COMBI SW OUTPUT 2
COMBI SW OUTPUT 3
COMBI SW OUTPUT 4
COMBI SW OUTPUT 5
COMBI SW INPUT 1
COMBI SW INPUT 2
COMBI SW INPUT 3
COMBI SW INPUT 4
COMBI SW INPUT 5
GND (POWER)
36
35
34
33
32
6
5
4
3
2
52
L/W
G/B
LG/R
G/Y
LG/B
R/W
R/B
R/G
P/L
R
B
1
2
3
4
5
6
7
10
9
8
OUTPUT 1
OUTPUT 2
OUTPUT 3
OUTPUT 4
OUTPUT 5
INPUT 1
INPUT 2
INPUT 3
INPUT 4
INPUT 5
COMBINATION SWITCH M29
M78
M14
M5 W
M9 W
M24 W
M29 W
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)
M34 , M35 -ELECTRICAL UNITS

TKWB2673E

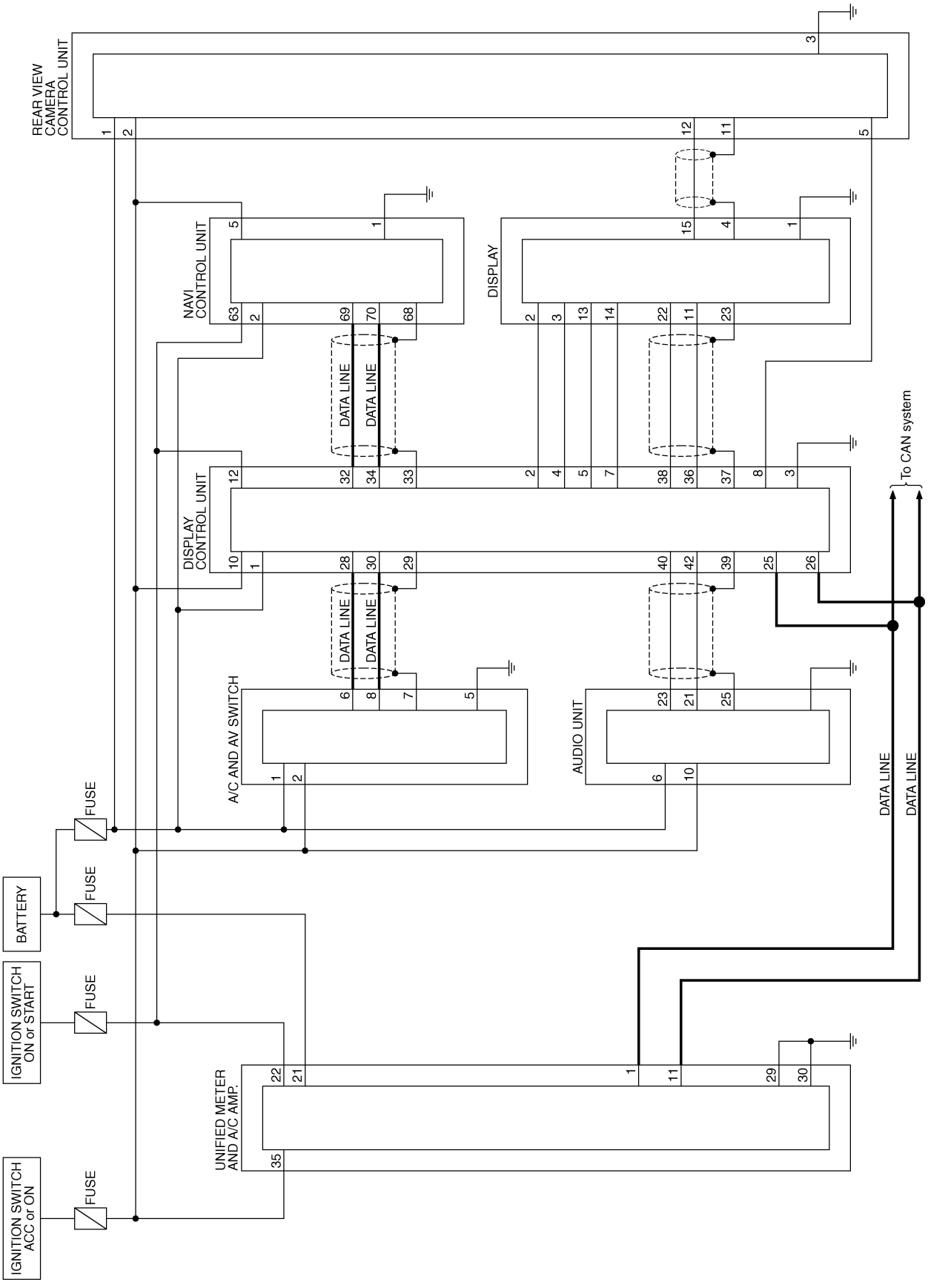

AV-NAVI-09
IGNITION SWITCH ON OR START
BATTERY
15A 78
10A 71
IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
E7, E8, E9
REFER TO PG-POWER.
IGNITION RELAY
TAIL LAMP RELAY
+IG
+B
+B
TAIL/L RLY
CPU
CAN-H
CAN-L
GND (POWER)
GND (SIGNAL)
48
49
38
60
22
L
Y
B
B
R/L
: DATA LINE
AD : WITH AUTOMATIC DRIVE POSITIONER
E105
4
B4
10
PRE-CEDING PAGE
R
S
TO LAN-CAN
AD
B9
3
B301
19
L/Y
BR/W
E13
E28
E26
DRIVER SEAT CONTROL UNIT
B303 : AD
E110
14
M7
ILL
DISPLAY CONTROL UNIT
M42


M7 GR
M42 W
*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.
E7 GR
E8 W
E9 W
H.S.
E105 W
B9 W
B303 W

TKWB2674E

Schematic — COMM —

NKS0023H

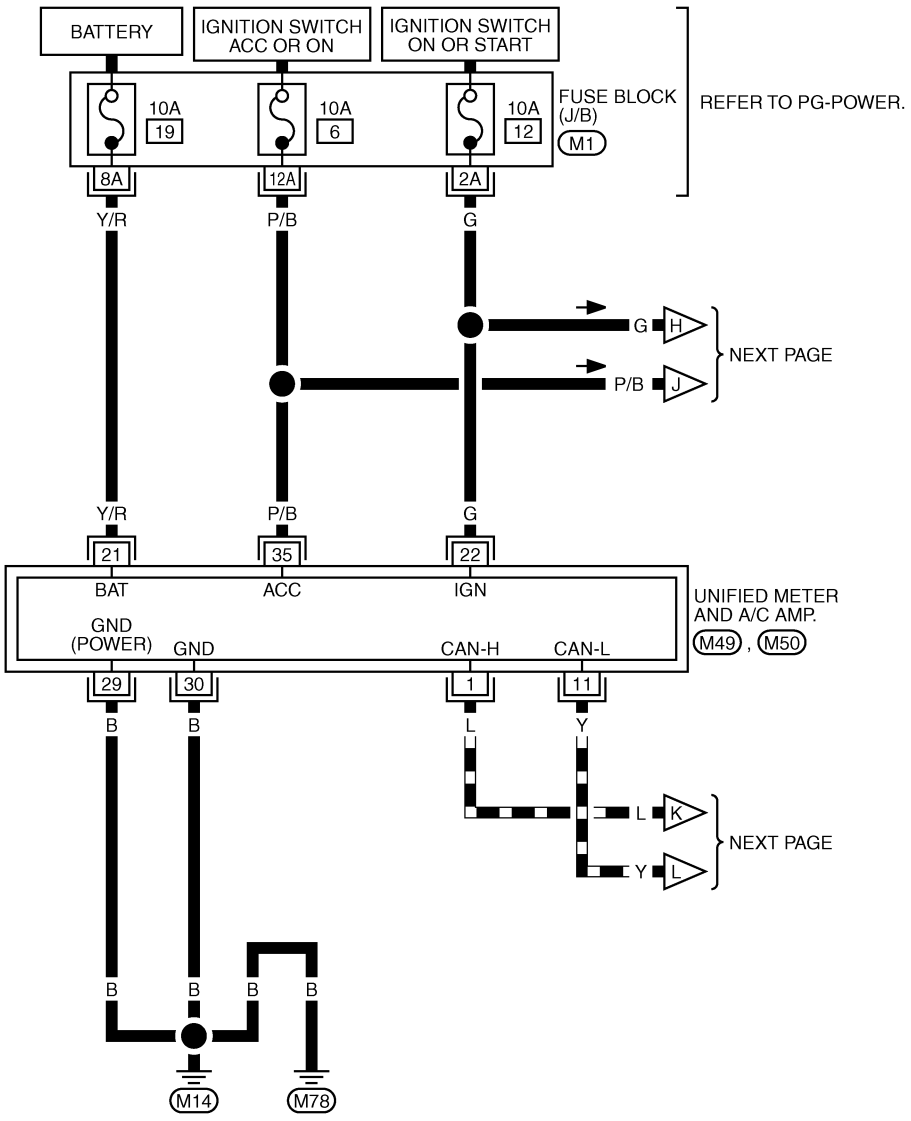


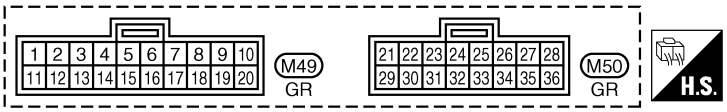
Wiring Diagram — COMM —

NKS0023I

AV-COMM-05

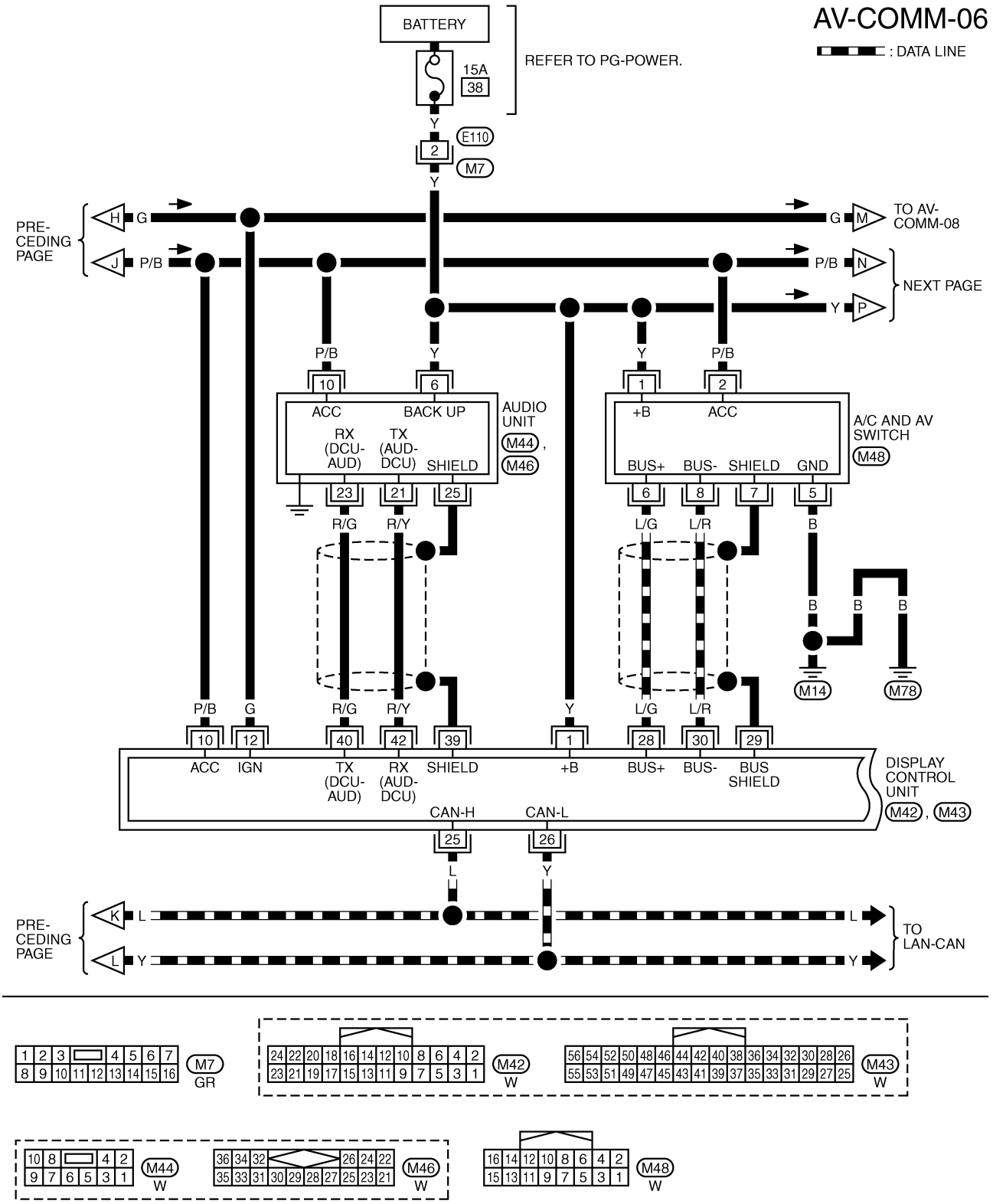
: DATA LINE





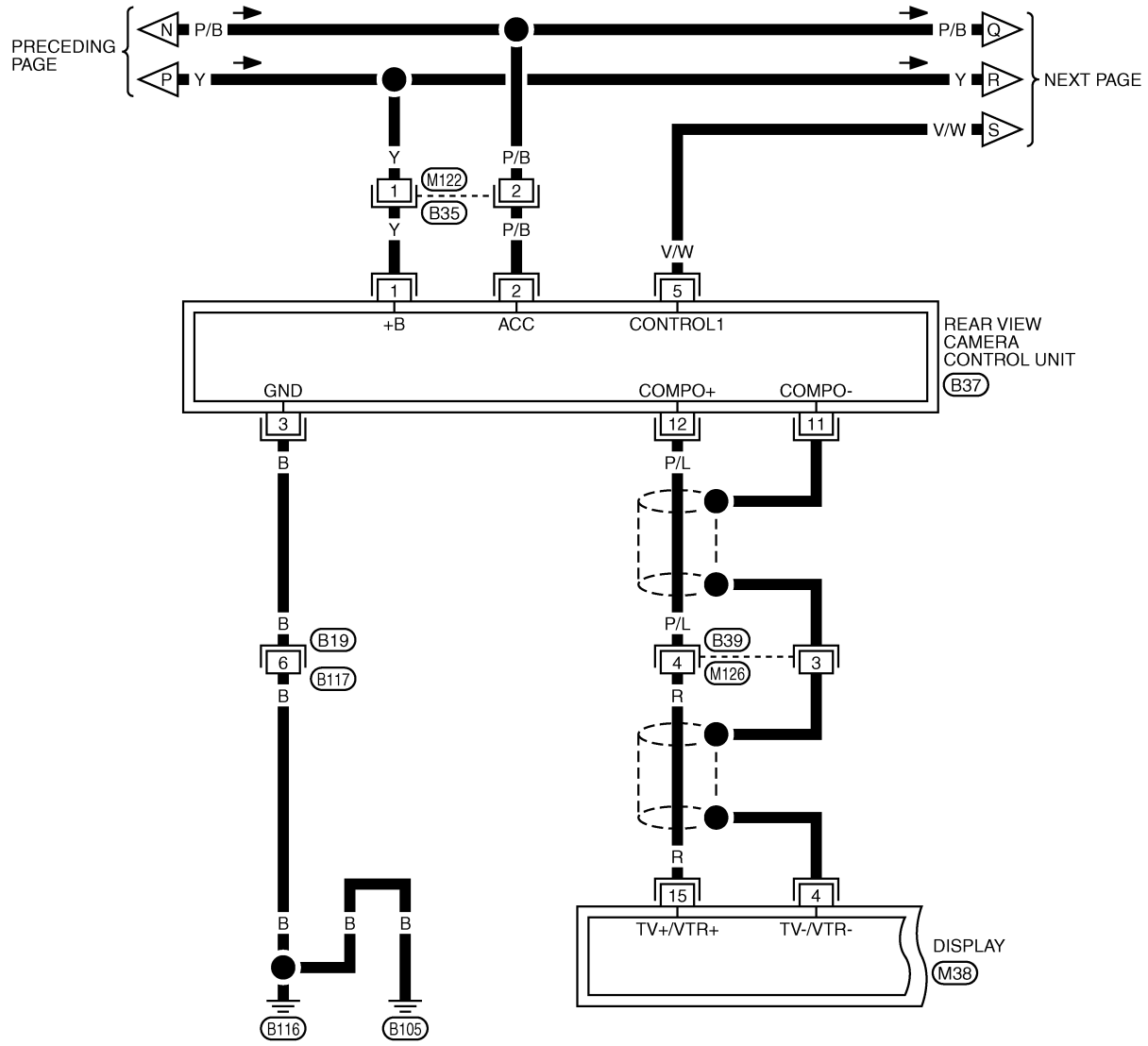
REFER TO THE FOLLOWING.
M1 -FUSE BLOCK-JUNCTION BOX (J/B)

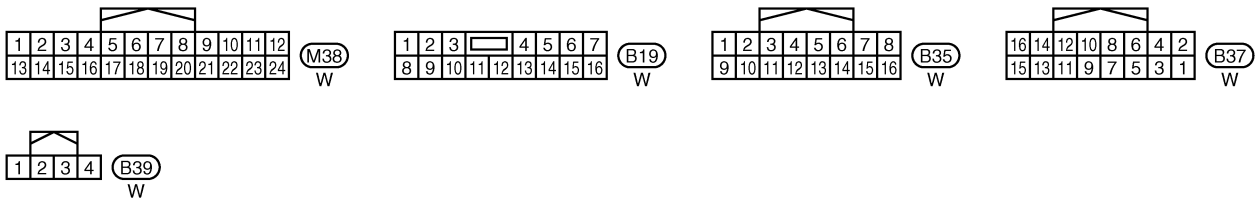
TKWB2676E


AV-COMM-06
: DATA LINE
BATTERY
15A
38
REFER TO PG-POWER.
E110
M7
PRE-CEDING PAGE
TO AV-COMM-08
NEXT PAGE
AUDIO UNIT
M44, M46
ACC
BACK UP
RX (DCU-AUD)
TX (AUD-DCU)
SHIELD
A/C AND AV SWITCH
M48
+B
BUS+
BUS-
GND
M14
M78
DISPLAY CONTROL UNIT
M42, M43
IGN
CAN-H
CAN-L
TO LAN-CAN
M7 GR
M42 W
M43 W
M44 W
M46 W
M48 W

TKWB2677E

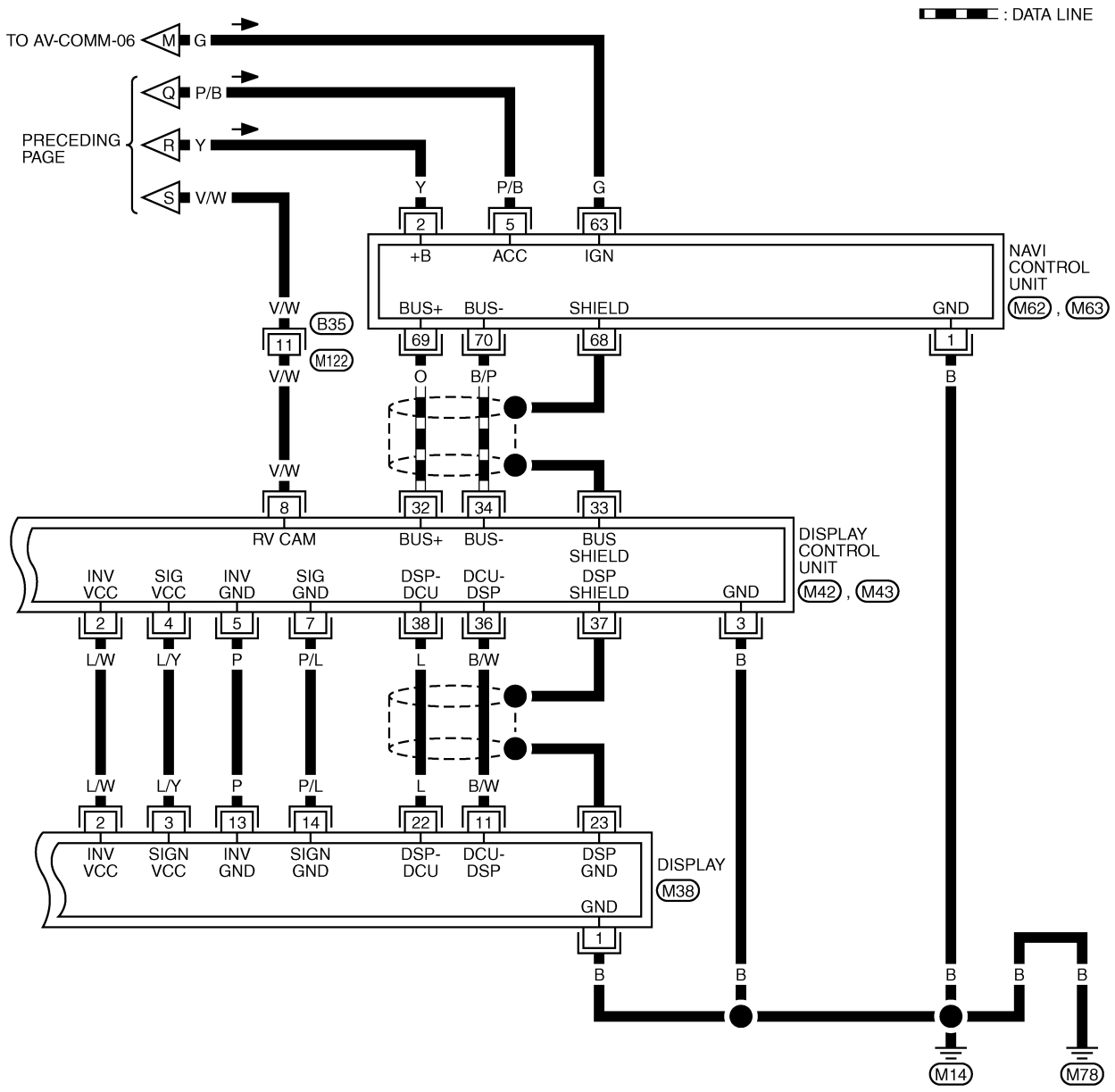
AV-COMM-07

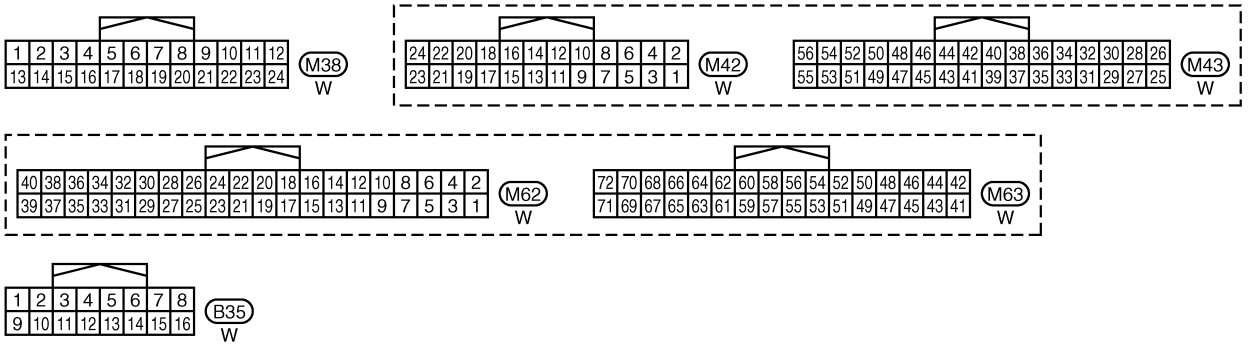




TKWB2678E

AV-COMM-08

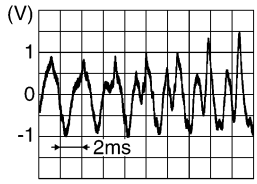
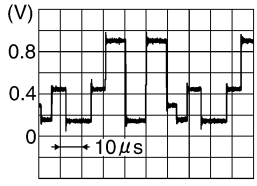
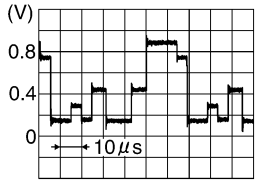
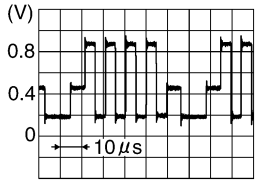
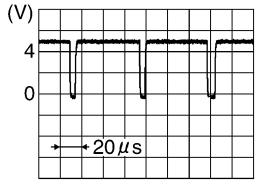


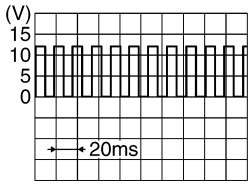
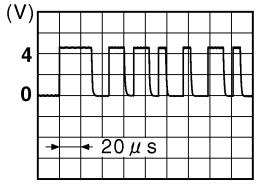
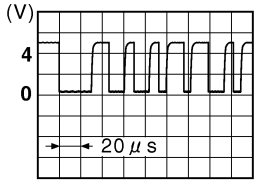


TKWB2679E

Terminals and Reference Value for NAVI Control Unit

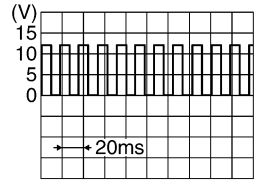
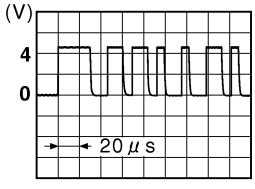
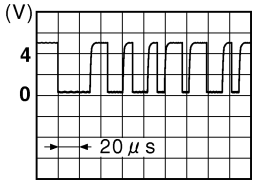
NKS0023J

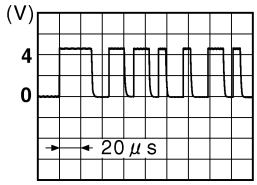
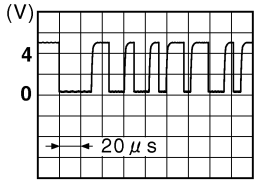
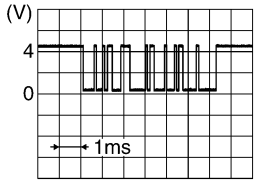
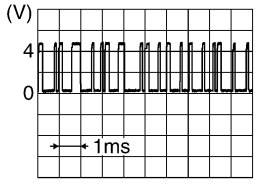
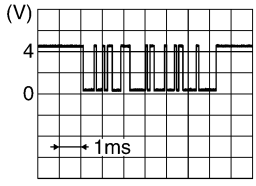
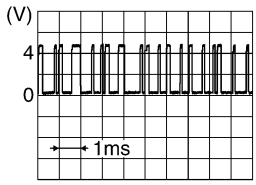
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (B)	Ground	Ground	–	ON	–	Approx. 0 V
2 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
5 (P/B)	Ground	ACC power supply	Input	ACC	—	Battery voltage
12 (L/G)	14 (L/R)	Voice guidance signal	Output	ON	Press “GUIDE/VOICE” button	 SKIB3609E
13	—	Shield	—	—	—	—
44 (BR/Y)	Ground	RGB signal (R: red)	Output	ON	Start Confirmation/Adjustment (Navigation) mode, and then display color bar by selecting “Color Spectrum bar” on Display Diagnosis screen	 SKIB7360E
45 (BR/W)	Ground	RGB signal (G: green)	Output	ON	Start Confirmation/Adjustment (Navigation) mode, and then display color bar by selecting “Color Spectrum bar” on Display Diagnosis screen	 SKIB7361E
46 (BR)	Ground	RGB signal (B: blue)	Output	ON	Start Confirmation/Adjustment (Navigation) mode, and then display color bar by selecting “Color Spectrum bar” on Display Diagnosis screen	 SKIB7362E
47	—	Shield	—	—	—	—
48 (R)	Ground	RGB synchronizing signal	Output	ON	When displaying RGB image	 SKIB3603E
49	—	Shield	—	—	—	—
61 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch ON	Approx. 12 V
					Lighting switch OFF	Approx. 0 V
63 (G)	Ground	Ignition signal	Input	ON	—	Battery voltage
65 (G/W)	Ground	Reverse signal	Input	ON	Selector lever in R position	Approx. 12 V
					Selector lever except in R position	Approx. 0 V

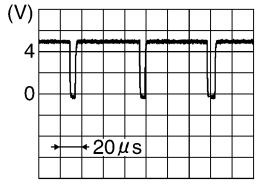
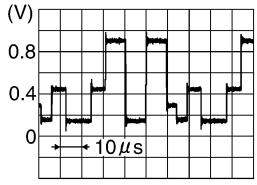
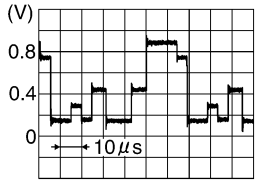
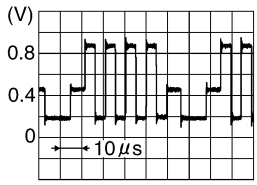
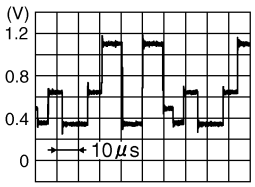
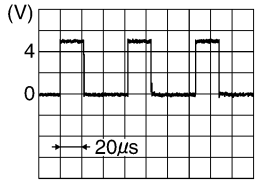
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
66 (V/W)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 25 MPH (40 km/h)	**NOTE:** Maximum voltage may be 5 V due to specifications (connected units).  PKIA1935E
68	—	Shield	—	—	—	—
69 (O)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
70 (B/P)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
73	Ground	GPS signal	Input	ON	Connector is not connected	Approx. 5 V
74	—	Shield	—	—	—	—

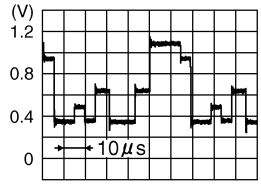
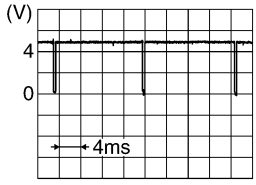
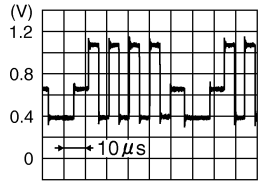
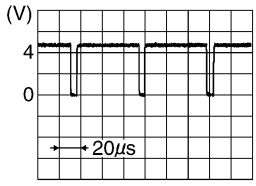
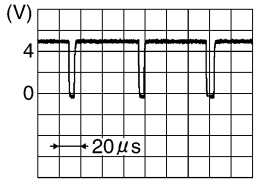
Terminals and Reference Value for Display Control Unit

NKS0023K

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
2 (L/W)	Ground	Power supply (Inverter)	Output	ON	—	Approx. 9 V
3 (B)	Ground	Ground	—	ON	—	Approx. 0 V
4 (L/Y)	Ground	Power supply (Signal)	Output	ON	—	Approx. 9 V
5 (P)	Ground	Ground (Inverter)	—	ON	—	Approx. 0 V
6 (G/W)	Ground	Reverse signal	Input	ON	Selector lever in R position	Approx. 12 V
					Selector lever except in R position	Approx. 0 V
7 (P/L)	Ground	Ground (Signal)	—	ON	—	Approx. 0 V
8 (V/W)	Ground	Camera-connection recognition signal	Input	ON	Connected to rear view camera control unit connector	Approx. 0 V
					Not connected to rear view camera control unit connector	Approx. 5 V
10 (P/B)	Ground	ACC power supply	Input	ACC	—	Battery voltage
12 (G)	Ground	Ignition signal	Input	ON	—	Battery voltage
14 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch ON	Approx. 12 V
					Lighting switch OFF	Approx. 0 V
16 (V/W)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 25 MPH (40 km/h)	**NOTE:** Maximum voltage may be 5 V due to specifications (connected units).  PKIA1935E
25 (L)	—	CAN-H	—	—	—	—
26 (Y)	—	CAN-L	—	—	—	—
28 (L/G)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
29	—	Shield	—	—	—	—
30 (L/R)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E

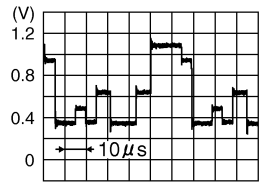
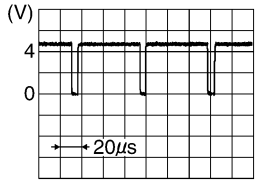
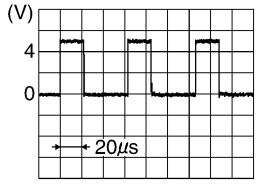
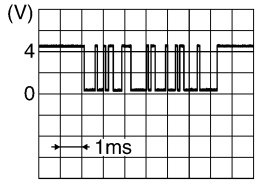
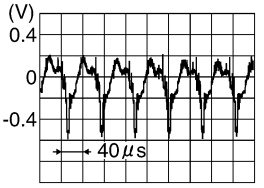
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
32 (O)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
33	—	Shield	—	—	—	—
34 (B/P)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
36 (B/W)	Ground	Communication signal (DCU-DSP)	Output	ON	—	 SKIB3607E
37	—	Shield	—	—	—	—
38 (L)	Ground	Communication signal (DSP-DCU)	Input	ON	—	 SKIB3606E
39	—	Shield	—	—	—	—
40 (R/G)	Ground	Communication signal (DCU-AUD)	Output	ON	Operate audio volume switch	 SKIB3607E
41	—	Shield	—	—	—	—
42 (R/Y)	Ground	Communication signal (AUD-DCU)	Input	ON	Operate audio volume switch	 SKIB3606E

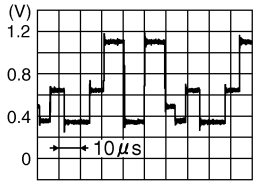
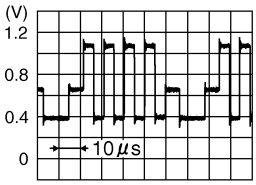
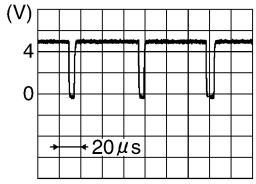
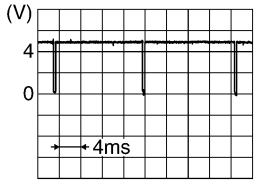
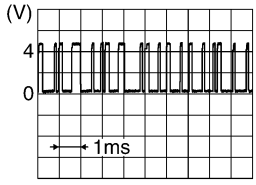
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
43 (R)	Ground	RGB synchronizing signal	Input	ON	When displaying RGB image	 SKIB3603E
44 (BR/Y)	Ground	RGB signal (R: red)	Input	ON	Start Confirmation/Adjustment (Navigation) mode, and then display color bar by selecting “Color Spectrum bar” on Display Diagnosis screen	 SKIB7360E
45	—	Shield	—	—	—	—
46 (BR/W)	Ground	RGB signal (G: green)	Input	ON	Start Confirmation/Adjustment (Navigation) mode, and then display color bar by selecting “Color Spectrum bar” on Display Diagnosis screen	 SKIB7361E
47	—	Shield	—	—	—	—
48 (BR)	Ground	RGB signal (B: blue)	Input	ON	Start Confirmation/Adjustment (Navigation) mode, and then display color bar by selecting “Color Spectrum bar” on Display Diagnosis screen	 SKIB7362E
49	—	Shield	—	—	—	—
50 (G/Y)	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	 SKIB7769E
51 (B)	Ground	RGB area (YS) signal	Output	ON	Set the selector lever in R position, and then display the rear view image	 SKIB3599E

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
52 (G/R)	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	 SKIB7770E
53 (W)	Ground	Vertical synchronizing (VP) signal	Input	ON	—	 SKIB3598E
54 (G/O)	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	 SKIB7771E
55 (R)	Ground	Horizontal synchronizing (HP) signal	Input	ON	—	 SKIB3601E
56 (G)	Ground	RGB synchronizing signal	Output	ON	When displaying RGB image	 SKIB3603E

Terminals and Reference Value for Display

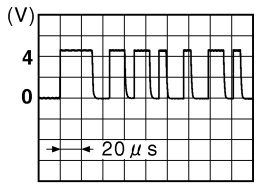
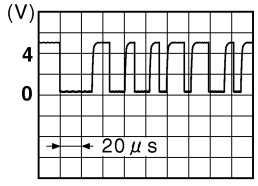
NKS0023L

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (B)	Ground	Ground	—	ON	—	Approx. 0 V
2 (L/W)	Ground	Power supply (Inverter)	Input	ON	—	Approx. 9 V
3 (L/Y)	Ground	Power supply (Signal)	Input	ON	—	Approx. 9 V
4	—	Shield	—	—	—	—
6 (G/R)	Ground	RGB signal (G: green)	Input	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Display Color Spectrum Bar” on Display Diagnosis screen	 SKIB7770E
7	—	Shield	—	—	—	—
8 (R)	Ground	Horizontal synchronizing (HP) signal	Output	ON	—	 SKIB3601E
9 (B)	Ground	RGB area (YS) signal	Input	ON	Set the selector lever in R position, and then display the rear view image	 SKIB3599E
11 (B/W)	Ground	Communication signal (DCU-DSP)	Input	ON	—	 SKIB3607E
13 (P)	Ground	Ground (Inverter)	—	ON	—	Approx. 0 V
14 (P/L)	Ground	Ground (Signal)	—	ON	—	Approx. 0 V
15 (R)	Ground	Rear view image signal	Input	ON	Set the selector lever in R position, and then display the rear view image	 SKIB3608E

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
17 (G/Y)	Ground	RGB signal (R: red)	Input	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Display Color Spectrum Bar” on Display Diagnosis screen	 SKIB7769E
18 (G/O)	Ground	RGB signal (B: blue)	Input	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting “Display Color Spectrum Bar” on Display Diagnosis screen	 SKIB7771E
19 (G)	Ground	RGB synchronizing signal	Input	ON	When displaying RGB image	 SKIB3603E
20 (W)	Ground	Vertical synchronizing (VP) signal	Output	ON	—	 SKIB3598E
21	—	Shield	—	—	—	—
22 (L)	Ground	Communication signal (DSP-DCU)	Output	ON	—	 SKIB3606E
23	—	Shield	—	—	—	—

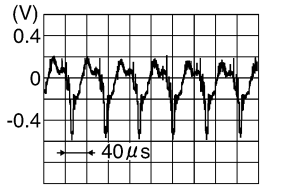
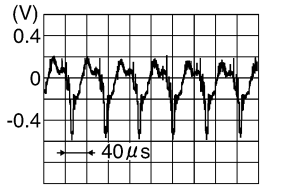
Terminals and Reference Value for A/C and AV Switch

NKS0023M

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
2 (P/B)	Ground	ACC power supply	Input	ACC	—	Battery voltage
3 (R/L)	Ground	Illumination signal	Input	ON	Lighting switch ON	Approx. 12 V
					Lighting switch OFF	Approx. 0 V
4 (R/W)	Ground	Illumination control signal	Input	ON	Illumination control switch is operated by lighting switch in ON position	Changes between approx. 0 and approx. 12 V
5 (B)	Ground	Ground	—	ON	—	Approx. 0 V
6 (L/G)	Ground	Communication signal (+)	Input/ Output	ON	—	 SKIB7378E
7	—	Shield	—	—	—	—
8 (L/R)	Ground	Communication signal (–)	Input/ Output	ON	—	 SKIB7379E
12 (R)	Ground	Remote control A	Input	ON	Press and hold MODE switch	Approx. 0 V
					Press and hold SEEK UP switch	Approx. 1.7 V
					Press and hold VOL UP switch	Approx. 3.3 V
					Except for above	Approx. 5 V
13 (G)	Ground	Remote control B	Input	ON	Press and hold POWER switch	Approx. 0 V
					Press and hold SEEK DOWN switch	Approx. 1.7 V
					Press and hold VOL DOWN switch	Approx. 3.3 V
					Except for above	Approx. 5 V
14 (B/W)	Ground	Remote control ground	—	ON	—	Approx. 0 V
16 (G/W)	Ground	Rear window defogger ON signal	Output	ON	Press and hold rear window defogger button	Approx. 0 V
					Except for above	Approx. 5 V

Terminals and Reference Value for Rear View Camera Control Unit

NKS0023N

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	–			Ignition switch	Operation	
1 (Y)	Ground	Battery power supply	Input	OFF	—	Battery voltage
2 (P/B)	Ground	ACC power supply	Input	ACC	—	Battery voltage
3 (B)	Ground	Ground	—	ON	—	Approx. 0 V
4 (G/W)	Ground	Reverse signal	Input	ON	Selector lever in R position	Approx. 12 V
					Other than selector lever in R position	Approx. 0 V
5 (V/W)	Ground	Camera-connection recognition signal	Output	ON	—	Approx. 0 V
6 (O)	—	Data transmit/receive signal	—	—	—	—
8 (L)	Ground	Camera power supply	Output	ON	Set the selector lever in R position, and then display the rear view image	Approx. 6 V
9	—	Shield	—	—	—	—
10 (R)	Ground	Rear view image signal	Input	ON	Set the selector lever in R position, and then display the rear view image	 SKIB3608E
11	—	Shield	—	—	—	—
12 (P/L)	Ground	Rear view image signal	Output	ON	Set the selector lever in R position, and then display the rear view image	 SKIB3608E

Special Note for Trouble Diagnosis

NKS002Q8

Prior to performing trouble diagnosis, make sure there are no corresponding description in the “Example of Symptoms Possible No Malfunction”. Refer to AV-195, "Example of Symptoms Possible No Malfunction" .

On Board Self-Diagnosis Function

NKS0023O

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 cannot be performed by the system), confirmation of preset value, and an error history.

DIAGNOSIS ITEM

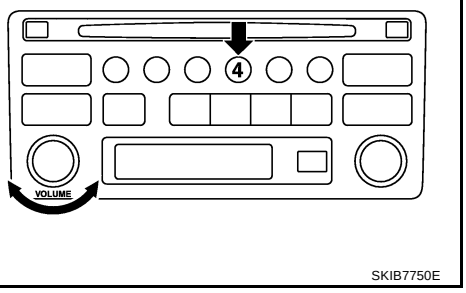
<table>
<tr><th colspan="4">Mode</th><th>Description</th></tr>
<tr><td colspan="4">Self Diagnosis (DCU)</td><td>● Display control unit diagnosis
● Analyzes connection between the display control unit and each unit, and operation of each unit.</td></tr>
<tr><td colspan="4">Self Diagnosis (NAVI)</td><td>● NAVI control unit diagnosis (DVD-ROM drive will not be diagnosed when no DVD-ROM is in it.).
● Analyzes connection between the NAVI control unit and the GPS antenna.</td></tr>
<tr><td rowspan="10">Confirmation/ Adjustment</td><td colspan="3">Display Diagnosis</td><td>Color tone and shading of the display control unit-generated image can be checked by the display of a color bar and a gray scale.</td></tr>
<tr><td colspan="3">Vehicle Signals</td><td>Diagnosis of signals that are input to display control unit can be performed for Vehicle Speed, IGN, Reverse and Light.</td></tr>
<tr><td colspan="3">Auto Climate Control</td><td>Refer to ATC-47, "Self-diagnosis Function" .</td></tr>
<tr><td rowspan="9">Navigation</td><td colspan="2">Display Diagnosis</td><td>Color tone and shading of the NAVI control unit-generated image can be checked by the display of a color bar and a gray scale.</td></tr>
<tr><td colspan="2">Vehicle Signals</td><td>Diagnosis of signals that are input to NAVI control unit can be performed for Vehicle speed, Lights, Ignition and Reverse.</td></tr>
<tr><td rowspan="2">Navigation</td><td>Steering Angle Adjustment</td><td>This mode is used to correct difference between actual turning angle of a vehicle and turning angle of the vehicle mark on the display.</td></tr>
<tr><td>Speed Calibration</td><td>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.</td></tr>
<tr><td colspan="2">Error History</td><td>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.</td></tr>
<tr><td colspan="2">Delete Unit Connection Log</td><td>Erase the connection history of unit and error history.</td></tr>
<tr><td colspan="4">CAN DIAG SUPPOPT MONITOR</td><td>The transmitting/receiving of CAN communication can be monitored.</td></tr>
</table>

Self-Diagnosis Mode (DCU)

NKS0023P

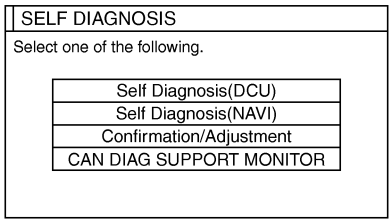
OPERATION PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “4” 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 “BACK” button.



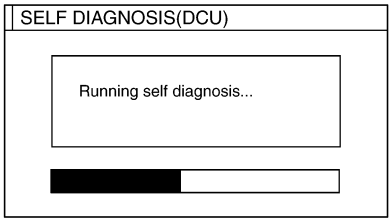
SKIB7750E

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



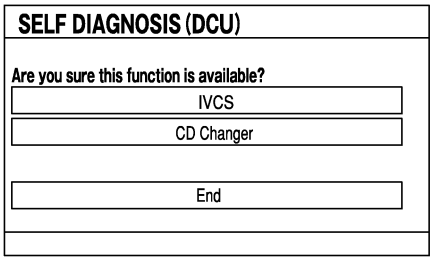
SKIB7874E

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



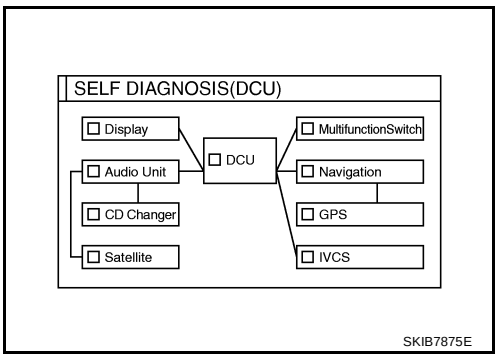
SKIA4208E

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.



SKIB7751E

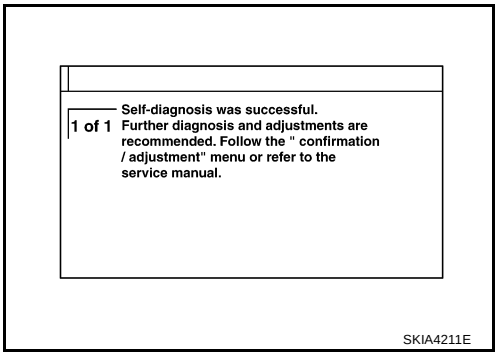
7. On the diagnosis results screen, each unit name and connection line will be colored according to the diagnosis result, as follows.



Green : No malfunctioning.
Gray : Cannot be judged by self-diagnosis results.
Red : Unit is malfunctioning.

NOTE:
- Satellite = Satellite radio tuner
- DCU = Display control unit
- Multifunction switch = A/C and AV switch
- Navigation = NAVI control unit
- GPS = GPS antenna
- 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.
	DCU	Display	Audio Unit	Navigation	GPS	Satellite	
Red	×						1
Gray		×					2
			×			×	3
				×	×		4
					×		5
						×	6

- When A/C and AV switch has a malfunction, the self-diagnosis cannot be started. Refer to AV-177, "Unable to Operate System with A/C and AV Switch" .
- When display has a malfunction, the self-diagnosis cannot be started. Refer to AV-179, "All Images Are Not Displayed" .

Self-Diagnosis Codes

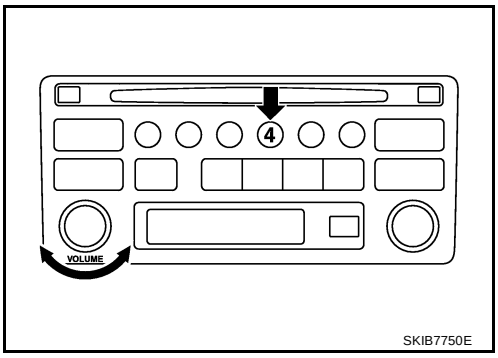
Diagnosis No.	Possible cause	Action to take
1	Display control unit malfunction is detected.	Replace display control unit.
2	Malfunction is detected on communication signal between display control unit and display.	1. Check communication circuit between display control unit and display. 2. Check communication signal between display control unit and display. 3. If the results from the above checkup show no malfunction, replace either display control unit or display, and then start self-diagnosis. 4. If self-diagnosis results still show any malfunction, replace the other unit.
3	● Audio unit power supply circuit malfunction is detected. ● Malfunction is detected on communication signal between display control unit and audio unit.	1. Check audio unit power supply circuit. 2. Check communication circuit between display control unit and audio unit. 3. Check communication signal between display control unit and audio unit. 4. If the results from the above checkup show no malfunction, replace either display control unit or audio unit, and then start self-diagnosis. 5. If self-diagnosis results still show any malfunction, replace the other unit.
4	● NAVI control unit power supply and ground circuit malfunction is detected. ● Malfunction is detected on communication signal between display control unit and NAVI control unit.	1. Check NAVI control unit power supply and ground circuit. 2. Check communication circuit between display control unit and NAVI control unit. 3. If the results from the above checkup show no malfunction, replace either display control unit or NAVI control unit, and then start self-diagnosis. 4. If self-diagnosis results still show any malfunction, replace the other unit.
5	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 NAVI control unit.
6	● Satellite radio tuner power supply and ground circuit malfunction is detected. ● Malfunction is detected on communication signal between audio unit and satellite radio tuner.	1. Check satellite radio tuner power supply and ground circuit. 2. Check communication circuit between audio unit and satellite radio tuner. 3. Check communication signal between audio unit and satellite radio tuner. 4. If the results from the above checkup show no malfunction, replace either audio unit or satellite radio tuner, and then start self-diagnosis. 5. If self-diagnosis results still show any malfunction, replace the other unit.

Self-Diagnosis Mode (NAVI)

NKS0023Q

OPERATION PROCEDURE

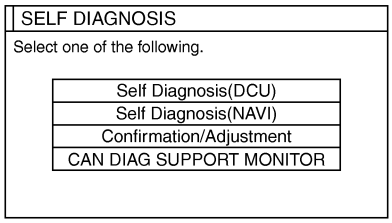
1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “4” button, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.)
   - Shifting from current screen to previous screen is performed by pressing “BACK” button.



SKIB7750E

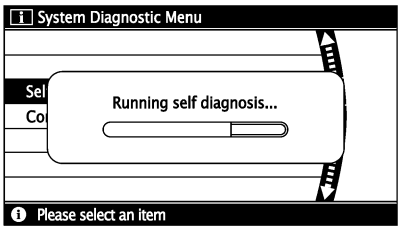
4. The initial trouble diagnosis screen will be shown, and items “Self Diagnosis (DCU)”, “Self Diagnosis (NAVI)”, “Confirmation/ Adjustment” and “CAN DIAG SUPPORT MONITOR” will become selective.

   NOTE:
   Select “Self Diagnosis (DCU)” when “Self Diagnosis (NAVI)” is not available. Repair malfunctioning part.



SKIB7874E

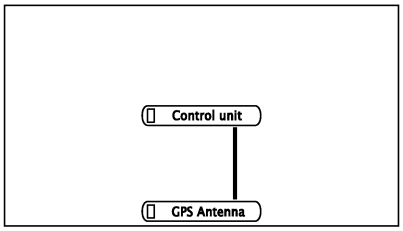
5. Perform self-diagnosis by selecting the “Self Diagnosis (NAVI)”.
   - Self-diagnosis screen is displayed, and then self-diagnosis starts.
   - The bar graph visible below self-diagnosis screen displays progress of the diagnosis.



SKIB6972E

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

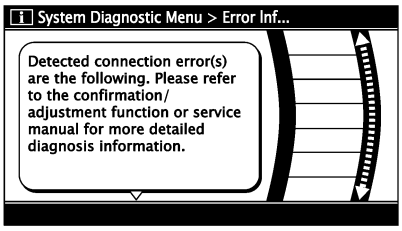
Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
DVD-ROM drive undiagnosed	Gray	Green
DVD-ROM and DVD-ROM drive malfunction	Yellow	Green
Unit returned an error	Red	Green



SKIB7772E

NOTE:
- Control unit = NAVI control unit
- Only Control unit (NAVI control unit) is displayed in red.
- If multiple malfunctions occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > yellow > gray.

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

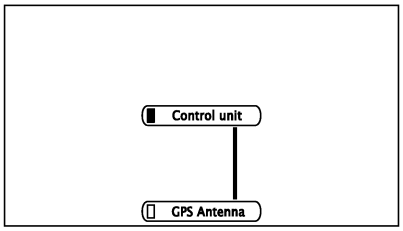
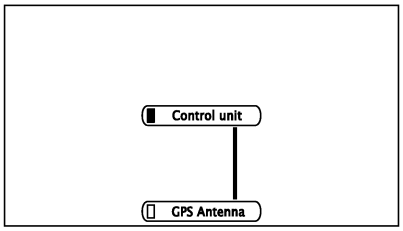
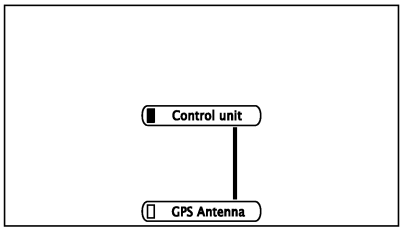
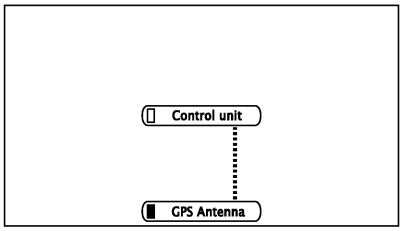


SKIB3659E

SELF-DIAGNOSIS RESULT

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

Quick Reference Table

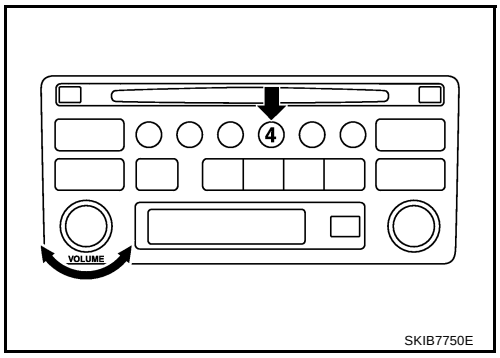
Self-diagnosis result screen	Possible cause	Action to take
 SKIB7773E	NAVI control unit malfunction is detected.	Replace NAVI control unit. Refer to AV-198, "Removal and Installation of NAVI Control Unit" .
 SKIB7774E	● Malfunction is detected on DVD-ROM drive pickup lens in NAVI control unit. ● There 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 NAVI control unit.
 SKIB7775E	DVD-ROM not inserted is detected.	Insert DVD-ROM.
 SKIB7776E	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 NAVI control unit.

Confirmation/Adjustment Mode

NKS0023R

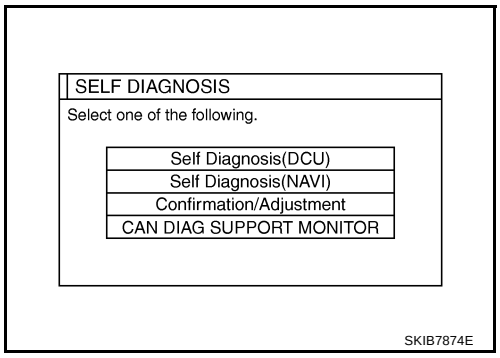
OPERATION PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “4” 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 “BACK” button.



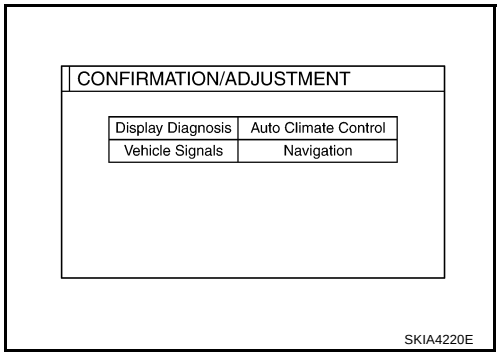
SKIB7750E

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



SKIB7874E

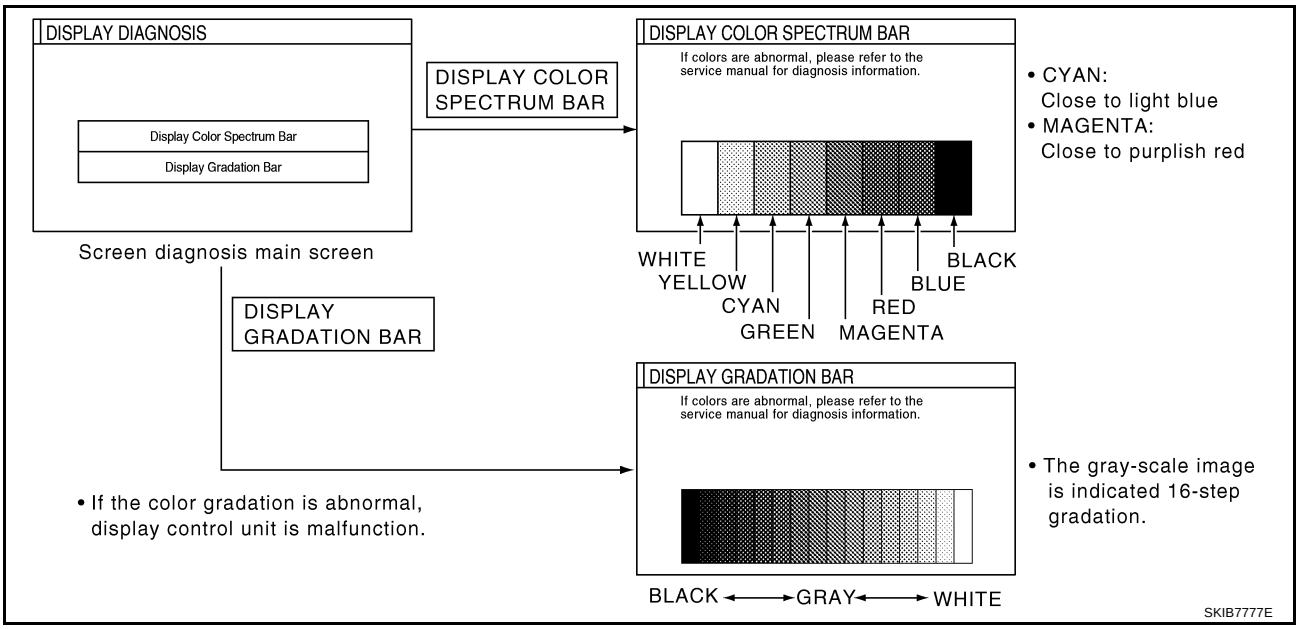
6. Each diagnosis is shown by selecting each screen switch on Confirmation/Adjustment screen.



SKIA4220E

DISPLAY DIAGNOSIS

Color tone and shading of the display control unit-generated image can be checked by the display of a color bar and a gray scale.



- 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

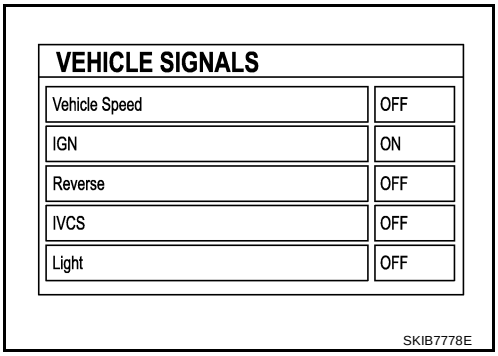
VEHICLE SIGNALS

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

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

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

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



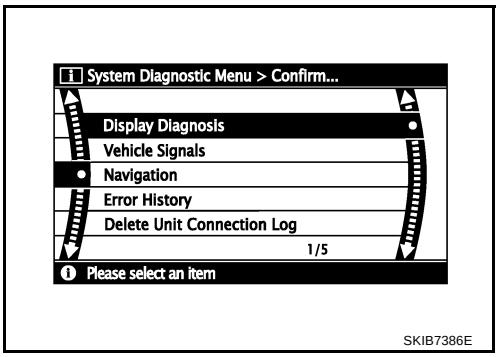
Diagnosis item	Display	Condition	Remarks
Vehicle Speed	ON	When vehicle speed is more than 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	When vehicle speed is 0 km/h (0 MPH)	
	—	Ignition switch in ACC position	
IGN	ON	Ignition switch ON	—
	OFF	Ignition switch ACC position	
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	
IVCS	OFF	—	This vehicle does not use it.
Light	ON	Lighting switch ON	—
	OFF	Lighting switch OFF	

AUTO CLIMATE CONTROL

Refer to ATC-47, "Self-diagnosis Function" .

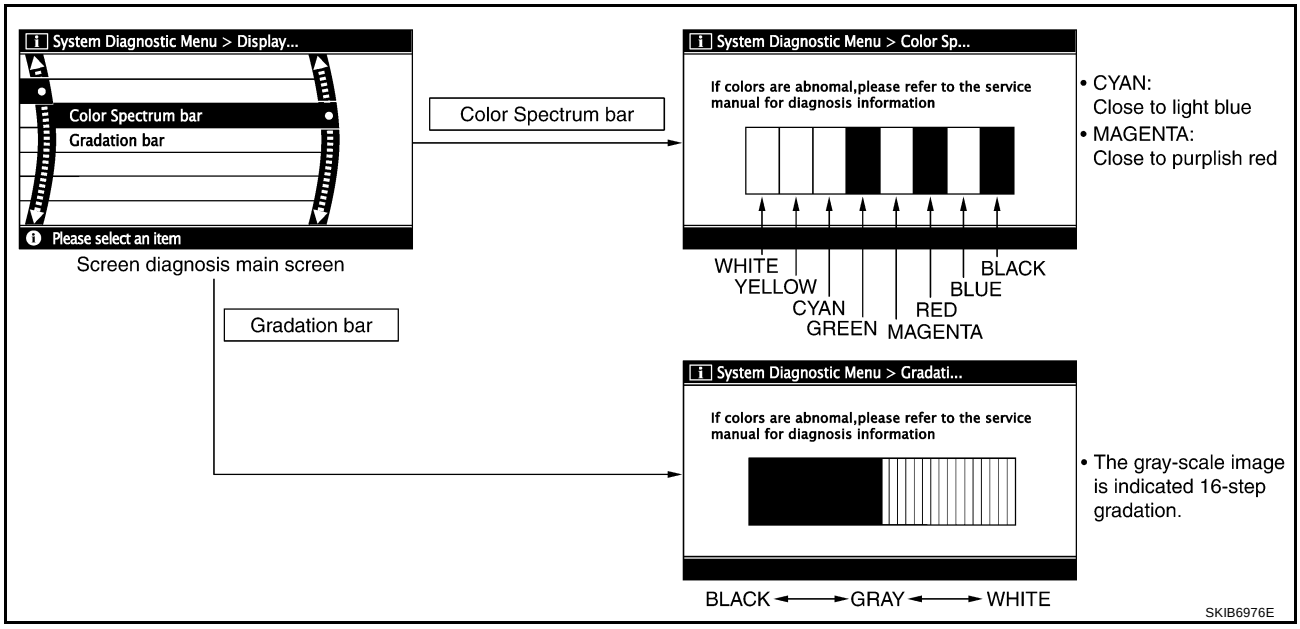
NAVIGATION

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



Display Diagnosis

Color tone and shading of the NAVI control unit-generated image can be checked by the display of a color bar and a gray scale.

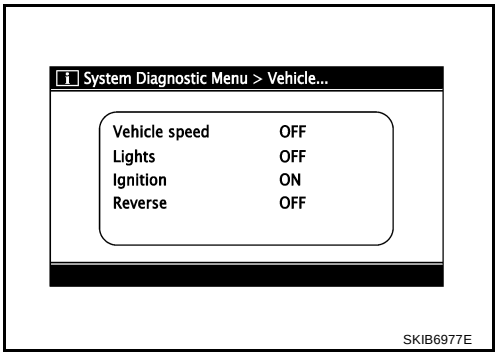


- If RGB signal is malfunctioning, the tint of the color bar display is as follows.

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

Vehicle Signals

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

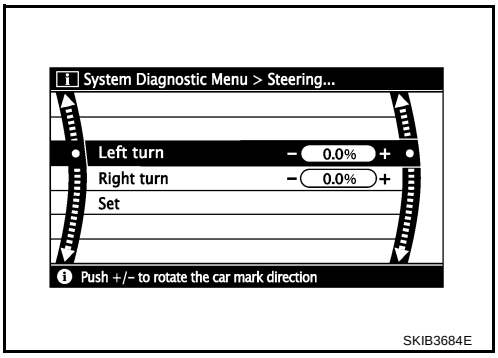


Diagnosis item	Display	Condition	Remarks
Vehicle speed	ON	When vehicle speed is more than 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	When vehicle speed is 0 km/h (0 MPH)	
	—	Ignition switch in ACC position	
Lights	ON	Lighting switch ON	—
	OFF	Lighting switch OFF	
Ignition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

Navigation

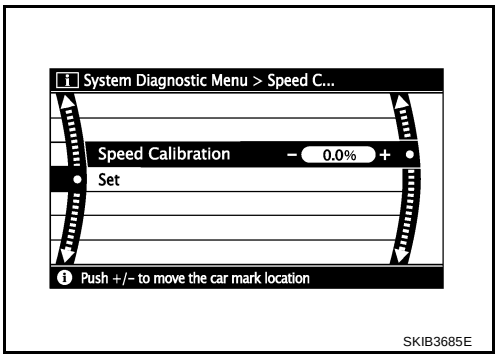
Steering Angle Adjustment

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



Speed Calibration

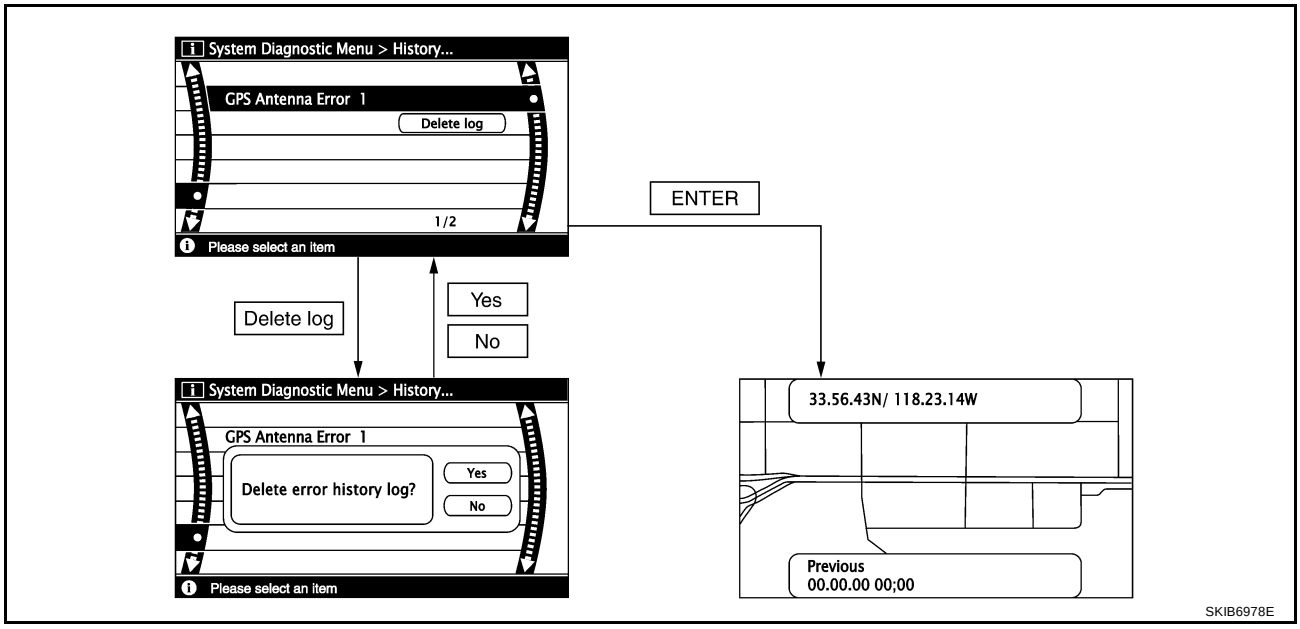
Usually the automatic distance correction function adjusts the malfunction in distance caused by the tires wearing down or the tire pressure change. If prompt adjustment is necessary when the tire chains are installed, etc., perform this procedure.



Error History

Diagnosis results of self-diagnosis depend on if any error occurred during the time after selecting “Self Diagnosis” until self-diagnosis results is displayed.
Meanwhile, when an error occurs before selecting “Self Diagnosis”, and if an error does not occur until self-diagnosis results is displayed, a diagnosis result is judged as normal.
Consequently, a diagnosis needs to be performed with “Error History” for the past error that is not available with self-diagnosis.
“Error History” displays the time and place of the most recent occurrence of that error. However, take note of the following points.

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



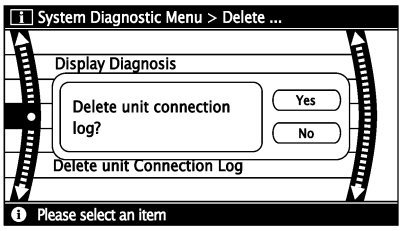
Diagnosis by Error History

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

Error item	Possible cause	Action to take
GPS Antenna Error	GPS antenna connection malfunction is detected.	1. Start self-diagnosis, and make sure of the result. 2. If any error is found, GO TO 3. If any error is not found, delete the error history and end the diagnosis. (This is not a malfunction.) 3. Check if GPS antenna feeder line is snapped or pinched. 4. If the results from the above checkup show no malfunction, replace GPS antenna, and then restart self-diagnosis. 5. If self-diagnosis results still show any malfunction, replace NAVI control unit.
FLASH-ROM Error Of Control Unit	NAVI control unit malfunction is detected.	1. Start self-diagnosis, and make sure of the result. 2. If any error is found, replace NAVI control unit. Refer to AV-198, "Removal and Installation of NAVI Control Unit" . If any error is not found, delete the error history and end the diagnosis. (This is not a malfunction.)
Connection Of Gyro		
GPS Communication Error	GPS malfunction is detected.	If the symptoms such as the GPS receipt malfunction occur, intermittent malfunction caused by strong radio interference may be detected. If the malfunction always occurs, replace NAVI control unit.
GPS ROM Error		
GPS RAM Error		
GPS RTC Error		
DVD-ROM Mechanism not Detected	● Malfunction is detected on DVD-ROM drive pickup lens in 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 NAVI control unit.
DVD-ROM Communication Error		
DVD-ROM Mechanism Error		
DVD-ROM Focus Error		
DVD-ROM TOC Error		
DVD-ROM Disc Error		
DVD-ROM Seek Error		
DVD-ROM Error Correction Error		
DVD-ROM Read Error		
DVD-ROM Data Transfer Error		
DVD-ROM Data Error		
DVD-ROM Loading / Eject Error		
DVD-ROM Time-out		

Delete Unit Connection Log

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



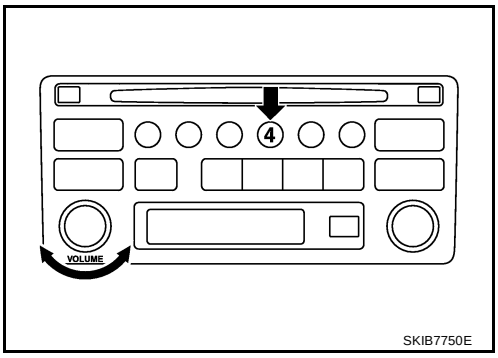
SKIB6979E

CAN DIAG SUPPORT MONITOR

NKS0023S

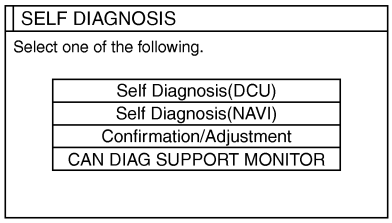
OPERATION PROCEDURE

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “4” 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 “BACK” button.



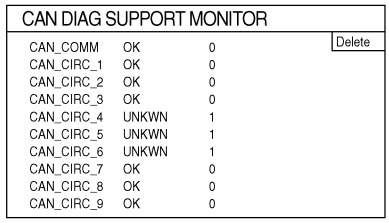
SKIB7750E

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



SKIB7874E

6. The transmitting/receiving of CAN communication can be monitored.



SKIA4288E

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

NOTE:
Counter shows the status of CAN communication.

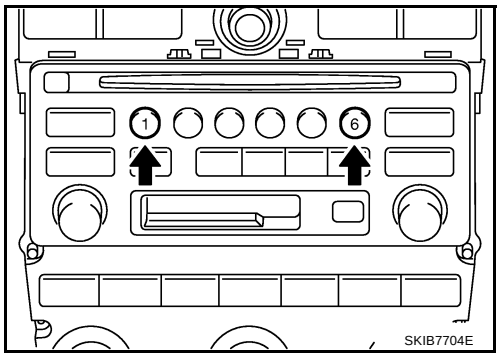
A/C and AV Switch Self-Diagnosis Function

NKS002Q2

Performing self-diagnosis makes it possible to check operation of A/C and AV switch indicator (LED) and other switch.

STARTING THE SELF-DIAGNOSIS MODE

1. Turn ignition switch from OFF to ACC.
2. Within 10 seconds press and hold the switches “1” and “6” simultaneously for 3 seconds.



DIAGNOSIS FUNCTION

The following are checked:

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

NOTE:
Impossible to check rear window defogger switch operation (No beep sound even under normal status).

EXITING THE SELF-DIAGNOSIS MODE

- Turn ignition switch OFF.

CONSULT-II Functions (REAR VIEW CAMERA)

NKS0023U

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

Diagnosis part	Check Item, Diagnosis Mode	Description
REAR VIEW CAMERA	WORK SUPPORT	It can adjust the vehicle width and distance guiding lines that overlap camera image.
	DATA MONITOR	Displays input data for rear view camera control unit in real-time.
	ECU PART NUMBER	Displays rear view camera control unit part number.

CONSULT-II BASIC OPERATION PROCEDURE

Refer to GI-37, "CONSULT-II Start Procedure" .

WORK SUPPORT

Operation Procedure

1. Touch “WORK SUPPORT” on “SELECT DIAG MODE” screen.
2. Touch “SELECT GUIDELINE PATTERN” or “ADJ GUIDELINE POSITION” on “SELECT WORK ITEM” screen.

Item	Description
SELECT GUIDELINE PATTERN	The opening of the vehicle width and distance guiding lines can be selected from 2 patterns.
ADJ GUIDELINE POSITION	Make fine adjustment to the vehicle width and distance guiding lines upper/lower/left/right

For details, refer to AV-174, "Vehicle Width and Distance Guiding Line Correction" .

DATA MONITOR

Operation Procedure

1. Touch “DATA MONITOR” on “SELECT DIAG MODE” screen.
2. Touch either “ALL SIGNALS” or “SELECTION FROM MENU” on “SELECT MONITOR ITEM” screen.

Item	Description
ALL SIGNALS	Monitors all the signal.
SELECTION FROM MENU	Selects and monitors individual items.

3. When “SELECTION FROM MENU” is selected, touch individual items to be monitored. When “ALL SIGNALS” is selected, all the items will be monitored.
4. Touch “START”.
5. Touch “RECORD” while monitoring, then the status of the monitored item can be recorded. To stop recording, touch “STOP”.

Display Item List

Item	Description
R POSI SIG [ON/OFF]	“ON (Selector lever R position)/OFF (other than R position)” status as judged from the reverse signal is displayed.

Vehicle Width and Distance Guiding Line Correction

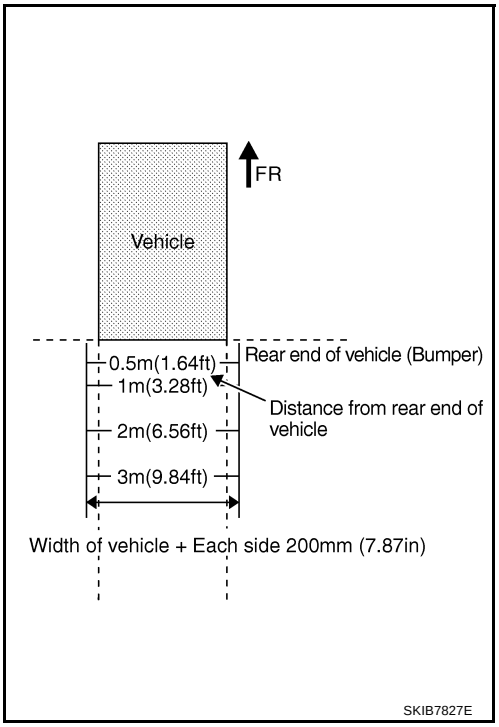
NKS0023V

DESCRIPTION

CONSULT-II is used to modify the guiding lines of the width of vehicle and the distance from rear end of vehicle on the rear view monitor when these lines are derated from the actual width and/or distance, because of rear view camera replacement, etc.

VEHICLE WIDTH AND DISTANCE GUIDING LINE CORRECTION PROCEDURE

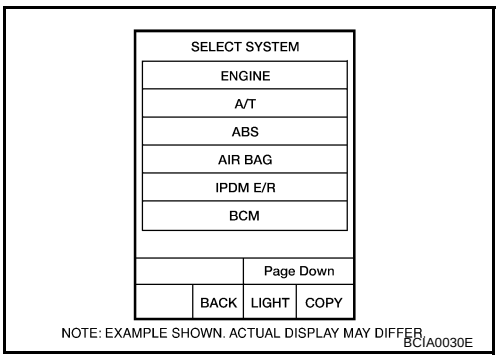
1. Create a correction line to modify the guiding lines inside monitors. Draw lines on the rearward area of the vehicle passing through the following points: 200 mm (7.87 in) from both sides of the vehicle, and 0.5 m (1.64 ft), 1 m (3.28 ft), 2 m (6.56 ft), and 3 m (9.84 ft) from the rear end of the bumper.



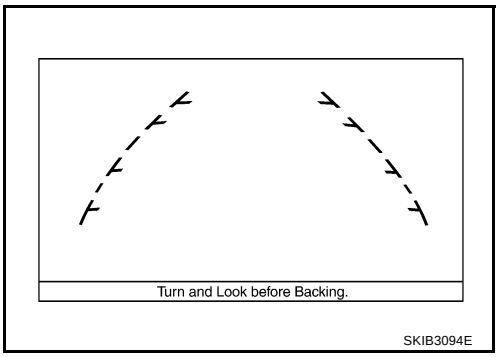
2. Connect CONSULT-II and CONSULT-II CONVERTER, and then touch “REARVIEW CAMERA” on “SELECT SYSTEM” screen.

   WARNING:

   Correct the guiding line with the engine stopped for safety.

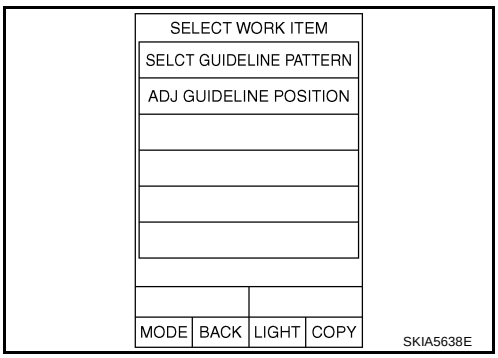


3. Shift selector lever to R position.



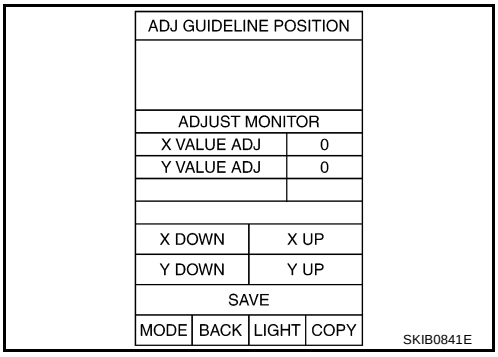
4. Touch “ADJ GUIDELINE POSITION” on “SELECT WORK ITEM” screen.

NOTE:
When starting “ADJ GUIDELINE POSITION” mode, vehicle width guiding lines may move horizontally. It is normal.



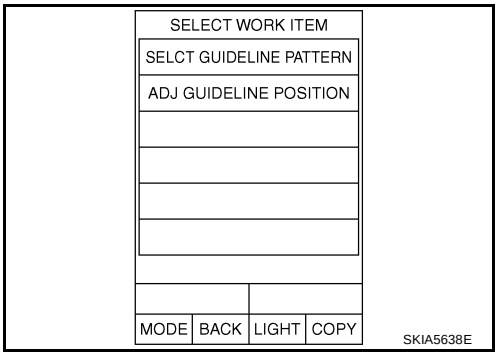
5. Touch “X UP”, “X DOWN”, “Y UP”, and “Y DOWN” so as to align with a correction line created, and then adjust the guiding lines.

Adjustment direction	ADJUST MONITOR	
LEFT/RIGHT	X VALUE ADJ	–8 - 8
UP/DOWN	Y VALUE ADJ	–8 - 8



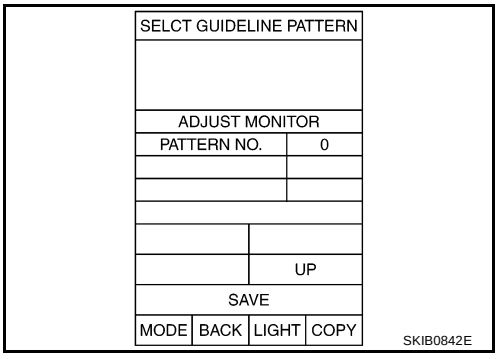
6. If the guiding lines align with the correction lines, touch “SAVE” so as to fix the lines, and then end the correction by touching “END”. GO TO 7 if the guiding lines do not align with the correction lines.

7. Touch “SELECT GUIDELINE PATTERN” on SELECT WORK ITEM screen.



8. Change the pattern of the guiding lines by touching “UP” or “DOWN”. [Select from among 2 patterns (“PATTERN NO. 0 or 1”) of the guiding lines.]
9. Fix the pattern of the guiding lines by touching “SAVE”.
10. End the correction by touching “END”.

NOTE:
If the setting value is changed on “SELECT GUIDELINE PATTERN” and “ADJ GUIDELINE POSITION”, the change is not reflected at the next starting if “SAVE” is not touched.



CAN Communication Check

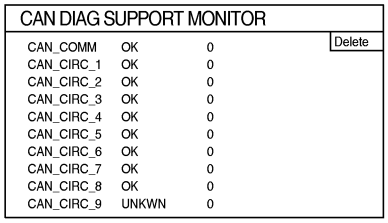
NKS0024D

1. CHECK MONITOR DESCRIPTION

1. Start self-diagnosis of DCU. Refer to AV-158, "Self-Diagnosis Mode (DCU)" .
2. Select “CAN DIAG SUPPORT MONITOR”. Refer to AV-171, "CAN DIAG SUPPORT MONITOR" .

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

(Example)



PKIB6080E

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

CAN DIAG SUPPORT MONITOR Check Sheet

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

>> After filling in CAN DIAG SUPPORT MONITOR Check Sheet, GO TO LAN-3, "Precautions When Using CONSULT-II" .

Unable to Operate System with A/C and AV Switch

NKS0024U

Symptom: Unable to operate A/C system, audio system and navigation system with A/C and AV switch. (Unable to start self-diagnosis.)

1. CHECK CONDITION

1. Turn ignition switch ON.
2. Check if an image is displayed on the screen.

Is an image displayed on the screen?

YES >> GO TO 2.
NO >> Repair malfunctioning part. Refer to AV-179, "All Images Are Not Displayed" .

2. SELF-DIAGNOSIS OF A/C AND AV SWITCH

Start self-diagnosis of A/C and AV switch, and check the self-diagnosis result. Refer to AV-172, "A/C and AV Switch Self-Diagnosis Function" .

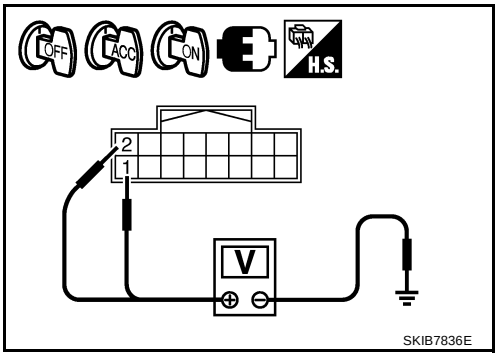
OK or NG

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

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

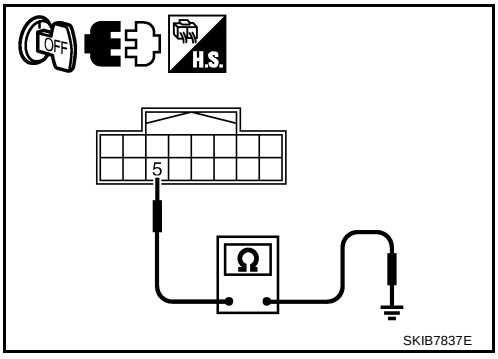
1. Check voltage between A/C and AV switch harness connector terminals and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal				
M48	1	Ground	Battery voltage	Battery voltage	Battery voltage
	2		0 V	Battery voltage	Battery voltage



2. Turn ignition switch OFF.
3. Disconnect A/C and AV switch connector.
4. Check continuity between A/C and AV switch harness connector M48 terminal 5 and ground.

5 – Ground : Continuity should exist.



OK or NG

OK >> Replace A/C and AV switch.
NG >> Repair harness or connector.

4. CHECK HARNESS

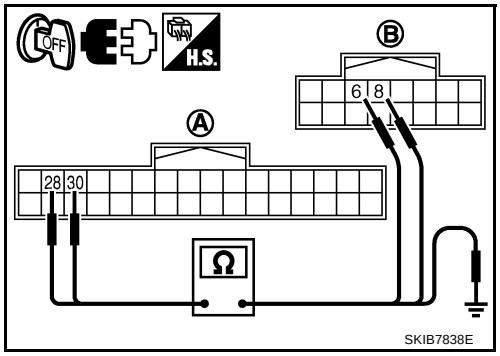
1. Turn ignition switch OFF.
2. Disconnect display control unit and A/C and AV switch connectors.
3. Check continuity between display control unit harness connector (A) M43 terminals 28, 30 and A/C and AV switch harness connector (B) M48 terminals 6, 8.

28 – 6 : Continuity should exist.

30 – 8 : Continuity should exist.

4. Check continuity between display control unit harness connector (A) M43 terminals 28, 30 and ground.

28, 30 – Ground : Continuity should not exist.



OK or NG

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

5. CHECK A/C AND AV SWITCH AND DISPLAY CONTROL UNIT

1. Replace A/C and AV switch or display control unit.
2. Make sure that A/C system, audio system and navigation system can be operated by A/C and AV switch.

OK or NG

OK >> INSPECTION END
NG >> Replace the other unit.

All Images Are Not Displayed

NKS0024L

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

1. CHECK CONDITION

When operating audio and air conditioner, make sure that they operate correctly.

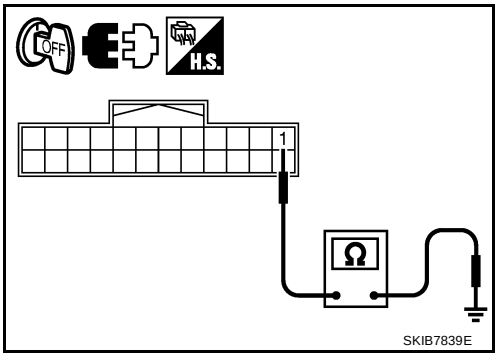
Do audio and air conditioner operate normally?

YES >> GO TO 2.
NO >> GO TO 5.

2. CHECK DISPLAY GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display connector.
3. Check continuity between display harness connector M38 terminal 1 and ground.

1 – Ground : Continuity should exist.



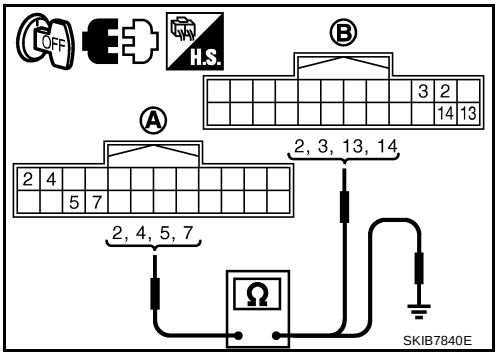
OK or NG

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

3. CHECK HARNESS

1. Disconnect display control unit connector.
2. Check continuity between display control unit harness connector (A) M42 terminals 2, 4, 5, 7 and display harness connector (B) M38 terminals 2, 3, 13, 14.

2 – 2 : Continuity should exist.
4 – 3 : Continuity should exist.
5 – 13 : Continuity should exist.
7 – 14 : Continuity should exist.



3. Check continuity between display control unit harness connector (A) M42 terminals 2, 4 and ground.

2, 4 – Ground : Continuity should not exist.

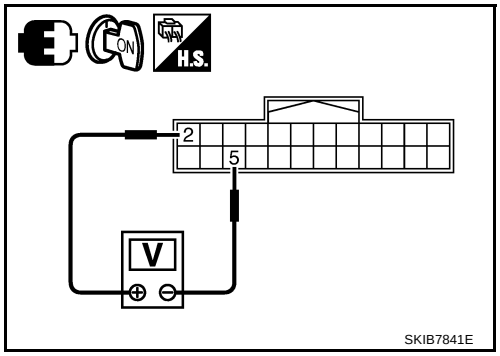
OK or NG

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

4. CHECK DISPLAY POWER SUPPLY AND GROUND CIRCUIT (INVERTER AND SIGNAL)

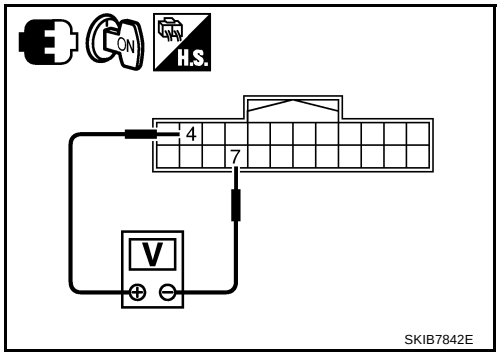
1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. Check voltage between display control unit harness connector M42 terminals 2 and 5.

2 – 5 : Approx. 9 V



4. Check voltage between display control unit harness connector M42 terminals 4 and 7.

4 – 7 : Approx. 9 V



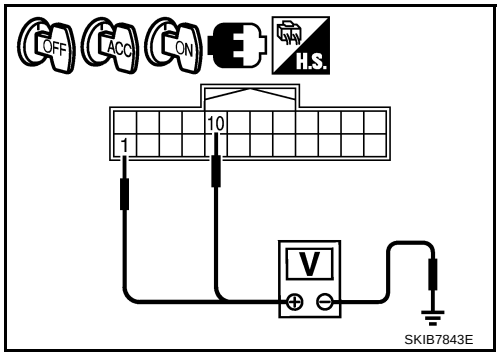
OK or NG

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

5. CHECK DISPLAY CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

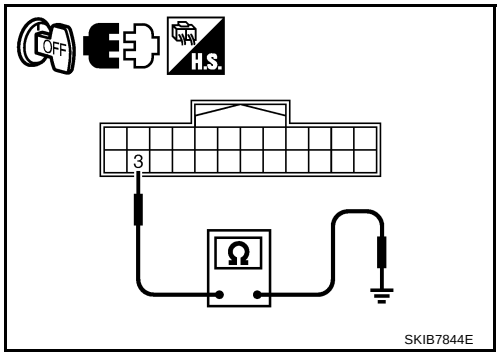
1. Check voltage between display control unit harness connector terminals and ground.

Terminals			OFF	ACC	ON
(+)		(–)			
Connector	Terminal				
M42	1	Ground	Battery voltage	Battery voltage	Battery voltage
	10		0 V	Battery voltage	Battery voltage



2. Turn ignition switch OFF.
3. Disconnect display control unit connector.
4. Check continuity between display control unit harness connector M42 terminal 3 and ground.

3 – Ground : Continuity should exist.



OK or NG

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

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

NKS0024T

Symptom: Rear view image is not displayed when selector lever is set in R position. (RGB image is displayed.)

1. CHECK CONDITION

1. Turn ignition switch ON.
2. Check if the screen holds current display or shows nothing but warning message when shifting selector lever to R position.

Does the screen change?

YES >> GO TO 2.
NO >> GO TO 12.

2. CONSULT-II FUNCTIONS

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. Refer to AV-173, "CONSULT-II BASIC OPERATION PROCEDURE" .
2. Check if “REARVIEW CAMERA” is shown on the SELECT SYSTEM screen.

Is “REARVIEW CAMERA” shown?

YES >> GO TO 3.
NO >> Check rear view camera control unit power supply and ground circuit, and repair malfunctioning part.

3. CONSULT-II FUNCTIONS

Check if reverse signals input to the rear view camera control unit are normal with DATA MONITOR. Refer to AV-173, "DATA MONITOR" .

OK or NG

OK >> GO TO 4.
NG >> Check rear view camera control unit reverse signal circuit, and repair malfunctioning part.

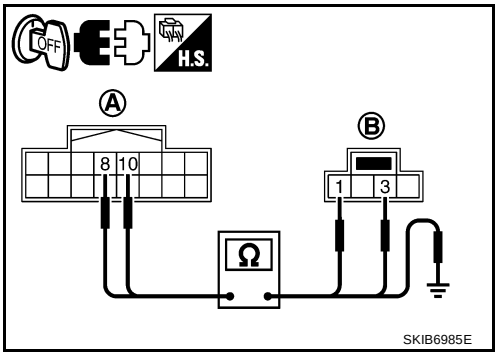
4. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect rear view camera control unit and rear view camera connectors.
3. Check continuity between rear view camera control unit harness connector (A) B37 terminals 8, 10 and rear view camera harness connector (B) D109 terminals 1, 3.

8 – 1 : Continuity should exist.
10 – 3 : Continuity should exist.

4. Check continuity between rear view camera control unit harness connector (A) B37 terminals 8, 10 and ground.

8, 10 – Ground : Continuity should not exist.



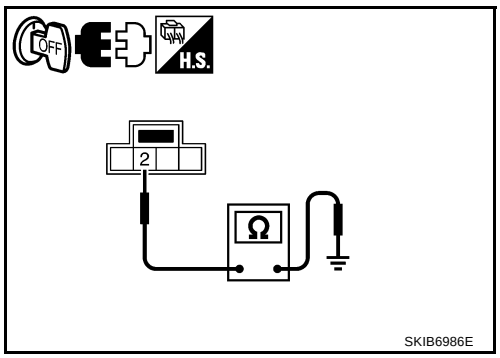
OK or NG

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

5. CHECK REAR VIEW CAMERA GROUND CIRCUIT

Check continuity between rear view camera harness connector D109 terminal 2 and ground.

2 – Ground : Continuity should exist.



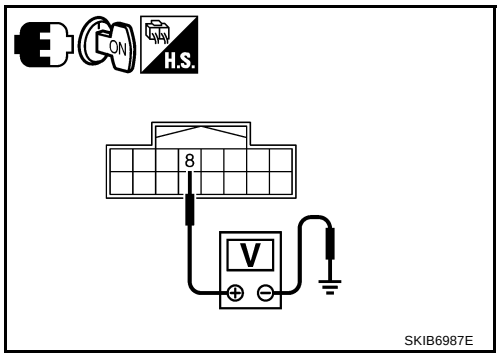
OK or NG

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

6. CHECK REAR VIEW CAMERA POWER SUPPLY CIRCUIT

1. Connect rear view camera control unit and rear view camera connectors.
2. Turn ignition switch ON.
3. When displaying rear view image, check voltage between rear view camera control unit harness connector B37 terminal 8 and ground.

8 – Ground : Approx. 6 V



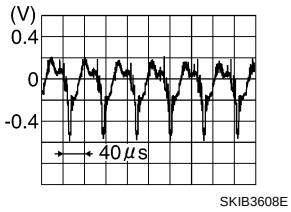
OK or NG

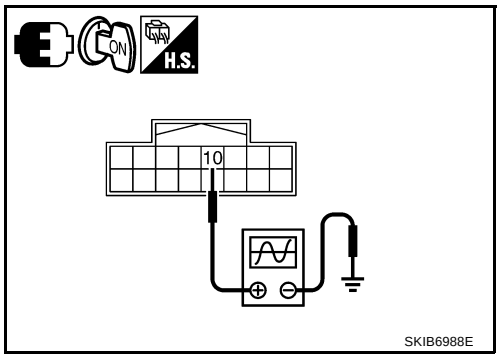
OK >> GO TO 7.
NG >> Replace rear view camera control unit.

7. CHECK REAR VIEW IMAGE SIGNAL

When displaying rear view image, check voltage waveform between rear view camera control unit harness connector B37 terminal 10 and ground with CONSULT-II or oscilloscope.

10 – Ground:





OK or NG

OK >> GO TO 8.
NG >> Replace rear view camera.

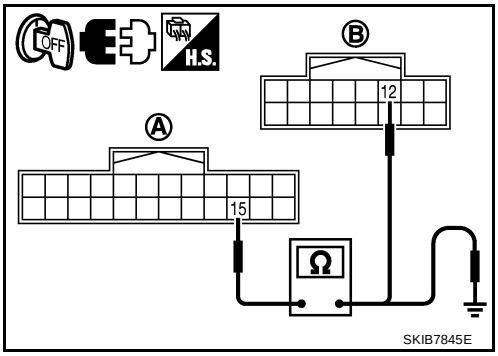
8. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display and rear view camera control unit connectors.
3. Check continuity between display harness connector (A) M38 terminal 15 and rear view camera control unit harness connector (B) B37 terminal 12.

15 – 12 : Continuity should exist.

4. Check continuity between display harness connector (A) M38 terminal 15 and ground.

15 – Ground : Continuity should not exist.



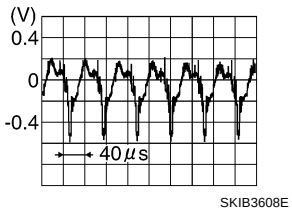
OK or NG

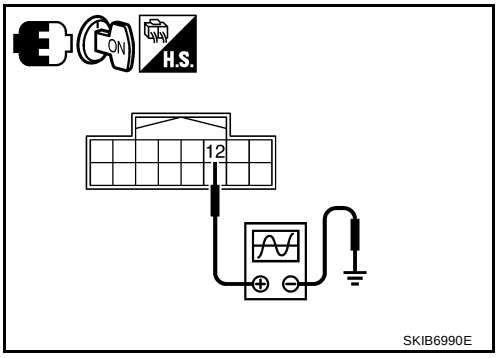
OK >> GO TO 9.
NG >> Repair harness or connector.

9. CHECK REAR VIEW IMAGE SIGNAL

1. Connect display and rear view camera control unit connectors.
2. Turn ignition switch ON.
3. When displaying rear view image, check voltage waveform between rear view camera control unit harness connector B37 terminal 12 and ground with CONSULT-II or oscilloscope.

12 – Ground:





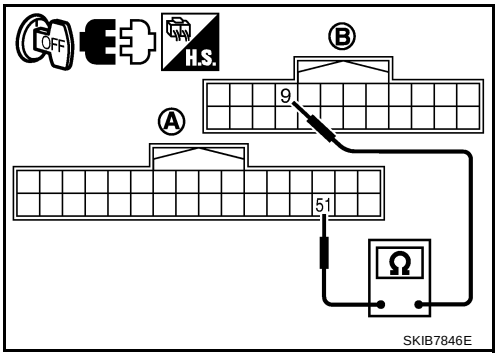
OK or NG

OK >> GO TO 10.
NG >> Replace rear view camera control unit.

10. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit and display connectors.
3. Check continuity between display control unit harness connector (A) M43 terminal 51 and display harness connector (B) M38 terminal 9.

51 – 9 : Continuity should not exist.

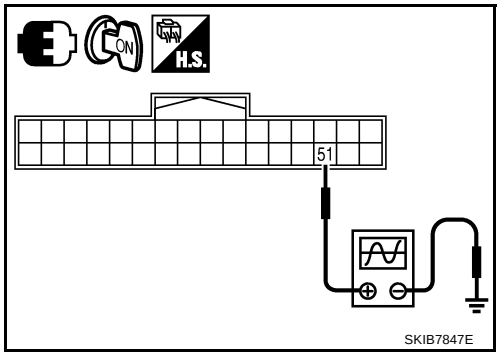


OK or NG

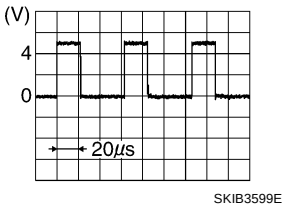
OK >> GO TO 11.
NG >> Repair harness or connector.

11. CHECK RGB AREA (YS) SIGNAL

1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. When displaying rear view image, check voltage waveform between display control unit harness connector M43 terminal 51 and ground with CONSULT-II or oscilloscope.



51 – Ground:



OK or NG

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

12. SELF-DIAGNOSIS OF DCU

Start self-diagnosis of DCU, and check the self-diagnosis result. Refer to AV-158, "Self-Diagnosis Mode (DCU)" .

OK or NG

OK >> GO TO 13.
NG >> Repair malfunctioning part.

13. CHECK DISPLAY CONTROL UNIT REVERSE SIGNAL

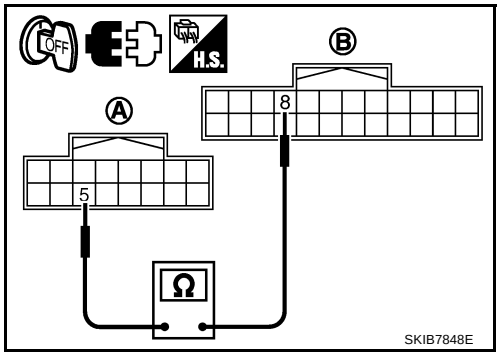
Select “Vehicle Signals” of Confirmation/Adjustment mode, and check the reverse signal inputting to display control unit. Refer to AV-165, "VEHICLE SIGNALS" .

OK or NG

OK >> GO TO 14.
NG >> Check display control unit reverse signal circuit, and repair malfunctioning part.

14. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect rear view camera control unit and display control unit connectors.
3. Check continuity between rear view camera control unit harness connector (A) B37 terminal 5 and display control unit harness connector (B) M42 terminal 8.



5 – 8 : Continuity should exist.

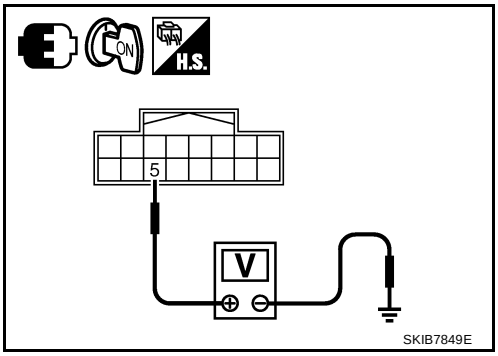
OK or NG

OK >> GO TO 15.
NG >> Repair harness or connector.

15. CHECK CAMERA-CONNECTION RECOGNITION SIGNAL

1. Connect rear view camera control unit and display control unit connectors.
2. Turn ignition switch ON.
3. Check voltage between rear view camera control unit harness connector B37 terminal 5 and ground.

5 – Ground : Approx. 0 V



OK or NG

OK >> Replace display control unit.
NG >> Replace rear view camera control unit.

Status Screen for Audio and A/C Is Not Displayed When Showing Map Screen

NKS0024M

Symptom: Status screen is not displayed in the lower portion of map screen when operating audio system and A/C system.

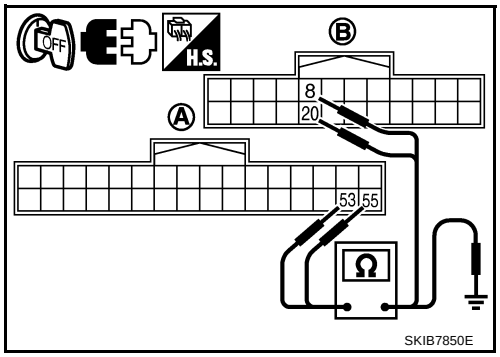
1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit and display connectors.
3. Check continuity between display control unit harness connector (A) M43 terminals 53, 55 and display harness connector (B) M38 terminals 20, 8.

53 – 20 : Continuity should exist.
55 – 8 : Continuity should exist.

4. Check continuity between display control unit harness connector (A) M43 terminals 53, 55 and ground.

53, 55 – Ground : Continuity should not exist.



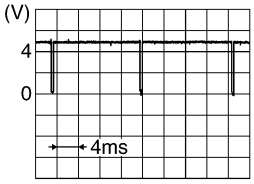
OK or NG

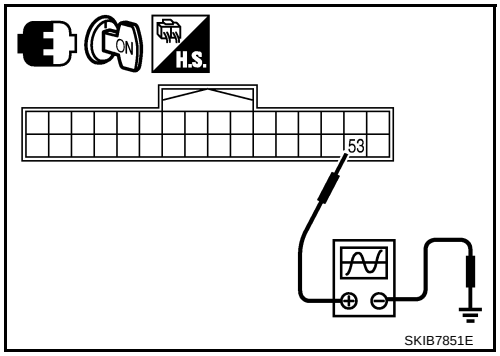
OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK VERTICAL SYNCHRONIZING (VP) SIGNAL

1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. Check voltage waveform between display control unit harness connector M43 terminal 53 and ground with CONSULT-II or oscilloscope.

53 – Ground:





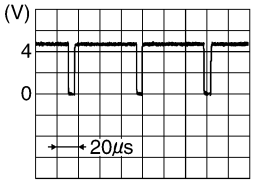
OK or NG

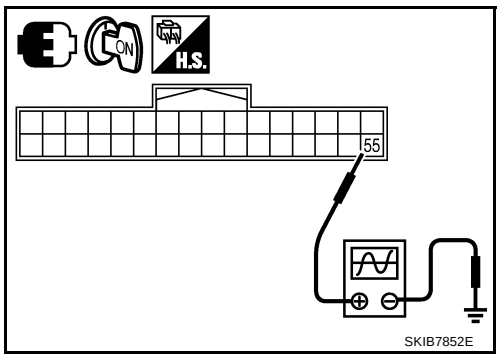
OK >> GO TO 3.
NG >> Replace display.

3. CHECK HORIZONTAL SYNCHRONIZING (HP) SIGNAL

Check voltage waveform between display control unit harness connector M43 terminal 55 and ground with CONSULT-II or oscilloscope.

55 – Ground:





OK or NG

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

Vehicle Mark Is Not Displayed Properly

NKS002QD

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

1. NAVIGATION SYSTEM ADJUSTMENT

1. Select “Navigation” in Confirmation/Adjustment mode, and adjust items, “Steering Angle Adjustment” and “Speed Calibration”. Refer to AV-167, "Navigation" .
2. Check symptom with driving.

Is any malfunction observed?

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

2. SELF-DIAGNOSIS OF NAVI

Start self-diagnosis of NAVI, and check any malfunction related to GPS. Refer to AV-161, "Self-Diagnosis Mode (NAVI)" .

Is any malfunction related to GPS observed?

YES >> Repair malfunctioning part.
NO >> GO TO 3.

3. CHECK VEHICLE SIGNAL

Select “Vehicle Signals” in Confirmation/Adjustment mode, and check the vehicle speed signal and reverse signal inputting to NAVI control unit. Refer to AV-167, "Vehicle Signals" .

OK or NG

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

Tint Is Strange for The RGB Image

NKS0024H

Symptom: Tint of all RGB images is strange.

1. CHECK HARNESS

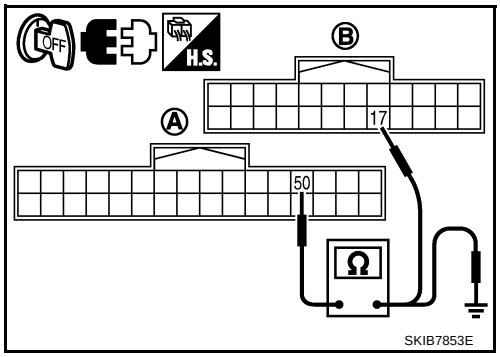
1. Turn ignition switch OFF.
2. Disconnect display control unit and display connectors.
3. Check the malfunctioning circuit according to the symptoms.

- **Light blue (Cyan) tinged screen**
  Check continuity between display control unit harness connector (A) M43 terminal 50 and display harness connector (B) M38 terminal 17.

  50 – 17 : Continuity should exist.

  Check continuity between display control unit harness connector (A) M43 terminal 50 and ground.

  50 – Ground : Continuity should not exist.

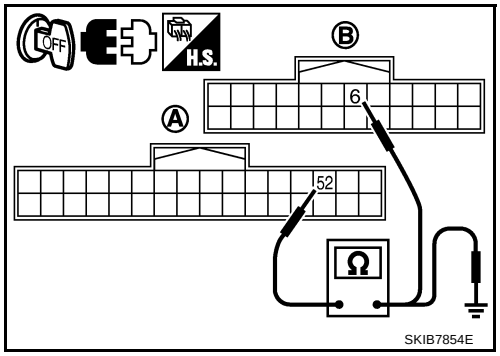


- **Purple (Magenta) tinged screen**
  Check continuity between display control unit harness connector (A) M43 terminal 52 and display harness connector (B) M38 terminal 6.

  52 – 6 : Continuity should exist.

  Check continuity between display control unit harness connector (A) M43 terminal 52 and ground.

  52 – Ground : Continuity should not exist.

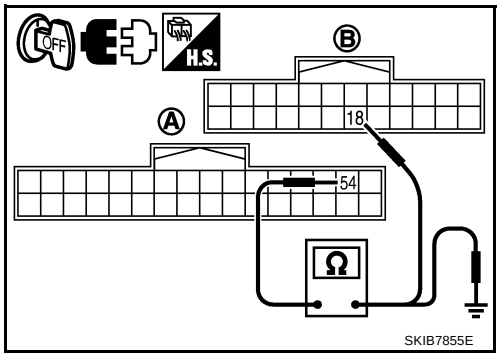


- **Yellow tinged screen**
  Check continuity between display control unit harness connector (A) M43 terminal 54 and display harness connector (B) M38 terminal 18.

  54 – 18 : Continuity should exist.

  Check continuity between display control unit harness connector (A) M43 terminal 54 and ground.

  54 – Ground : Continuity should not exist.



OK or NG

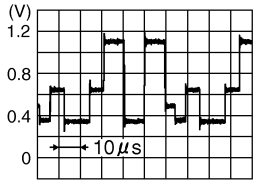
OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK RGB SIGNAL

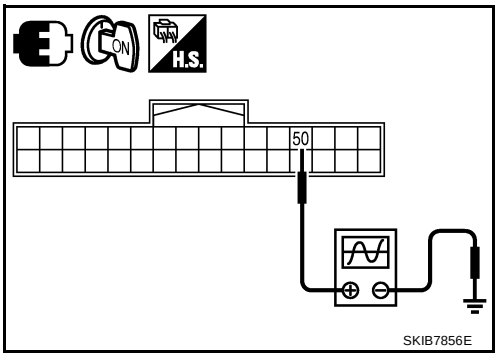
1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. Start Confirmation/Adjustment mode. Refer to AV-164, "Confirmation/Adjustment Mode" .
4. Display color bar by selecting “Display Color Spectrum Bar” on Display Diagnosis screen. Refer to AV-165, "DISPLAY DIAGNOSIS" .
5. Check the malfunctioning circuit according to the symptoms.

- **Light blue (Cyan) tinged screen**
  Check voltage waveform between display control unit harness connector M43 terminal 50 and ground with CONSULT-II or oscilloscope.

50 – Ground:



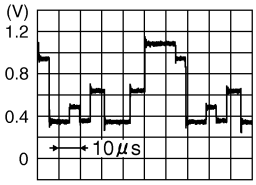
SKIB7769E



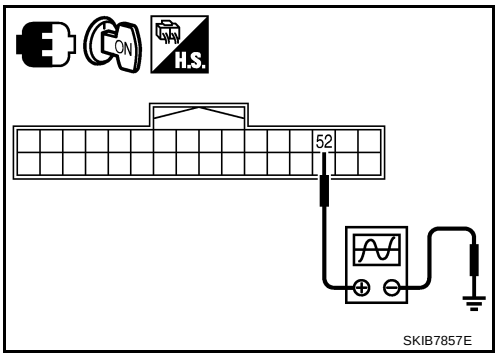
SKIB7856E

- **Purple (Magenta) tinged screen**
  Check voltage waveform between display control unit harness connector M43 terminal 52 and ground with CONSULT-II or oscilloscope.

52 – Ground:



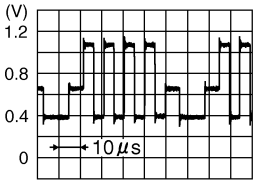
SKIB7770E



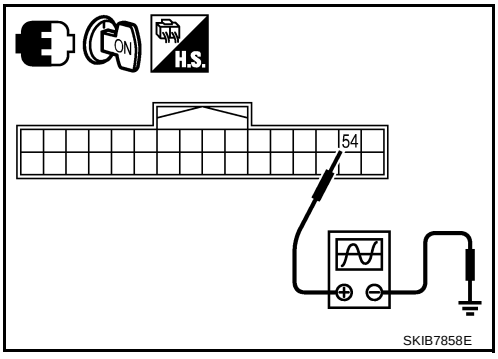
SKIB7857E

- **Yellow tinged screen**
  Check voltage waveform between display control unit harness connector M43 terminal 54 and ground with CONSULT-II or oscilloscope.

54 – Ground:



SKIB7771E



SKIB7858E

OK or NG

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

Tint Is Strange for The RGB Image (Only NAVI Screen)

NKS0024I

Symptom: Tint of map screen is strange. (Status screen for audio and A/C, TRIP screen and FUEL ECONOMY screen are normal.)

1. CHECK HARNESS

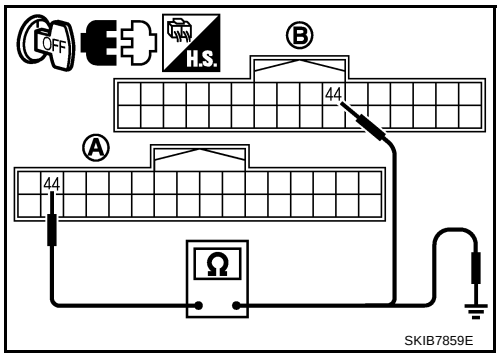
1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and display unit connectors.
3. Check the malfunctioning circuit according to the symptoms.

- **Light blue (Cyan) tinged screen**
  Check continuity between NAVI control unit harness connector (A) M63 terminal 44 and display control unit harness connector (B) M43 terminal 44.

  44 – 44 : Continuity should exist.

  Check continuity between NAVI control unit harness connector (A) M63 terminal 44 and ground.

  44 – Ground : Continuity should not exist.

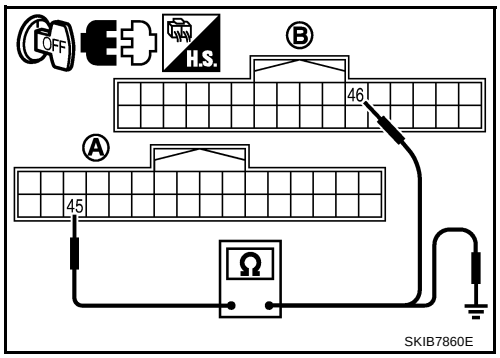


- **Purple (Magenta) tinged screen**
  Check continuity between NAVI control unit harness connector (A) M63 terminal 45 and display control unit harness connector (B) M43 terminal 46.

  45 – 46 : Continuity should exist.

  Check continuity between NAVI control unit harness connector (A) M63 terminal 45 and ground.

  45 – Ground : Continuity should not exist.

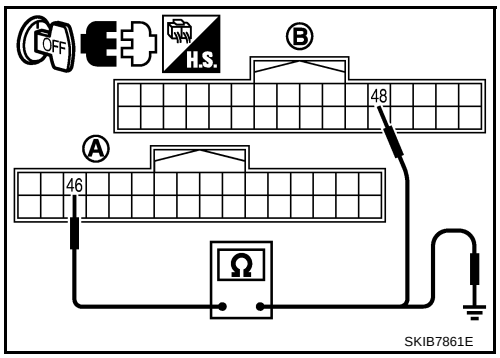


- **Yellow tinged screen**
  Check continuity between NAVI control unit harness connector (A) M63 terminal 46 and display control unit harness connector (B) M43 terminal 48.

  46 – 48 : Continuity should exist.

  Check continuity between NAVI control unit harness connector (A) M63 terminal 46 and ground.

  46 – Ground : Continuity should not exist.



OK or NG

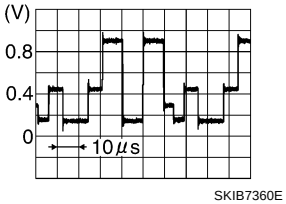
OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK RGB SIGNAL

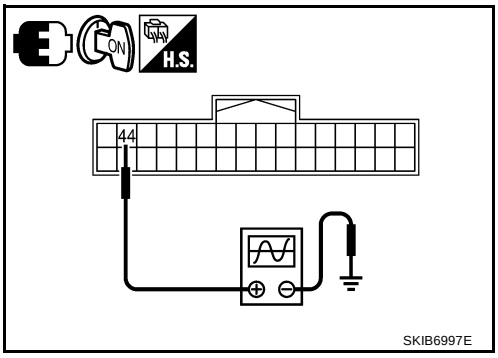
1. Connect NAVI control unit and display control unit connectors.
2. Turn ignition switch ON.
3. Start Confirmation/Adjustment (Navigation) mode. Refer to AV-164, "Confirmation/Adjustment Mode" .
4. Display color bar by selecting “Color Spectrum bar” on Display Diagnosis screen. Refer to AV-166, "Display Diagnosis" .
5. Check the malfunctioning circuit according to the symptoms.

- **Light blue (Cyan) tinged screen**
  Check voltage waveform between NAVI control unit harness connector M63 terminal 44 and ground with CONSULT-II or oscilloscope.

44 – Ground:



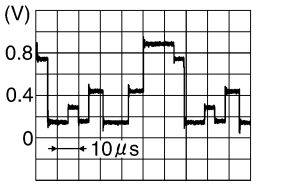
SKIB7360E



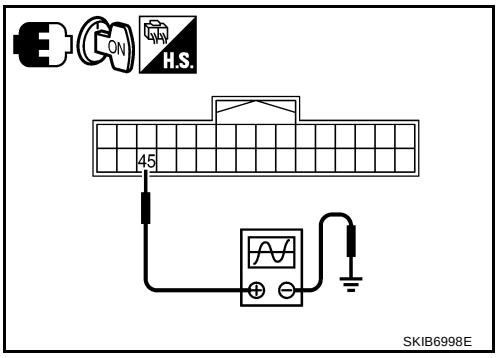
SKIB6997E

- **Purple (Magenta) tinged screen**
  Check voltage waveform between NAVI control unit harness connector M63 terminal 45 and ground with CONSULT-II or oscilloscope.

45 – Ground:



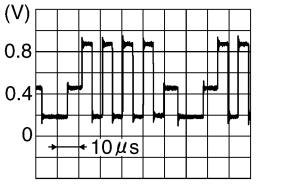
SKIB7361E



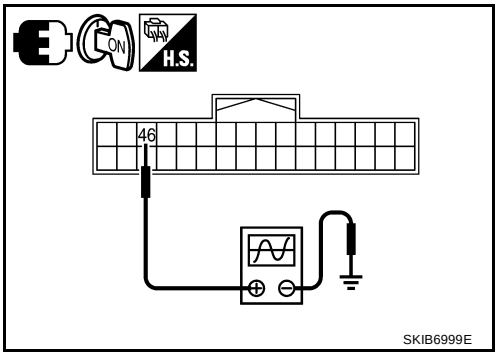
SKIB6998E

- **Yellow tinged screen**
  Check voltage waveform between NAVI control unit harness connector M63 terminal 46 and ground with CONSULT-II or oscilloscope.

46 – Ground:



SKIB7362E



SKIB6999E

OK or NG

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

RGB Image Is Rolling

NKS0024J

Symptom: Map screen is rolling.

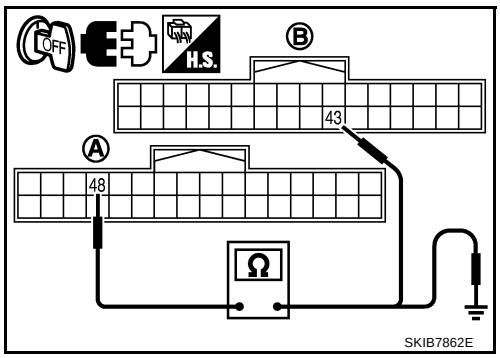
1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and display control unit connectors.
3. Check continuity between NAVI control unit harness connector (A) M63 terminal 48 and display control unit harness connector (B) M43 terminal 43.

48 – 43 : Continuity should exist.

4. Check continuity between NAVI control unit harness connector (A) M63 terminal 48 and ground.

48 – Ground : Continuity should not exist.



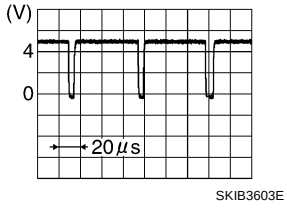
OK or NG

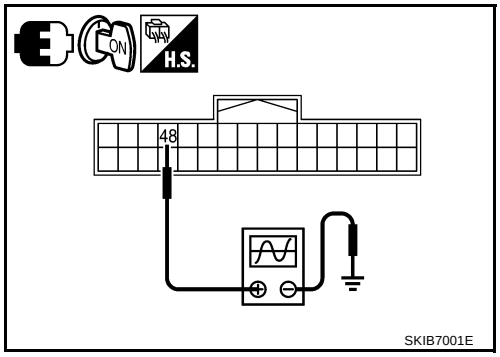
OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK RGB SYNCHRONIZING SIGNAL

1. Connect NAVI control unit and display control unit connectors.
2. Turn ignition switch ON.
3. When displaying RGB image, check voltage waveform between NAVI control unit harness connector M63 terminal 48 and ground with CONSULT-II or oscilloscope.

48 – Ground:





OK or NG

OK >> GO TO 3.
NG >> Replace NAVI control unit.

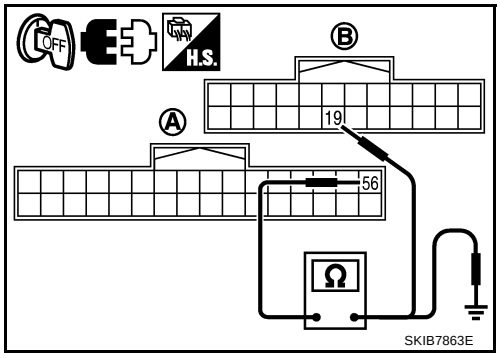
3. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit and display connectors.
3. Check continuity between display control unit harness connector (A) M43 terminal 56 and display harness connector (B) M38 terminal 19.

56 – 19 : Continuity should exist.

4. Check continuity between display control unit harness connector (A) M43 terminal 56 and ground.

56 – Ground : Continuity should not exist.



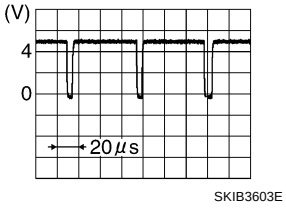
OK or NG

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

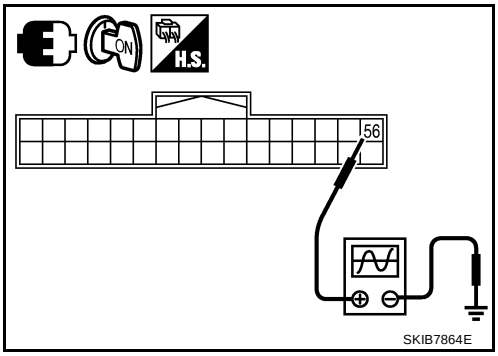
4. CHECK RGB SYNCHRONIZING SIGNAL

1. Connect display control unit and display connectors.
2. Turn ignition switch ON.
3. When displaying RGB image, check voltage waveform between display control unit harness connector M43 terminal 56 and ground with CONSULT-II or oscilloscope.

56 – Ground:



SKIB3603E



SKIB7864E

OK or NG

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

Values for All Items in The TRIP Screen Do Not Change

NKS0024N

Symptom: Values for items, “Elapsed Time”, “Driving Distance” and “Average Speed” in the TRIP screen do not change. FUEL ECONOMY screen is not displayed when pressing “TRIP” button.

1. CHECK DISPLAY CONTROL UNIT IGNITION SIGNAL

Select “Vehicle Signals” in Confirmation/Adjustment mode, and check the ignition signal inputting to display control unit. Refer to AV-165, "VEHICLE SIGNALS" .

OK or NG

OK >> Replace display control unit.
NG >> Check display control unit ignition signal circuit, and repair malfunctioning part.

Values for Items, “Driving Distance” and “Average Speed” Do Not Change

NKS0024O

Symptom: Values for Items, "Driving Distance" and "Average Speed" do not change. (The Value for "Elapsed Time" Changes.)

1. CHECK DISPLAY CONTROL UNIT VEHICLE SPEED SIGNAL

Select “Vehicle Signals” in Confirmation/Adjustment mode, and check the vehicle speed signal inputting to display control unit. Refer to AV-165, "VEHICLE SIGNALS" .

OK or NG

OK >> Replace display control unit.
NG >> Check display control unit vehicle speed signal circuit, and repair malfunctioning part.

Values for All Items in The FUEL ECONOMY Screen Do Not Change

NKS0024P

Symptom: Values for items, “Average Fuel Economy” and “Distance to Empty” in the FUEL ECONOMY screen do not change.

1. CHECK CONDITION

Check if values for all items in the TRIP screen change properly.

OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning part. Refer to AV-193, "Values for All Items in The TRIP Screen Do Not Change" or AV-193, "Values for Items, “Driving Distance” and “Average Speed” Do Not Change" .

2. CHECK CAN COMMUNICATION

Check CAN communication. Refer to AV-176, "CAN Communication Check" .

OK or NG

OK >> Replace display control unit.
NG >> After filling out CAN DIAG SUPPORT MONITOR check sheet, GO TO LAN-3, "Precautions When Using CONSULT-II" .

Voice Guidance Is Not Heard

NKS0024K

Symptom: Voice guidance does not sound at route guidance.

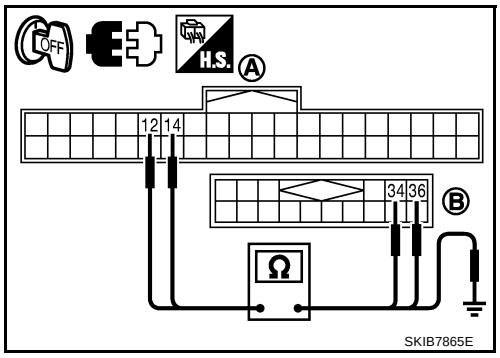
1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit and audio unit connectors.
3. Check continuity between NAVI control unit harness connector (A) M62 terminals 12, 14 and audio unit harness connector (B) M46 terminals 36, 34.

12 – 36 : Continuity should exist.
14 – 34 : Continuity should exist.

4. Check continuity between NAVI control unit harness connector (A) M62 terminals 12, 14 and ground.

12, 14 – Ground : Continuity should not exist.



SKIB7865E

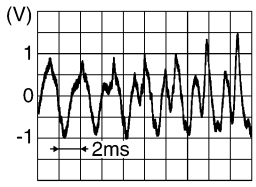
OK or NG

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

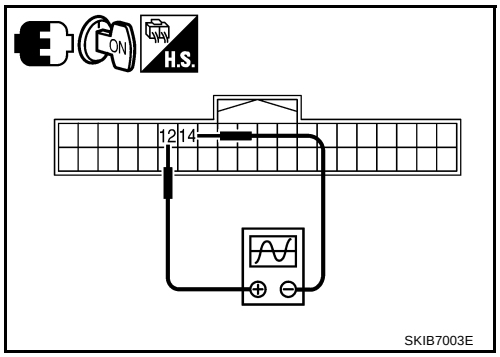
2. CHECK VOICE GUIDANCE SIGNAL

1. Connect NAVI control unit and audio unit connectors.
2. Turn ignition switch ON.
3. Check voltage waveform between NAVI control unit harness connector M62 terminals 12 and 14 with CONSULT-II or oscilloscope.

12 – 14:



SKIB3609E



SKIB7003E

OK or NG

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

Example of Symptoms Possible No Malfunction

NKS0024Z

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

BASIC OPERATIONS

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

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

VEHICLE MARKS

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

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

DVD-ROM

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

ROUTE CALCULATION AND VISUAL GUIDANCE

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

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

VOICE GUIDANCE

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

REAR VIEW MONITOR

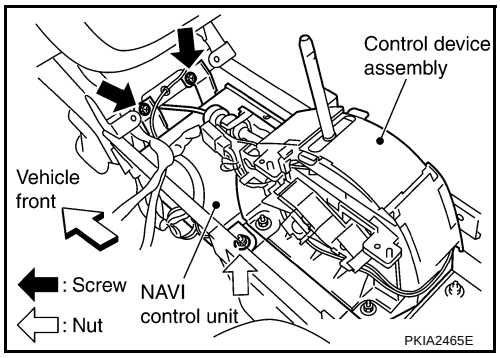
Symptom	Possible cause	Possible solution
Rear view monitor image is not shown.	Selector lever is not set to R position.	Shift the selector lever to R position.
Rear view monitor image is fuzzy.	The front glass of the camera lens is dirty.	Wipe it with a soft wet cloth lightly.
	Adherence of raindrops or snow.	Wipe it with a soft cloth lightly.
	The lens is illuminated directly by sunlight or light from headlight of cars behind.	The fuzzy image recovers when the light is covered.

Removal and Installation of NAVI Control Unit

NKS00251

REMOVAL

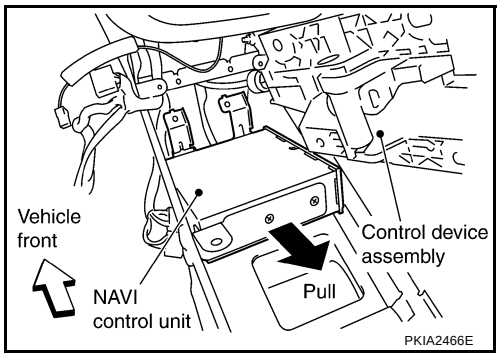
1. Remove center console. Refer to IP-17, "CENTER CONSOLE ASSEMBLY" .
2. Remove console cover (LH and RH). Refer to IP-17, "CENTER CONSOLE ASSEMBLY" .
3. Remove control device assembly, and remove screws (2) and nut.
4. Disconnect NAVI control unit connector.



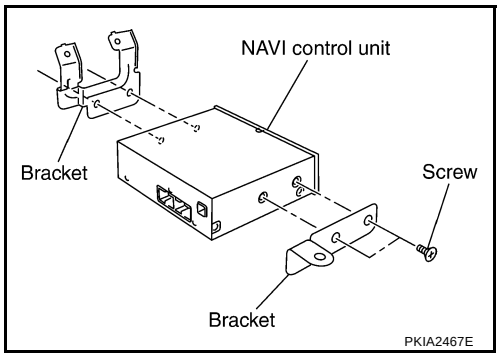
5. Pull NAVI control unit up-ward, then vehicle rear side.

CAUTION:

Cover unit with cloth avoid contact with console box bracket that may cause scratches or damages.



6. Remove screws (4), and remove brackets.



INSTALLATION

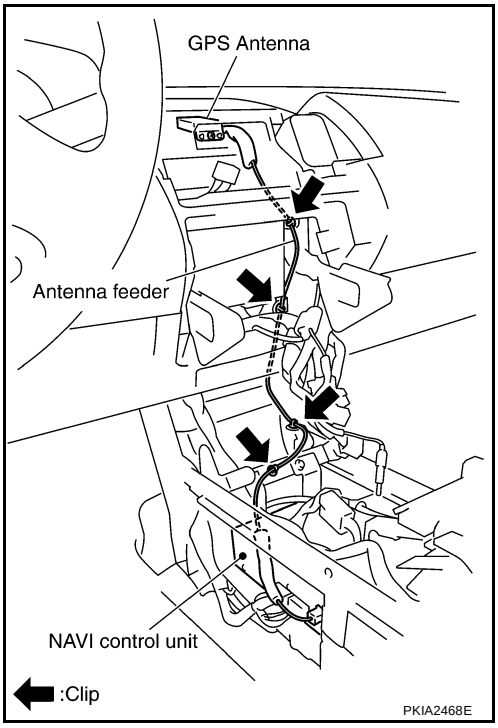
Installation is the reverse order of removal.

Removal and Installation of GPS Antenna

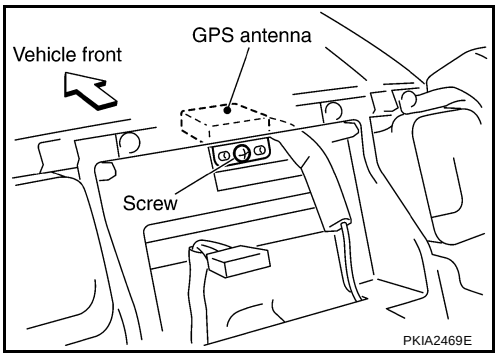
NKS00252

REMOVAL

1. Remove cluster lid C. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove center console. Refer to IP-17, "CENTER CONSOLE ASSEMBLY" .
3. Remove console cover (LH). Refer to IP-17, "CENTER CONSOLE ASSEMBLY" .
4. Remove display. Refer to AV-200, "Removal and Installation of Display" .
5. Disengaged the clips (4) to separate antenna feeder.



6. Remove screw, and remove GPS antenna.



INSTALLATION

Installation is the reverse order of removal.

Removal and Installation of A/C and AV Switch

NKS00254

Refer to AV-61, "Removal and Installation for A/C and AV Switch" .

Removal and Installation of Audio Steering Switch

NKS00253

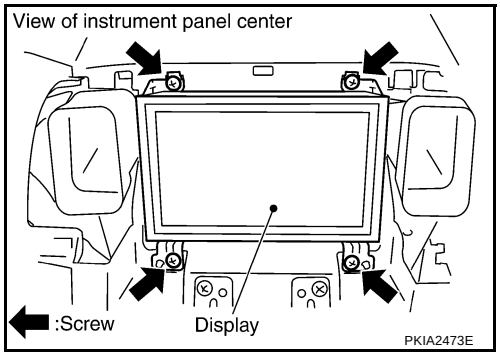
Refer to AV-62, "Removal and Installation of Audio Steering Switch" .

Removal and Installation of Display

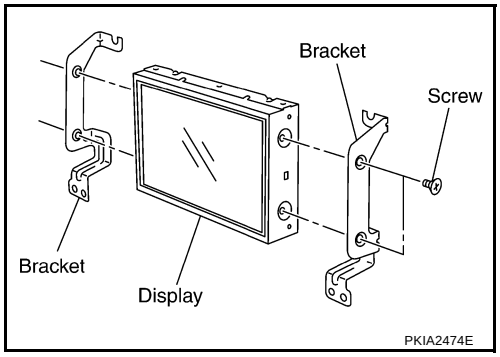
NKS00255

REMOVAL

1. Remove center ventilator. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove screws (4), and remove display.



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



INSTALLATION

Installation is the reverse order of removal.

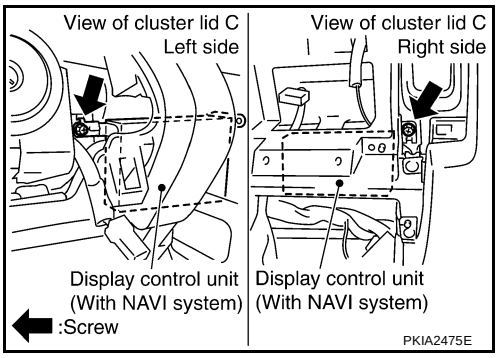
Removal and Installation of Display Control Unit

NKS00256

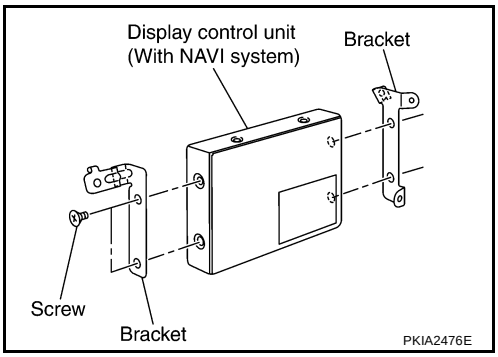
REMOVAL

1. Remove cluster lid C. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
2. Remove steering lock escutcheon. Refer to IP-10, "INSTRUMENT PANEL ASSEMBLY" .
3. Remove screws (2), and remove display control unit.

   CAUTION:
   See the figure attached, when install or remove screws for display control unit.



4. Remove screws (4), and remove brackets.



INSTALLATION

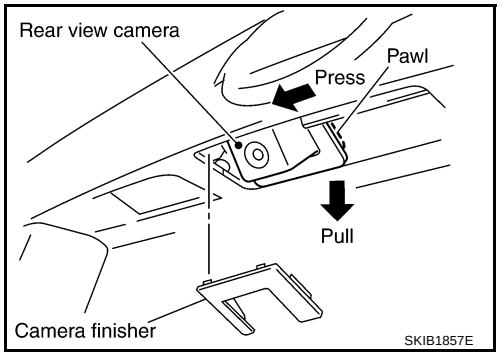
Installation is the reverse order of removal.

Removal and Installation of Rear View Camera

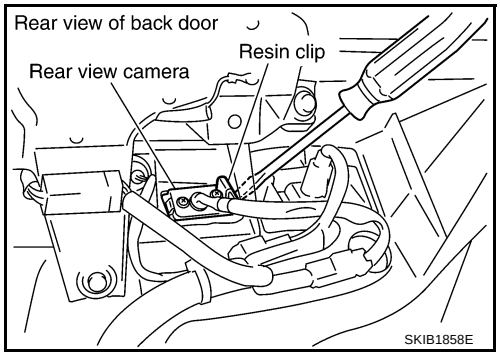
NKS00257

REMOVAL

1. Remove back door trim. Refer to EI-39, "BACK DOOR TRIM" .
2. Unhook two pawls to remove the camera finisher from the back door. Pull the right pawl out with pressing the rear view camera to the left.



3. Press the resin clip from the inside of the back door with a minus screwdriver etc. Remove the rear view camera from the back door.
4. Disconnect connector.



INSTALLATION

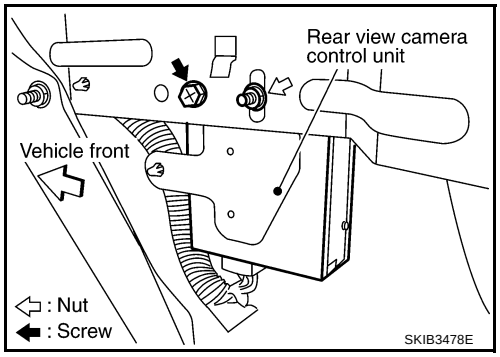
Installation is the reverse order of removal.
Adjust the vehicle width and distance guiding line referring to AV-174, "Vehicle Width and Distance Guiding Line Correction" if there is a difference after installing rear view camera.

Removal and Installation of Rear View Camera Control Unit

NKS00258

REMOVAL

1. Remove luggage floor spacer (right). Refer to EI-37, "LUGGAGE FLOOR TRIM" .
2. Remove screw and nut.
3. Disconnect connector, and remove rear view camera control unit.



INSTALLATION

Installation is the reverse order of removal.