SECTION AV

AUDIO VISUAL, NAVIGATION & TELEPHONE SYSTEM

CONTENTS

SERVICE INFORMATION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000004277829

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.

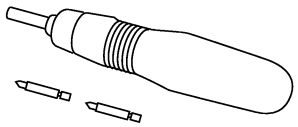
WARNING:

- **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

Commercial Service Tool

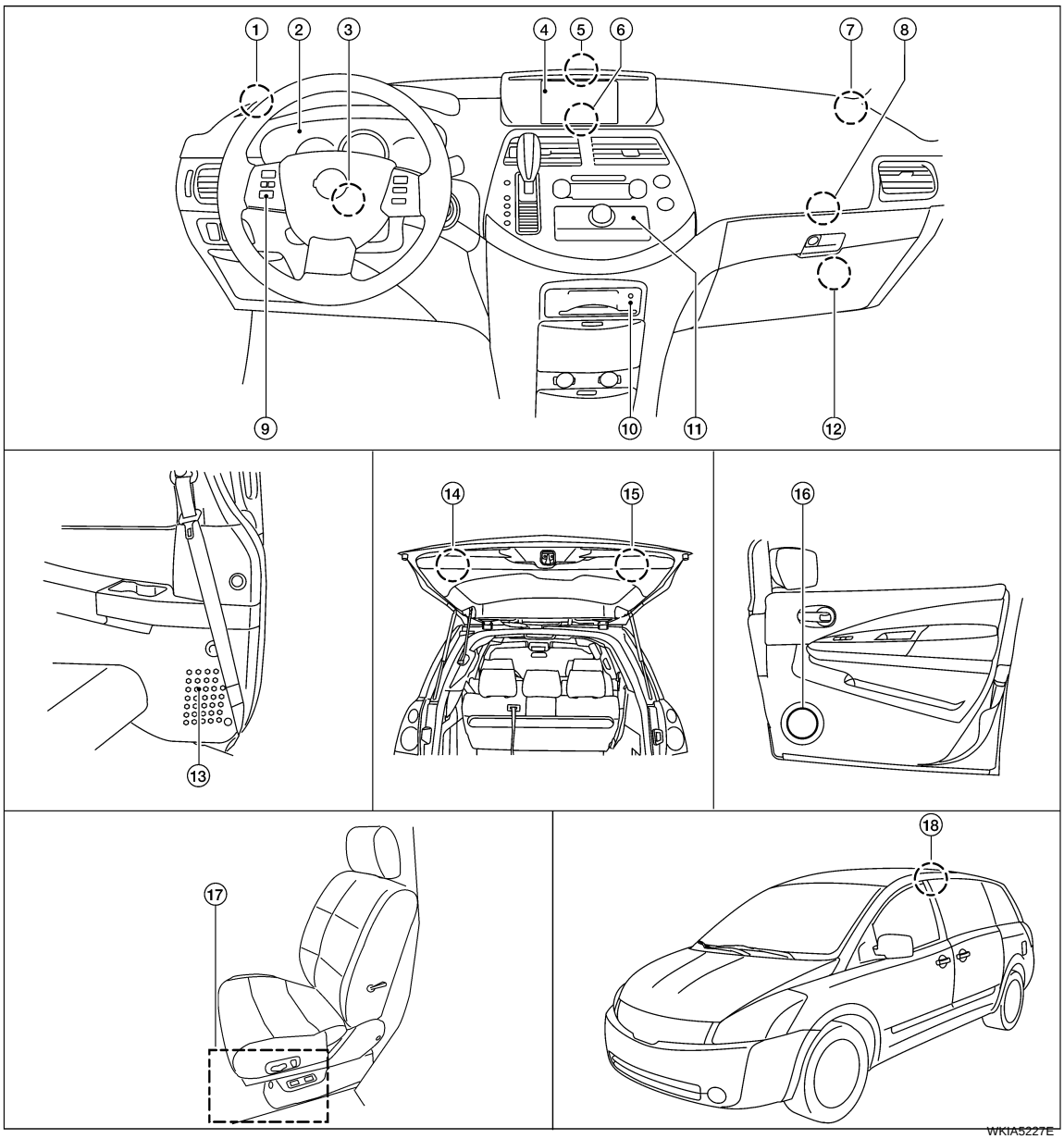
INFOID:0000000004277830

Tool name	Description
Power tool  PBIC0191E	Loosening bolts and nuts

AUDIO

Component Parts and Harness Connector Location

INFOID:0000000004277831



1. Front tweeter LH M109
2. Combination meter M24
3. Combination switch (spiral cable) M30, M102
4. Display unit M93
5. Center speaker (with BOSE) M110
6. Display control unit (with color display) M94, M95
7. Front tweeter RH M111
8. Satellite radio tuner (if equipped) M128, M129
9. Steering wheel audio control switches
10. Audio unit M43, M44, M45, M46, M127, M252
11. AV switch M98
12. BOSE speaker amp (with BOSE) M112, M113
13. Rear speaker LH, RH B45, B131
14. Rear tweeter LH D516
15. Rear tweeter RH D506
16. Front door speaker LH, RH D3, D103
17. Subwoofer (with BOSE, driver seat view) B11
18. Rear audio remote control unit (if equipped) B23

System Description

INFOID:0000000004277832

BASE SYSTEM

Refer to Owner's Manual for audio system operating instructions.
Power is supplied at all times
- through 20A fuse [No. 31, located in the fuse and fusible link box]
- to audio unit terminal 6 and
- through 15A fuse [No. 19, located in the fuse block (J/B)]
- to AV switch terminal 1 and
- to display unit terminal 1.

With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to audio unit terminal 10 and
- to AV switch terminal 2 and
- to display unit terminal 2.

With the ignition switch in the ON or START position, power is supplied
- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to display unit terminal 3.

Ground is supplied through the case of the audio unit.
Ground is also supplied
- to AV switch terminal 5 and
- to display unit terminal 6
- through body grounds M57, M61 and M79.

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

Rear Audio Remote Control Unit (If Equipped)

Power is supplied
- from audio unit terminal 32
- to rear audio remote control unit terminal 13.

Ground is supplied
- to rear audio remote control unit terminal 15
- through body grounds B7 and B19.

Audio signals are supplied
- through audio unit terminals 26, 27, 28 and 29
- to terminals 1, 2, 3 and 4 of rear audio remote control unit.

MID LEVEL SYSTEM

Refer to Owner's Manual for audio system operating instructions.
Power is supplied at all times
- through 20A fuse [No. 31, located in the fuse and fusible link box]
- to audio unit terminal 6 and
- through 15A fuse [No. 19, located in the fuse block (J/B)]
- to AV switch terminal 1 and
- to display unit terminal 1 (with monochrome display) or display control unit terminal 1 (with color display).

With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to audio unit terminal 10 and
- to AV switch terminal 2 and
- to display unit terminal 2 (with monochrome display) or display control unit terminal 10 (with color display).

With the ignition switch in the ON or START position, power is supplied
- through 10A fuse [No. 12, located in the fuse block (J/B)]
- to display unit terminal 3 (with monochrome display) or display control unit terminal 12 (with color display).

Ground is supplied through the case of the audio unit.
Ground is also supplied
- to AV switch terminal 5 and
- to display unit terminal 6 (with monochrome display) or display control unit terminal 3 (with color display).

• through body grounds M57, M61 and M79.
Then audio signals are supplied
• through audio unit terminals 1, 2, 3, 4, 13, 14, 15 and 16
• to terminals + and - of front door speaker LH and RH
• to terminals + and - of front tweeter LH and RH
• to terminals + and - of rear speaker LH and RH
• to terminals + and - of rear tweeter LH and RH.

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

Rear Audio Remote Control Unit (If Equipped)
Power is supplied
• from audio unit terminal 32
• to rear audio remote control unit terminal 13.
Ground is supplied
• to rear audio remote control unit terminal 15
• through body grounds B7 and B19.
Audio signals are supplied
• through audio unit terminals 26, 27, 28 and 29
• to terminals 1, 2, 3 and 4 of rear audio remote control unit.

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

BOSE® SYSTEM

Refer to Owner's Manual for audio system operating instructions.
Power is supplied at all times
• through 15A fuse [No. 18, located in the fuse block (J/B)]
• to subwoofer terminal 6
• through 20A fuse [No. 31, located in the fuse and fusible link box]
• to audio unit terminal 6 and
• to BOSE speaker amp. terminal 1
• through 15A fuse [No. 19, located in the fuse block (J/B)]
• to AV switch terminal 1 and
• to display control unit terminal 1.
With the ignition switch in the ACC or ON position, power is supplied
• through 10A fuse [No. 4, located in the fuse block (J/B)]
• to audio unit terminal 10 and
• to AV switch terminal 2 and
• to display control unit terminal 10.
With the ignition switch in the ON or START position, power is supplied
• through 10A fuse [No. 12, located in the fuse block (J/B)]
• to display control unit terminal 12.
Ground is supplied through the case of the audio unit.
Ground is also supplied
• to subwoofer terminal 5
• through body grounds B7 and B19 and
• to BOSE speaker amp. terminal 17
• to AV switch terminal 5
• to display unit terminal 1 and
• to display control unit terminal 3
• through body grounds M57, M61 and M79.
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 + and - of front door speaker LH and RH
• to terminals + and - of front tweeter LH and RH

- to terminals + and - of center speaker
- to terminals + and - of rear speaker LH and RH
- to terminals + and - of rear tweeter LH and RH and
- to terminals 1 and 2 of subwoofer.

Steering Wheel Audio Control Switches

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

Rear Audio Remote Control Unit

Power is supplied
- from audio unit terminal 32
- to rear audio remote control unit terminal 13.

Ground is supplied
- to rear audio remote control unit terminal 15
- through body grounds B7 and B19.

Audio signals are supplied
- through audio unit terminals 26, 27, 28 and 29
- to terminals 1, 2, 3 and 4 of rear audio remote control unit.

Speed Sensitive Volume System

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

Satellite Radio Tuner (Factory Installed)

NOTE:

Factory installed satellite radio systems may be identified by the location of the satellite radio tuner antenna. Factory installed satellite radio antennas are installed on the front of the roof and dealer installed antennas are installed on the rear of the roof.

Power is supplied at all times
- through 20A fuse [No. 31, located in the fuse and fusible link box]
- to satellite radio tuner terminal 32.

With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to satellite radio tuner terminal 36.

Radio signals are supplied from the satellite radio antenna to satellite radio tuner terminal 37.

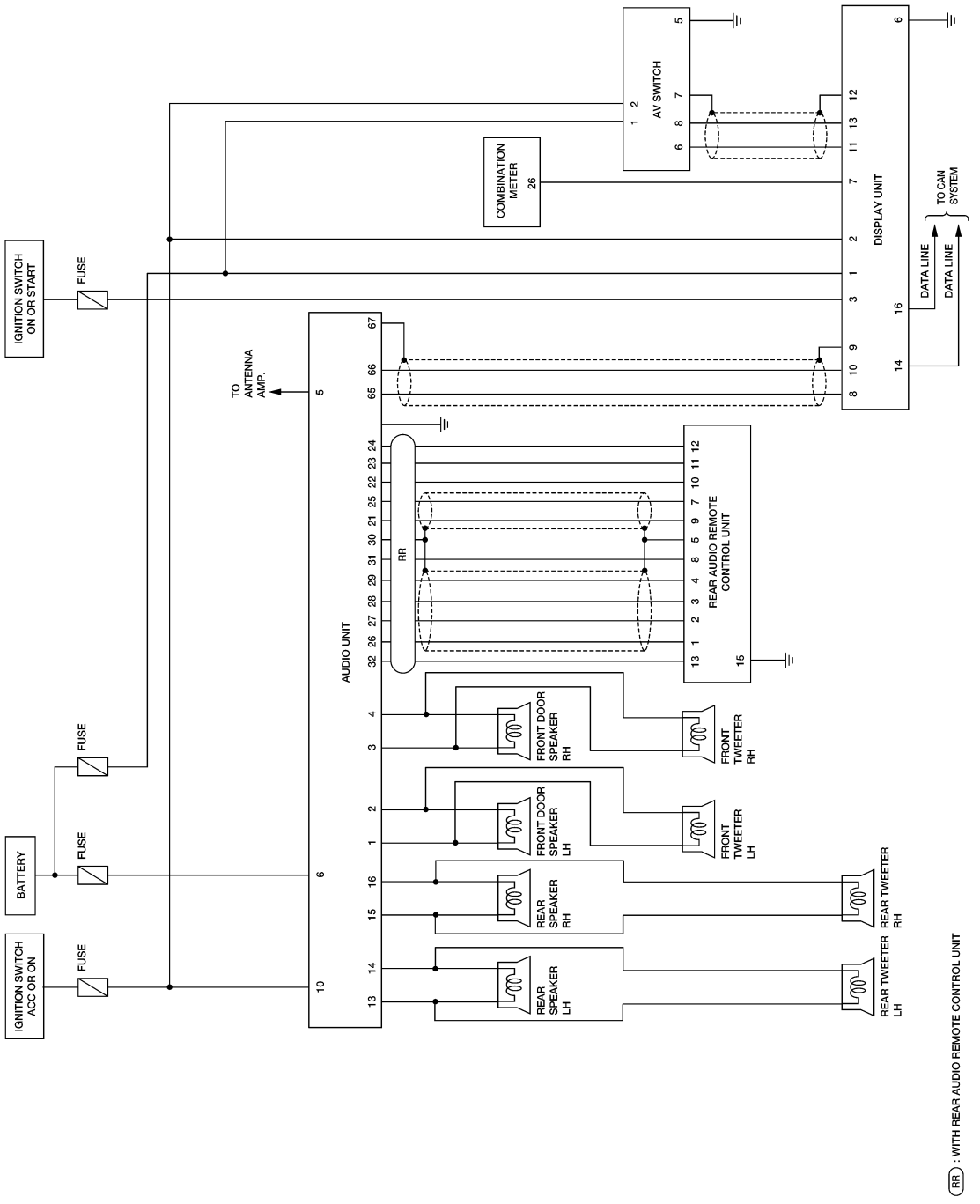
Audio signals are supplied
- through satellite radio tuner terminals 21, 22, 23 and 24
- to terminals 41, 42, 43 and 44 of audio unit.

Ground is supplied through the case of the satellite radio tuner.

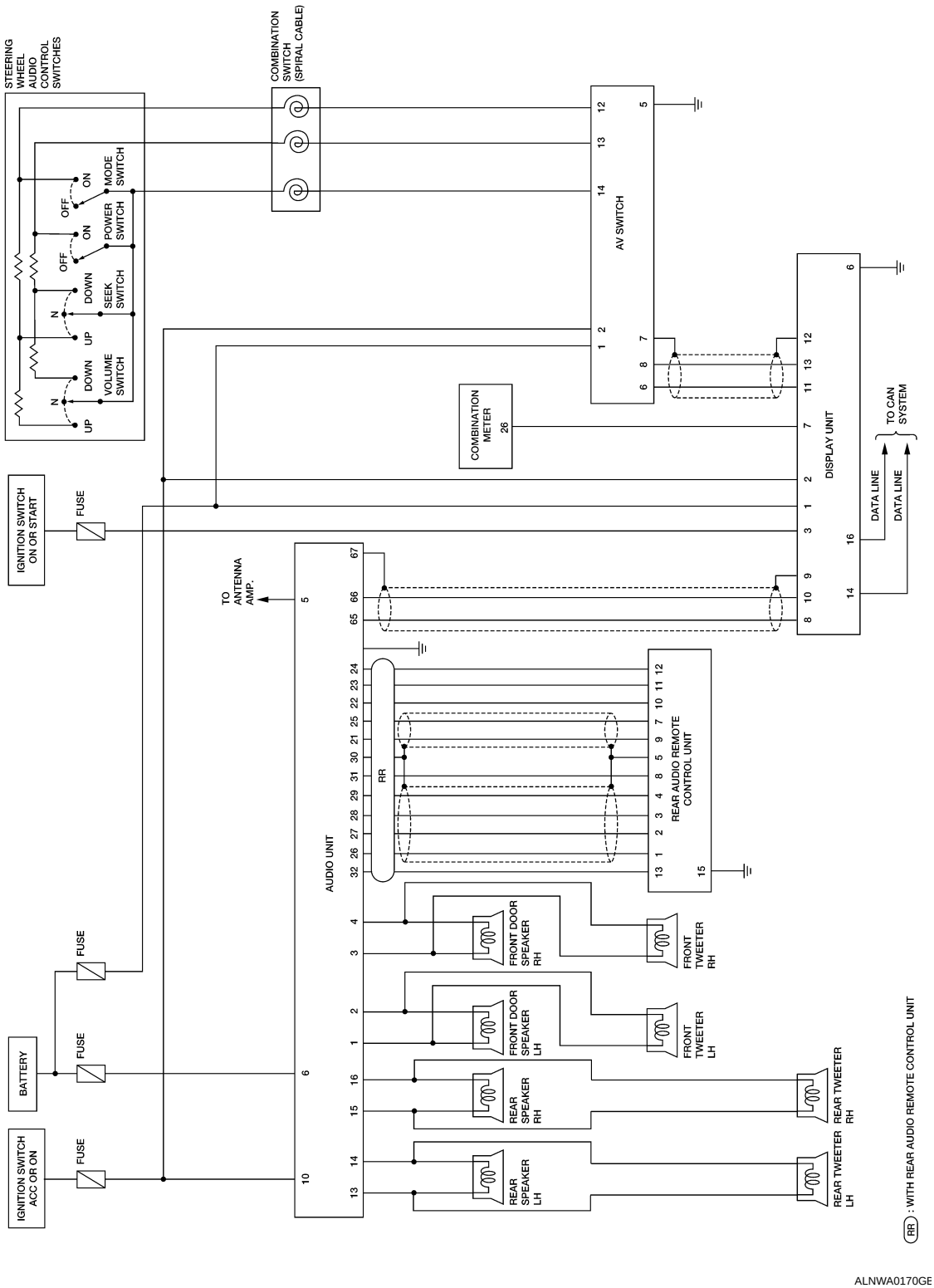
Schematic

INFOID:0000000004277833

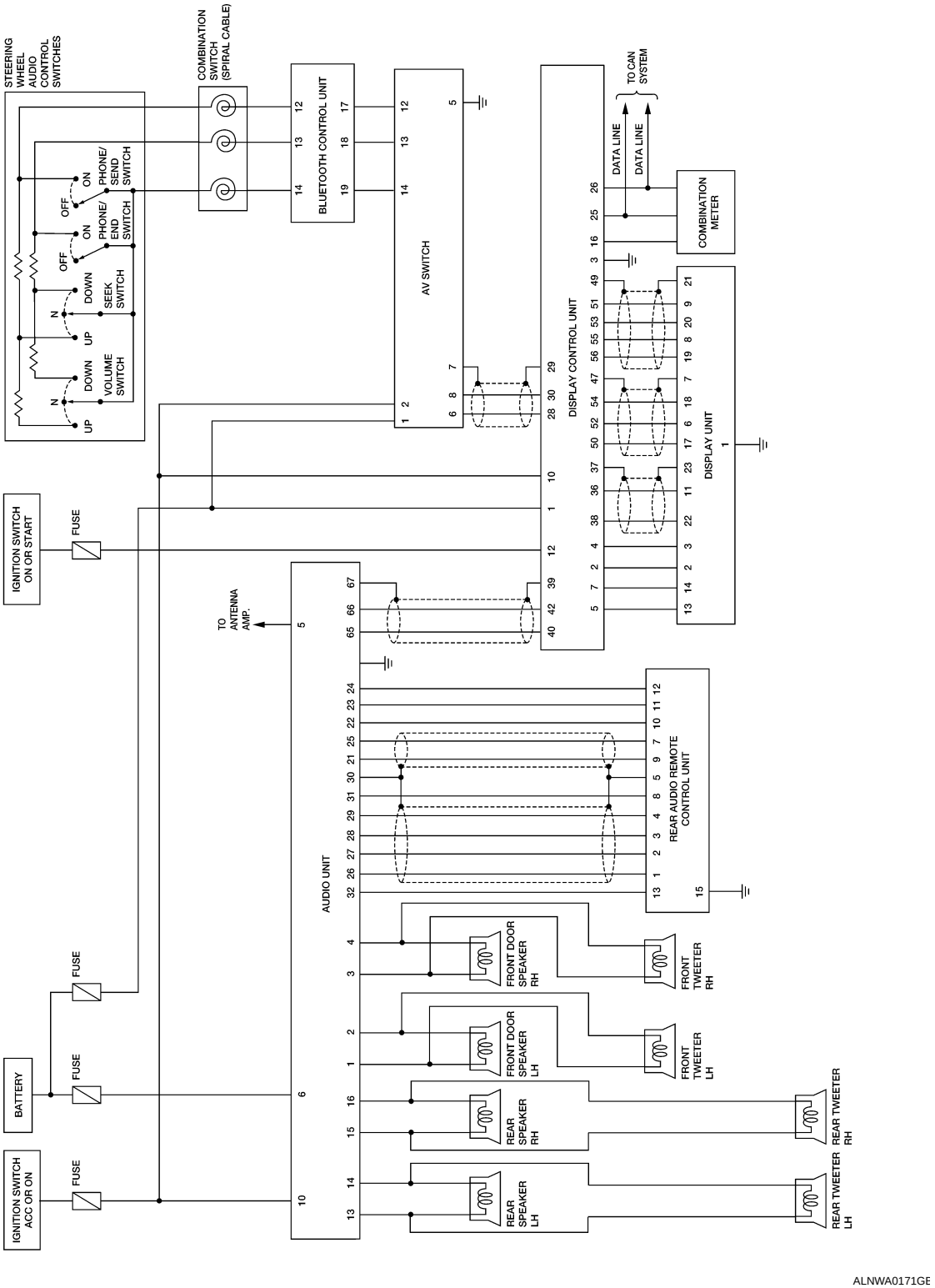
BASE SYSTEM

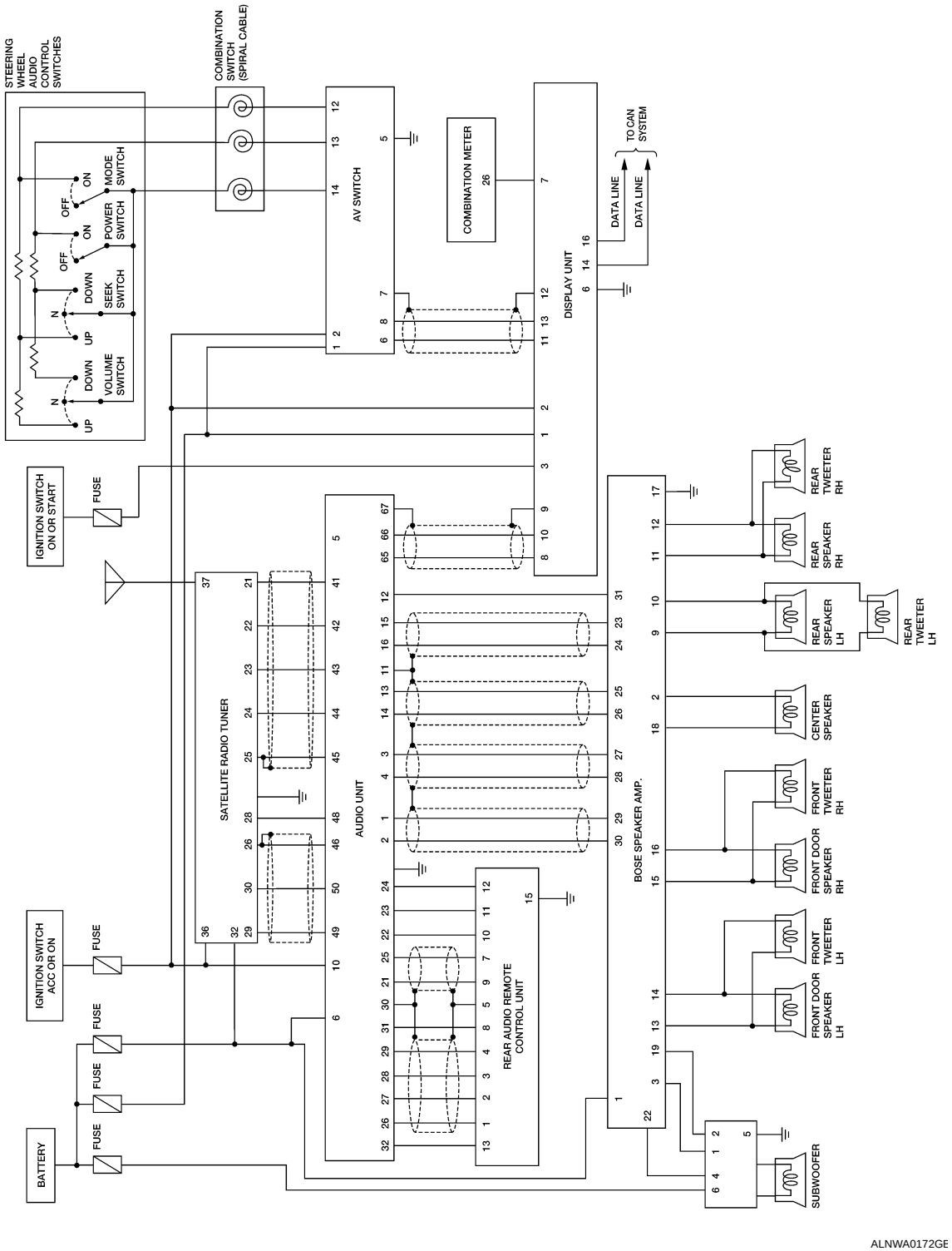


MID LEVEL SYSTEM (WITH MONOCHROME DISPLAY)

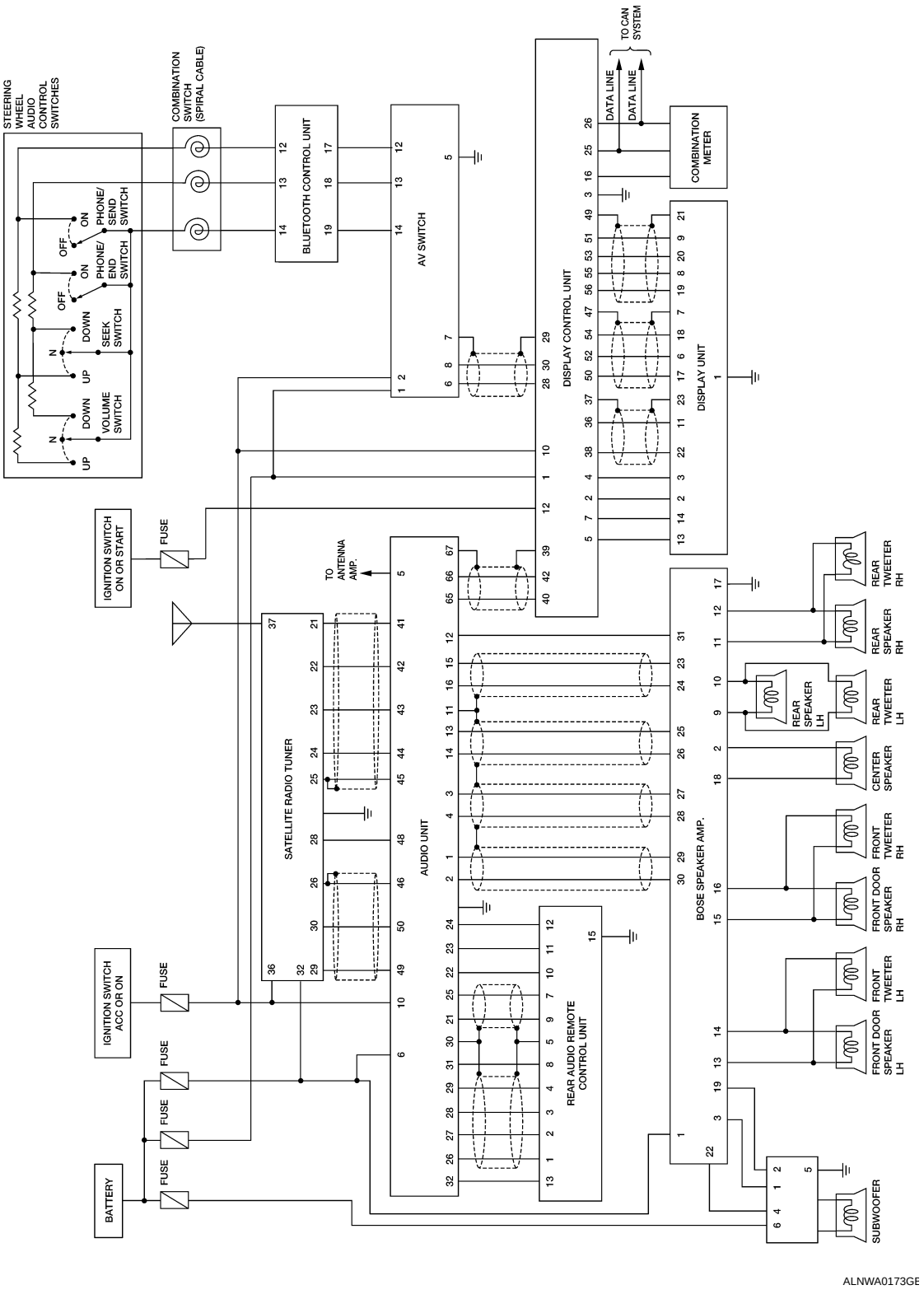


MID LEVEL SYSTEM (WITH COLOR DISPLAY)




STEERING WHEEL AUDIO CONTROL SWITCHES
COMBINATION SWITCH (SPIRAL CABLE)
AV SWITCH
COMBINATION METER
DISPLAY UNIT
TO CAN SYSTEM
DATA LINE
DATA LINE
MODE SWITCH
POWER SWITCH
SEEK SWITCH
VOLUME SWITCH
ON
OFF
DOWN
UP
IGNITION SWITCH ON OR START
IGNITION SWITCH ACC OR ON
BATTERY
FUSE
SATELLITE RADIO TUNER
AUDIO UNIT
REAR AUDIO REMOTE CONTROL UNIT
BOSE SPEAKER AMP.
REAR TWEETER RH
REAR SPEAKER RH
REAR SPEAKER LH
REAR TWEETER LH
CENTER SPEAKER
FRONT TWEETER RH
FRONT DOOR SPEAKER RH
FRONT TWEETER LH
FRONT DOOR SPEAKER LH
SUBWOOFER
ALNWA0172GE

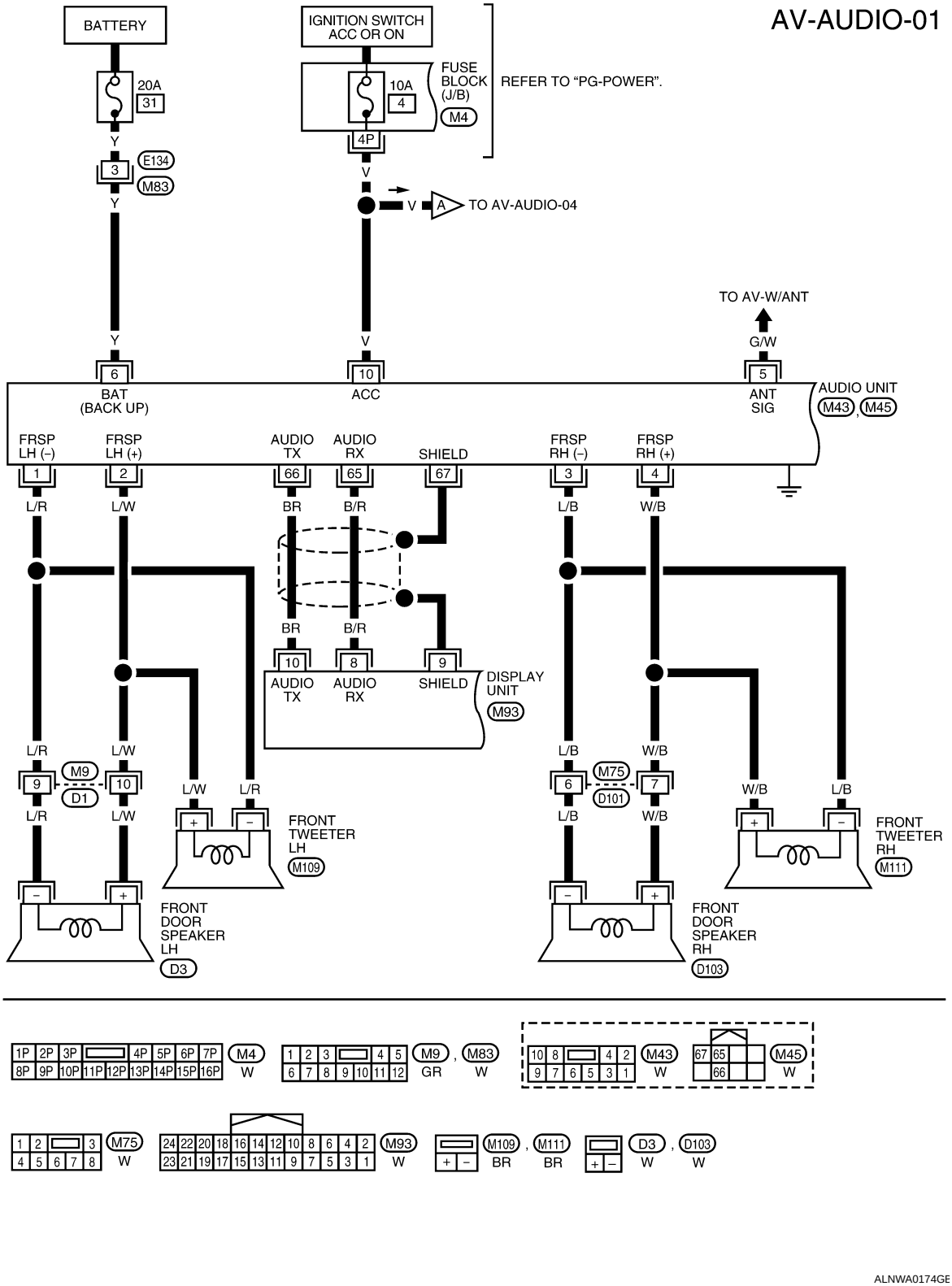
BOSE SYSTEM


STEERING WHEEL AUDIO CONTROL SWITCHES
VOLUME SWITCH
SEEK SWITCH
PHONE/ END SWITCH
PHONE/ SEND SWITCH
COMBINATION SWITCH (SPIRAL CABLE)
BLUETOOTH CONTROL UNIT
AV SWITCH
DISPLAY CONTROL UNIT
DISPLAY UNIT
TO CAN SYSTEM
DATA LINE
COMBINATION METER
IGNITION SWITCH ON OR START
IGNITION SWITCH ACC OR ON
BATTERY
FUSE
TO ANTENNA AMP.
SATELLITE RADIO TUNER
AUDIO UNIT
REAR AUDIO REMOTE CONTROL UNIT
BOSE SPEAKER AMP.
REAR TWEETER RH
REAR SPEAKER RH
REAR SPEAKER LH
REAR TWEETER LH
CENTER SPEAKER
FRONT TWEETER RH
FRONT DOOR SPEAKER RH
FRONT TWEETER LH
FRONT DOOR SPEAKER LH
SUBWOOFER
ALNWA0173GE

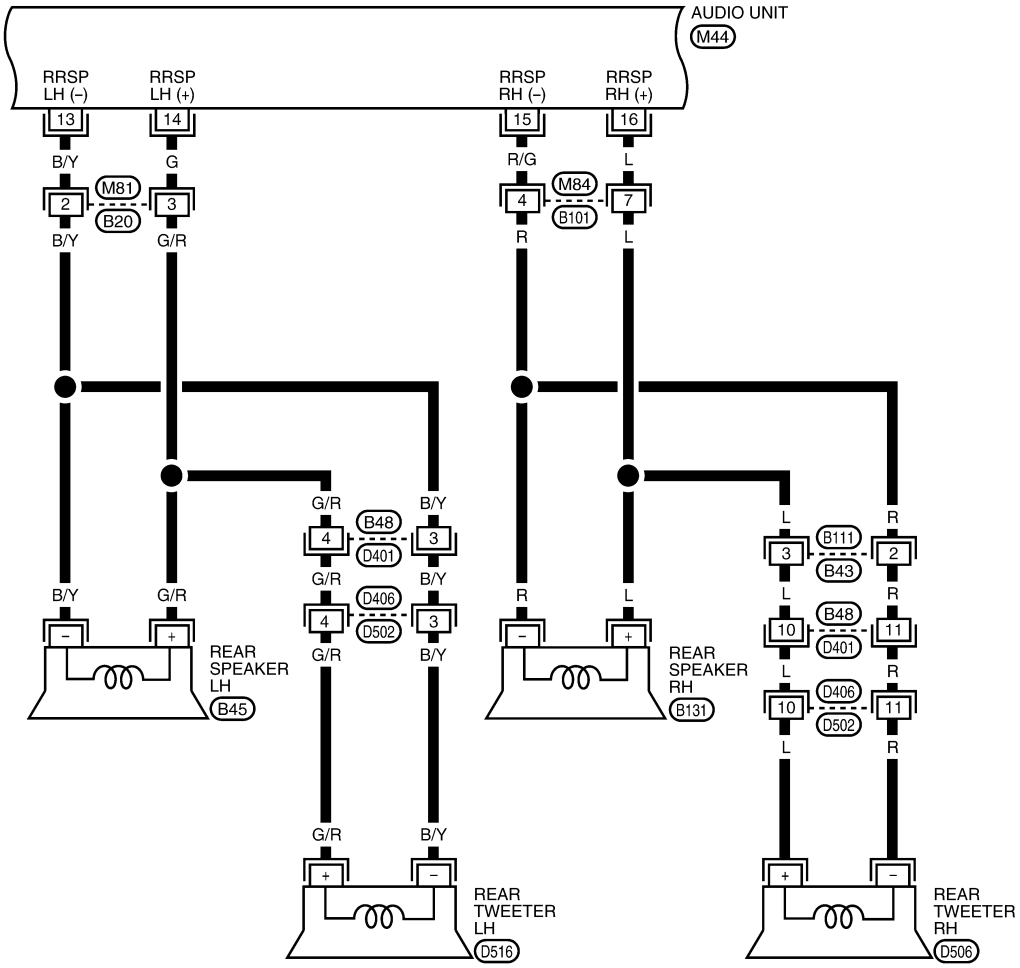
Wiring Diagram - AUDIO -

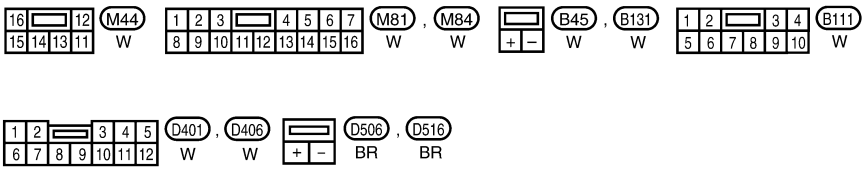
INFOID:0000000004277834

BASE SYSTEM



ALNWA0174GE

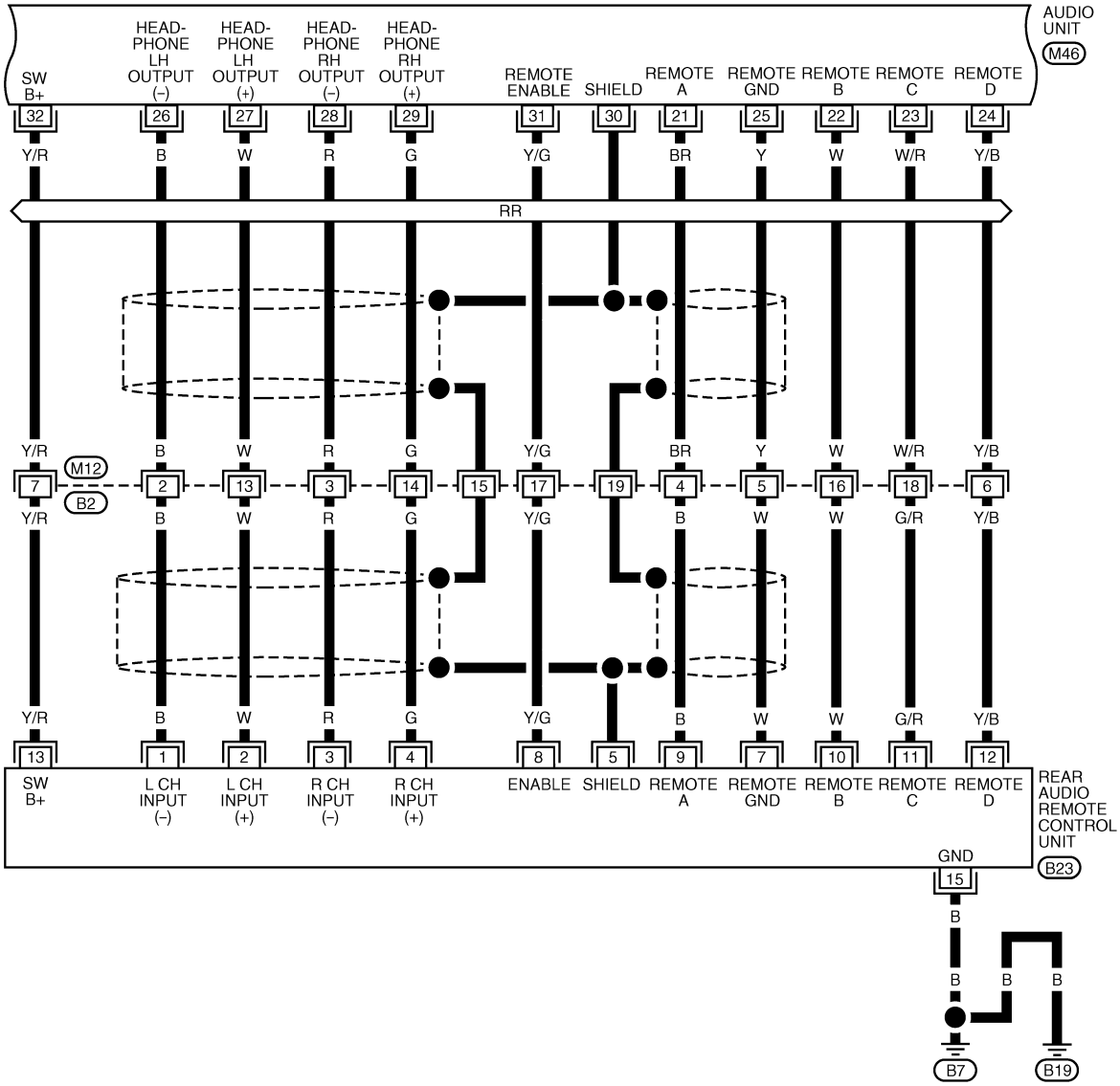

AUDIO UNIT
M44
RRSP LH (–)
RRSP LH (+)
RRSP RH (–)
RRSP RH (+)
13
14
15
16
B/Y
G
R/G
L
M81
B20
M84
B101
2
3
4
7
B/Y
G/R
R
L
G/R
B/Y
B48
D401
D406
D502
B111
B43
B48
D401
D406
D502
REAR SPEAKER LH
B45
REAR SPEAKER RH
B131
REAR TWEETER LH
D516
REAR TWEETER RH
D506

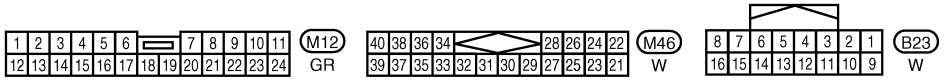

M44
W
M81
W
M84
W
B45
W
B131
W
B111
W
D401
W
D406
W
D506
BR
D516
BR

WKWA4738E

AV-AUDIO-03

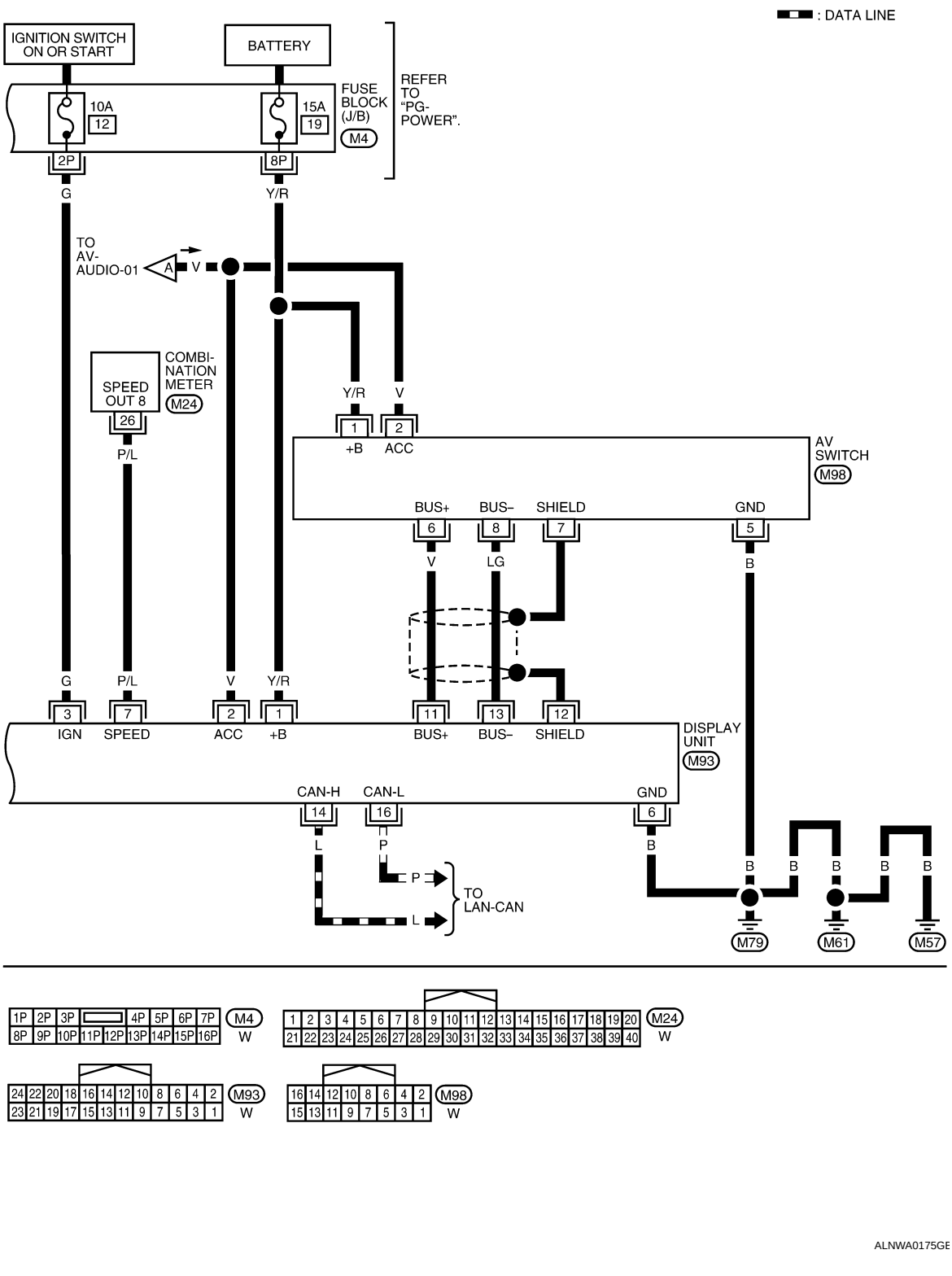
RR : WITH REAR AUDIO REMOTE CONTROL UNIT





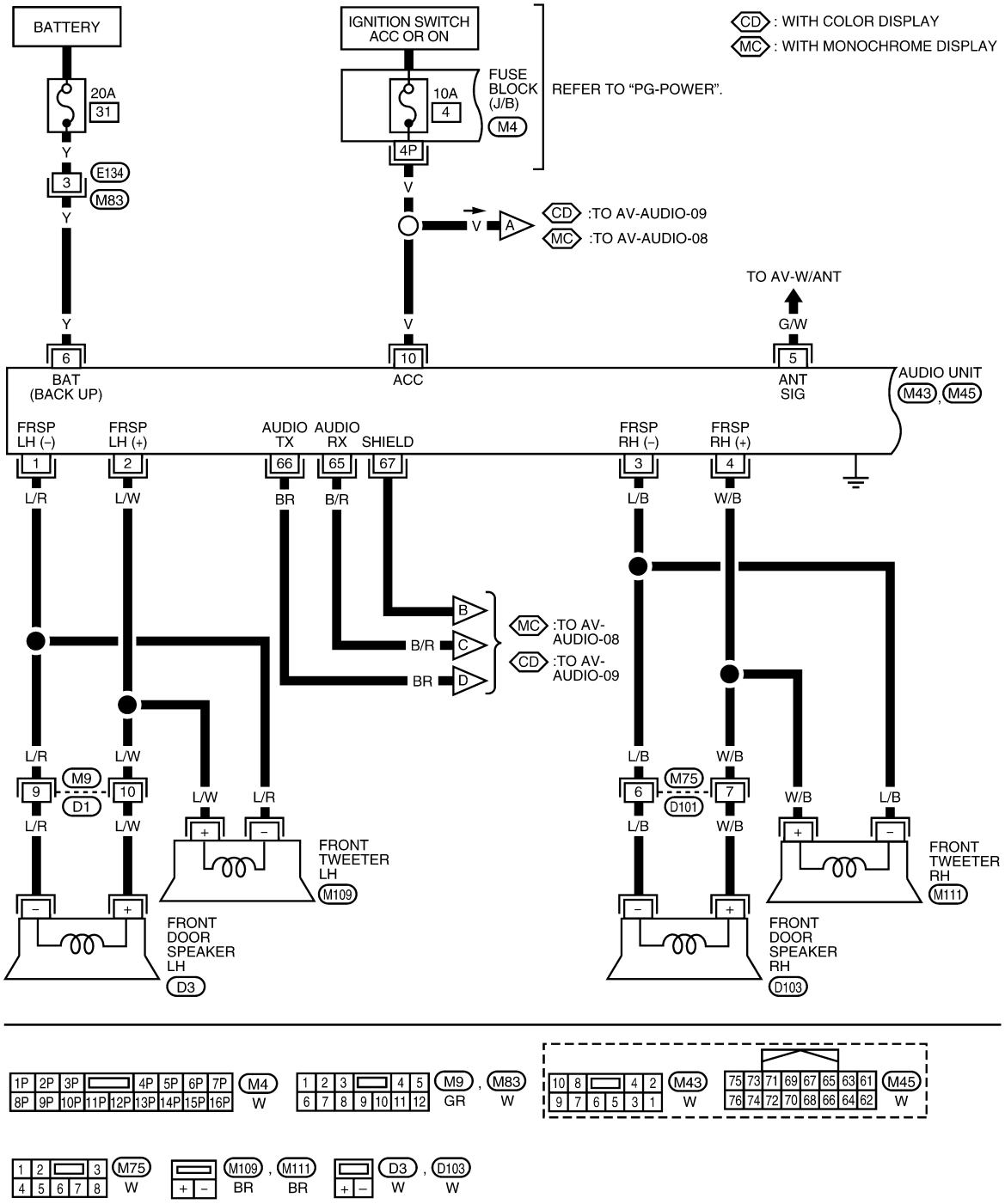
WKWA4739E

AV-AUDIO-04



ALNWA0175GE

AV-AUDIO-05



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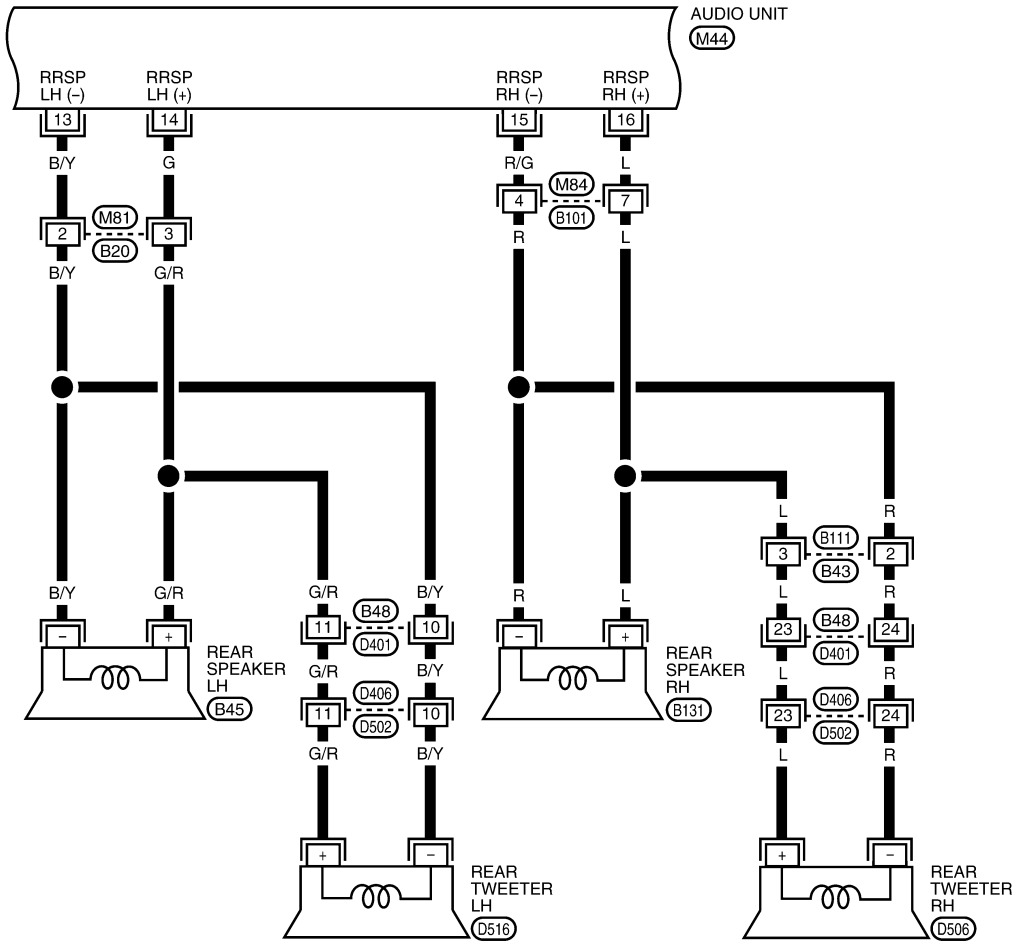
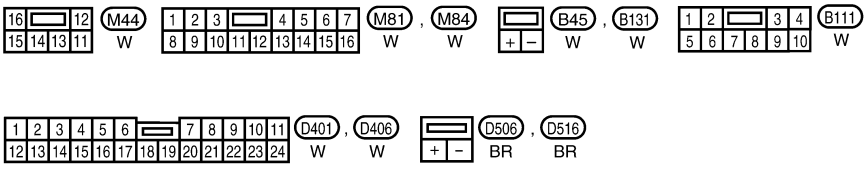
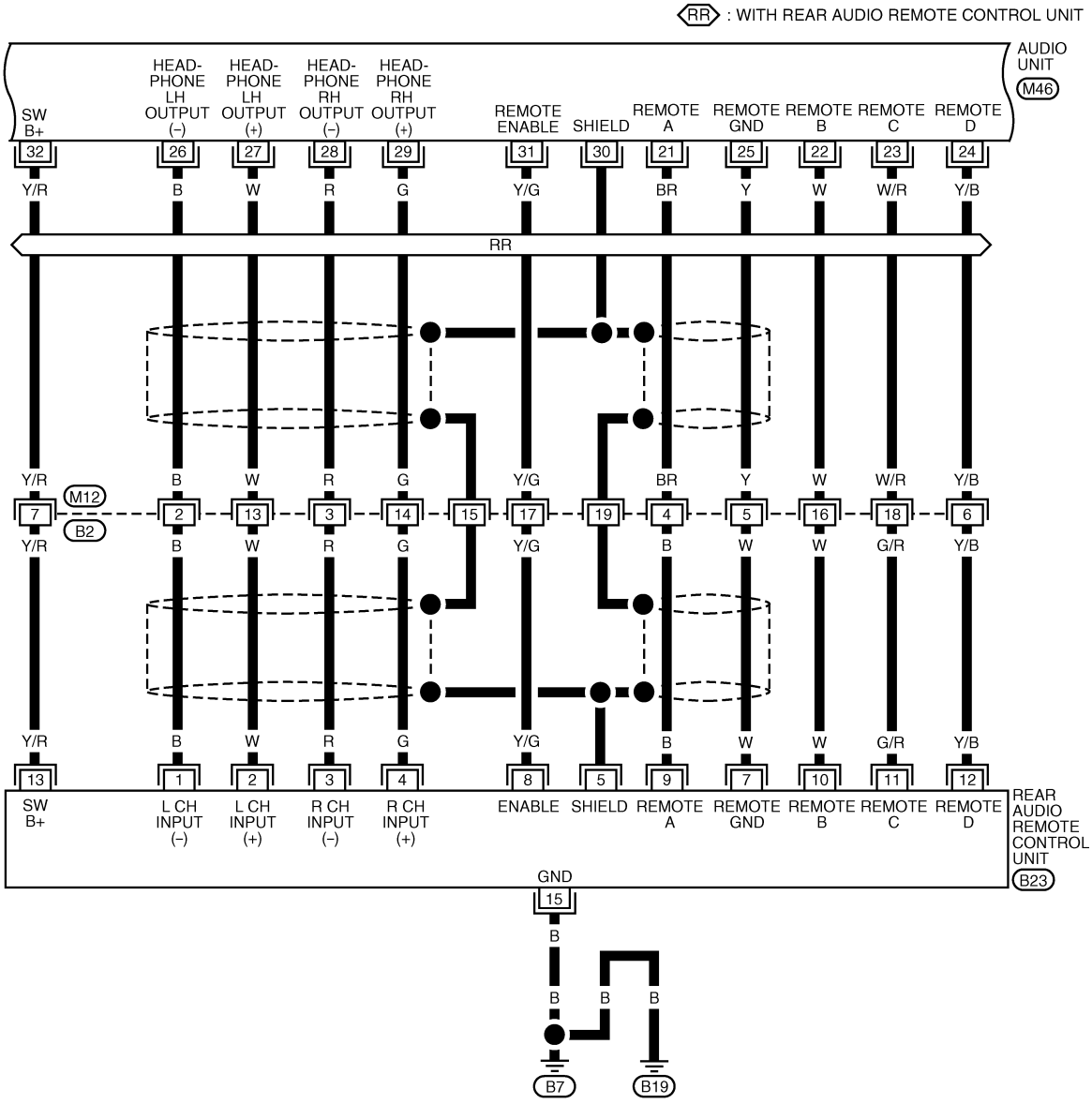
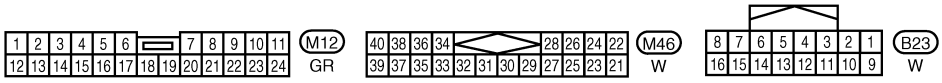

AUDIO UNIT
M44
RRSP LH (–)
RRSP LH (+)
RRSP RH (–)
RRSP RH (+)
13
14
15
16
B/Y
G
R/G
L
M81
B20
M84
B101
2
3
4
7
B/Y
G/R
R
L
B/Y
G/R
G/R
B/Y
R
L
L
R
B111
B43
3
2
B48
D401
D406
D502
11
10
23
24
REAR SPEAKER LH
B45
REAR SPEAKER RH
B131
REAR TWEETER LH
D516
REAR TWEETER RH
D506


M44
W
M81
M84
W
W
B45
B131
W
W
B111
W
D401
D406
W
W
D506
D516
BR
BR

WKWA3159E

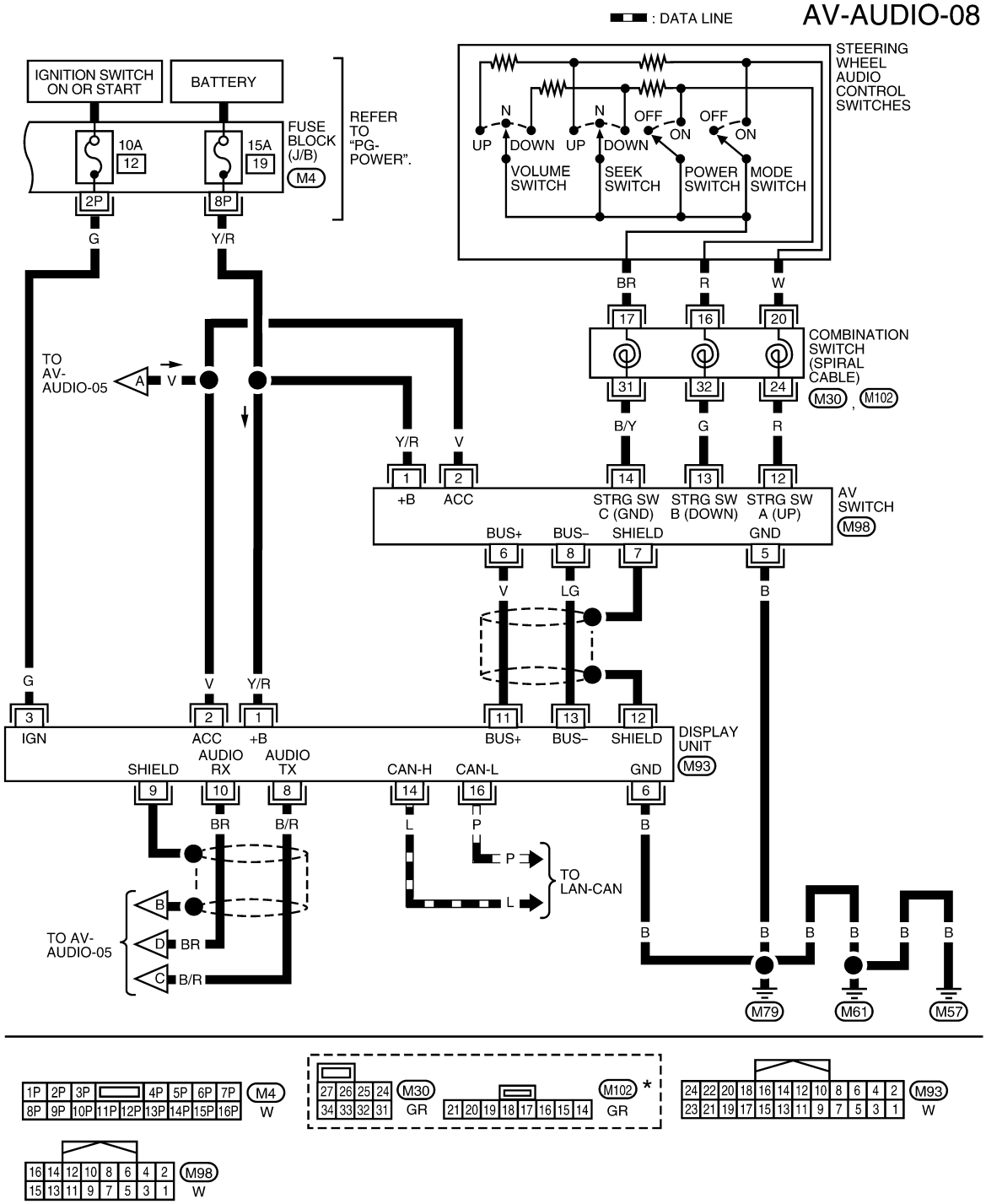
AV-AUDIO-07





WKWA4742E

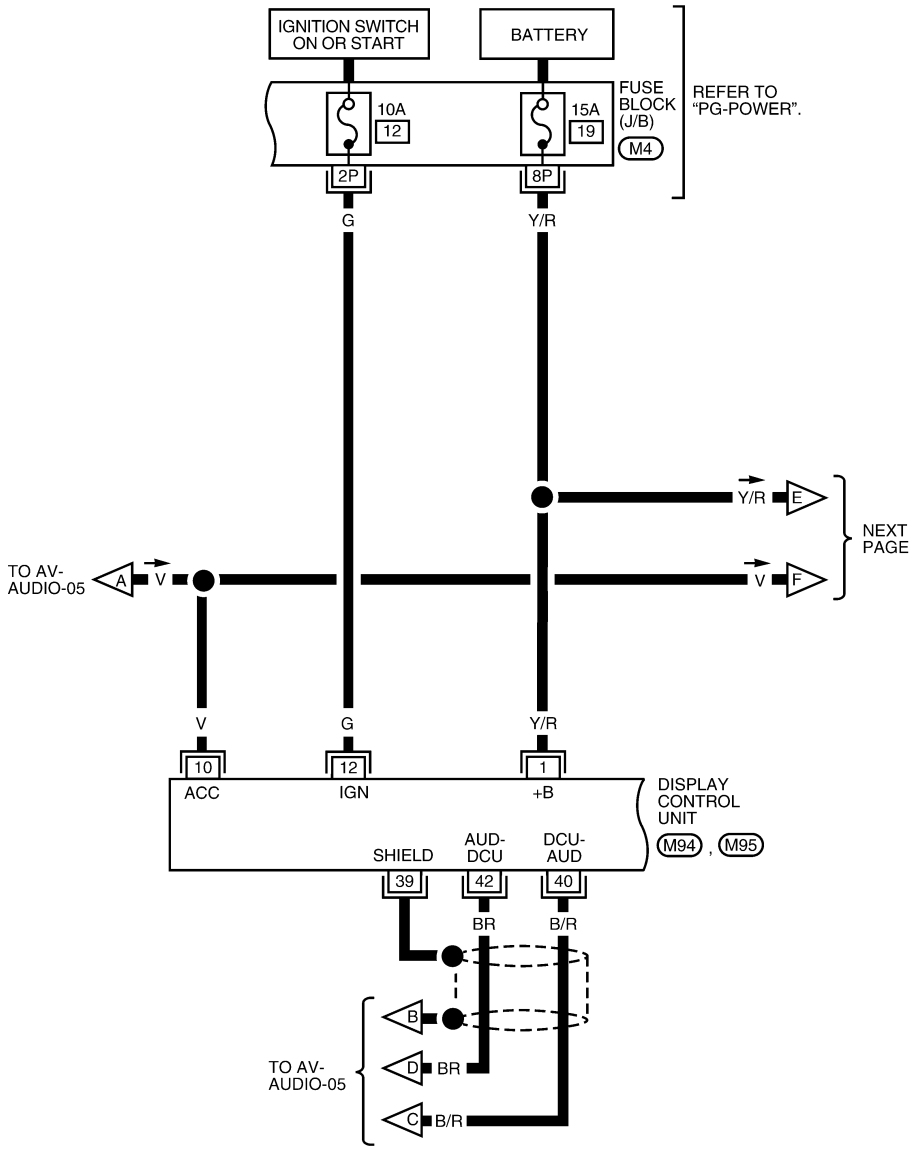
AV-AUDIO-08

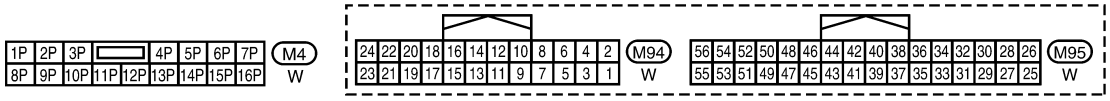


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

ALNWA0177GE

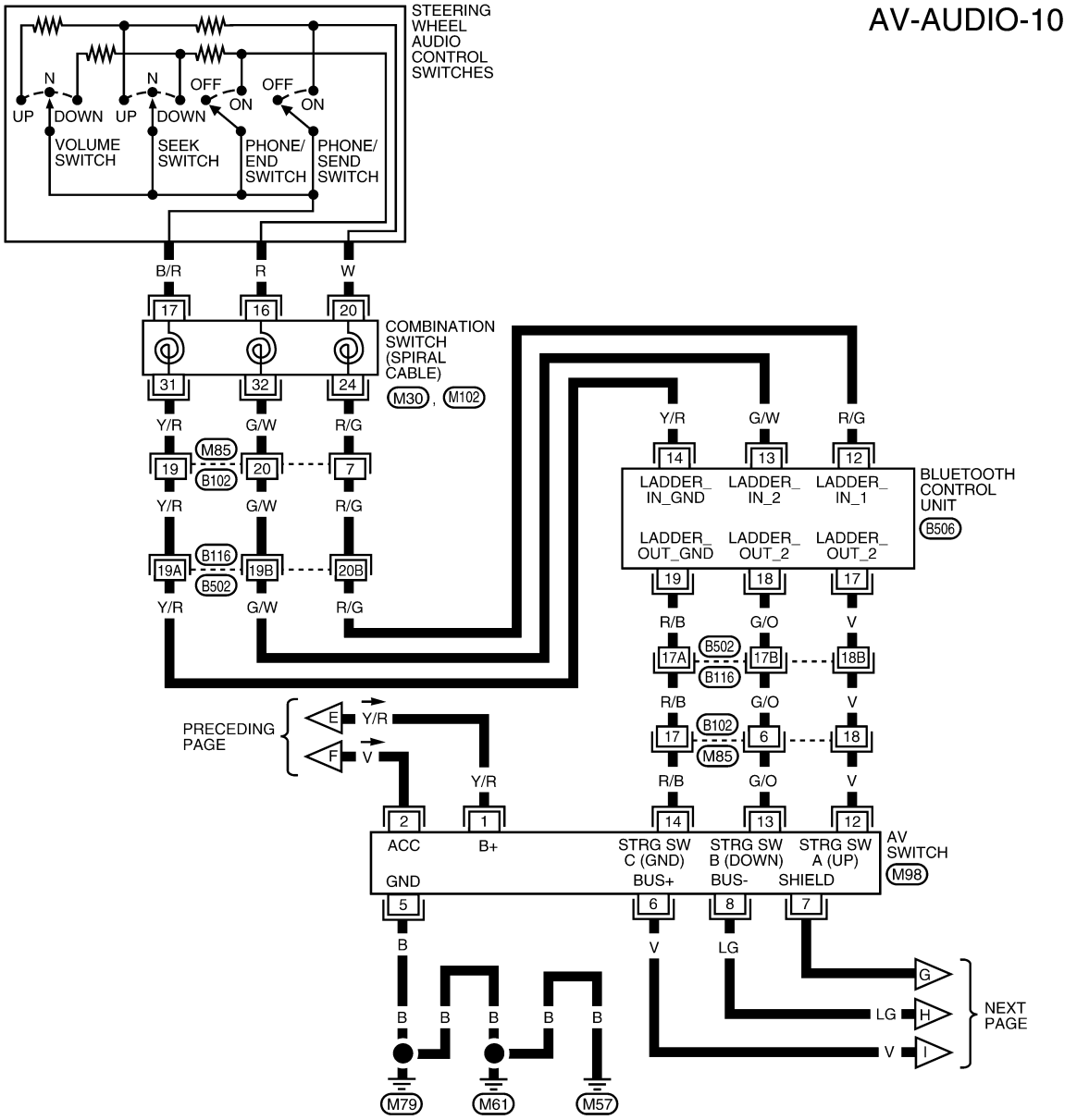
AV-AUDIO-09

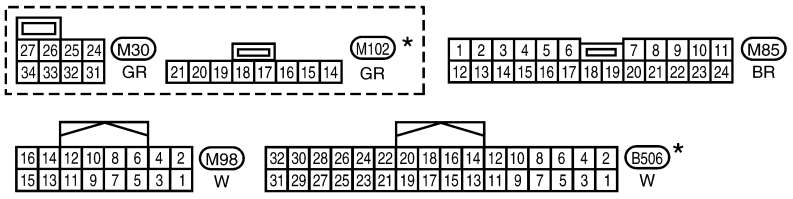




ALNWA0178GE

AV-AUDIO-10

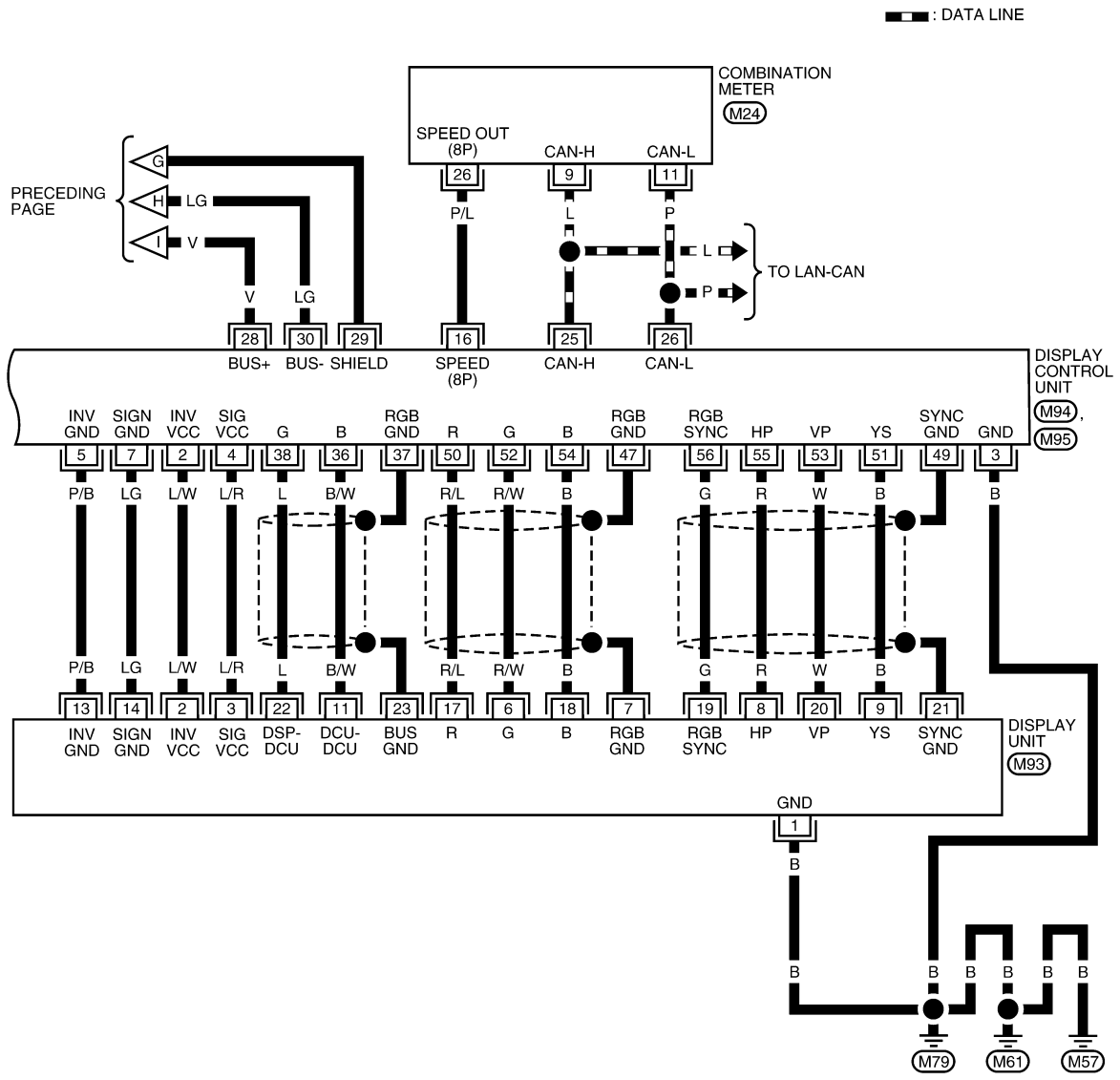


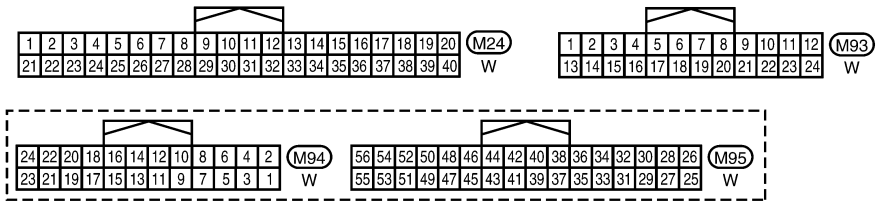


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

REFER TO THE FOLLOWING.
B116 - SUPER MULTIPLE JUNCTION (SMJ)

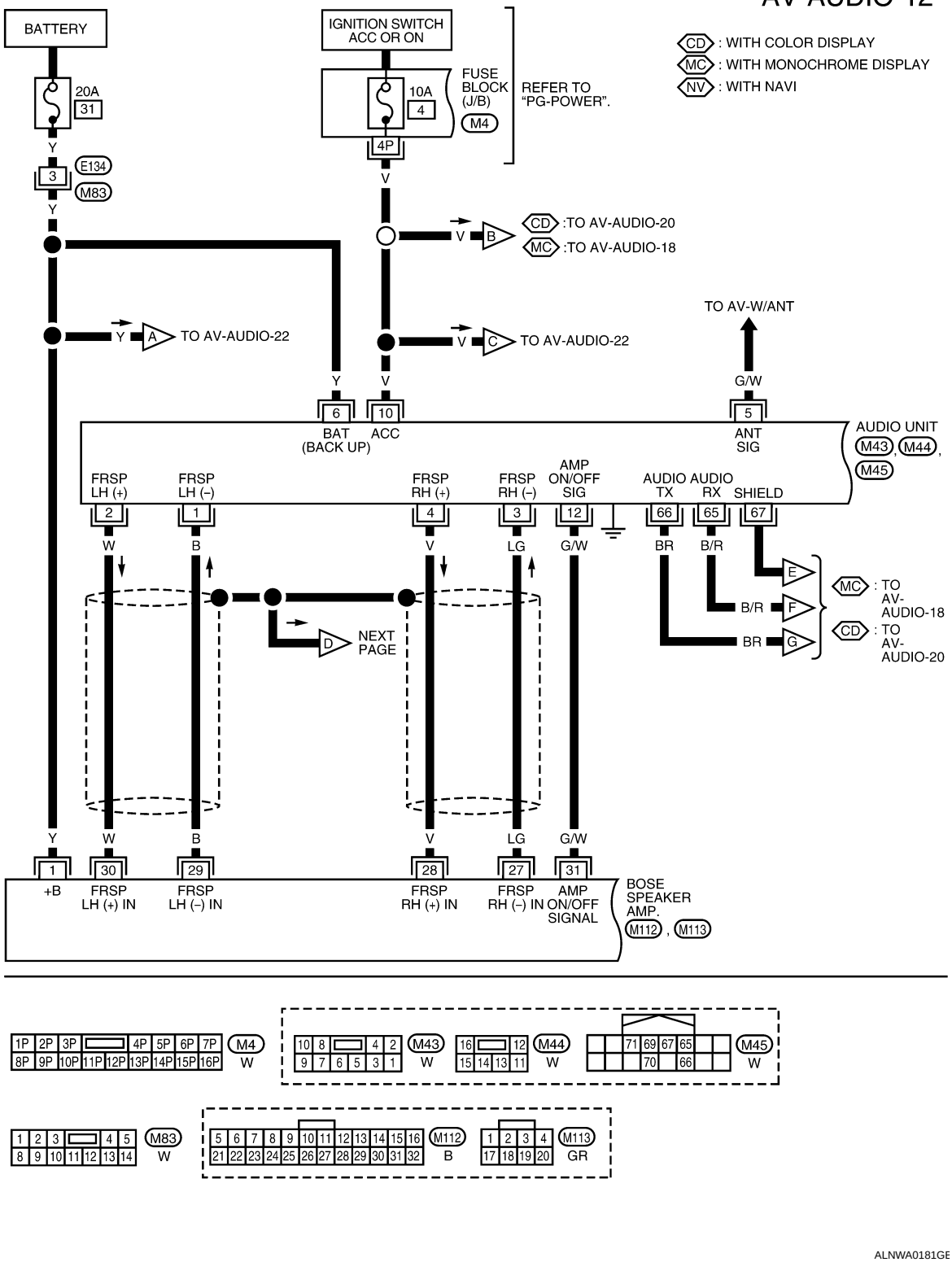
ALNWA0179GE





ALNWA0180GE

AV-AUDIO-12



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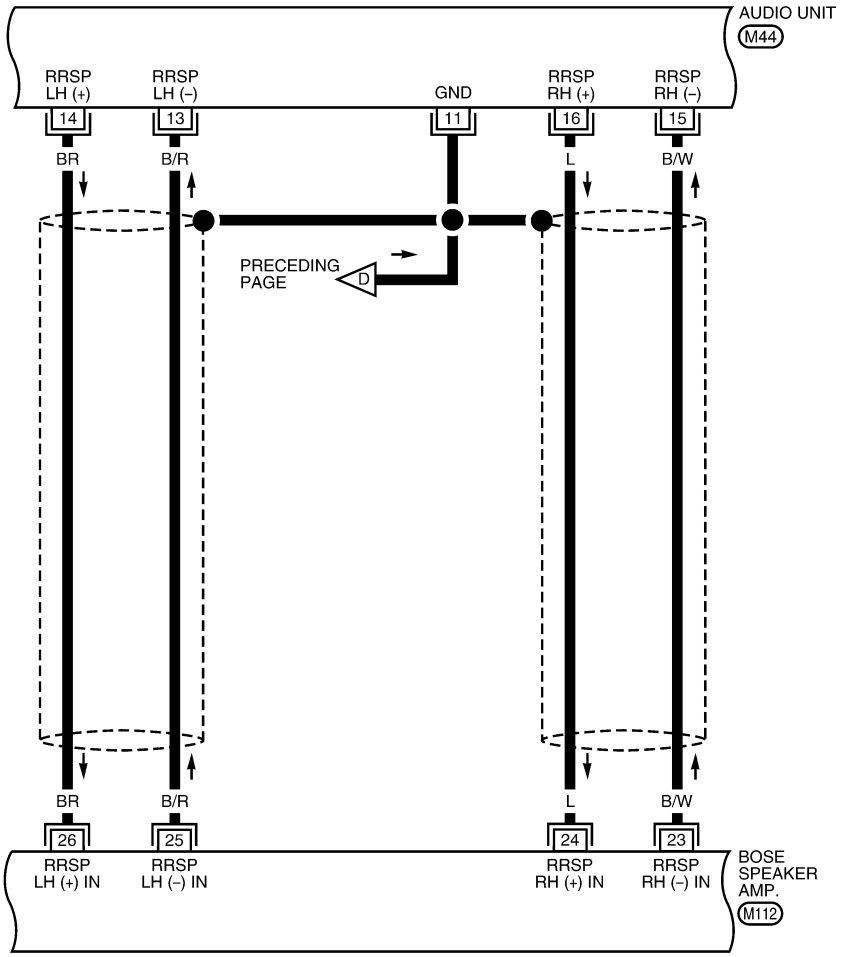

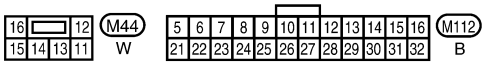

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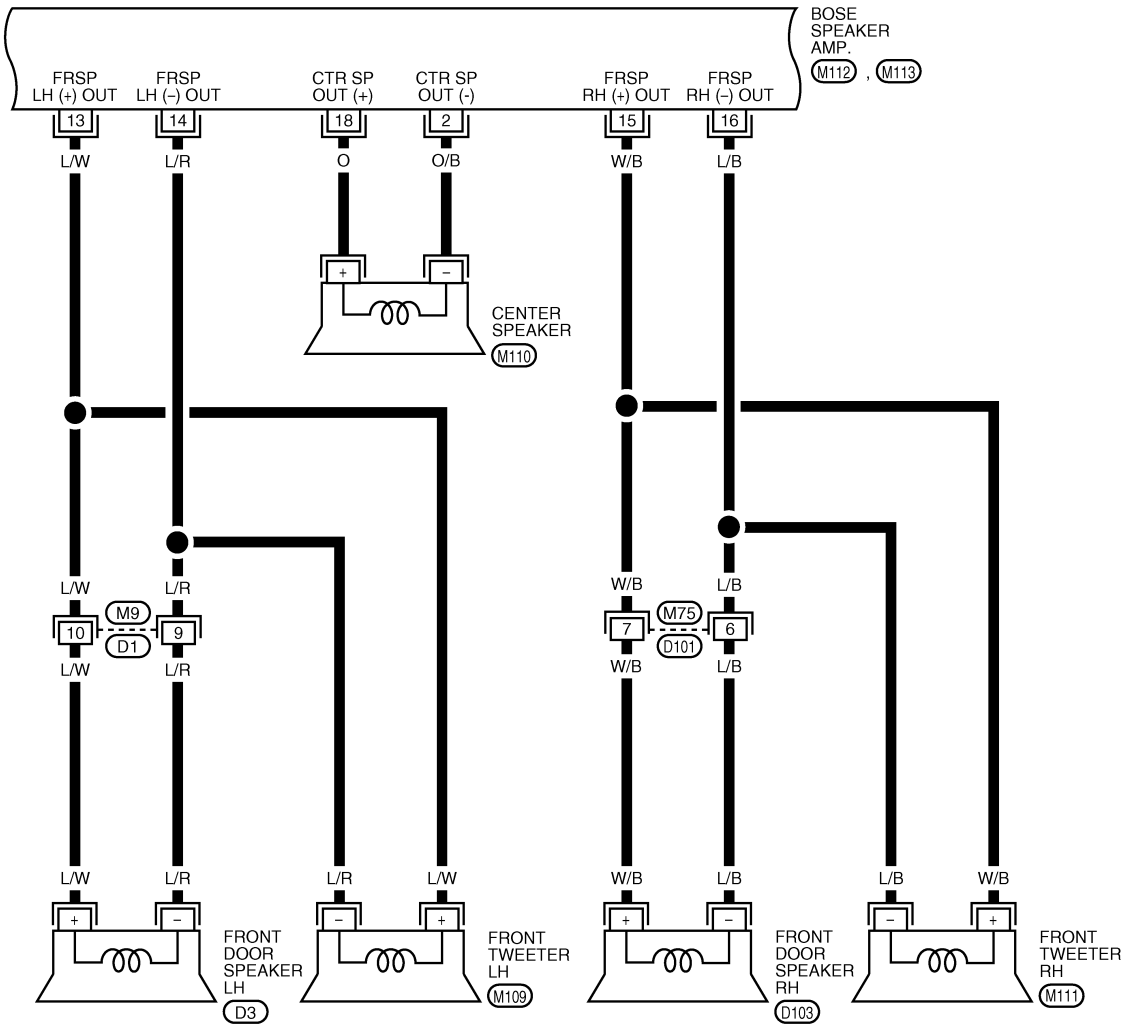
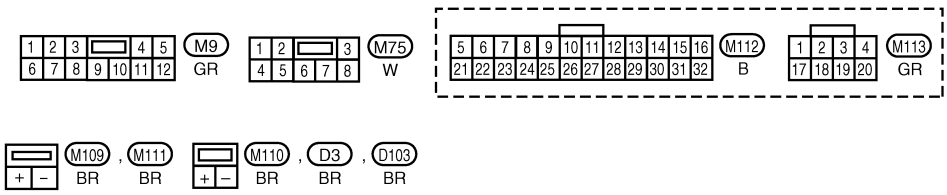
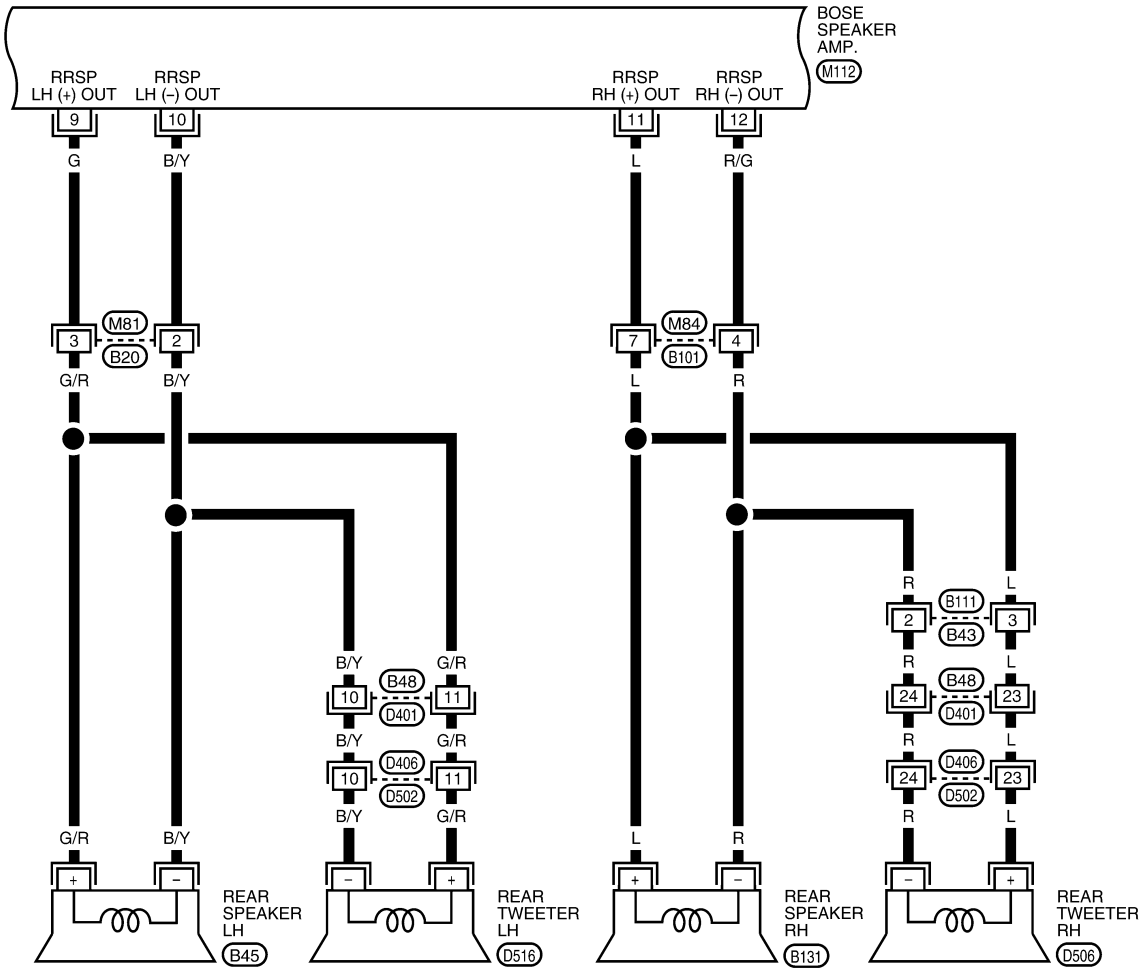
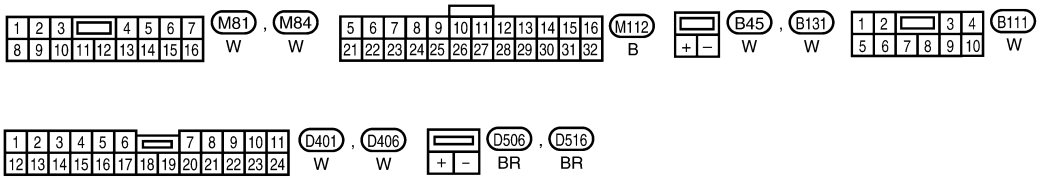

BOSE SPEAKER AMP.
M112 , M113
FRSP LH (+) OUT
FRSP LH (–) OUT
CTR SP OUT (+)
CTR SP OUT (-)
FRSP RH (+) OUT
FRSP RH (–) OUT
13
14
18
2
15
16
L/W
L/R
O
O/B
W/B
L/B
CENTER SPEAKER
M110
M9
D1
10
9
M75
D101
7
6
FRONT DOOR SPEAKER LH
D3
FRONT TWEETER LH
M109
FRONT DOOR SPEAKER RH
D103
FRONT TWEETER RH
M111

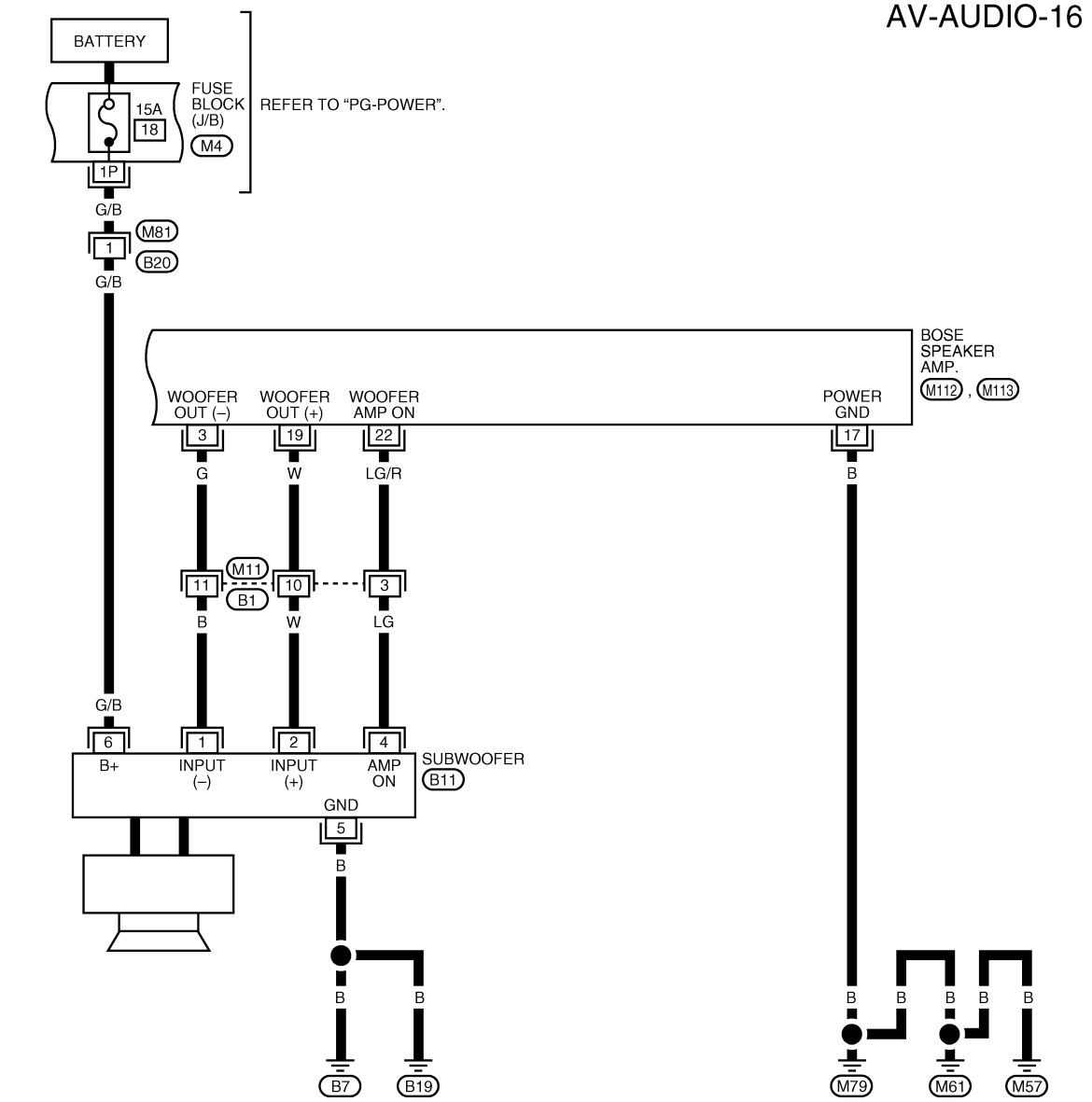

M9
GR
M75
W
M112
B
M113
GR
M109 , M111
BR
BR
M110 , D3 , D103
BR
BR
BR

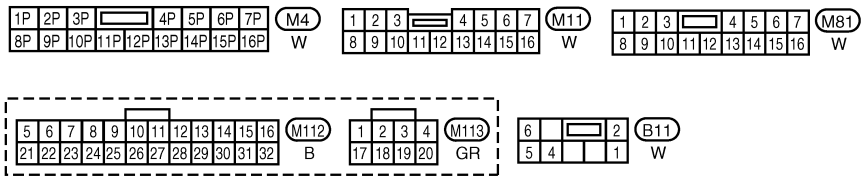
WKWA4749E


BOSE SPEAKER AMP.
M112
RRSP LH (+) OUT
RRSP LH (–) OUT
RRSP RH (+) OUT
RRSP RH (–) OUT
9
10
11
12
G
B/Y
L
R/G
M81
B20
M84
B101
3
2
7
4
G/R
B/Y
L
R
B/Y
G/R
B48
D401
D406
D502
10
11
24
23
REAR SPEAKER LH
B45
REAR TWEETER LH
D516
REAR SPEAKER RH
B131
REAR TWEETER RH
D506
B111
B43

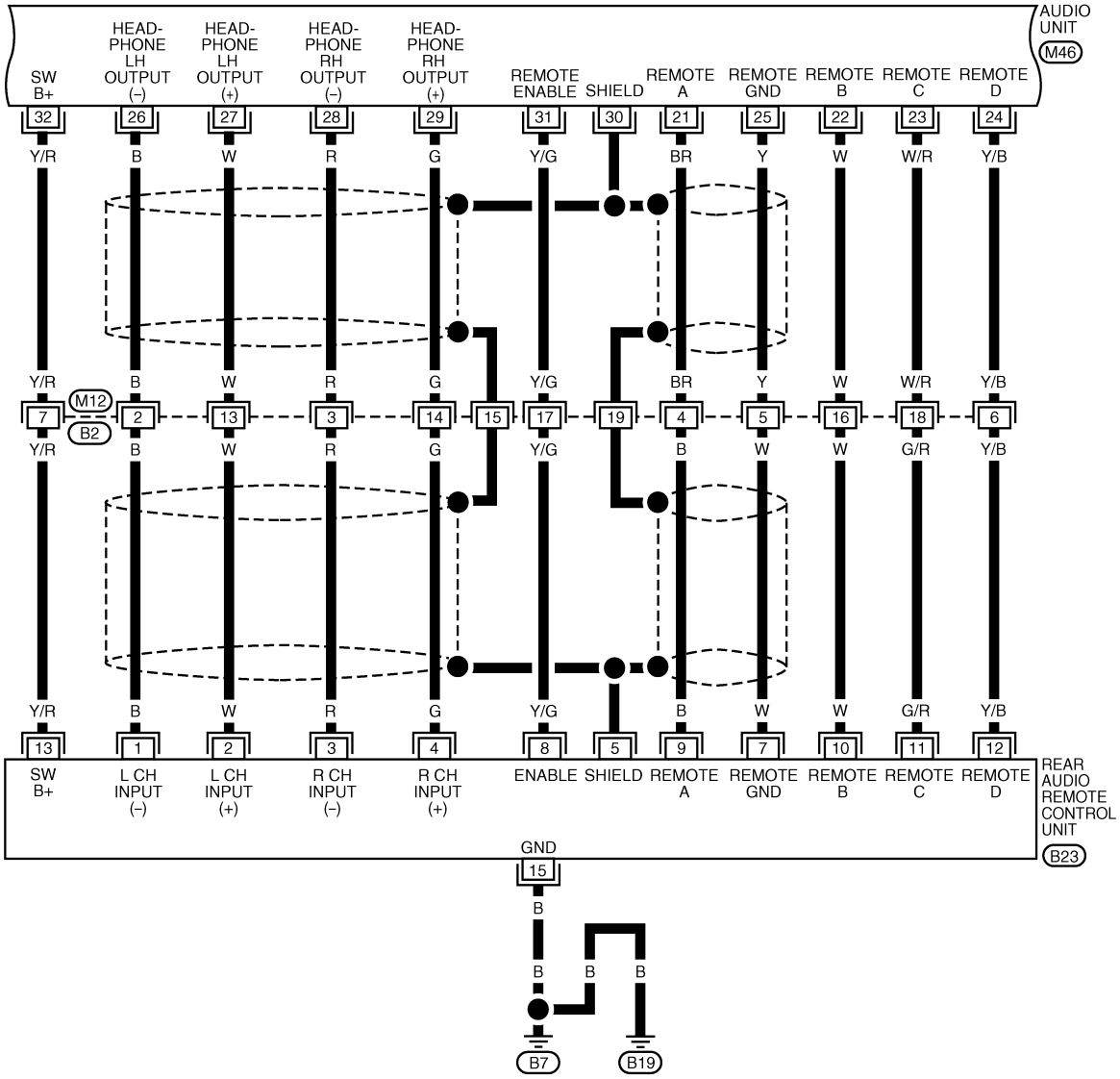

M81, M84
W W
M112
B
B45, B131
W W
B111
W
D401, D406
W W
D506, D516
BR BR

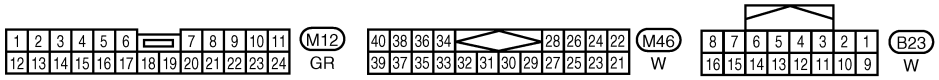
WKWA4750E


BATTERY
FUSE BLOCK (J/B)
M4
15A
18
1P
REFER TO "PG-POWER".
G/B
M81
1
B20
BOSE SPEAKER AMP.
M112 , M113
WOOFER OUT (–)
WOOFER OUT (+)
WOOFER AMP ON
POWER GND
3
19
22
17
G
W
LG/R
B
M11
11
10
3
B1
B
W
LG
6
1
2
4
B+
INPUT (–)
INPUT (+)
AMP ON
SUBWOOFER
B11
GND
5
B7
B19
M79
M61
M57


M4
W
M11
W
M81
W
M112
B
M113
GR
B11
W

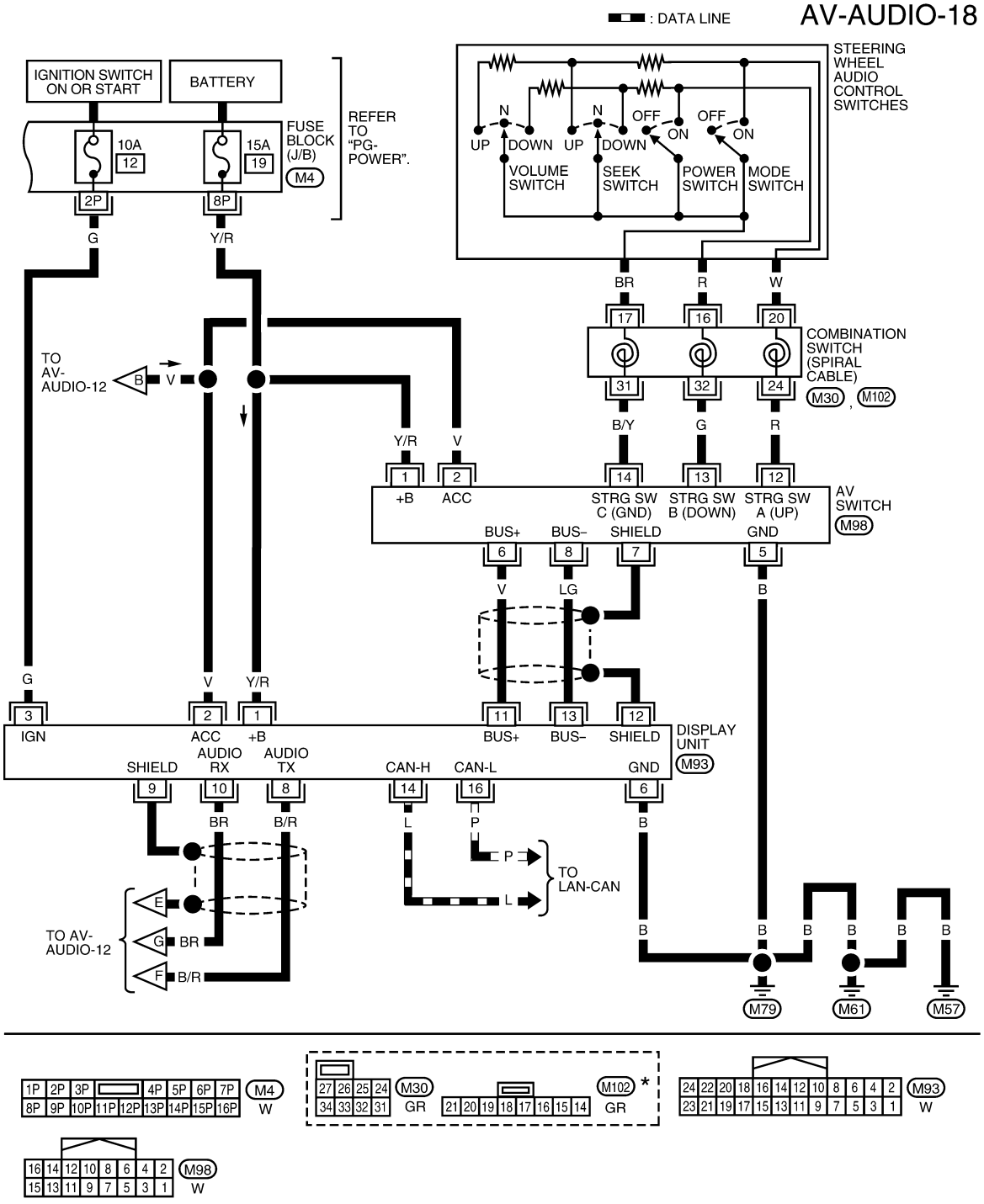
WKWA4751E


AUDIO UNIT
M46
SW B+
HEAD-PHONE LH OUTPUT (–)
HEAD-PHONE LH OUTPUT (+)
HEAD-PHONE RH OUTPUT (–)
HEAD-PHONE RH OUTPUT (+)
REMOTE ENABLE
SHIELD
REMOTE A
REMOTE GND
REMOTE B
REMOTE C
REMOTE D
32 26 27 28 29 31 30 21 25 22 23 24
Y/R B W R G Y/G BR Y W W/R Y/B
M12
B2
7 2 13 3 14 15 17 19 4 5 16 18 6
Y/R B W R G Y/G B W W G/R Y/B
13 1 2 3 4 8 5 9 7 10 11 12
SW B+
L CH INPUT (–)
L CH INPUT (+)
R CH INPUT (–)
R CH INPUT (+)
ENABLE
SHIELD
REMOTE A
REMOTE GND
REMOTE B
REMOTE C
REMOTE D
REAR AUDIO REMOTE CONTROL UNIT
B23
GND
15
B
B7
B19


M12
GR
M46
W
B23
W

WKWA4752E

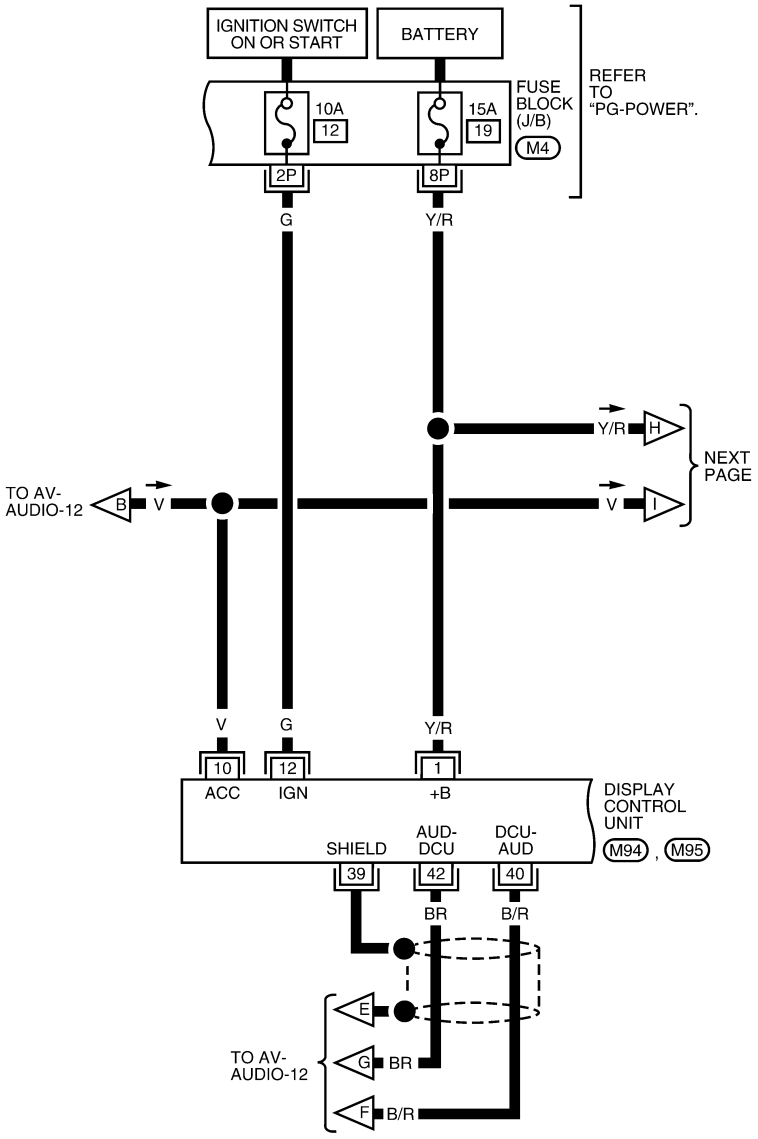
AV-AUDIO-18

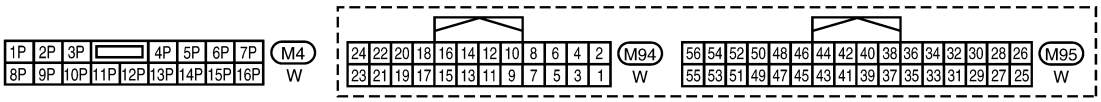


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

ALNWA0183GE

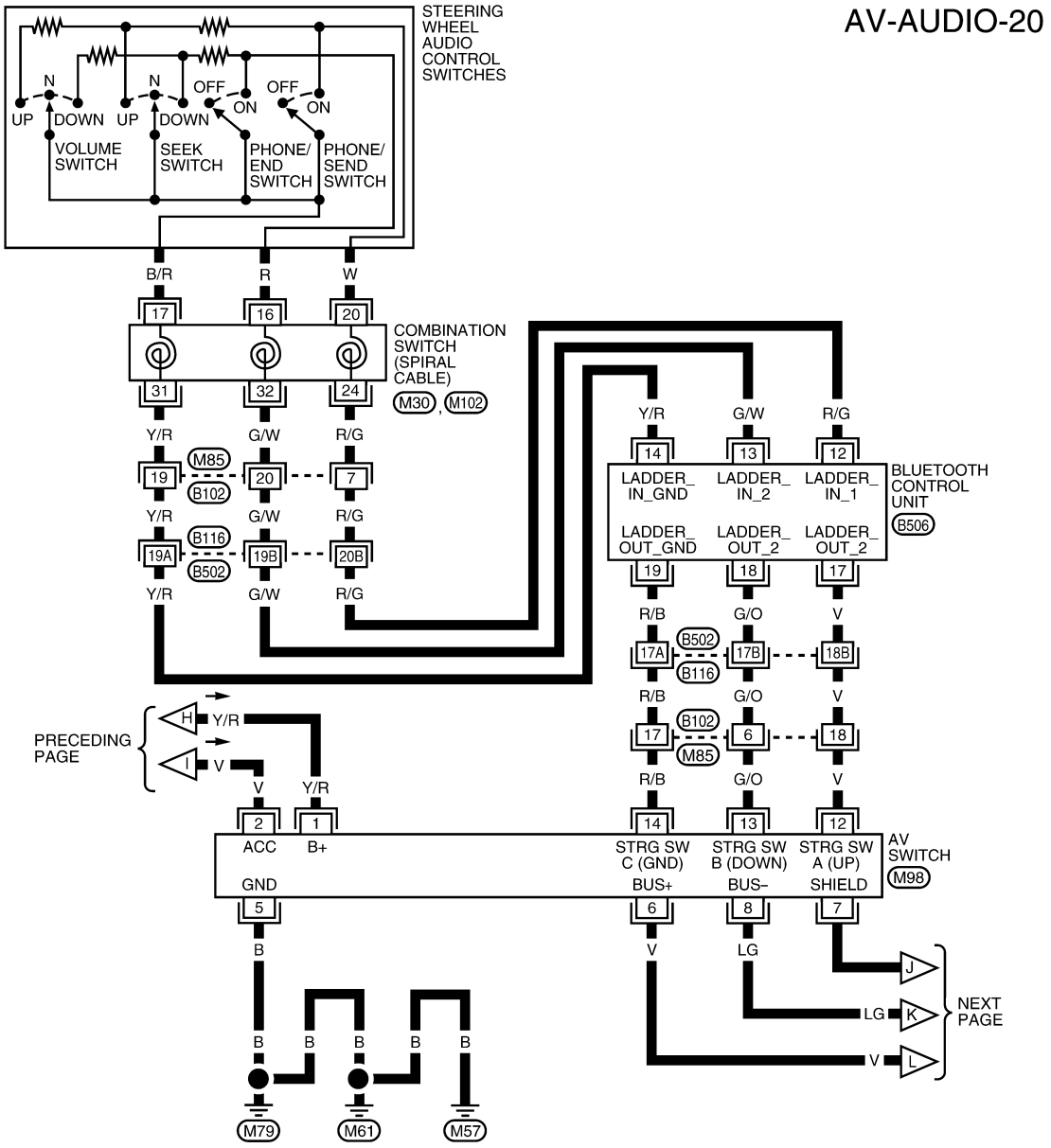
AV-AUDIO-19

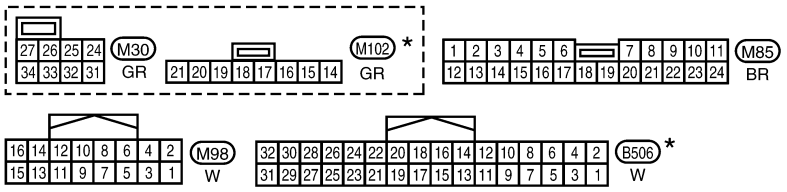




ALNWA0184GE

AV-AUDIO-20



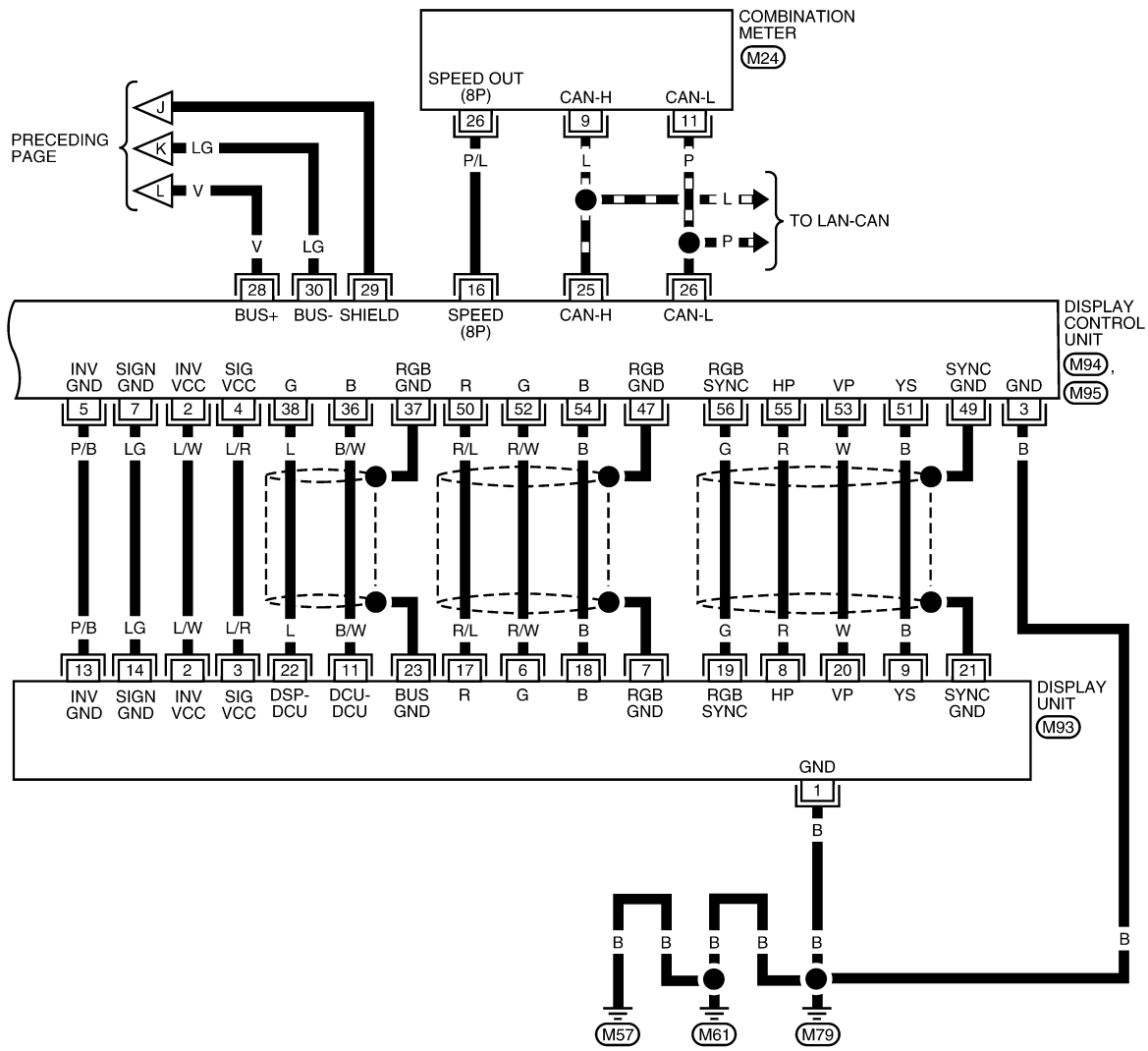


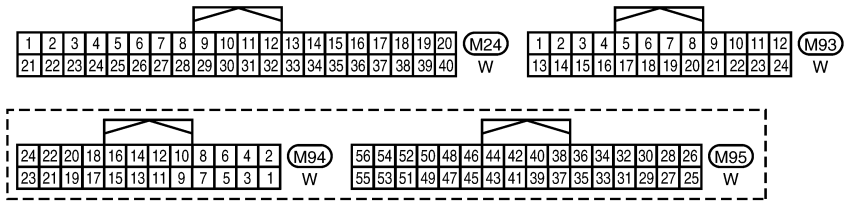
REFER TO THE FOLLOWING.
B116 - SUPER MULTIPLE JUNCTION (SMJ)

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

ALNWA0185GE

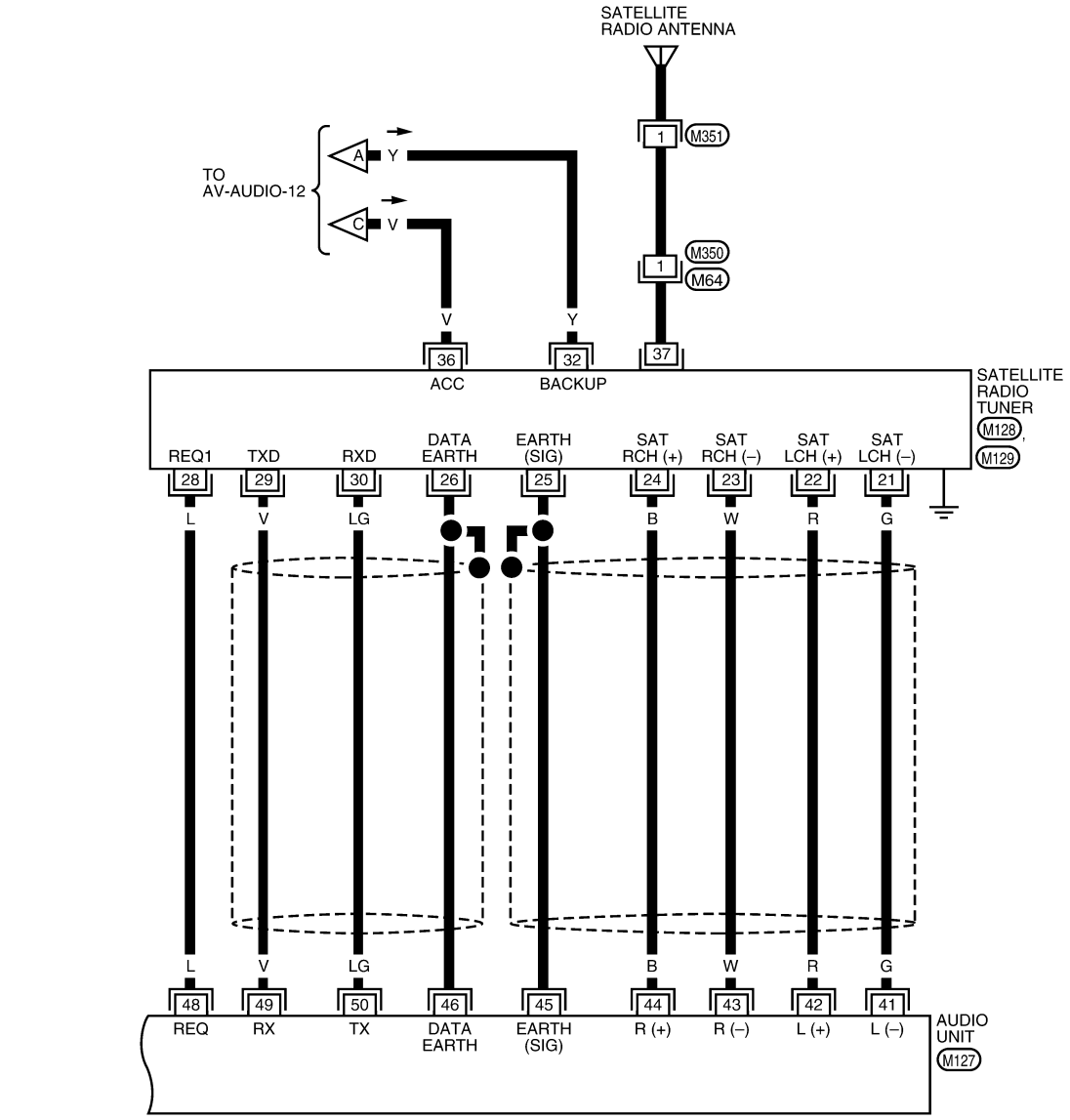
AV-AUDIO-21

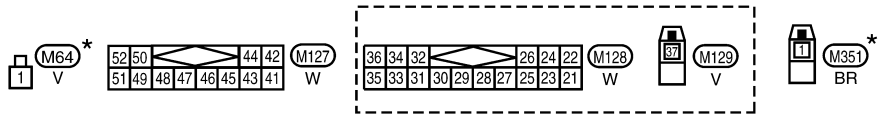




ALNWA0186GE

AV-AUDIO-22



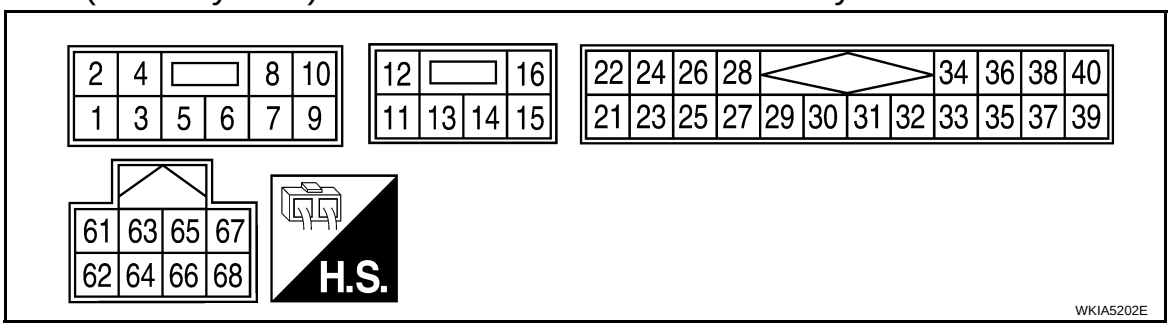


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

ALNWA0187GE

Audio Unit (Base System) Harness Connector Terminal Layout

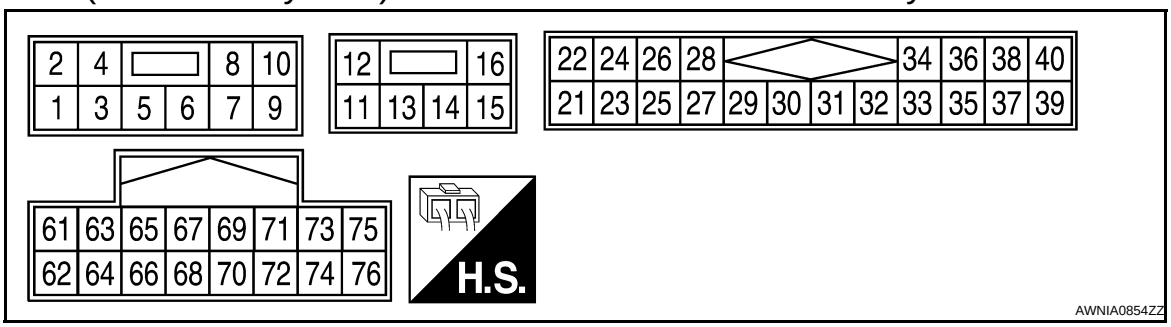
INFOID:0000000004277835



WKIA5202E

Audio Unit (Mid Level System) Harness Connector Terminal Layout

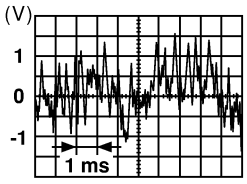
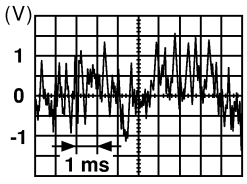
INFOID:0000000004277836

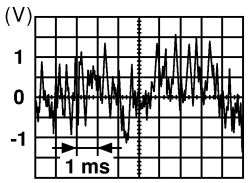
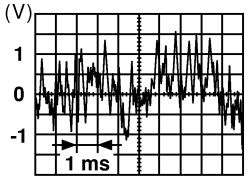
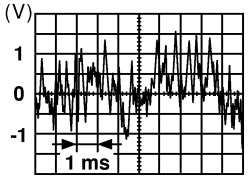
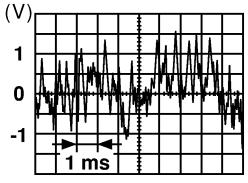


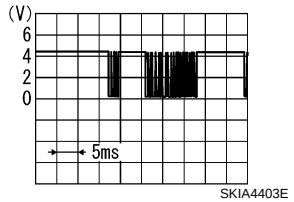
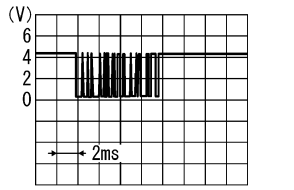
AWNIA0854ZZ

Terminal and Reference Value for Audio Unit (Base and Mid Level System)

INFOID:0000000004277837

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
2 (L/W)	1 (L/R)	Audio sound signal front LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker LH or tweeter LH.
4 (W/B)	3 (L/B)	Audio sound signal front RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker RH or tweeter RH.
5 (G/W)	Ground	Antenna signal	Output	ON	–	More than 10V	Poor radio reception.
6 (Y)	Ground	Battery power	Input	–	–	Battery voltage	System does not work properly.
7 (R/Y)	Ground	Illumination control signal	Input	ON	Illumination control switch is operated by lighting switch in 1st position.	Changes between 0 and 12V	Audio unit illumination cannot be controlled.

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
8 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch is in 1st position.	Battery voltage	Audio unit illumination does not come on when lighting switch is in 1st position.
					Lighting switch is OFF.	3V or less	
10 (V)	Ground	ACC signal	Input	ON	Ignition switch ACC or ON	Battery voltage	System does not work properly.
14 (G)	13 (B/Y)	Audio sound signal rear LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear speaker LH or rear tweeter LH.
16 (L)	15 (R/G)	Audio sound signal rear RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear speaker RH or rear tweeter RH.
21 (BR)	Ground	Remote control A	Output	ON	Audio unit ON	5V	Rear audio remote control unit does not operate properly.
22 (W)	Ground	Remote control B	Output	ON	Audio unit ON	5V	Rear audio remote control unit does not operate properly.
23 (W/R)	Ground	Remote control C	Output	ON	Audio unit ON	5V	Rear audio remote control unit does not operate properly.
24 (Y/B)	Ground	Remote control D	Output	ON	Audio unit ON	5V	Rear audio remote control unit does not operate properly.
25 (Y)	–	Remote control ground	–	–	–	0V	Rear audio remote control unit switches do not function.
27 (W)	26 (B)	Audio sound signal LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from LH headphone channel.
29 (G)	28 (R)	Audio sound signal RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from RH headphone channel.

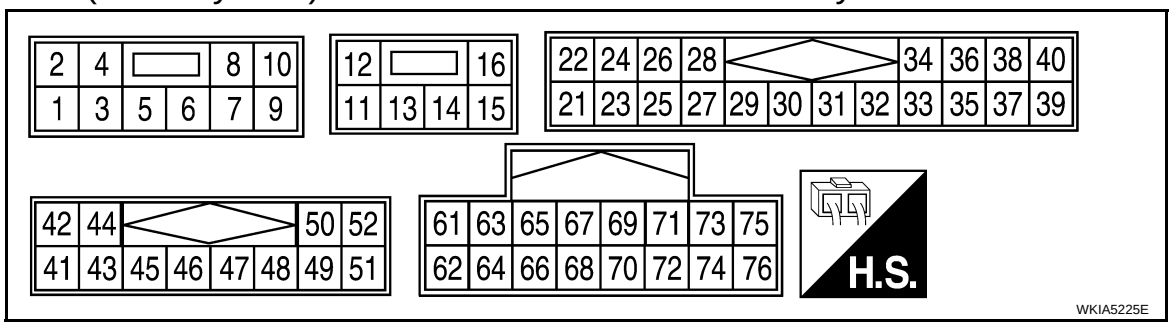
Terminal (Wire color) +	Terminal (Wire color) –	Item	Signal input/ output	Condition: Ignition switch	Condition: Operation	Reference value (Approx.)	Example of symptom
30	–	Shield	–	–	–	0V	Interference and distortion heard from headphones or rear audio remote control unit switches not operating properly.
31 (Y/G)	Ground	Remote control enable signal	Output	ON	Audio unit ON	5V	Rear audio remote control unit does not operate.
32 (Y/R)	Ground	Remote control switch power supply	Output	ON	Audio unit ON	Battery voltage	Rear audio remote control unit does not operate.
65 (B/R)	Ground	Audio RX	Input	ON	Operate audio volume	 SKIA4403E	Audio information does not display properly.
66 (BR)	Ground	Audio TX	Output	ON	Operate audio volume	 SKIA4402E	Audio information does not display properly.
67	–	Shield	–	–	–	0V	Interference and distortion heard from speakers.

*1 With satellite radio tuner

*2 With pre-wiring for satellite radio tuner

Audio Unit (Bose System) Harness Connector Terminal Layout

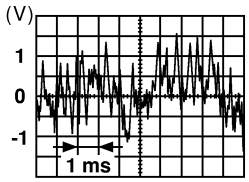
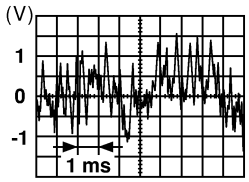
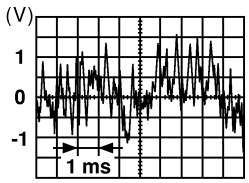
INFOID:0000000004277838

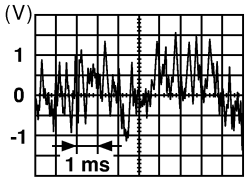
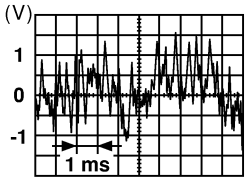
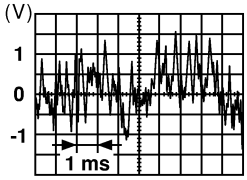


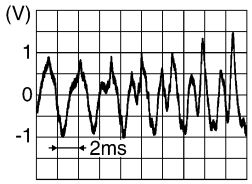
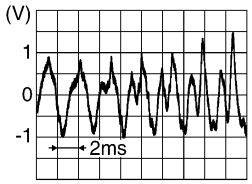
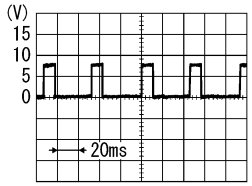
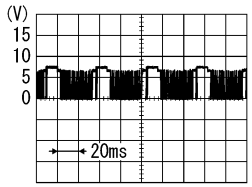
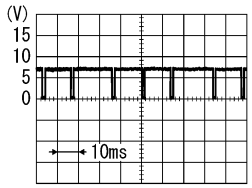
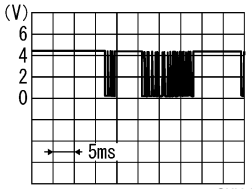
WKIA5225E

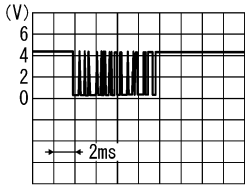
Terminal and Reference Value for Audio Unit (BOSE System)

INFOID:0000000004277839

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
2 (W)	1 (B)	Audio sound signal front LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker LH or tweeter LH.
4 (V)	3 (LG)	Audio sound signal front RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker RH or tweeter RH.
5 (G/W)	Ground	Antenna signal	Output	ON	–	More than 10V	Poor radio reception.
6 (Y)	Ground	Battery power	Input	–	–	Battery voltage	System does not work properly.
7 (R/Y)	Ground	Illumination control signal	Input	ON	Illumination control switch is operated by lighting switch in 1st position.	Changes between 0 and 12V	Audio unit illumination cannot be controlled.
8 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch is in 1st position.	Battery voltage	Audio unit illumination does not come on when lighting switch is in 1st position.
10 (V)	Ground	ACC signal	Input	ON	–	Battery voltage	System does not work properly.
11	–	Shield	–	–	–	0V	Interference and distortion heard from speakers.
12 (G/W)	Ground	Amp. ON signal	Output	ON	–	More than 6.5V	Amp. does not work properly.
14 (BR)	13 (B/R)	Audio sound signal rear LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear speaker LH or rear tweeter LH.

Terminal (Wire color) +	Terminal (Wire color) –	Item	Signal input/ output	Condition: Ignition switch	Condition: Operation	Reference value (Approx.)	Example of symptom
16 (L)	15 (B/W)	Audio sound signal rear RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear speaker RH or rear speaker RH.
21 (BR)	Ground	Remote control A	Output	ON	Audio unit ON	5V	Rear audio remote control unit does not operate properly.
22 (W)	Ground	Remote control B	Output	ON	Audio unit ON	5V	Rear audio remote control unit does not operate properly.
23 (W/R)	Ground	Remote control C	Output	ON	Audio unit ON	5V	Rear audio remote control unit does not operate properly.
24 (Y/B)	Ground	Remote control D	Output	ON	Audio unit ON	5V	Rear audio remote control unit does not operate properly.
25 (Y)	–	Remote control ground	–	–	–	0V	Rear audio remote control switches do not function.
27 (W)	26 (B)	Audio sound signal LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from LH headphone channel.
29 (G)	28 (R)	Audio sound signal RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from RH headphone channel.
30	–	Shield	–	–	–	0V	Interference and distortion heard from headphones or rear audio remote control unit switches not operating properly.
31 (Y/G)	Ground	Remote control enable signal	Output	ON	Audio unit ON	5V	Rear audio remote control unit does not operate.
32 (Y/R)	Ground	Remote control switch power supply	Output	ON	Audio unit ON	Battery voltage	Rear audio remote control unit does not operate.

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
42 (R)	41 (G)	Audio signal LH	Input	ON	Receive satellite radio tuner signal.	 SKIB3609E	No sound on LH channel when satellite radio signal is received.
44 (B)	43 (W)	Audio signal RH	Input	ON	Receive satellite radio tuner signal.	 SKIB3609E	No sound on RH channel when satellite radio signal is received.
45	–	Shield	–	–	–	–	–
46				ON		Approx. 0 V	
48 (L)	Ground	REQ1 (AUDIO-SAT)	Input	ON	Set to the satellite radio mode	 SKIB3825E	–
49 (V) *1 (W/R) *2	Ground	Communication signal (AUDIO-SAT)	Input	ON	Set to the satellite radio mode	 SKIB3824E	–
50 (LG) *1 (B/R) *2	Ground	Communication signal (SAT-AUDIO)	Output	ON	Set to the satellite radio mode	 SKIB3826E	–
65 (B/R)	Ground	Audio RX	Input	ON	Operate audio volume	 SKIA4403E	Audio does not operate properly.

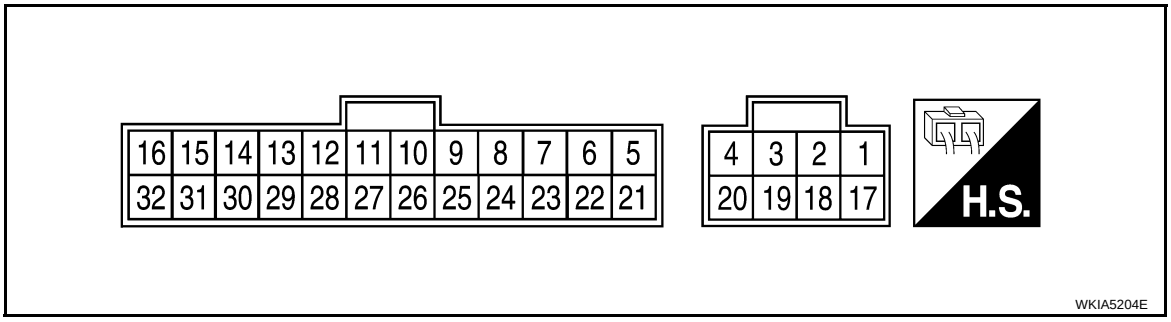
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
66 (BR)	Ground	Audio TX	Output	ON	Operate audio volume	 SKIA4402E	Audio does not operate properly.
67	–	Shield	–	ON	–	0V	Interference and distortion heard from speakers.

*1 With satellite radio tuner

*2 With pre-wiring for satellite radio tuner

BOSE Speaker Amp. Harness Connector Terminal Layout

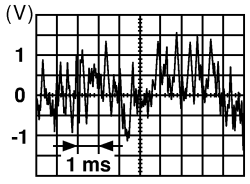
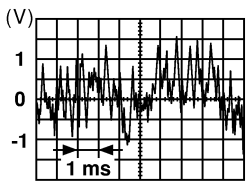
INFOID:0000000004277840

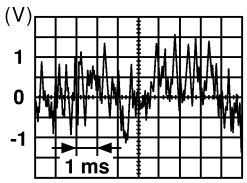
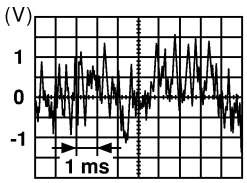
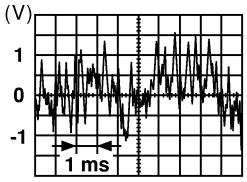
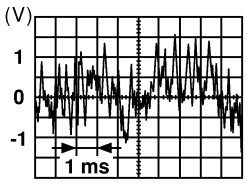
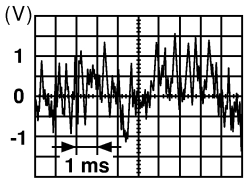
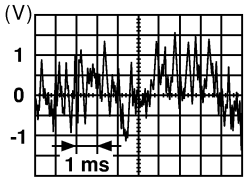


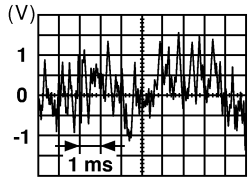
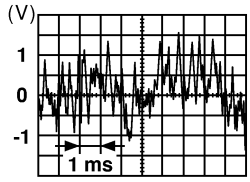
WKIA5204E

Terminal and Reference Value for BOSE Speaker Amp

INFOID:0000000004277841

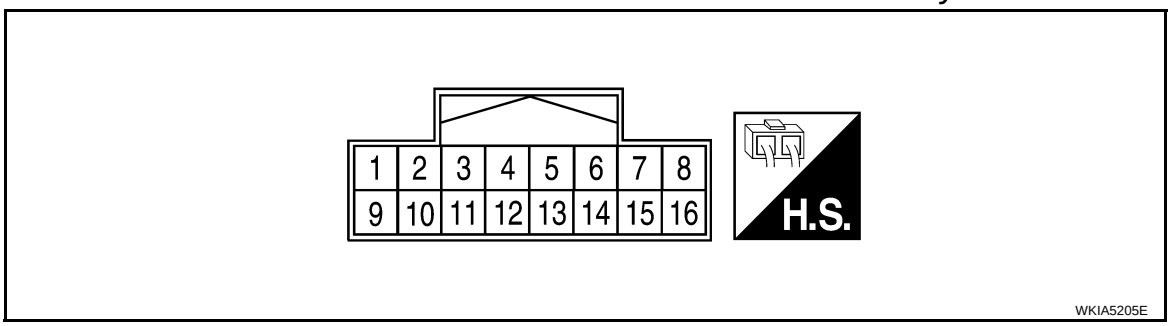
Terminal (wire color)		Item	Signal input/ output	Condition		Reference value (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
1 (Y)	Ground	Battery	Input	–	–	Battery voltage	System does not work properly.
9 (G)	10 (B/Y)	Rear speaker LH and rear tweeter LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear speaker LH or rear tweeter LH.
11 (L)	12 (R/G)	Rear speaker RH and rear tweeter RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from rear speaker RH or rear tweeter RH.

Terminal (wire color)		Item	Signal input/ output	Condition		Reference value (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
13 (L/W)	14 (L/R)	Front door speaker LH and front tweeter LH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker LH or front tweeter LH.
15 (W/B)	16 (L/B)	Front door speaker RH and front tweeter RH	Output	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker RH or front tweeter RH.
17 (B)	Ground	Ground	–	ON	–	–	–
18 (O)	2 (O/B)	Center speaker	Output	ON	Receive audio signal	 SKIA0177E	No sound from center speaker.
19 (W)	3 (G)	Subwoofer	Output	ON	Receive audio signal	 SKIA0177E	No sound from subwoofer.
22 (LG/R)	Ground	Subwoofer ON signal	Input	ON	–	More than 6.5V	Subwoofer does not work properly.
24 (L)	23 (B/W)	Audio sound signal rear RH	Input	ON	Receive audio signal	 SKIA0177E	No sound from rear speaker RH or rear tweeter RH.
26 (BR)	25 (B/R)	Audio sound signal rear LH	Input	ON	Receive audio signal	 SKIA0177E	No sound from rear speaker LH or rear tweeter LH.

Terminal (wire color)		Item	Signal input/ output	Condition		Reference value (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
28 (V)	27 (LG)	Audio sound signal front RH	Input	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker RH or front tweeter RH.
30 (W)	29 (B)	Audio sound signal front LH	Input	ON	Receive audio signal	 SKIA0177E	No sound from front door speaker LH or front tweeter LH.
31 (G/W)	Ground	Amp. ON signal	Input	ON	–	More than 6.5V	System does not work properly.

Rear Audio Remote Control Unit Harness Connector Terminal Layout

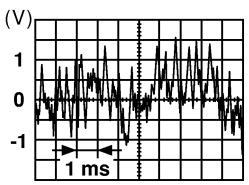
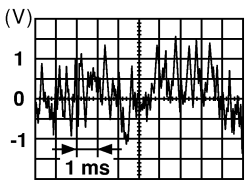
INFOID:0000000004277842



WKIA5205E

Terminal and Reference Value for Rear Audio Remote Control Unit

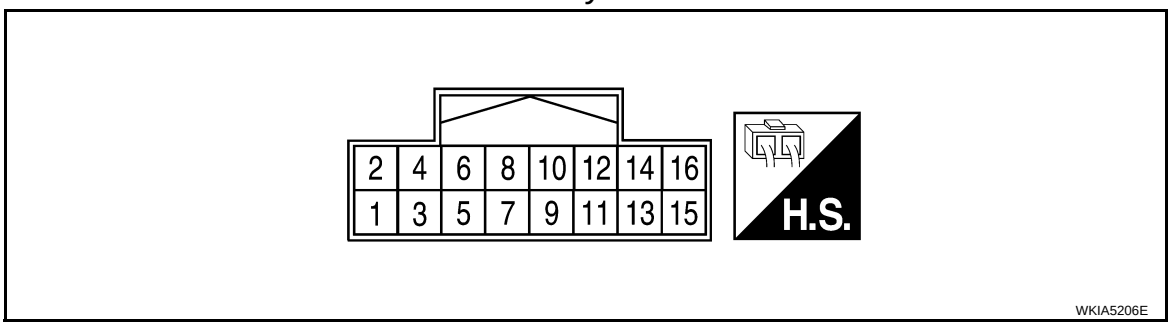
INFOID:0000000004277843

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
2 (W)	1 (B)	Audio sound signal LH	Input	ON	Receive audio signal	 SKIA0177E	No sound from LH headphone channel.
4 (G)	3 (R)	Audio sound signal RH	Input	ON	Receive audio signal	 SKIA0177E	No sound from RH headphone channel.

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
5	–	Shield	–	–	–	0V	Interference and distortion heard from headphones or rear audio remote control unit switches not operating properly.
6 (R/L)	Ground	Illumination	Input	ON	Lighting switch ON	Battery voltage	Rear audio remote control unit does not illuminate.
7 (W)	–	Remote control ground	–	–	–	0V	Rear audio remote control unit switches do not function.
8 (Y/G)	Ground	Remote control enable signal	Input	ON	Audio unit ON	5V	Rear audio remote control unit does not operate.
9 (B)	Ground	Remote control A	Input	ON	Audio unit ON	5V	Rear audio remote control unit does not operate properly.
10 (W)	Ground	Remote control B	Input	ON	Audio unit ON	5V	Rear audio remote control unit does not operate properly.
11 (G/R)	Ground	Remote control C	Input	ON	Audio unit ON	5V	Rear audio remote control unit does not operate properly.
12 (Y/B)	Ground	Remote control D	Input	ON	Audio unit ON	5V	Rear audio remote control unit does not operate properly.
13 (Y/R)	Ground	Remote control switch power supply	Input	ON	Audio unit ON	Battery voltage	Rear audio remote control does not operate.
15 (B)	–	Ground	–	ON		0V	–

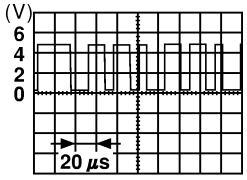
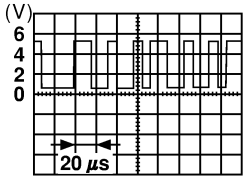
AV Switch Harness Connector Terminal Layout

INFOID:0000000004277844



Terminal and Reference Value for AV Switch

INFOID:0000000004277845

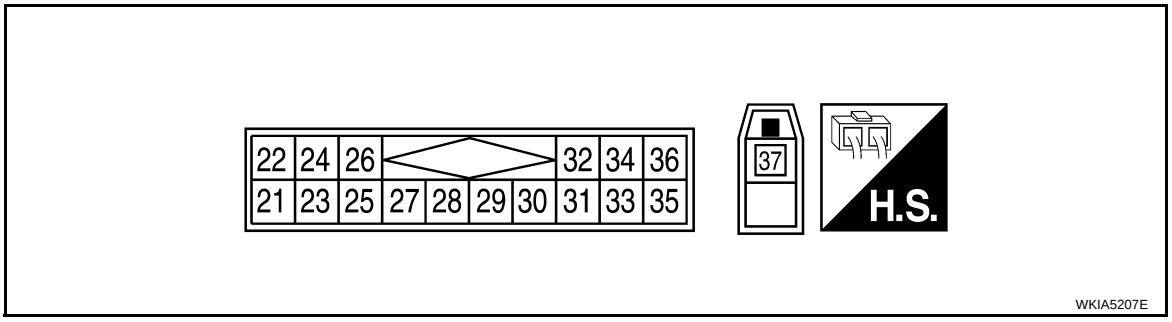
Terminal No. (Wire color)		Item	Signal input/ output	Condition		Voltage (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
1 (Y/R)	Ground	Battery power	Input	OFF	–	Battery voltage	System does not work properly.
2 (V)	Ground	ACC signal	Input	ACC	–	Battery voltage	System does not work properly.
3 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch is ON (position 1).	Battery voltage	AV switch illumination does not come on when lighting switch is ON (position 1).
					Turn lighting switch OFF.	Approx. 3.0V or less	
4 (R/Y)	Ground	Illumination control signal	Input	ON	Illumination control switch is operated by lighting switch in 1st position.	Changes between 0 and 12V.	AV switch illumination cannot be controlled.
5 (B)	Ground	Ground	–	ON	–	0V	–
6 (V)	Ground	Communication signal (+)	Input/ output	ON	–	 SKIA0175E	System does not work properly.
7	–	Shield ground	–	–	–	–	–
8 (LG)	Ground	Communication signal (-)	Input/ output	ON	–	 SKIA0176E	System does not work properly.
12 (R) *1 (V) *2	Ground	Remote control A	Input	ON	Press MODE switch	0V	Steering wheel audio controls do not function.
					Press SEEK UP switch	0.75V	
					Press VOL UP switch	2V	
					Except for above	5V	
13 (G) *1 (G/O) *2	Ground	Remote control B	Input	ON	Press POWER switch	0V	Steering wheel audio controls do not function.
					Press SEEK DOWN switch	0.75V	
					Press VOL DOWN switch	2V	
					Except for above	5V	
14 (B/Y) *1 (R/B) *2	–	Remote control ground	–	–	–	–	Steering wheel audio controls do not function.

*1 Without bluetooth control unit

*2 With bluetooth control unit

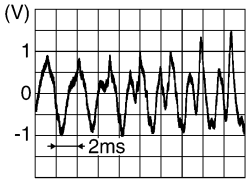
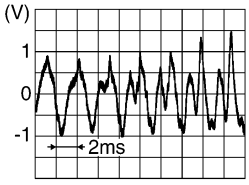
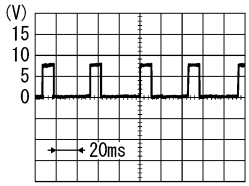
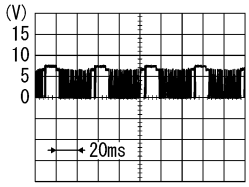
Satellite Radio Tuner Harness Connector Terminal Layout

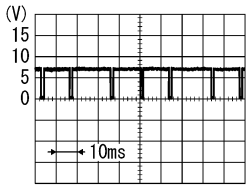
INFOID:0000000004277846



Terminal and Reference Value for Satellite Radio Tuner

INFOID:0000000004277847

Terminal (Wire color)		Item	Signal input/ output	Condition		Voltage (approx.)
+	–			Ignition switch	Operation	
22 (R)	21 (G)	Audio signal LH	Output	ON	Receive audio signal.	 SKIB3609E
24 (B)	23 (W)	Audio signal RH	Output	ON	Receive audio signal.	 SKIB3609E
25	–	Shield	–	–	–	–
26				ON		Approx. 0 V
28 (L)	Ground	REQ1 (SAT-AUDIO)	Output	ON	Set to the satellite radio mode	 SKIB3825E
29 (V) *1 (W/R) *2	Ground	Communication signal (SAT-AUDIO)	Output	ON	Set to the satellite radio mode	 SKIB3824E

Terminal (Wire color)		Item	Signal input/ output	Condition		Voltage (approx.)
+	–			Ignition switch	Operation	
30 (LG) *1 (B/R) *2	Ground	Communication signal (AUDIO-SAT)	Input	ON	Set to the satellite radio mode	 SKIB3826E
32 (Y)	Ground	Battery power supply	Input	OFF	–	Battery voltage
36 (V)		ACC power supply		ACC		
37	–	Antenna signal		–	–	–

*1 With satellite radio tuner

*2 With pre-wiring for satellite radio tuner

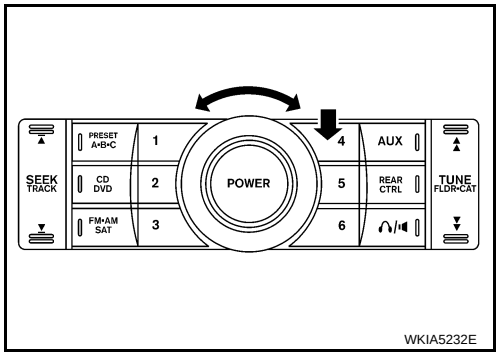
AV Switch Self-Diagnosis Function

INFOID:0000000004277848

It can check ON/OFF operation of each switch in the AV switch and diagnose the input signals from the steering switch.

STARTING THE SELF-DIAGNOSIS MODE

1. Turn ignition switch from OFF to ACC.
2. While pressing the “4” switch, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.) If unable to start self-diagnosis mode refer to AV-138, "AV Communication Line Check (With Monochrome Display)".
3. Press each switch and listen for beep.



WKIA5232E

EXITING THE SELF-DIAGNOSIS MODE

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

DIAGNOSIS FUNCTION

- It can check for continuity of the switches by sounding a beep when each AV switch and steering switch is pressed.
- It can check for continuity of harness between AV switch and steering switch.

Trouble Diagnosis

INFOID:0000000004277849

The majority of audio concerns are the result of outside causes (bad CD, electromagnetic interference, etc.). Check the inspection items below to diagnose the malfunction.

MALFUNCTION WITH RADIO AND CD (BASE AND MID LEVEL SYSTEM)

Symptom	Possible cause
Inoperative	• Audio unit power circuit check. Refer to AV-53, "Power Supply Circuit Inspection". • Audio communication line check. Refer to AV-134, "Audio Communication Line Check (With Monochrome Display)" (with monochrome display) or AV-136, "Audio Communication Line Check (Between Display Control Unit and Audio Unit)" (with color display). • AV switch check. Refer to AV-127, "AV Switch Self-Diagnosis Function". If above check is OK, replace audio unit.
Steering switch does not operate	• Steering switch check. Refer to AV-58, "Steering Switch Check (without bluetooth)". • AV switch check. Refer to AV-127, "AV Switch Self-Diagnosis Function". If above check is OK, replace audio unit.
Audio screen is not shown	• Display unit check. Refer to AV-120, "Self-Diagnosis Mode" (with monochrome display). • Display control unit check. Refer to AV-120, "Self-Diagnosis Mode" (with color display).
All speakers do not sound	• Audio unit
One or several speakers do not sound	• Front door speaker check. Refer to AV-62, "Sound Is Not Heard from Front Door Speaker or Front Tweeter (Base and Mid Level System)". • Rear speaker check. Refer to AV-63, "Sound Is Not Heard from Rear Speaker or Rear Tweeter (Base and Mid Level System)".
Poor sound	• Audio unit • Speaker
Noisy	• Audio unit • Electrical equipment (generator, bonding wire, etc.)

MALFUNCTION WITH RADIO AND CD (BOSE SYSTEM)

Before proceeding on models with NAVI, confirm that other AV switch functions (except audio functions) operate. If not, refer to AV-204, "Unable to Operate All of AV Switches (Unable to Start Self-Diagnosis)".

Symptom	Possible cause
Inoperative	• Audio unit power circuit check. Refer to AV-53, "Power Supply Circuit Inspection". • AV switch check. Refer to AV-127, "AV Switch Self-Diagnosis Function" (without NAVI) or AV-180, "AV Switch Self-Diagnosis Function" (with NAVI). • Audio communication line check (without NAVI). Refer to AV-134, "Audio Communication Line Check (With Monochrome Display)". • Audio communication line check (with NAVI). Refer to AV-189, "Audio Communication Line Check (Between Display Control Unit and Audio Unit)". If above check is OK, replace audio unit.
Steering switch does not operate	• Steering switch check. Refer to AV-58, "Steering Switch Check (without bluetooth)". • AV switch check. Refer to AV-127, "AV Switch Self-Diagnosis Function" (without NAVI) or AV-180, "AV Switch Self-Diagnosis Function" (with NAVI). • Audio communication line check (without NAVI). Refer to AV-134, "Audio Communication Line Check (With Monochrome Display)". • Audio communication line check (with NAVI). Refer to AV-189, "Audio Communication Line Check (Between Display Control Unit and Audio Unit)". If above check is OK, replace audio unit.
Audio screen is not shown	• Display unit check. Refer to AV-120, "Self-Diagnosis Mode" (without NAVI), AV-169, "Self-Diagnosis Mode (DCU)" (with NAVI).
All speakers do not sound	• Audio unit • BOSE speaker amp. power supply and ground circuit check. Refer to AV-53, "Power Supply Circuit Inspection". • BOSE speaker amp. ON signal • BOSE speaker amp.

Symptom	Possible cause
One or several speakers do not sound	• Front door speaker check. Refer to AV-64, "Sound Is Not Heard from Front Door Speaker or Front Tweeter (BOSE System)". • Rear speaker check. Refer to AV-67, "Sound Is Not Heard from Rear Speaker or Rear Tweeter (BOSE System)". • Subwoofer check. Refer to AV-70, "Sound Is Not Heard from Subwoofer (BOSE System)". • Center speaker check. Refer to AV-70, "Sound Is Not Heard from Center Speaker (BOSE System)".
Poor sound	• Audio unit • BOSE speaker amp. • Speaker
Noisy	• Audio unit • BOSE speaker amp. • Electrical equipment (generator, bonding wire, etc.)

FOR RADIO ONLY

Symptom	Possible cause
No sound	• Audio unit • Antenna feeder, wiring or connections • Antenna amplifier, power supply, wiring or connections
Noisy	• Audio unit • Antenna feeder, wiring or connections • Antenna amplifier, power supply, wiring or connections • Noise prevention parts • Electrical equipment (generator, bonding wire, etc.) • Wire harness of each piece of electrical equipment
All radio stations stored in memory are deleted	• Audio unit power circuit. Refer to AV-53, "Power Supply Circuit Inspection". • Audio unit

NOTE:
The following noise results from variations in field strength, such as fading noise and multi-path noise, or external noise from trains and other sources. It is not a malfunction.
- Fading noise: This noise occurs because of variations in the field strength in a narrow range due to mountains or buildings blocking the signal.
- Multi-path noise: This noise results from the waves sent directly from the broadcast station arriving at the antenna at a different time from the waves which reflect off mountains or buildings.

FOR CD ONLY

Symptom	Possible cause
CD cannot be inserted.	Audio unit
CD cannot be ejected.	
The CD cannot be played.	
The sound skips, stops suddenly, or is distorted.	

FOR SATELLITE RADIO TUNER (FACTORY INSTALLED) ONLY

Symptom	Possible cause
Inoperative	• Satellite radio tuner (factory installed) power and ground circuit inspection. Refer to AV-54, "Satellite Radio Tuner (Factory Installed) Power and Ground Supply Circuit Inspection". • Satellite radio tuner (factory installed) communication circuit inspection. Refer to AV-55, "Satellite Radio Tuner (Factory Installed) Communication Circuit Inspection". If above check is OK, replace satellite radio tuner (factory installed). Refer to AV-72, "Removal and Installation".
Right or left channel does not sound	• Satellite radio tuner (factory installed) right channel audio signal circuit inspection. Refer to AV-57, "Satellite Radio Tuner (Factory Installed) Right Channel Audio Signal Circuit Inspection". • Satellite radio tuner (factory installed) left channel audio signal circuit inspection. Refer to AV-57, "Satellite Radio Tuner (Factory Installed) Left Channel Audio Signal Circuit Inspection". If above check is OK, replace satellite radio tuner (factory installed). Refer to AV-72, "Removal and Installation".
Poor reception	• Location of vehicle. Make certain vehicle is in an open area (clear view of sky). • Satellite radio antenna or antenna feeder. Refer to AV-80, "Location of Antenna".
Noisy	• Satellite radio tuner (factory installed) ground. • Satellite radio tuner (factory installed) harness shield wires. • Electrical equipment (generator, bonding wire, etc.). Refer to AV-52, "Noise Inspection".

NOTE:
Pressing the SAT button, the display unit will display `NO SAT' when the following conditions exist:
• Loss of power to the satellite radio tuner (factory installed)
• Open or short in the REQ1, TXD, or RXD circuits.
If the satellite antenna is disconnected or inoperative, the display unit will display ANTENNA.

Noise Inspection

INFOID:0000000004277850

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

TYPE OF NOISE AND POSSIBLE CAUSE

Occurrence condition		Possible cause
Occurs only when engine is ON.	A continuous growling noise occurs. The speed of the noise varies with changes in the engine speed.	• Ignition components
	A whistling noise occurs while the engine speed is high. A booming noise occurs while the engine is running and the lighting switch is ON.	• Generator
The occurrence of the noise is linked with the operation of the fuel pump.		• Fuel pump condenser
Noise only occurs when various electrical components are operating.	A cracking or snapping sound occurs with the operation of various switches.	• Relay malfunction, radio malfunction
	The noise occurs when various motors are operating.	• Motor case ground • Motor

Occurrence condition	Possible cause
The noise occurs constantly, not just under certain conditions.	• Rear defogger coil malfunction • Open circuit in printed heater • Poor ground of antenna amplifier or antenna feeder line
A cracking or snapping sound occurs while the vehicle is being driven, especially when it is vibrating excessively.	• Ground wire of body parts • Ground due to improper part installation • Wiring connections or a short circuit

Power Supply Circuit Inspection

INFOID:0000000004277851

1. CHECK FUSES

Check that the following fuses are not blown.

Unit	Terminals	Signal name	Fuse No.
Audio unit	6	Battery power	31
	10	Ignition switch ACC or ON	4
AV switch	1	Battery power	19
BOSE speaker amp. (with BOSE)	1	Battery power	31
Subwoofer (BOSE system)	6	Battery power	18

OK or NG

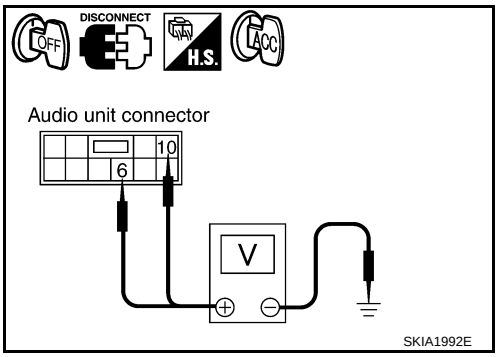
OK >> GO TO 2.

NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to PG-3.

2. POWER SUPPLY CIRCUIT CHECK

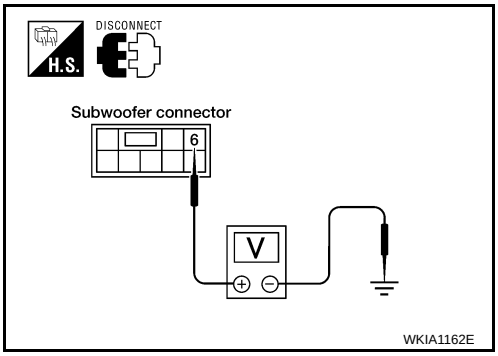
1. Disconnect audio unit, subwoofer (with BOSE) or BOSE speaker amp. (with BOSE) connector.
2. Check voltage between the audio unit and ground.

Unit	Terminal No. (+) Connector	Terminal No. (+) Terminal	(-)	OFF	ACC	ON
Audio unit	M43	6	Ground	Battery voltage	Battery voltage	Battery voltage
		10	Ground	0V	Battery voltage	Battery voltage



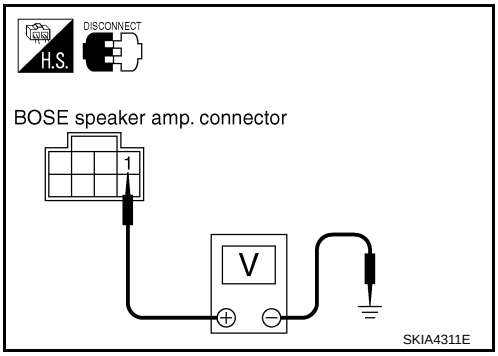
3. Check voltage between subwoofer (BOSE system) and ground.

Unit	Terminal No. (+) Connector	Terminal No. (+) Terminal	(-)	OFF	ACC	ON
Subwoofer	B11	6	Ground	Battery voltage	Battery voltage	Battery voltage



4. Check voltage between BOSE speaker amp. (with BOSE) and ground.

Unit	Terminal No. (+) Connector	Terminal	(-)	OFF	ACC	ON
BOSE speaker amp.	M113	1	Ground	Battery voltage	Battery voltage	Battery voltage



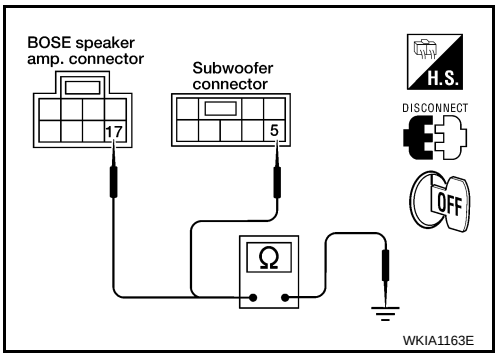
OK or NG

OK >> GO TO 3.
NG >> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

3.GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Check continuity between subwoofer (BOSE system) harness connector B11 terminal 5 and BOSE speaker amp. (with BOSE) harness connector M113 terminal 17 and ground.

Continuity should exist.



OK or NG

OK >> Inspection End.
NG >> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

Satellite Radio Tuner (Factory Installed) Power and Ground Supply Circuit Inspection

INFOID:0000000004277852

1.CHECK FUSES

• Check that the following fuses are not blown.

Unit	Terminals	Signal name	Fuse No.
Satellite radio tuner (factory installed)	32	Battery power	31
	36	Ignition switch ACC or ON	4

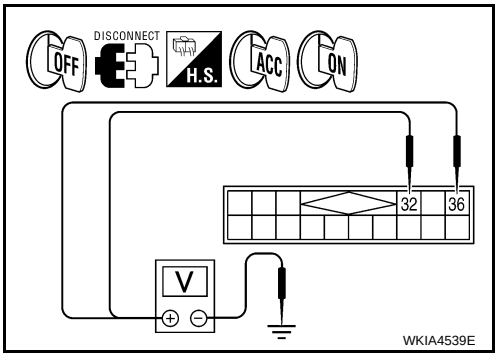
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to PG-3.

2.POWER SUPPLY CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Disconnect satellite radio tuner (factory installed) M128 connector.
3. Check voltage between the satellite radio tuner (factory installed) and ground.

Unit	Terminal No. (+) Connector	Terminal	(-)	OFF	ACC	ON
Satellite radio tuner (factory installed)	M128	32	Ground	Battery voltage	Battery voltage	Battery voltage
		36	Ground	0V	Battery voltage	Battery voltage



OK or NG

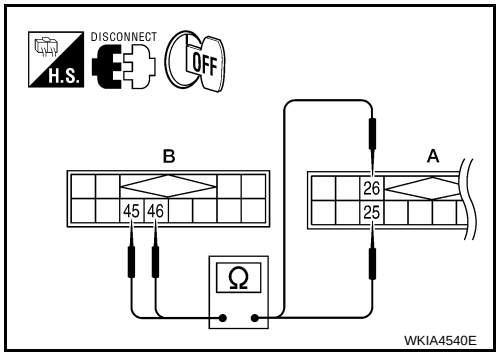
OK >> GO TO 3.

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

3. GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Inspect satellite radio tuner (factory installed) case ground.
3. Disconnect satellite radio tuner (factory installed) connector M128 (A) and audio unit connector M127 (B).
4. Check continuity between satellite radio tuner (factory installed) and audio unit.

Terminals				Continuity
Satellite radio tuner (factory installed)		Audio unit		
Connector	Terminal	Connector	Terminal	
A: M128	25	B: M127	45	Yes
	26		46	



OK or NG

OK >> Inspection End.
NG >> • Check connector housings for disconnected or loose terminals.
• Repair harness, connector or satellite radio tuner (factory installed) case ground.

Satellite Radio Tuner (Factory Installed) Communication Circuit Inspection

INFOID:0000000004277853

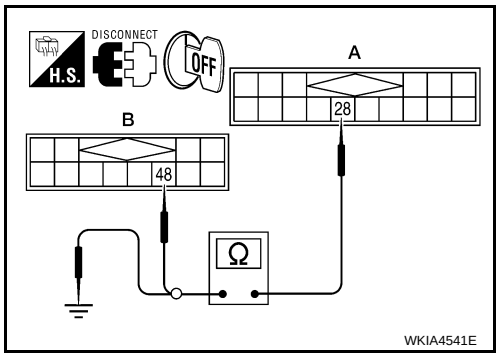
1. CHECK HARNESS - 1

1. Turn ignition switch OFF.
2. Disconnect satellite radio tuner (factory installed) connector M128 and audio unit connector M127.
3. Check continuity between satellite radio tuner (factory installed) harness connector M128 (A) terminal 28 and audio unit harness connector M127 (B) terminal 48

Continuity should exist.

4. Check continuity between satellite radio tuner (factory installed) harness connector M128 (A) terminal 28 and ground.

Continuity should not exist.



OK or NG

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

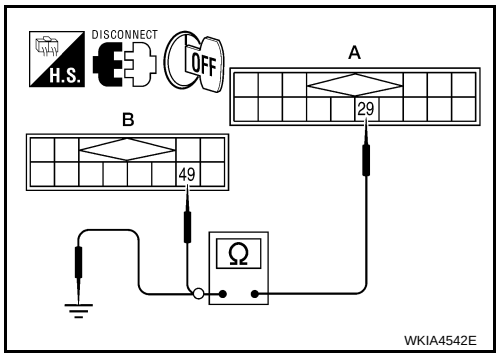
2. CHECK HARNESS - 2

1. Check continuity between satellite radio tuner (factory installed) harness connector M128 (A) terminal 29 and audio unit harness connector M127 (B) terminal 49

Continuity should exist.

2. Check continuity between satellite radio tuner (factory installed) harness connector M128 (A) terminal 29 and ground.

Continuity should not exist.



OK or NG

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

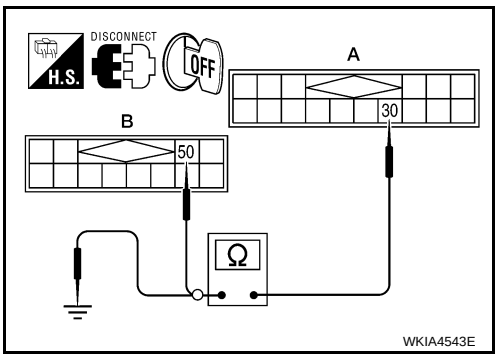
3. CHECK HARNESS - 3

1. Check continuity between satellite radio tuner (factory installed) harness connector M128 (A) terminal 30 and audio unit harness connector M127 (B) terminal 50

Continuity should exist.

2. Check continuity between satellite radio tuner (factory installed) harness connector M128 (A) terminal 30 and ground.

Continuity should not exist.



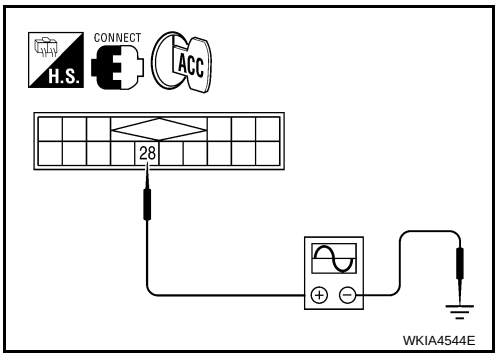
OK or NG

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

4. CHECK REQ1 SIGNAL

1. Connect satellite radio tuner (factory installed) connector and audio unit connector.
2. Turn ignition switch to ACC.
3. Check signal between satellite radio tuner (factory installed) harness connector M128 terminal 28 and ground with CONSULT-III or oscilloscope.

28 - Ground **: Refer to AV-48, "Terminal and Reference Value for Satellite Radio Tuner".**



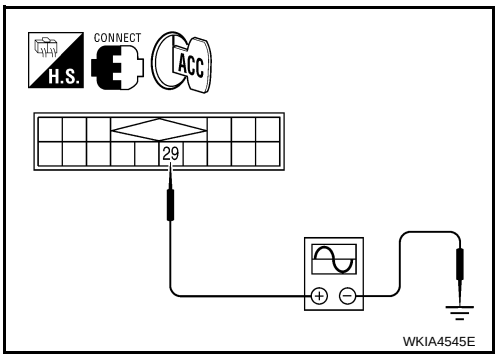
OK or NG

OK >> GO TO 5.
NG >> Replace audio unit. Refer to AV-72, "Removal and Installation".

5. CHECK TXD SIGNAL

1. Check signal between satellite radio tuner (factory installed) harness connector M128 terminal 29 and ground with CONSULT-III or oscilloscope.

29 - Ground **: Refer to AV-48, "Terminal and Reference Value for Satellite Radio Tuner".**



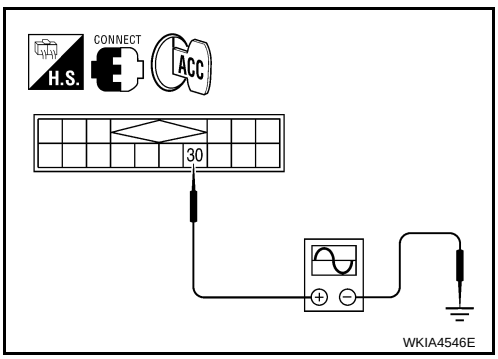
OK or NG

OK >> GO TO 6.
NG >> Replace audio unit. Refer to AV-72, "Removal and Installation".

6. CHECK RXD SIGNAL

1. Check signal between satellite radio tuner (factory installed) harness connector M128 terminal 30 and ground with CONSULT-III or oscilloscope.

30 - Ground **: Refer to AV-48, "Terminal and Reference Value for Satellite Radio Tuner".**



OK or NG

OK >> Replace satellite radio tuner (factory installed). Refer to AV-72, "Removal and Installation".
NG >> Replace audio unit. Refer to AV-72, "Removal and Installation".

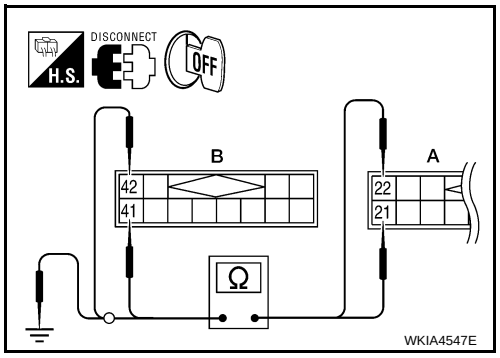
Satellite Radio Tuner (Factory Installed) Left Channel Audio Signal Circuit Inspection

INFOID:0000000004277854

1.CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect satellite radio tuner (factory installed) connector M128 (A) and audio unit connector M127 (B).
3. Check continuity between satellite radio tuner (factory installed) and audio unit.

Terminals				Continuity
Satellite radio tuner (factory installed)		Audio unit		
Connector	Terminal	Connector	Terminal	
A: M128	21	B: M127	41	Yes
	22		42	



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

Terminals			Continuity
Satellite radio tuner (factory installed)		—	
Connector	Terminal		
A: M128	21	Ground	No
	22		

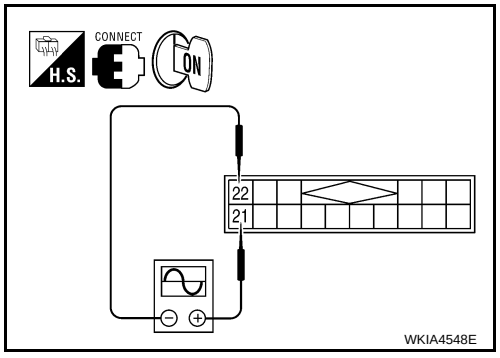
OK or NG

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

2.CHECK LEFT CHANNEL AUDIO SIGNAL

1. Connect satellite radio tuner (factory installed) and audio unit.
2. Turn ignition switch ON.
3. Check signal between satellite radio tuner (factory installed) connector M128 terminals 21 and 22 with CONSULT-III or oscilloscope.

21 - 22 **: Refer to AV-48, "Terminal and Reference Value for Satellite Radio Tuner".**



OK or NG

OK >> Replace satellite radio tuner (factory installed). Refer to AV-72, "Removal and Installation".
NG >> Replace audio unit. Refer to AV-72, "Removal and Installation".

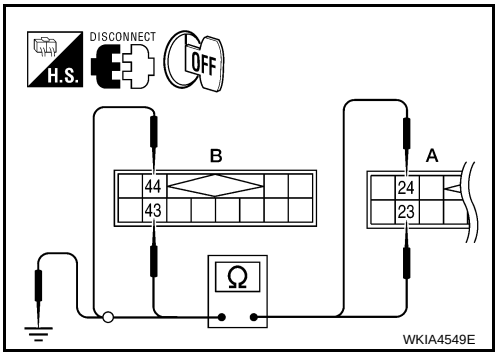
Satellite Radio Tuner (Factory Installed) Right Channel Audio Signal Circuit Inspection

INFOID:0000000004277855

1.CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect satellite radio tuner (factory installed) connector M128 (A) and audio unit connector M127 (B).
3. Check continuity between satellite radio tuner (factory installed) and audio unit.

Terminals				Continuity
Satellite radio tuner (factory installed)		Audio unit		
Connector	Terminal	Connector	Terminal	
A: M128	23	B: M127	43	Yes
	24		44	



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

Terminals			Continuity
Satellite radio tuner (factory installed)		—	
Connector	Terminal		
A: M128	23	Ground	No
	24		

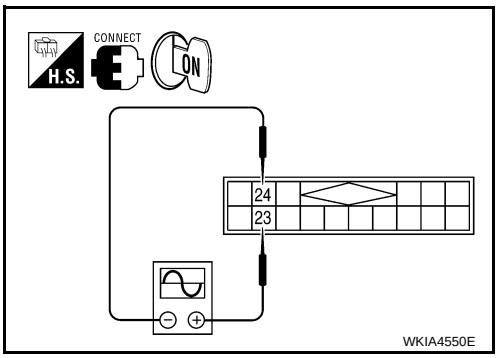
OK or NG

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

2.CHECK RIGHT CHANNEL AUDIO SIGNAL

1. Connect satellite radio tuner (factory installed) and audio unit.
2. Turn ignition switch ON.
3. Check signal between satellite radio tuner (factory installed) connector M128 terminals 23 and 24 with CONSULT-III or oscilloscope.

23 - 24 **: Refer to AV-48, "Terminal and Reference Value for Satellite Radio Tuner".**



OK or NG

OK >> Replace satellite radio tuner (factory installed). Refer to AV-72, "Removal and Installation".
NG >> Replace audio unit. Refer to AV-72, "Removal and Installation".

Steering Switch Check (without bluetooth)

INFOID:0000000004277856

1.AV SWITCH SELF-DIAGNOSIS FUNCTION CHECK

1. Start AV switch self-diagnosis function. Refer to AV-49, "AV Switch Self-Diagnosis Function".
2. Operate steering switch.

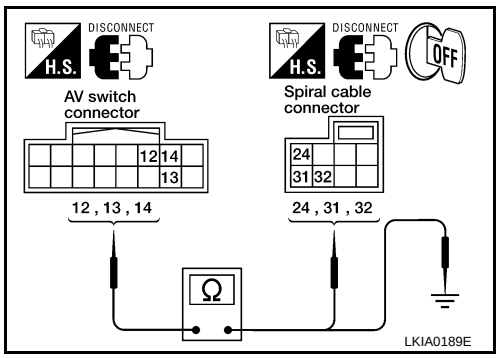
Does steering switch operate normally?

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

2.CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect AV switch connector and spiral cable connector.
3. Check continuity between spiral cable harness connector terminal and AV switch harness connector terminal.

Terminals				Continuity
Spiral cable		AV switch		
Connector	Terminal	Connector	Terminal	
M30	32	M98	13	Yes
	31		14	
	24		12	



4. Check continuity between AV switch and ground.

Terminals			Continuity
AV switch (+)		(–)	
Connector	Terminal		
M98	12	Ground	No
	13		
	14		

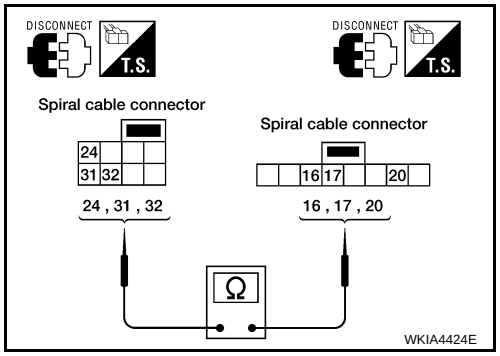
OK or NG

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

3. SPIRAL CABLE CHECK

Check continuity between spiral cable connector terminals.

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



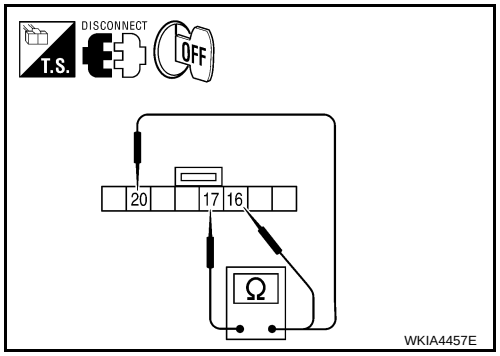
OK or NG

OK >> GO TO 4.
NG >> Replace spiral cable. Refer to SRS-36.

4. CHECK STEERING SWITCH RESISTANCE

Check resistance between steering wheel audio control switch terminals.

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



OK or NG

OK >> Inspection End.
NG >> Replace steering switch. Refer to AV-72, "Removal and Installation".

Steering Switch Check (with bluetooth)

INFOID:0000000004277857

1. AV SWITCH SELF-DIAGNOSIS FUNCTION CHECK

1. Start AV switch self-diagnosis function. Refer to AV-49, "AV Switch Self-Diagnosis Function".

2. Operate steering switch.

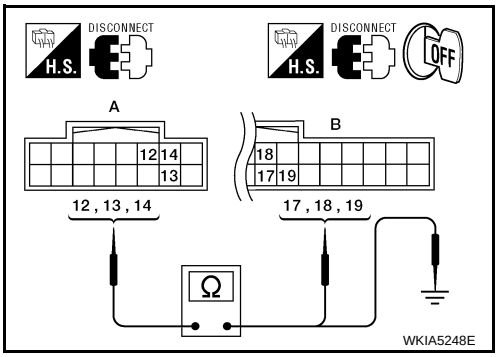
Does steering switch operate normally?

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

2.CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect AV switch connector and bluetooth control unit connector.
3. Check continuity between AV switch connector (A) M98 terminals 12, 13, and 14 and bluetooth control unit connector (B) B506 terminals 17, 18, and 19.

Terminal No.				Continuity
AV switch (A)		Bluetooth control unit (B)		
Connector	Terminal	Connector	Terminal	
M98	12	B506	17	Yes
	13		18	
	14		19	



4. Check continuity between AV switch and ground.

Terminal No.			Continuity
AV switch (+) (A)		(–)	
Connector	Terminal		
M98	12	Ground	No
	13		
	14		

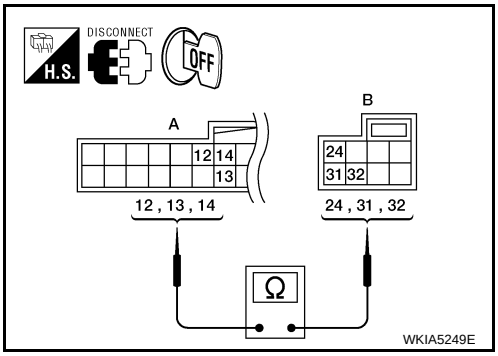
OK or NG

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

3.CHECK HARNESS

1. Disconnect spiral cable connector.
2. Check continuity between bluetooth control unit connector (A) B506 terminals 12, 13, and 14 and spiral cable connector (B) M30 terminals 24, 32, and 31.

Terminals				Continuity
Bluetooth control unit (A)		Spiral cable (B)		
Connector	Terminal	Connector	Terminal	
B506	12	M30	24	Yes
	13		32	
	14		31	



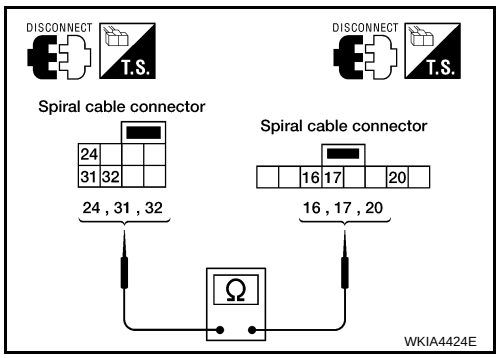
OK or NG

OK >> GO TO4.
NG >> Repair harness.

4.SPIRAL CABLE CHECK

Check continuity between spiral cable connector terminals.

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



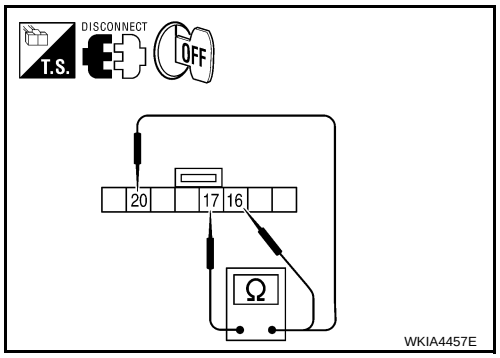
OK or NG

OK >> GO TO 5.
NG >> Replace spiral cable. Refer to SRS-36.

5.CHECK STEERING SWITCH RESISTANCE

Check resistance between steering wheel audio control switch terminals.

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



OK or NG

OK >> Replace bluetooth control unit. Refer to AV-223, "Removal and Installation".
NG >> Replace steering switch. Refer to AV-72, "Removal and Installation".

AV Switch Check

INFOID:0000000004277858

1.AV SWITCH SELF-DIAGNOSIS FUNCTION CHECK

Perform AV switch self-diagnosis function. Refer to AV-49, "AV Switch Self-Diagnosis Function".

Does AV switch operate normally?

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

2.CHECK AV SWITCH POWER SUPPLY AND GROUND CIRCUIT

Check AV switch power supply and ground circuit. Refer to AV-131, "Power Supply and Ground Circuit Inspection for AV Switch" (without NAVI) or AV-183, "Power Supply and Ground Circuit Inspection for AV Switch" (with NAVI).

OK or NG

OK >> Replace AV switch. Refer to AV-72, "Removal and Installation".
NG >> Repair malfunctioning part.

Audio Communication Line Check (Without NAVI)

INFOID:0000000004277859

1.CHECK AUDIO COMMUNICATION LINE

Start audio communication line check. Refer to AV-134, "Audio Communication Line Check (With Monochrome Display)" (with monochrome display) or AV-189, "Audio Communication Line Check (Between Display Control Unit and Audio Unit)" (with color display).

OK or NG

OK >> Inspection End.
NG >> Replace malfunctioning part.

Audio Communication Line Check (With NAVI)

INFOID:0000000004277860

1.CHECK AUDIO COMMUNICATION LINE

Start audio communication line check. Refer to AV-189, "Audio Communication Line Check (Between Display Control Unit and Audio Unit)".

OK or NG

OK >> Inspection End.
NG >> Replace malfunctioning part.

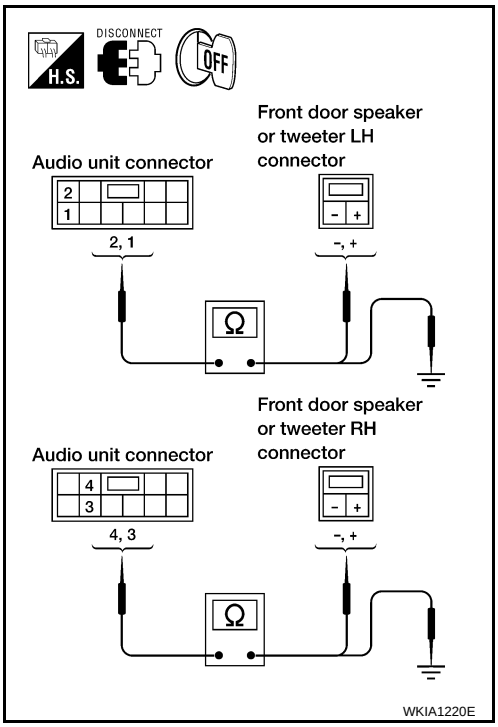
Sound Is Not Heard from Front Door Speaker or Front Tweeter (Base and Mid Level System)

INFOID:0000000004277861

1.HARNESS CHECK

1. Disconnect audio unit connector M43 and front door speaker and tweeter connector (LH or RH).
2. Check continuity between audio unit harness connector M43 terminal and suspect speaker or tweeter harness connector terminal.

Terminals				Continuity
Audio unit		Speaker or tweeter		
Connector	Terminal	Connector	Terminal	
M43	2	D3	+	Yes
	1		-	
	4	D103	+	
	3		-	
	2	M109	+	
	1		-	
	4	M111	+	
	3		-	



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

Terminals			Continuity
Audio unit		—	
Connector	Terminal		
M43	2	Ground	No
	1		
	4		
	3		

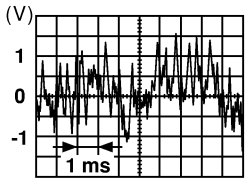
OK or NG

OK >> GO TO 2.
NG >> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

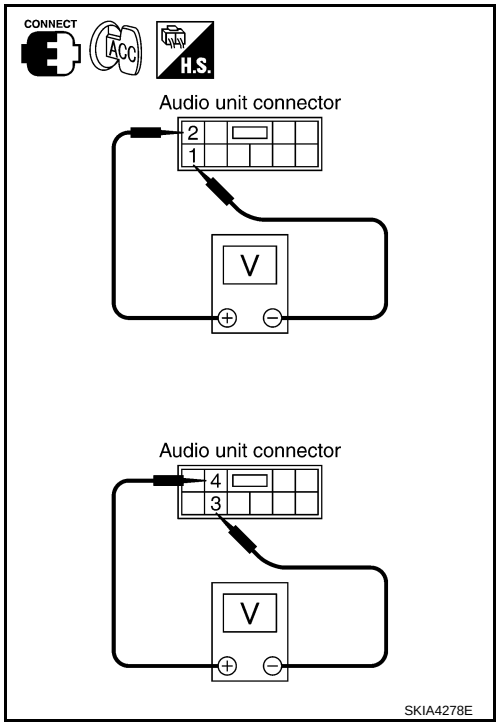
2.FRONT SPEAKER SIGNAL CHECK

1. Connect audio unit connector and front speaker or tweeter connector.
2. Turn ignition switch to ACC.
3. Push “POWER” switch.

4. Check the signal between audio unit harness connector terminals with CONSULT-III or oscilloscope.

Terminals				Condition	Reference signal
(+)		(-)			
Connector	Terminal	Connector	Terminal		
M43	2	M43	1	Receive audio signal	
	4		3		

SKIA0177E



SKIA4278E

OK or NG

OK >> Replace speaker. Refer to AV-72, "Removal and Installation" or AV-72, "Removal and Installation".

NG >> Replace audio unit. Refer to AV-72, "Removal and Installation".

Sound Is Not Heard from Rear Speaker or Rear Tweeter (Base and Mid Level System)

INFOID:0000000004277862

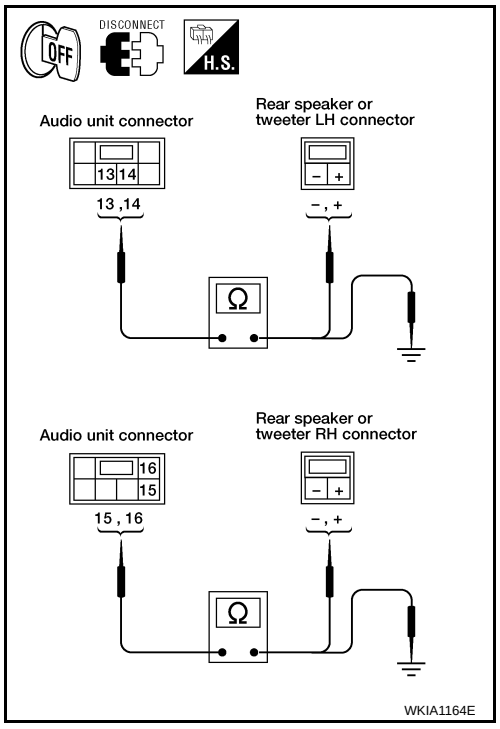
1. HARNESS CHECK

1. Disconnect audio unit connector M44 and rear speaker and tweeter connector (LH or RH).
2. Check continuity between audio unit harness connector M44 terminal and suspect speaker harness connector terminal.

Terminals				Continuity
Audio unit		Speaker or tweeter		
Connector	Terminal	Connector	Terminal	
M44	13	B45	-	Yes
	14		+	
	15	B131	-	
	16		+	
	13	D516	-	
	14		+	
	15	D506	-	
	16		+	

3. Check continuity between audio unit harness connector M44 terminal and ground.

Terminals		—	Continuity
Audio unit			
Connector	Terminal		
M44	13	Ground	No
	14		
	15		
	16		



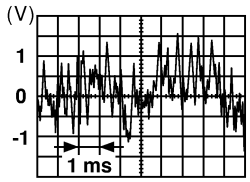
WKIA1164E

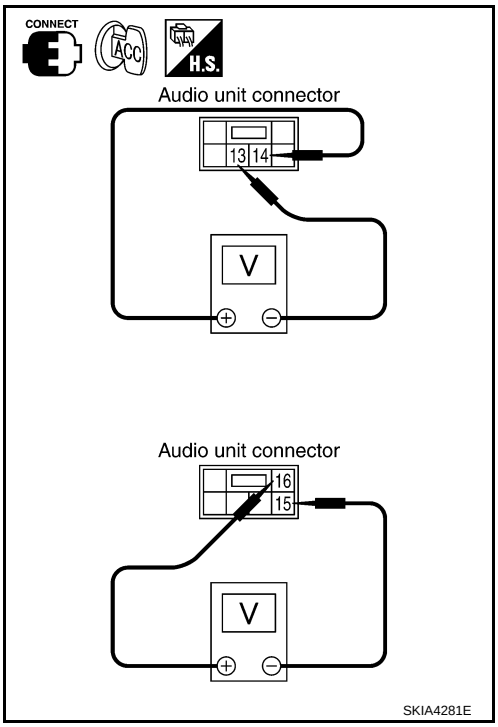
OK or NG

OK >> GO TO 2.
NG >> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

2.REAR SPEAKER SIGNAL CHECK

1. Connect audio unit connector and rear speaker connector.
2. Turn ignition switch to ACC.
3. Push “POWER” switch.
4. Check the signal between audio unit harness connector terminals with CONSULT-III or oscilloscope.

Terminals				Condition	Reference signal
(+)		(-)			
Connector	Terminal	Connector	Terminal		
M44	14	M44	13	Receive audio signal	 SKIA0177E
	16		15		



SKIA4281E

OK or NG

OK >> Replace rear speaker. Refer to AV-72, "Removal and Installation" or AV-72, "Removal and Installation".
NG >> Replace audio unit. Refer to AV-72, "Removal and Installation".

Sound Is Not Heard from Front Door Speaker or Front Tweeter (BOSE System)

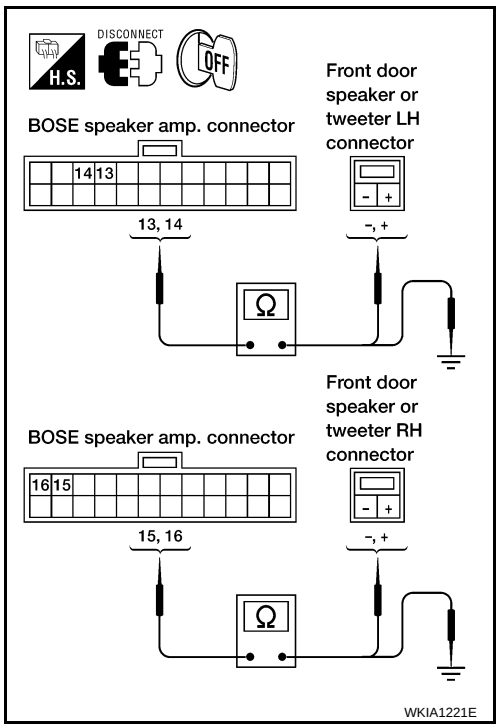
INFOID:0000000004277863

1.HARNESS CHECK

1. Disconnect BOSE speaker amp. connector M112 and front door speaker and tweeter connector (LH or RH).

2. Check continuity between BOSE speaker amp. harness connector M112 terminal and suspect speaker harness connector terminal.

Terminals				Continuity
BOSE speaker amp.		Speaker or tweeter		
Connector	Terminal	Connector	Terminal	
M112	13	D3	+	Yes
	14		-	
	15	D103	+	
	16		-	
	13	M109	+	
	14		-	
	15	M111	+	
	16		-	



3. Check continuity between BOSE speaker amp. harness connector M112 terminal and ground.

Terminals			Continuity
BOSE speaker amp.		—	
Connector	Terminal		
M112	13	Ground	No
	14		
	15		
	16		

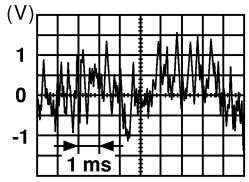
OK or NG

OK >> GO TO 2.
NG >> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

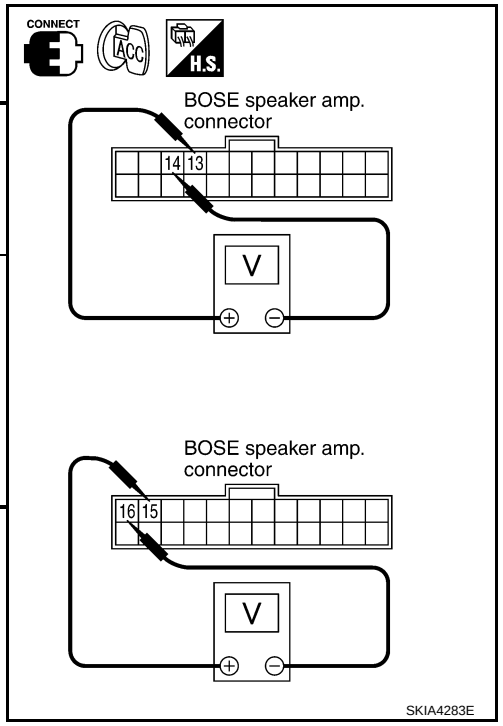
2. FRONT SPEAKER SIGNAL CHECK

1. Connect BOSE speaker amp. connector M112 and suspect speaker connector.
2. Turn ignition switch to ACC.
3. Push “POWER” switch.

4. Check the signal between BOSE speaker amp. harness connector M112 terminals with CONSULT-III or oscilloscope.

Terminals				Condition	Reference signal
(+)		(-)			
Connector	Terminal	Connector	Terminal		
M112	13	M112	14	Receive audio signal	
	15		16		

SKIA0177E



SKIA4283E

OK or NG

OK >> Replace suspect speaker. Refer to AV-72, "Removal and Installation" or AV-72, "Removal and Installation".

NG >> GO TO 3.

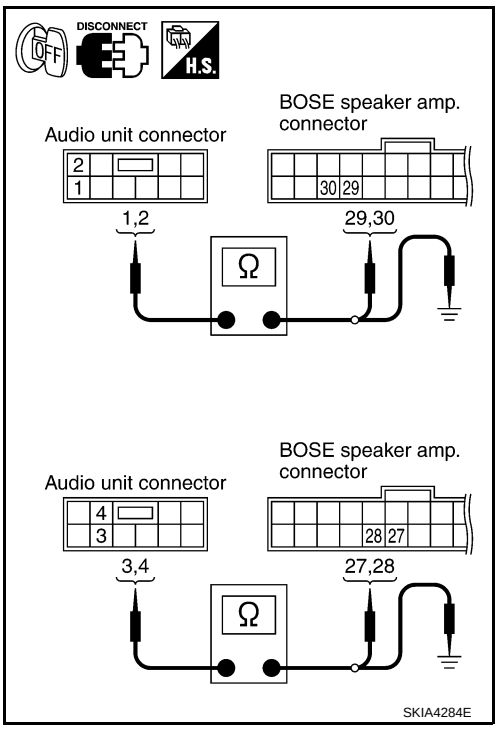
3. HARNESS CHECK

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

Terminals				Continuity
Audio unit		BOSE speaker amp.		
Connector	Terminal	Connector	Terminal	
M43	1	M112	29	Yes
	2		30	
	3		27	
	4		28	

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

Terminals			Continuity
Audio unit		—	
Connector	Terminal		
M43	1	Ground	No
	2		
	3		
	4		



SKIA4284E

OK or NG

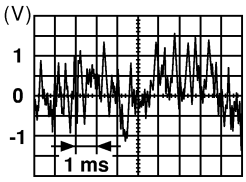
OK >> GO TO 4.

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

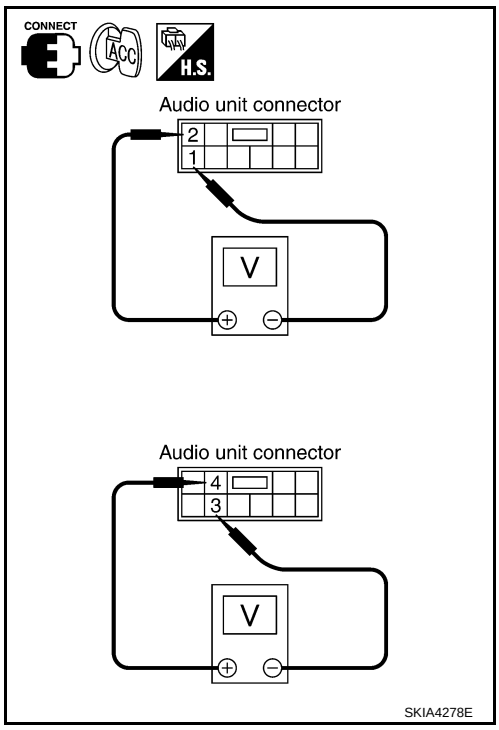
4. FRONT SPEAKER SIGNAL CHECK

1. Connect audio unit connector and BOSE speaker amp. connector.

2. Turn ignition switch to ACC.
3. Push “POWER” switch.
4. Check the signal between audio unit harness connector terminals with CONSULT-III or oscilloscope.

Terminals				Condition	Reference signal
(+)		(-)			
Connector	Terminal	Connector	Terminal		
M43	2	M43	1	Receive audio signal	
	4		3		

SKIA0177E



SKIA4278E

OK or NG

OK >> Replace BOSE speaker amp. Refer to AV-72, "Removal and Installation".

NG >> Replace audio unit. Refer to AV-72, "Removal and Installation".

Sound Is Not Heard from Rear Speaker or Rear Tweeter (BOSE System)

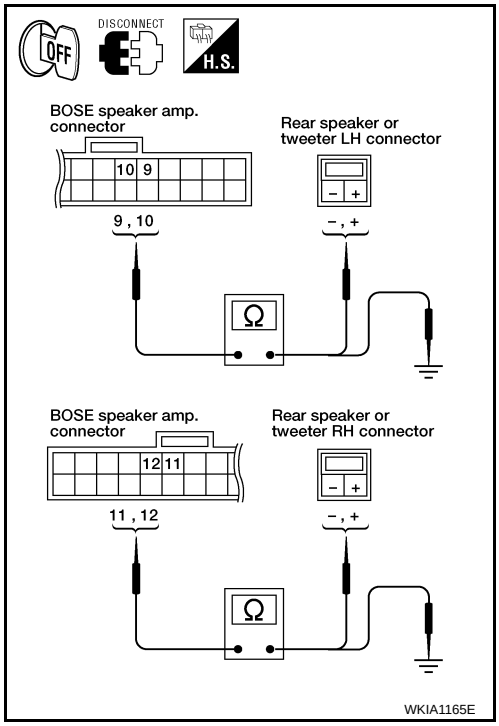
INFOID:0000000004277864

1. HARNESS CHECK

1. Disconnect BOSE speaker amp. connector M112 and rear speaker and tweeter connector (LH or RH).
2. Check continuity between BOSE speaker amp. harness connector M112 terminal and suspect speaker harness connector terminal.

Terminals				Continuity
BOSE speaker amp.		Speaker or tweeter		
Connector	Terminal	Connector	Terminal	
M112	9	B45	+	Yes
	10		-	
	11	B131	+	
	12		-	
	9	D516	+	
	10		-	
	11	D506	+	
	12		-	

3. Check continuity between BOSE speaker amp. harness connector M112 terminal and ground.



WKIA1165E

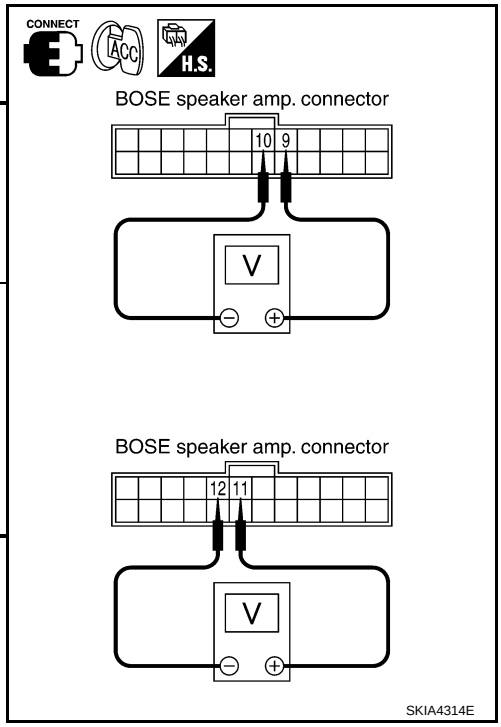
Terminals			Continuity
BOSE speaker amp.		—	
Connector	Terminal		
M112	9	Ground	No
	10		
	11		
	12		

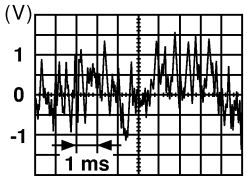
OK or NG

OK >> GO TO 2.
NG >> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

2. REAR SPEAKER SIGNAL CHECK

1. Connect BOSE speaker amp. connector M112 and suspect speaker connector.
2. Turn ignition switch to ACC.
3. Push “POWER” switch.
4. Check the signal between BOSE speaker amp. harness connector M112 terminals with CONSULT-III or oscilloscope.



Terminals				Condition	Reference signal
(+)		(-)			
Connector	Terminal	Connector	Terminal		
M112	9	M112	10	Receive audio signal	
	11		12		

SKIA0177E

OK or NG

OK >> Replace suspect speaker. Refer to AV-72, "Removal and Installation" or AV-72, "Removal and Installation".
NG >> GO TO 3.

3. HARNESS CHECK

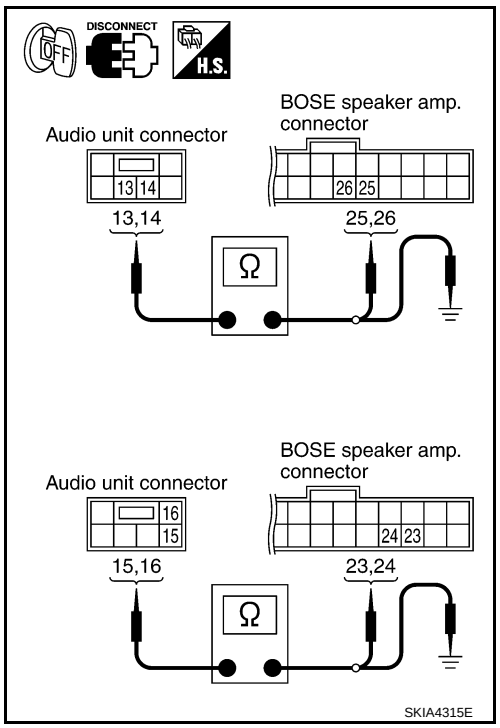
1. Turn ignition switch OFF.
2. Disconnect audio unit connector M44 and BOSE speaker amp. connector M112.

3. Check continuity between audio unit harness connector M44 terminal and BOSE speaker amp. harness connector M112 terminal.

Terminals				Continuity
Audio unit		BOSE speaker amp.		
Connector	Terminal	Connector	Terminal	
M44	13	M112	25	Yes
	14		26	
	15		23	
	16		24	

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

Terminals			Continuity
Audio unit		—	
Connector	Terminal		
M44	13	Ground	No
	14		
	15		
	16		

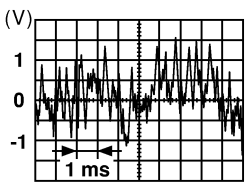


OK or NG

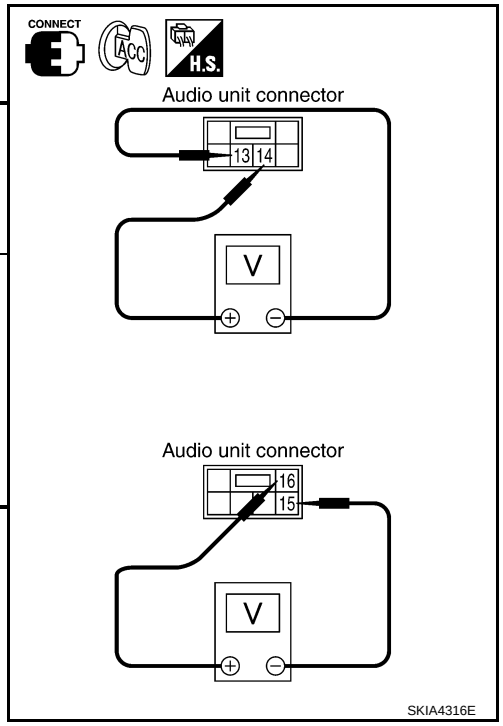
OK >> GO TO 4.
NG >> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

4. REAR SPEAKER SIGNAL CHECK

1. Connect audio unit connector M44 and BOSE speaker amp. connector M112.
2. Turn ignition switch to ACC.
3. Push “POWER” switch.
4. Check the signal between audio unit harness connector M44 terminals with CONSULT-III or oscilloscope.

Terminals				Condition	Reference signal
(+)		(-)			
Connector	Terminal	Connector	Terminal		
M44	14	M44	13	Receive audio signal	
	16		15		

SKIA0177E



OK or NG

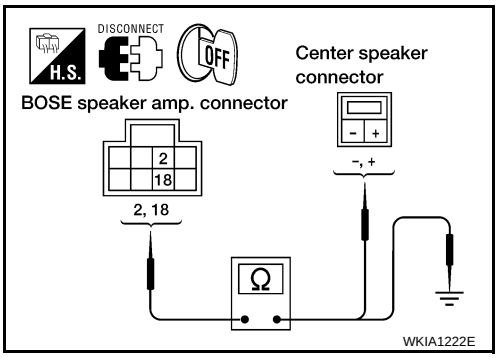
OK >> Replace BOSE speaker amp. Refer to AV-72, "Removal and Installation".
NG >> Replace audio unit. Refer to AV-72, "Removal and Installation".

Sound Is Not Heard from Center Speaker (BOSE System)

INFOID:0000000004277865

1.HARNESS CHECK

1. Disconnect BOSE speaker amp. connector M113 and center speaker connector M110.
2. Check continuity between BOSE speaker amp. harness connector M113 terminals and center speaker harness connector M110 terminals.



Terminals				Continuity
BOSE speaker amp.		Center speaker		
Connector	Terminal	Connector	Terminal	
M113	2	M110	-	Yes
	18		+	

3. Check continuity between BOSE speaker amp. harness connector M113 terminals and ground.

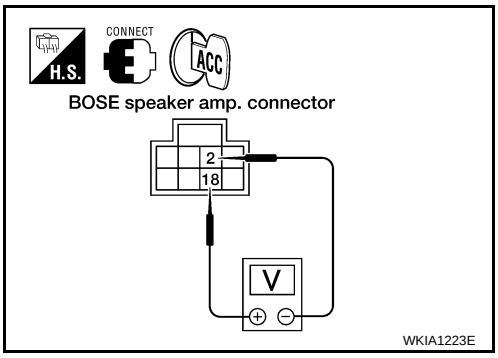
Terminals			Continuity
BOSE speaker amp.		—	
Connector	Terminal		
M113	2	Ground	No
	18		

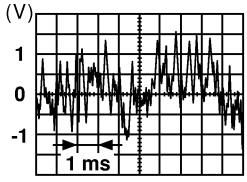
OK or NG

OK >> GO TO 2.
NG >> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

2.CENTER SPEAKER SIGNAL CHECK

1. Connect BOSE speaker amp. connector M113 and center speaker connector M110.
2. Turn ignition switch to ACC.
3. Push “POWER” switch.
4. Check the signal between BOSE speaker amp. harness connector M113 terminals with CONSULT-III or oscilloscope.



Terminals				Condition	Reference signal
(+)		(-)			
Connector	Terminal	Connector	Terminal		
M113	18	M113	2	Receive audio signal	

SKIA0177E

OK or NG

OK >> Replace center speaker. Refer to AV-72, "Removal and Installation".
NG >> Replace BOSE speaker amp. Refer to AV-72, "Removal and Installation".

Sound Is Not Heard from Subwoofer (BOSE System)

INFOID:0000000004277866

1.CHECK FUSE

Check that the following fuse is not blown.

Unit	Terminal	Signal name	Fuse No.
Subwoofer	6	Battery power	18

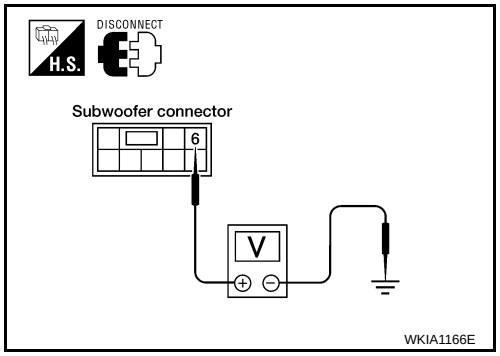
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to PG-3.

2. POWER SUPPLY CIRCUIT CHECK

1. Disconnect subwoofer connector.
2. Check voltage between the subwoofer and ground.

Unit	Terminal No. (+) Connector	Terminal No. (+) Terminal	Terminal No. (-)	OFF	ACC	ON
Subwoofer	B11	6	Ground	Battery voltage	Battery voltage	Battery voltage



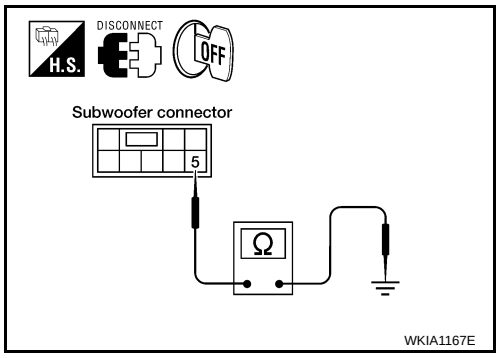
OK or NG

OK >> GO TO 3.
NG >> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

3. GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Check continuity between subwoofer harness connector B11 terminal 5 and ground.

Continuity should exist.



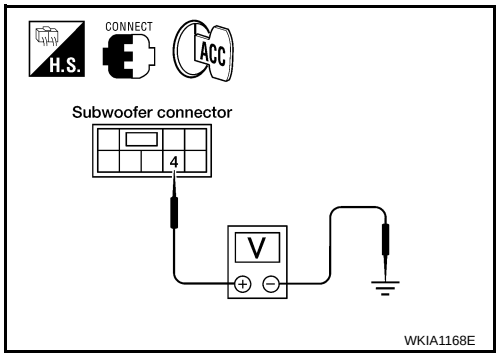
OK or NG

OK >> GO TO 4.
NG >> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

4. CHECK SUBWOOFER AMP. ON SIGNAL

1. Connect subwoofer connector.
2. Turn ignition switch to ACC.
3. Operate system and check voltage between subwoofer harness connector B11 terminal 4 and ground.

Voltage : More than approx. 6.5V



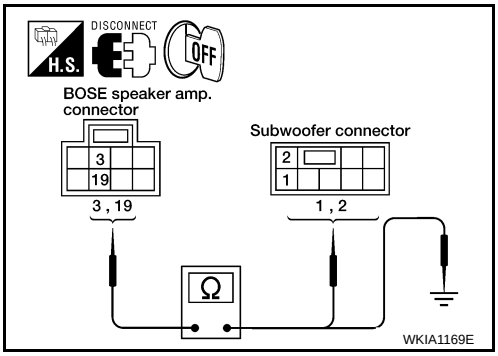
OK or NG

OK >> GO TO 5.
NG >> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

5. HARNESS CHECK

1. Turn ignition switch OFF.
2. Disconnect BOSE speaker amp. connector and subwoofer connectors.

3. Check continuity between BOSE speaker amp. harness connector terminal and subwoofer harness connector terminal.



Terminals				Continuity
BOSE speaker amp.		Subwoofer		
Connector	Terminal	Connector	Terminal	
M113	3	B11	1	Yes
	19	B11	2	

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

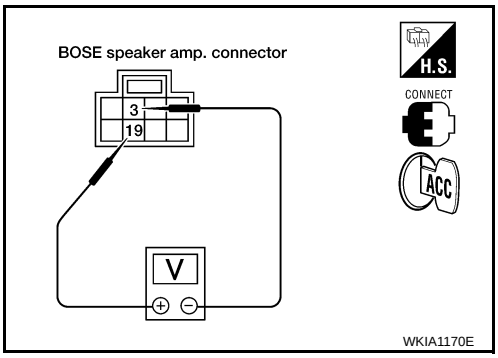
Terminals			Continuity
BOSE speaker amp.		—	
Connector	Terminal		
M113	3	Ground	No
	19		

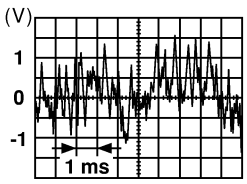
OK or NG

OK >> GO TO 6.
NG >> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

6. SUBWOOFER SIGNAL CHECK

1. Connect BOSE speaker amp. connector and subwoofer connector.
2. Turn ignition switch to ACC.
3. Check the signal between BOSE speaker amp. harness connector terminals with CONSULT-III or oscilloscope.



Terminals				Condition	Reference signal
(+)		(-)			
Connector	Terminal	Connector	Terminal		
M113	19	M113	3	Receive audio signal	

OK or NG

OK >> Replace subwoofer. Refer to AV-72, "Removal and Installation".
NG >> Replace BOSE speaker amp. Refer to AV-72, "Removal and Installation".

Removal and Installation

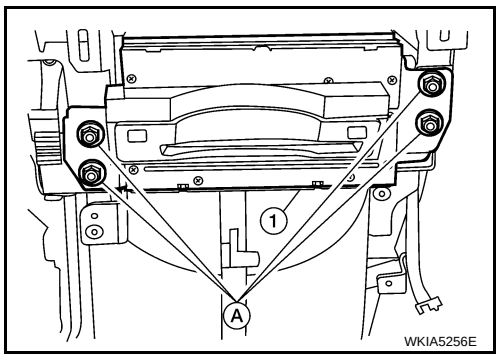
INFOID:0000000004277867

AUDIO UNIT

Removal

1. Remove center stack trim panel. Refer to IP-13, "Center Stack Trim Panel".
2. Disconnect electrical connectors.

3. Remove the audio unit (1) by removing the screws (A) and disconnecting the harness connectors.

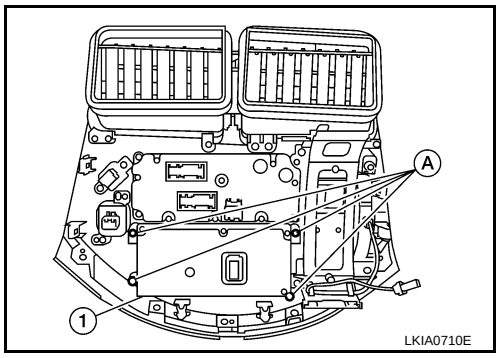


Installation
Installation is in the reverse order of removal.

AV SWITCH

Removal

1. Remove cluster lid C. Refer to IP-13, "Cluster Lid C".
2. Remove screws (A) and AV switch (1).

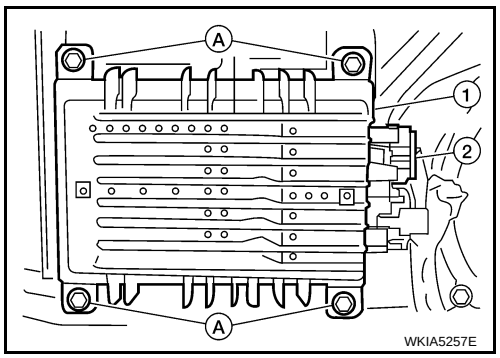


Installation
Installation is in the reverse order of removal.

BOSE SPEAKER AMP.

Removal

1. Disconnect battery negative terminal.
2. Remove glove box assembly. Refer to IP-14, "Glove Box".
3. Remove Bose speaker amp (1) by removing the screws (A) and disconnecting the harness connector (2).



Installation
Installation is in the reverse order of removal.

BOSE SUBWOOFER

Removal

1. Remove pedal adjusting switch and power seat switch LH.

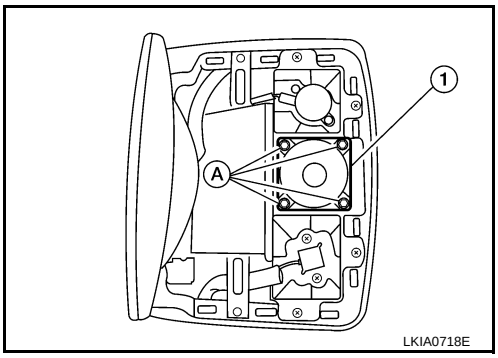
2. Remove outer pedestal finisher.
3. Remove front seat LH. Refer to SE-75, "Removal and Installation".
4. Remove Bose subwoofer.

Installation
Installation is in the reverse order of removal.

CENTER SPEAKER

Removal

1. Remove combination meter cover. Refer to IP-10.
2. Remove the center speaker (1) by removing the screws (A) and disconnecting the harness connector.

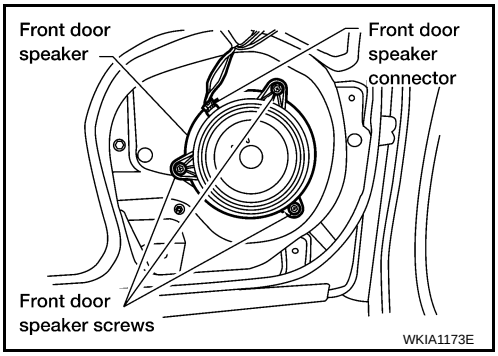


Installation
Installation is in the reverse order of removal.

FRONT DOOR SPEAKER

Removal

1. Remove door finisher. Refer to EI-29, "Removal and Installation".
2. Remove the three front door speaker screws.
3. Remove the front door speaker.
4. Disconnect front door speaker electrical connector.

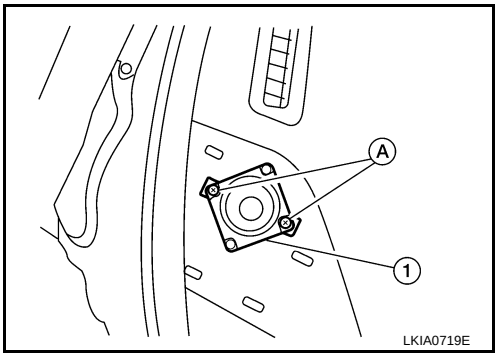


Installation
Installation is in the reverse order of removal.

FRONT TWEETER

Removal

1. Remove the front speaker cover. Refer to IP-10.
2. Remove the front tweeter (1) by removing the screws (A) and disconnecting the harness connector.

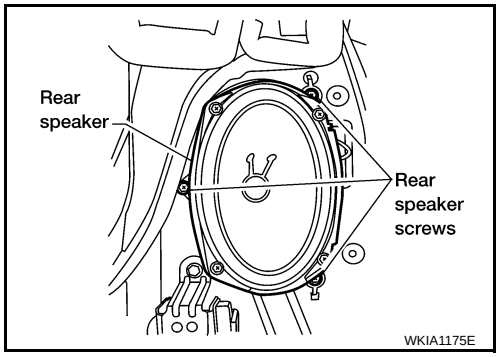


Installation
Installation is in the reverse order of removal.

REAR SPEAKER

Removal

1. Remove rear lower finisher assembly. Refer to EI-31, "Removal and Installation".
2. Remove the three rear speaker screws and remove speaker.
3. Disconnect rear speaker electrical connector.

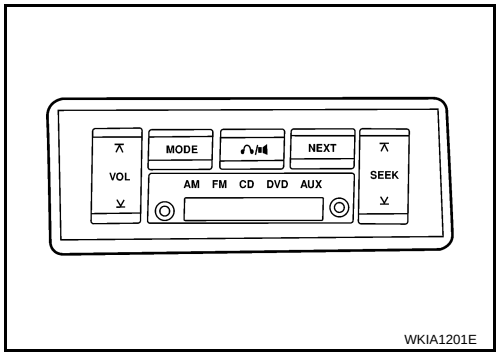


Installation
Installation is in the reverse order of removal.

REAR AUDIO CONTROL UNIT

Removal

1. Carefully remove the rear audio remote control unit from the headlining.
   CAUTION:
   Wrap removal tool with clean shop cloth to prevent damage to the headlining.
2. Disconnect rear audio electrical connector.
3. Remove the rear audio remote control unit.

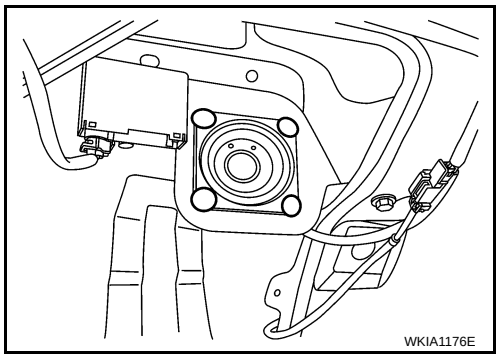


Installation
Installation is in the reverse order of removal.

REAR TWEETER

Removal

1. Remove back door lower finisher. Refer to EI-31, "Removal and Installation".
2. Remove push pins and remove tweeter.
3. Disconnect connector.

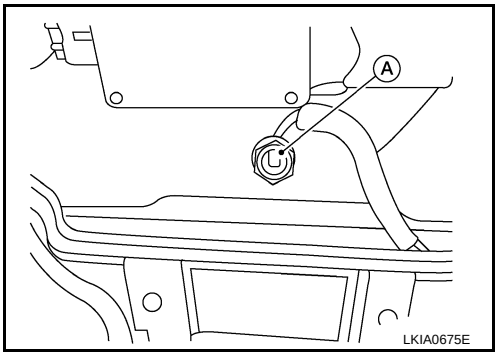


Installation
Installation is in the reverse order of removal.

SATELLITE RADIO ANTENNA

Removal

1. Remove front roof console assembly. Refer to EI-38.
2. Disconnect satellite radio antenna.
3. Remove satellite radio antenna nut (A).
4. Remove satellite radio antenna.

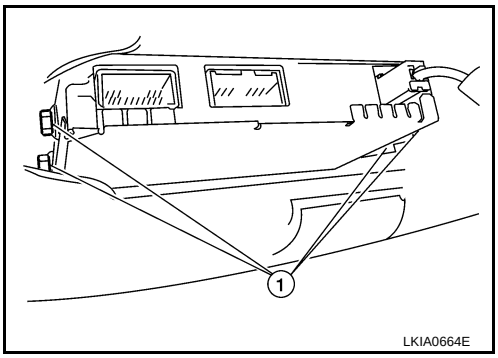


Installation
Installation is in the reverse order of removal.

SATLLITE RADIO TUNER

Removal

1. Remove glove box. Refer to IP-14, "Glove Box".
2. Disconnect satellite radio tuner connectors.
3. Remove satellite radio tuner bolts (1).



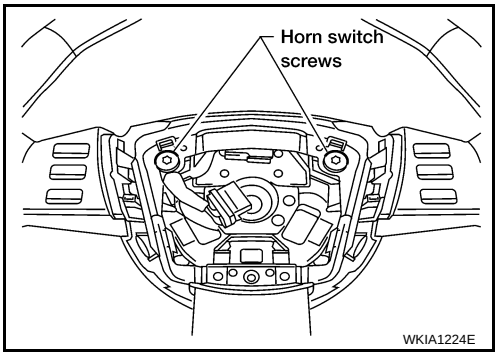
4. Remove satellite radio tuner unit.

Installation
Installation is in the reverse order of removal.

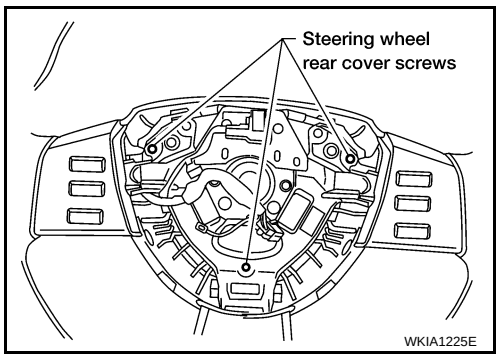
STEERING WHEEL AUDIO CONTROL SWITCHES

Removal

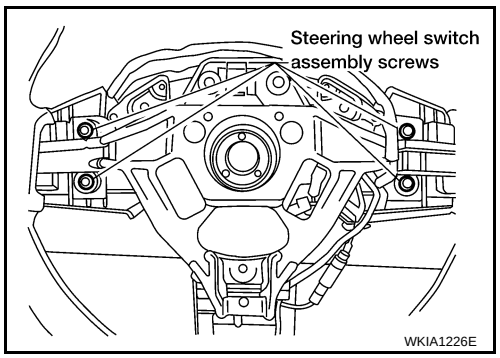
1. Remove steering wheel. Refer to PS-8, "Removal and Installation".
2. Remove horn switch screws and remove horn switch.



3. Remove steering wheel rear cover screws and remove steering wheel rear cover.



4. Remove steering wheel switch assembly screws and steering wheel switches.



Installation

Installation is in the reverse order of removal.

AUDIO ANTENNA

System Description

INFOID:0000000004277868

With the ignition switch in ACC or ON, power is supplied
- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to audio unit terminal 10.

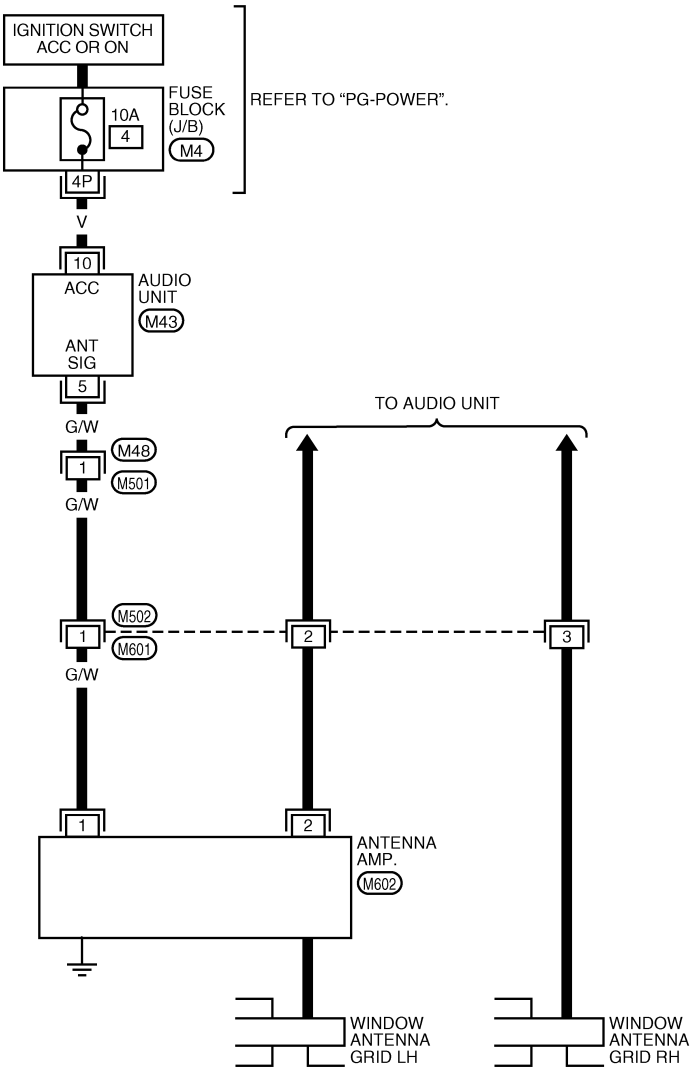
Ground is supplied through the case of the antenna amp.
When the radio switch is turned ON, antenna signal is supplied
- through audio unit terminal 5
- to the antenna amp. terminal 1.

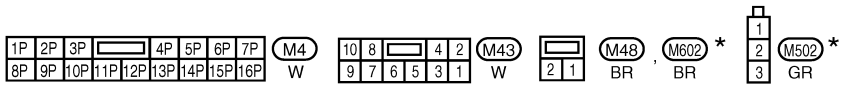
Then the antenna amp. is activated.
The amplified radio signals are supplied to the audio unit through the antenna amp.

Wiring Diagram - W/ANT -

INFOID:0000000004277869

AV-W/ANT-01



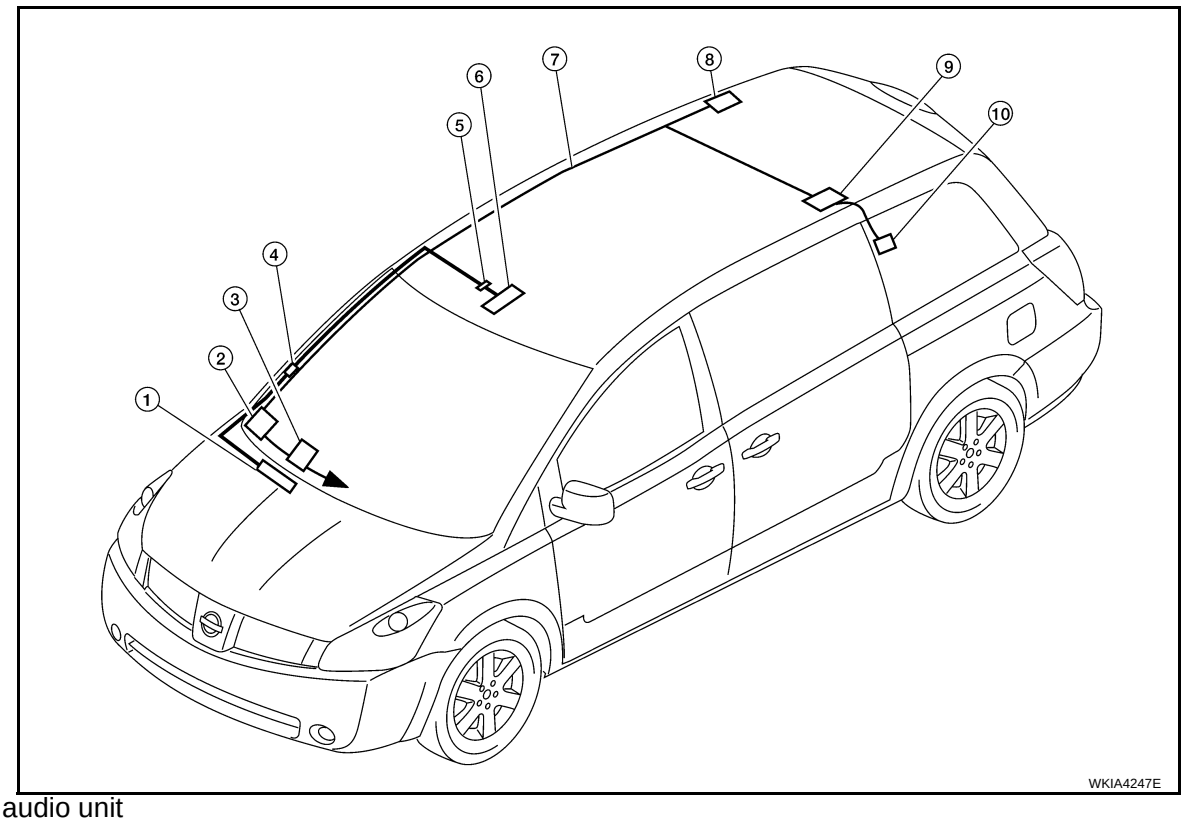


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

WKWA4960E

Location of Antenna

INFOID:0000000004277870



←: To audio unit

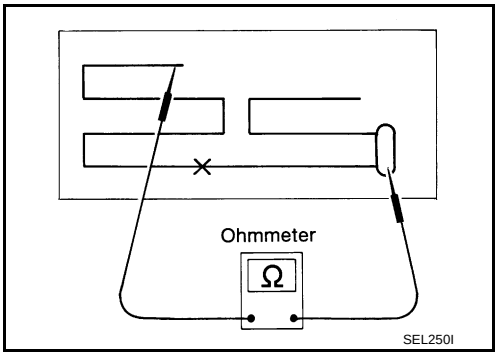
1. Satellite radio tuner (if equipped) M128, M129
2. M502, M601
3. M48, M501
4. M64, M350
5. M351
6. Satellite radio antenna (if equipped, factory installed)
7. Antenna feeder
8. Window antenna grid RH
9. Antenna amp. M602
10. Window antenna grid LH

Window Antenna Repair

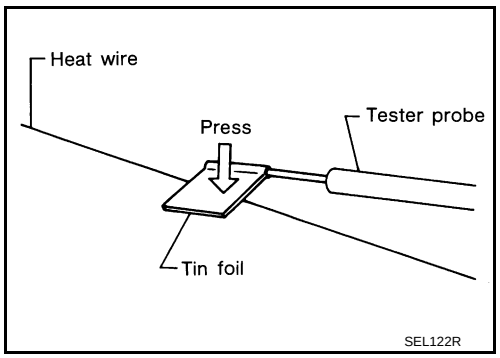
INFOID:0000000004277871

ELEMENT CHECK

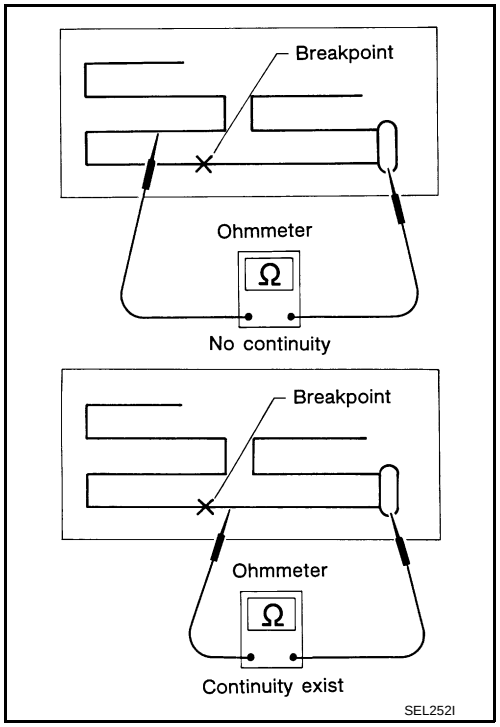
1. Attach probe circuit tester (ohm setting) to antenna terminal on each side.



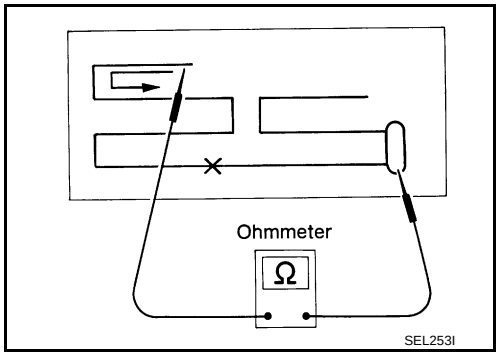
- **When measuring continuity, wrap tin foil around the top of probe. Then, press the foil against the wire with your finger.**



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



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



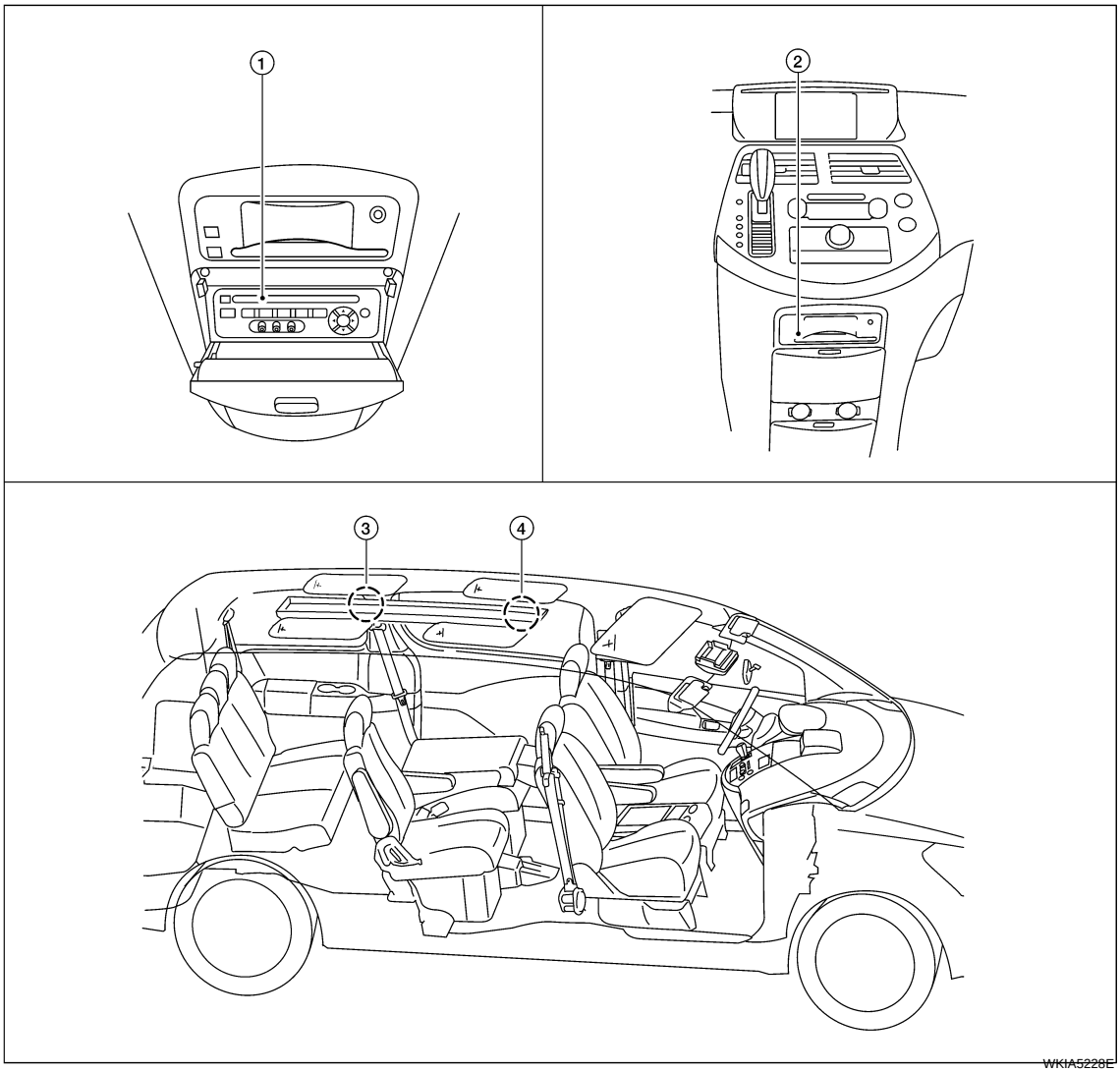
Element Repair

Refer to GW-91, "Filament Repair".

DVD ENTERTAINMENT SYSTEM

Component Parts and Harness Connector Location

INFOID:0000000004277872



1. DVD player M153, M154
2. Audio unit M46
3. Rear video monitor (with dual monitor system) R55
4. R15 Video monitor (without rear roof console assembly) R53
   Front video monitor (with rear roof console assembly)

System Description

INFOID:0000000004277873

Refer to Owner's Manual for DVD entertainment system operating instructions.
Power is supplied at all times
- through 15A fuse [No. 22, located in the fuse block (J/B)]
- to DVD player terminal 16.

With the ignition switch in the ACC or ON position, power is supplied
- through 10A fuse [No. 4, located in the fuse block (J/B)]
- to DVD player terminal 15.

Power is also supplied
- from DVD player terminals 31 and 32
- to video monitor terminals 11 and 12.

Ground is supplied
- to DVD player terminal 22

- through grounds M57, M61, and M79.

Audio signals are supplied

- through DVD player terminals 1, 2, 3 and 4
- to audio unit terminals 34, 35, 36 and 37.

Video signals are supplied

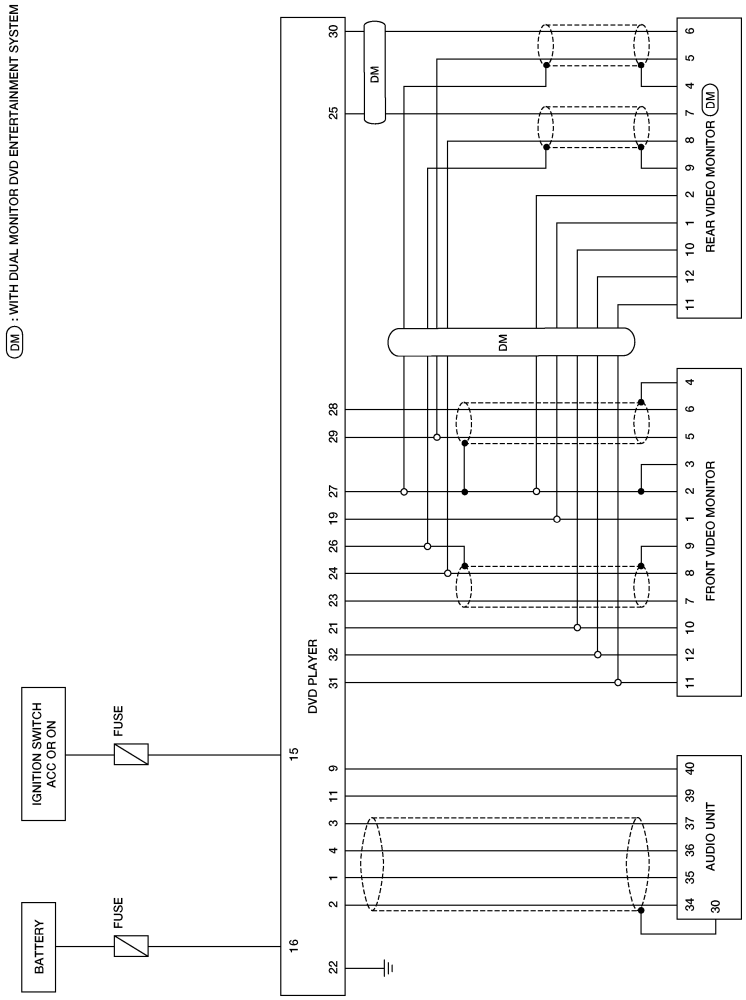
- through DVD player terminals 23, 24, 28 and 29
- to front video monitor terminals 5, 6, 7 and 8 and rear video monitor (models with dual monitor system) terminals 5 and 8.

On dual monitor DVD entertainment systems, video signals are also supplied

- through DVD player terminals 25 and 30
- to rear video monitor terminals 6 and 7.

Schematic

INFOID:0000000004277874

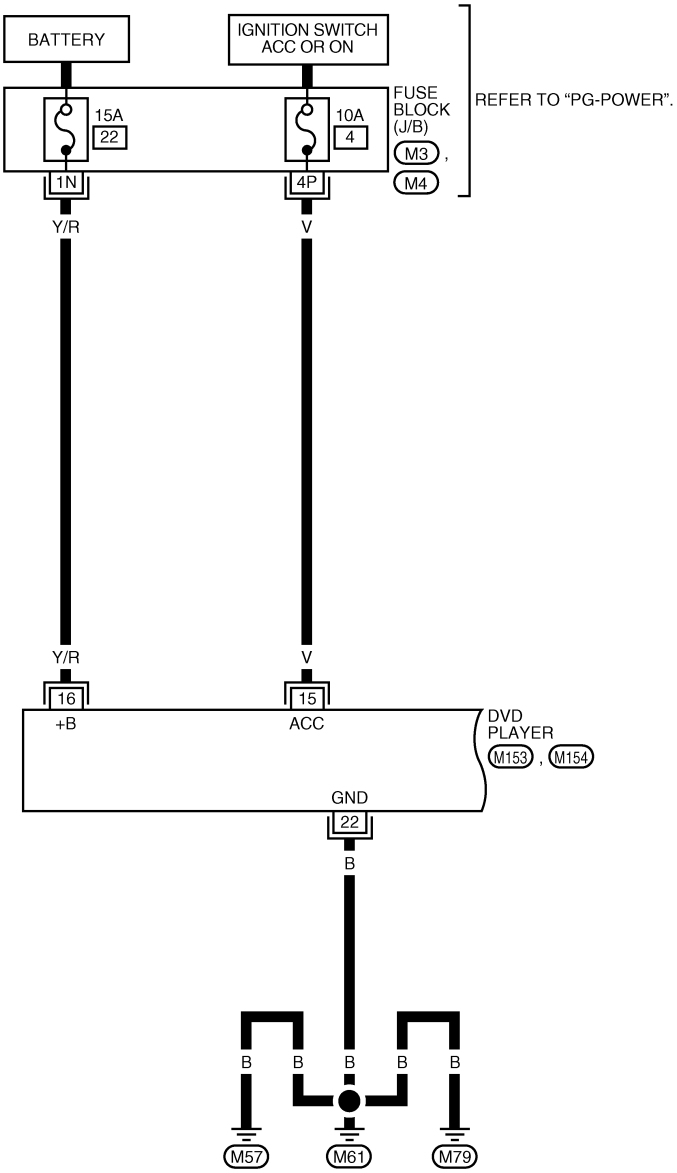


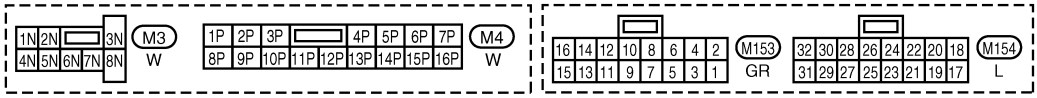
WKWA4762E

Wiring Diagram - DVD -

INFOID:0000000004277875

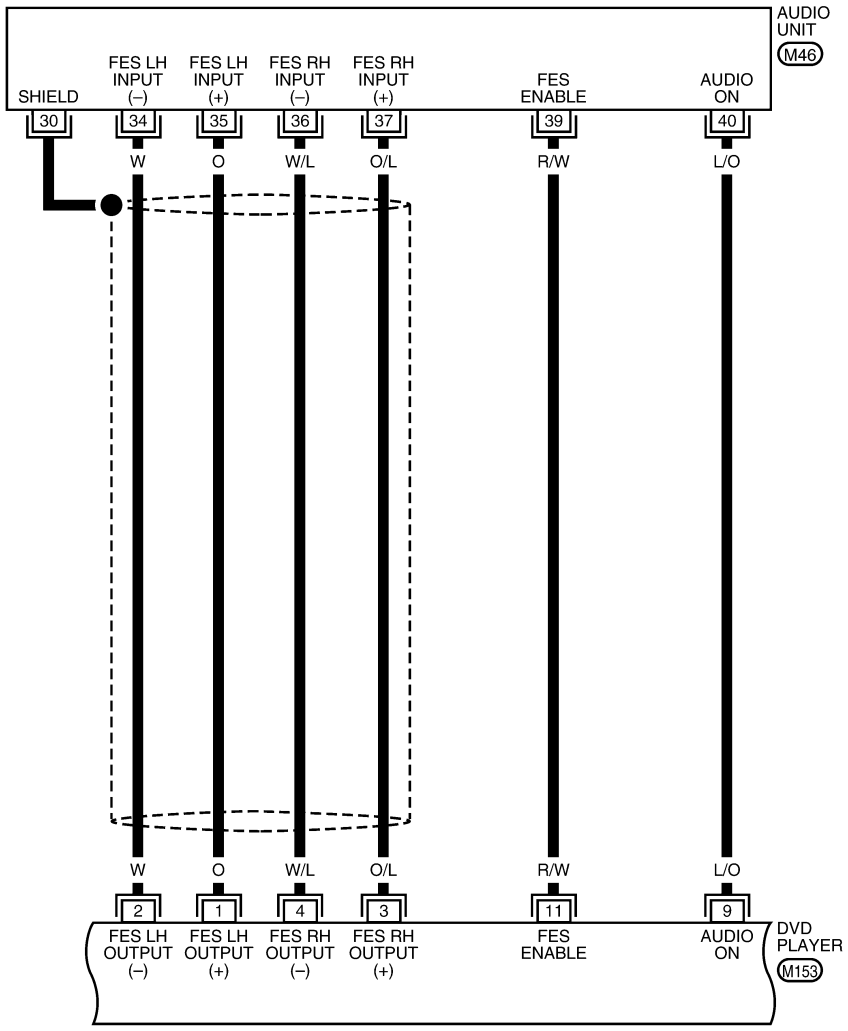
AV-DVD-01

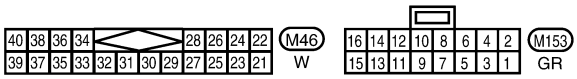




WKWA4763E

AV-DVD-02

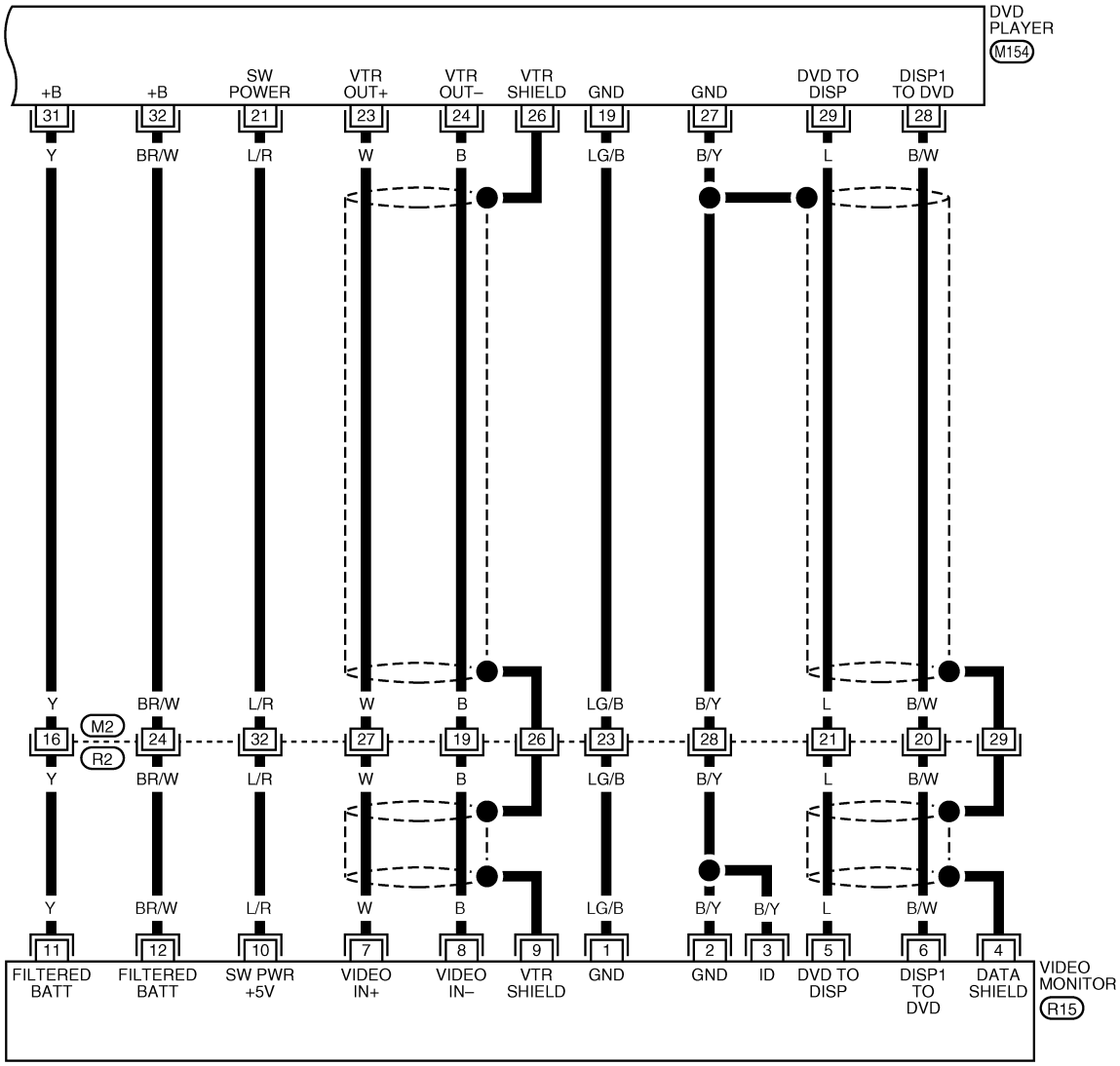


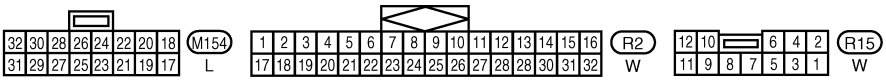


WKWA4764E

MODELS WITHOUT REAR ROOF CONSOLE ASSEMBLY

AV-DVD-03

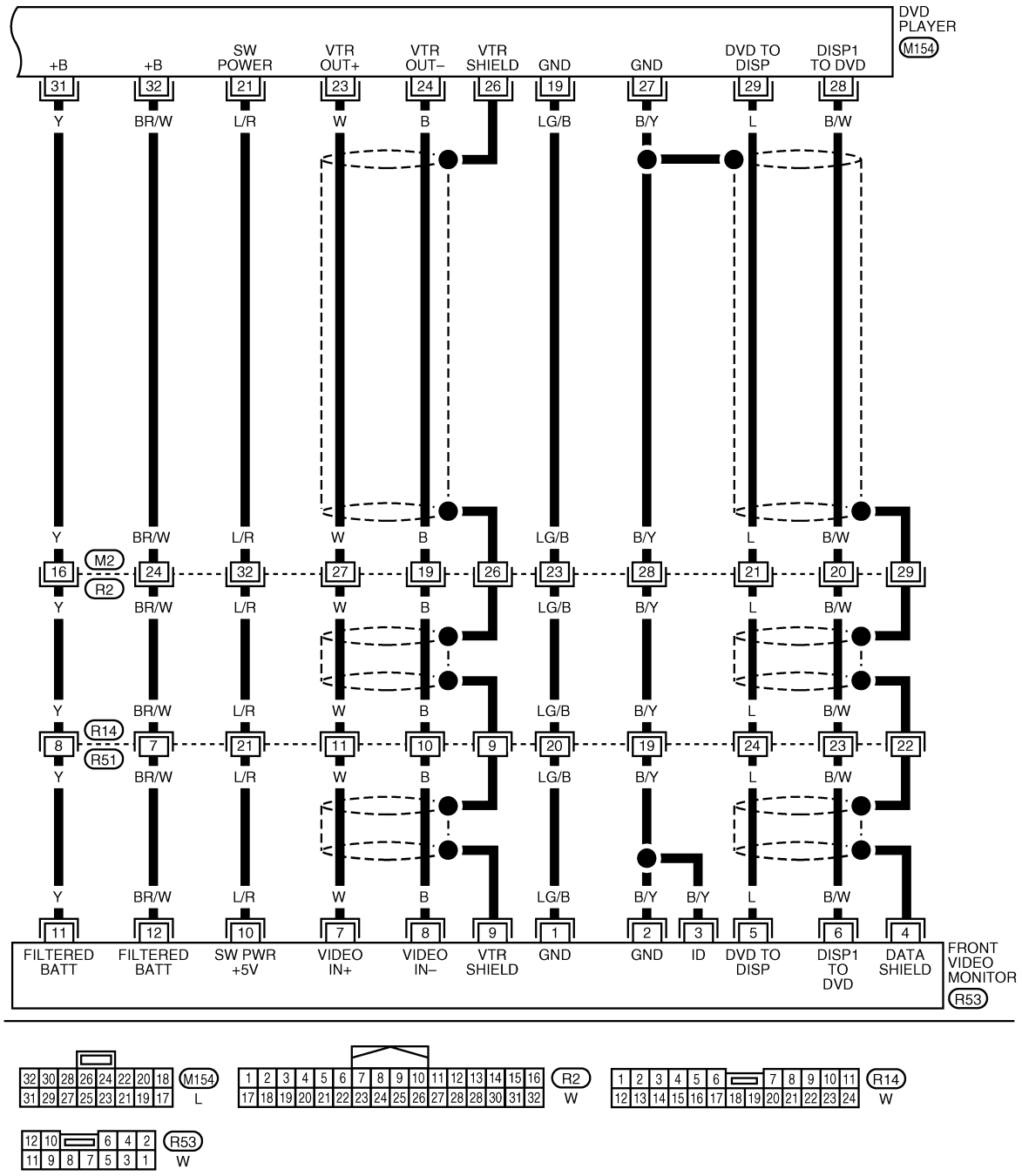




WKWA4765E

MODELS WITH REAR ROOF CONSOLE ASSEMBLY (SINGLE MONITOR)

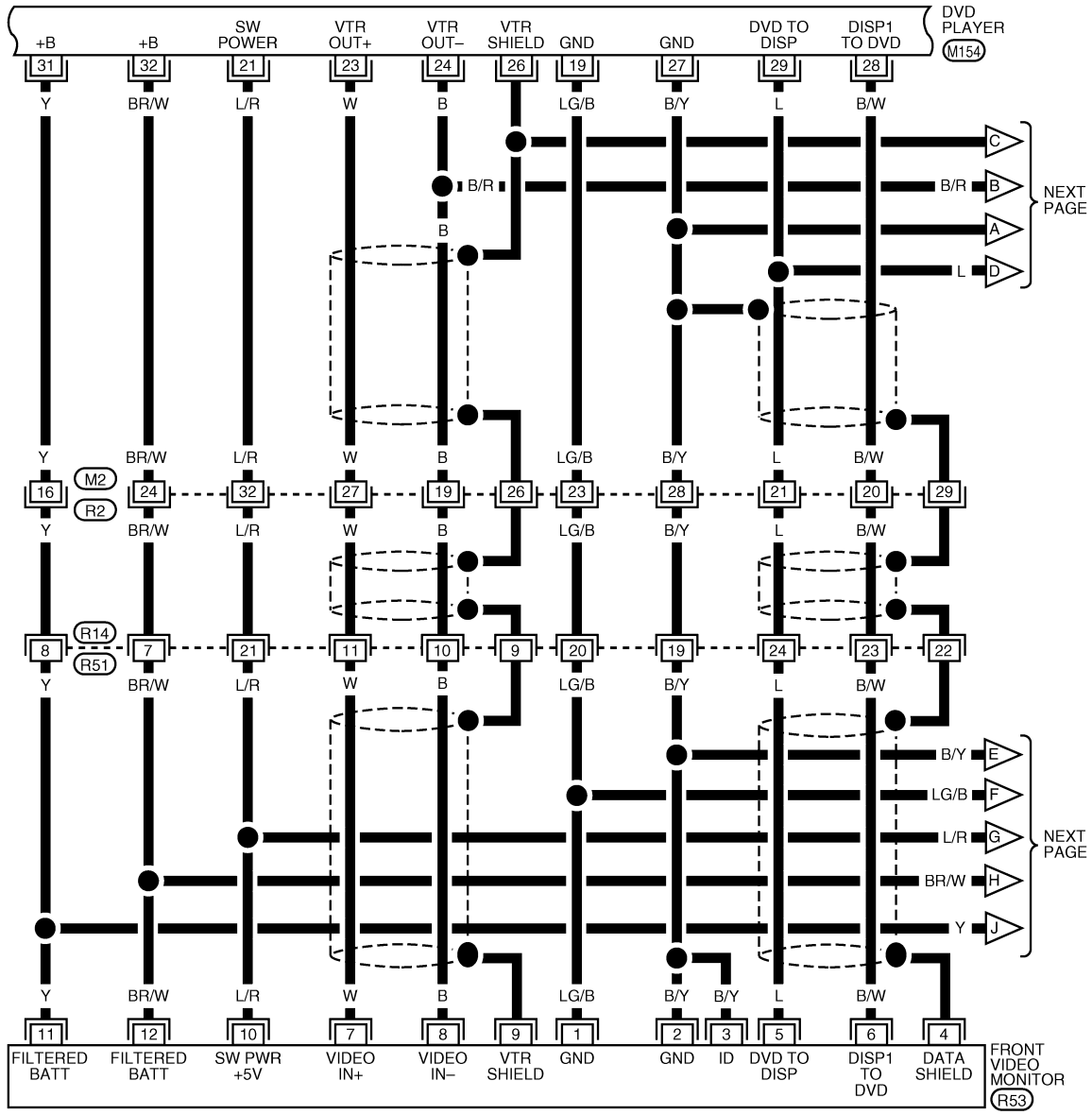
AV-DVD-04



WKWA4766E

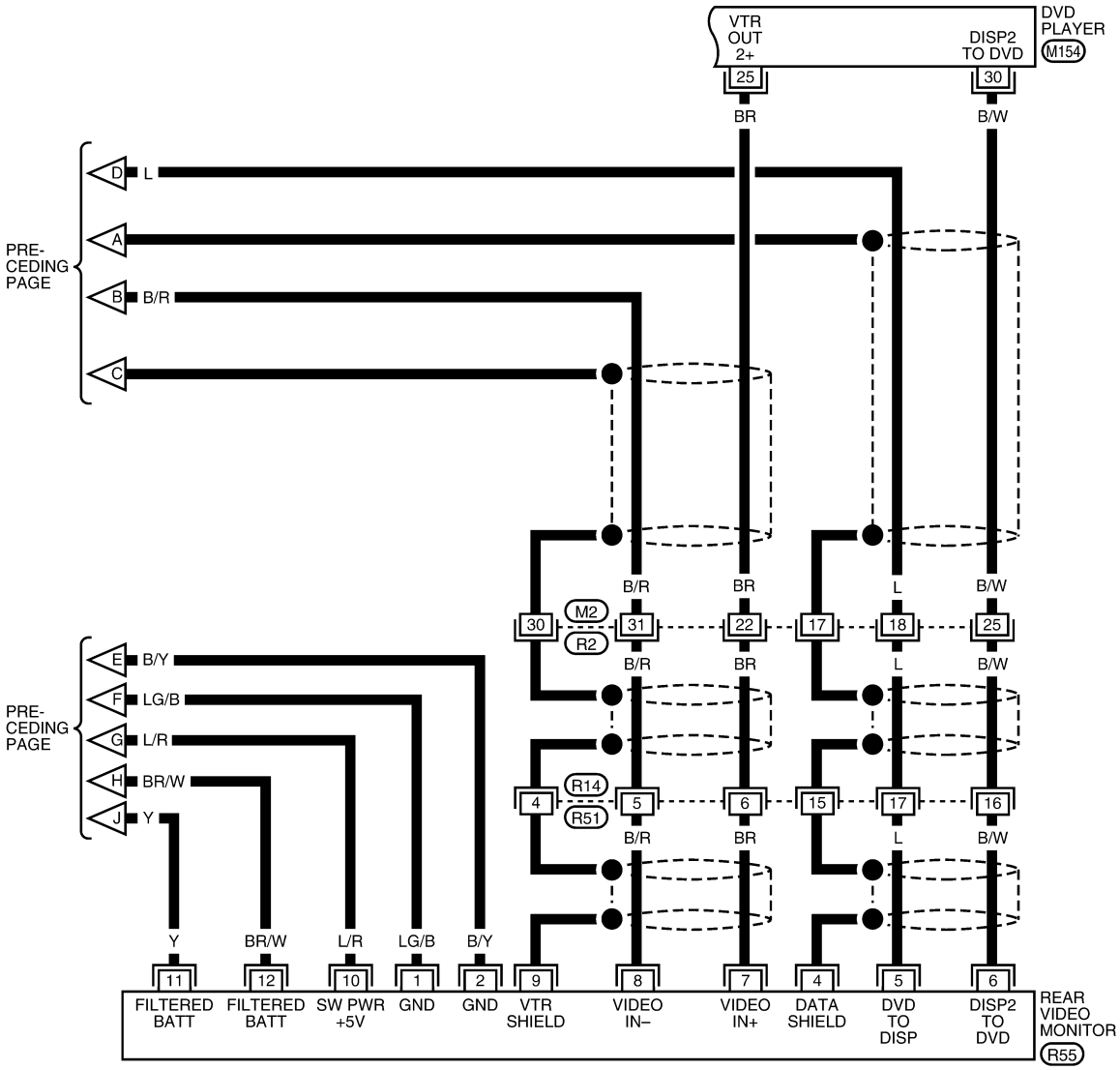
MODELS WITH REAR ROOF CONSOLE ASSEMBLY (DUAL MONITOR)

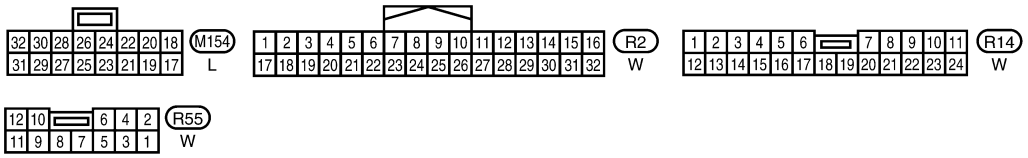
AV-DVD-05



WKWA4767E

AV-DVD-06





WKWA4768E

Trouble Diagnosis

INFOID:0000000004277876

Symptom	Possible causes	Repair order
DVD player inoperative	1. Power supply 2. Ground circuit 3. Audio enable circuit 4. DVD enable signal 5. Audio enable signal 6. DVD player 7. Audio unit	1. Refer to AV-91, "Power Supply Circuit Inspection". 2. Refer to AV-91, "Power Supply Circuit Inspection". 3. Check audio enable circuits for open or short between audio unit terminals 39, 40 and DVD player terminals 11, 9. 4. Push power switch of DVD player and verify approx. 5V is present at terminal 39 of audio unit. 5. Push power switch of DVD player and verify approx. 5V is present at terminal 9 of DVD player. 6. Remove DVD player for repair. 7. Remove audio unit for repair.
No sound when playing DVD	1. Audio signal circuits 2. DVD player 3. Audio unit	1. Check audio signal circuits for open or short between DVD player terminals 1, 2, 3 and 4 and audio unit terminals 34, 35, 36 and 37. 2. Remove DVD player for repair. 3. Remove audio unit for repair.
Video monitor is inoperative/does not operate properly	1. Power supply 2. Video monitor ground circuit 3. Video circuits 4. Data signal 5. Video monitor 6. DVD player	1. Operate DVD player and verify battery positive voltage is present at terminals 11 and 12 of video monitor. Verify approximately 5 volts is present at terminal 10 of video monitor. 2. Check video monitor ground circuits between DVD player terminals 19 and 27 and video monitor terminals 1 and 2. 3. Check video circuits between DVD player terminals 23 and 24 and video monitor terminals 7 and 8. 4. Check data signal circuit for open or short between DVD player terminal 29 and video monitor terminal 5. 5. Remove video monitor for repair. 6. Remove DVD player for repair.
DVD remote control is inoperative/does not operate properly	1. Data signal 2. DVD player remote control batteries 3. DVD player remote control 4. Video monitor	1. Check data signal circuit for open or short between DVD player terminal 28 and video monitor terminal 6. 2. Replace DVD player remote control batteries. 3. Replace DVD player remote control. 4. Remove video monitor for repair.
Headphones inoperative	1. Headphone batteries 2. Headphones 3. Rear audio remote control unit	1. Replace headphone batteries. 2. Replace headphones. 3. Replace rear audio remote control unit.
Snowy video/poor audio	1. Harness or connectors 2. DVD player	1. Check harness and connectors for open or short. 2. Check DVD player.
Snowy video (audio OK)	1. Harness or connectors 2. DVD player	1. Check harness and connectors for open or short. 2. Check DVD player.
No video (audio OK)	1. Harness or connectors 2. DVD player 3. Video monitor	1. Check harness and connectors for open or short. 2. Check DVD player. 3. Check video monitor.
Dim video (audio OK)	1. Harness or connectors 2. DVD player 3. Video monitor	1. Check harness and connectors for open or short. 2. Check DVD player. 3. Check video monitor.

Power Supply Circuit Inspection

INFOID:0000000004277877

1. CHECK FUSES

Check that the following fuses are not blown.

Unit	Terminals	Signal name	Fuse No.
DVD player	16	Battery power	22
	15	Ignition switch ACC or ON	4

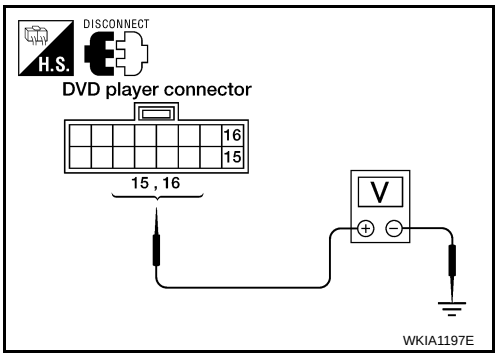
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of problem before installing new fuse. Refer to PG-3.

2.POWER SUPPLY CIRCUIT CHECK

1. Disconnect DVD player connector.
2. Check voltage between the DVD player and ground.

Unit	Terminal No. (+) Connector	Terminal	(-)	OFF	ACC	ON
DVD player	M153	16	Ground	Battery voltage	Battery voltage	Battery voltage
		15	Ground	0 V	Battery voltage	Battery voltage



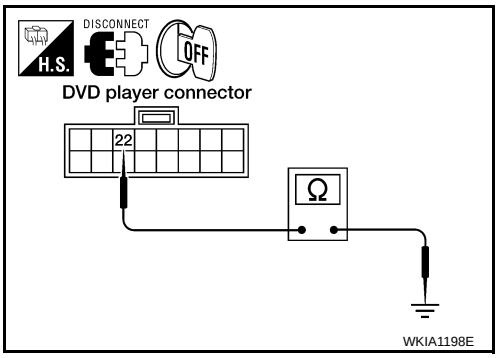
OK or NG

OK >> GO TO 3.
NG >> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

3.GROUND CIRCUIT CHECK

1. Turn ignition switch OFF.
2. Check continuity between DVD player harness connector P105 terminal 22 and ground.

Continuity should exist.



OK or NG

OK >> Inspection End.
NG >> • Check connector housings for disconnected or loose terminals.
• Repair harness or connector.

Removal and Installation

INFOID:0000000004277878

DVD PLAYER

Removal

1. Remove center stack trim panel. Refer to IP-13, "Center Stack Trim Panel".
2. Disconnect electrical connectors.
3. Remove DVD player screws, using power tool.
4. Pull out DVD player and disconnect DVD player connectors.

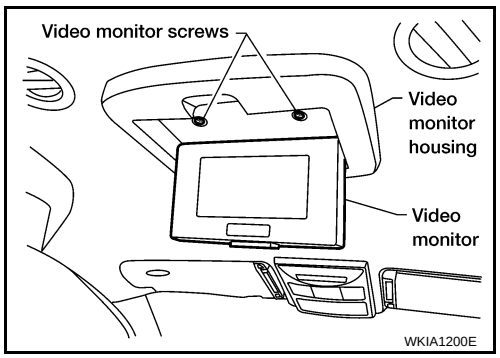
Installation

Installation is in the reverse order of removal.

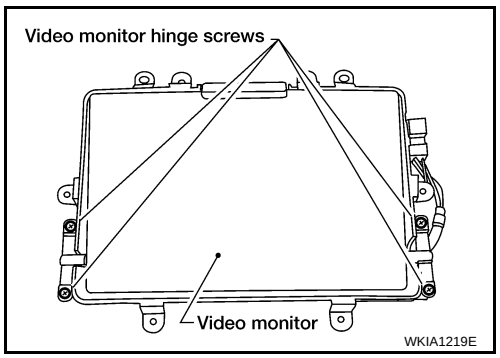
VIDEO MONITOR (WITHOUT REAR ROOF CONSOLE ASSEMBLY)

Removal

1. Remove video monitor screws.
2. Disconnect connector.
3. Remove video monitor housing.



4. Remove the video monitor hinge screws.
5. Remove the video monitor from video monitor housing.

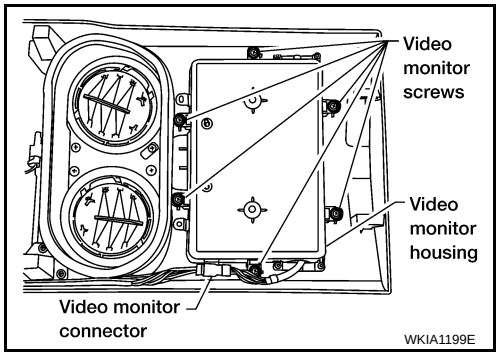


Installation
Installation is in reverse order of removal.

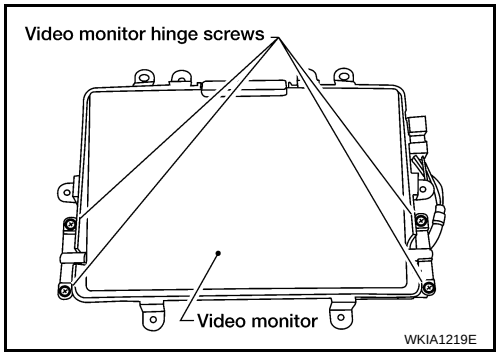
VIDEO MONITOR (WITH REAR ROOF CONSOLE ASSEMBLY)

Removal

1. Remove rear roof console assembly. Refer to EI-38.
2. Disconnect the video monitor connector.
3. Remove the video monitor screws.
4. Remove the video monitor and housing.



5. Remove the video monitor hinge screws and remove the video monitor.



Installation
Installation is in reverse order of removal.

INTEGRATED DISPLAY SYSTEM

System Description

INFOID:0000000004277879

INTEGRATED DISPLAY SYSTEM

Refer to Owner′s Manual for integrated display operating instructions.

AV SWITCH SYSTEM

Refer to Owner′s Manual for AV switch operating instructions.
Using the AV switch at the center of the instrument panel, the controls of the following systems are centralized:

- Integrated display system (Drive computer, setting screen, clock, etc.)
- Audio system

PRECAUTION OF LCD MONITOR

- Brightness of LED backlight display may change, depending on in-car temperature. In low temperatures, the refreshing rate of the picture also becomes low because of the low response of the LCD monitor. When passenger area becomes warm, however, the LCD recovers the normal display.
- Backlight sometimes flickers or darkens according to the total operation hours and the number of times switched ON and OFF. In this case, entire display unit should be replaced. (Backlight cannot be replaced separately.)

POWER SUPPLY AND GROUND

Power is supplied at all times

- to ignition relay, located in the intelligent power distribution module engine room (IPDM E/R), and
- through 15A fuse (No. 34 and 41, located in IPDM E/R)
- to CPU of IPDM E/R, and
- through 20A fuse (No. 31, located in fuse and fusible link box), and
- to audio unit terminal 6
- through 15A fuse [No. 19, located in fuse block (J/B)]
- to display unit terminal 1 (with monochrome display) or display control unit terminal 1 (with color display) and
- to AV switch terminal 1 and
- to combination meter terminal 40.

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

- through 10A fuse [No. 4, located in fuse block (J/B)]
- to display unit terminal 2 (with monochrome display) or display control unit terminal 10 (with color display) and
- to AV switch terminal 2 and
- to BCM terminal 11.

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

- to ignition relay, located in IPDM E/R, and
- through 10A fuse [No. 12, located in fuse block (J/B)]
- to display unit terminal 3 (with monochrome display) or display control unit terminal 12 (with color display).

Ground is supplied

- to display unit terminal 6 (with monochrome display) or display unit terminal 1 (with color display)
- to display control unit terminal 3 (with color display) and
- to AV switch terminal 5 and
- to combination meter terminal 20 and
- to BCM terminal 67
- through body grounds M57, M61 and M79, and
- to IPDM E/R terminals 38 and 60
- through body grounds E9, E15 and E24.

DRIVE COMPUTER

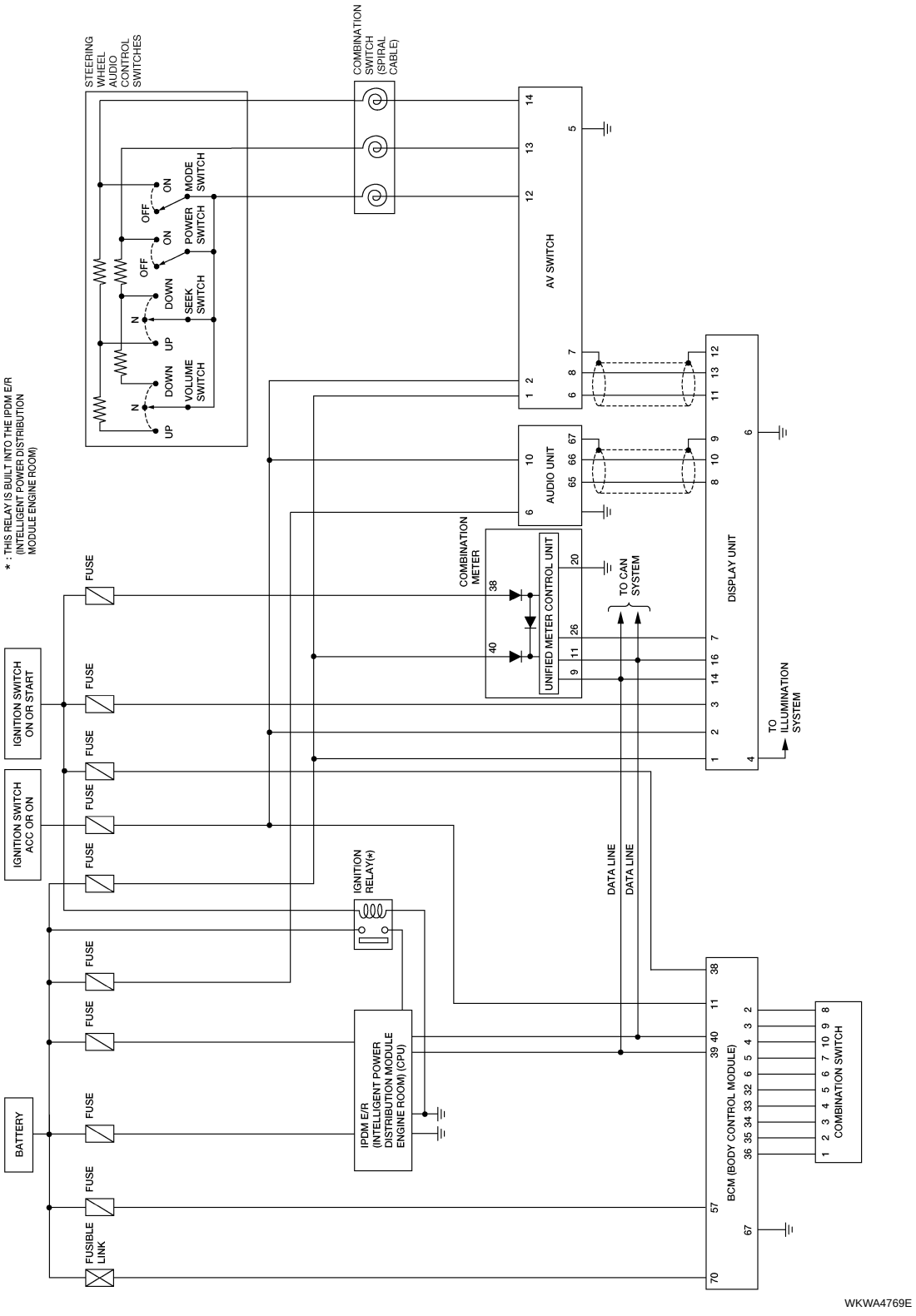
Refer to Owner′s Manual for drive computer operating instructions.

CAN COMMUNICATION SYSTEM DESCRIPTION

Refer to LAN-3, "CAN Communication System".

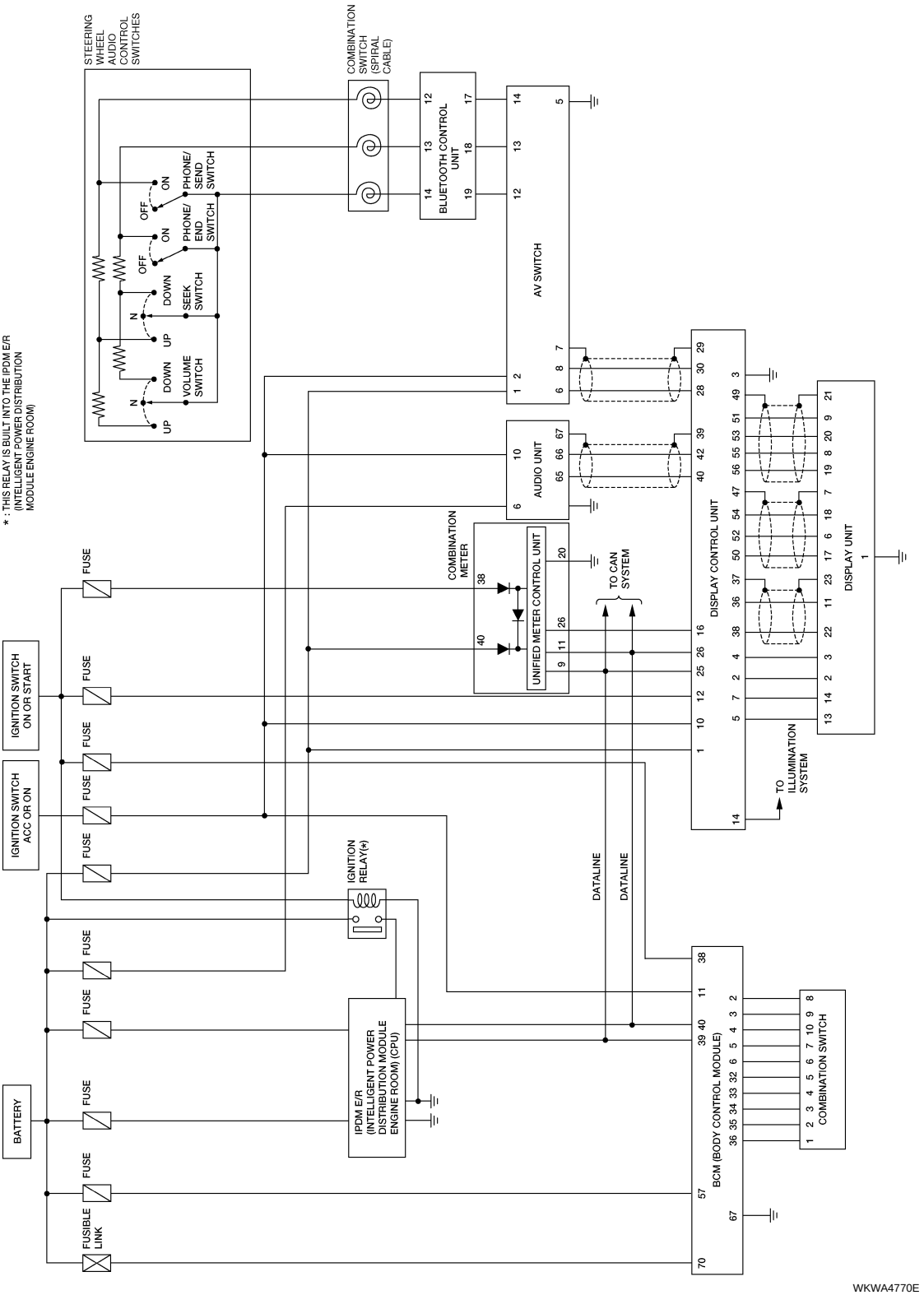
Schematic (With Monochrome Display)

INFOID:0000000004277880



Schematic (With Color Display)

INFOID:0000000004277881

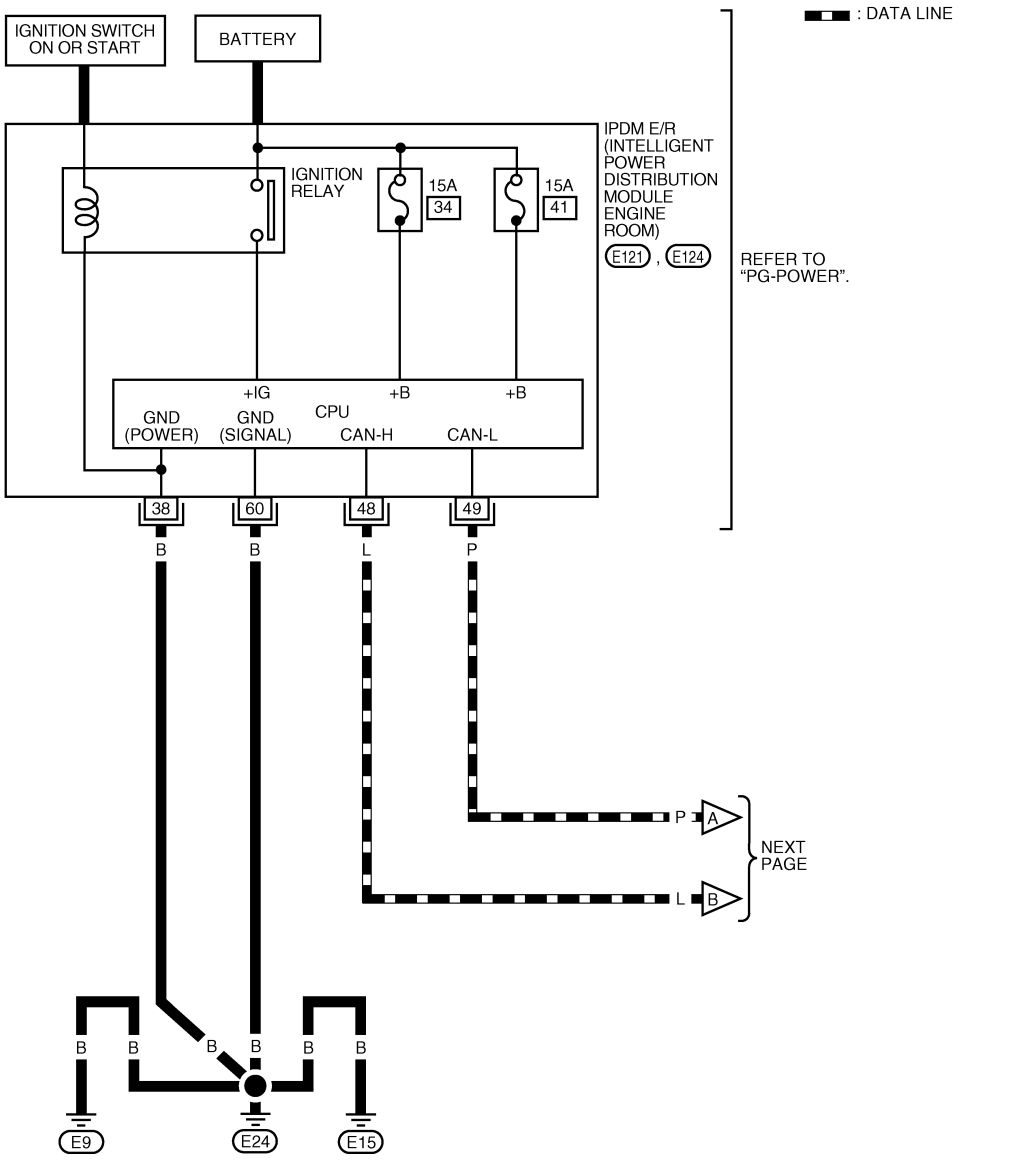


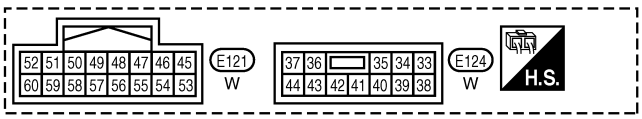
Wiring Diagram - INF/D -

INFOID:0000000004277882

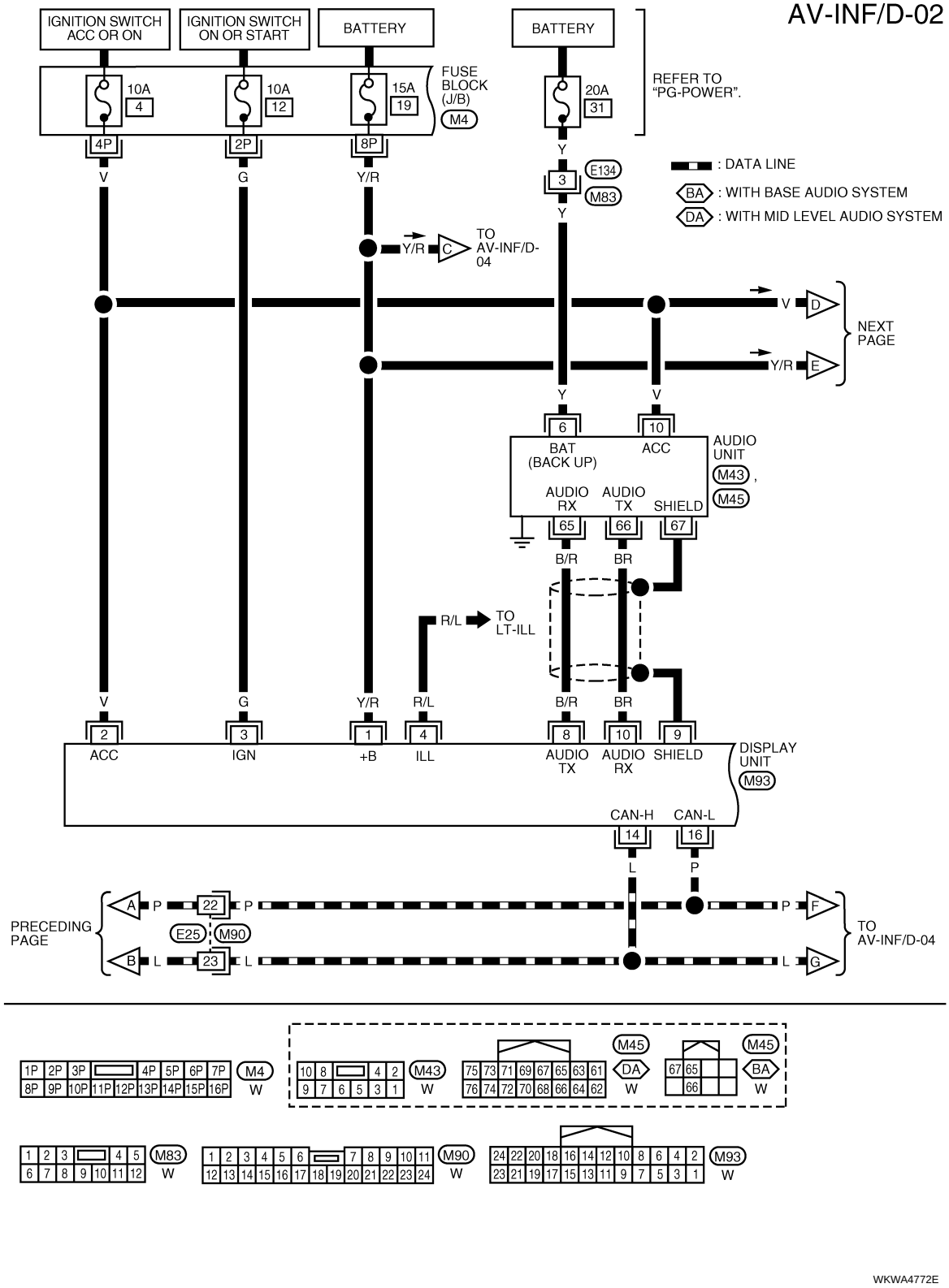
(WITH MONOCHROME DISPLAY)

AV-INF/D-01

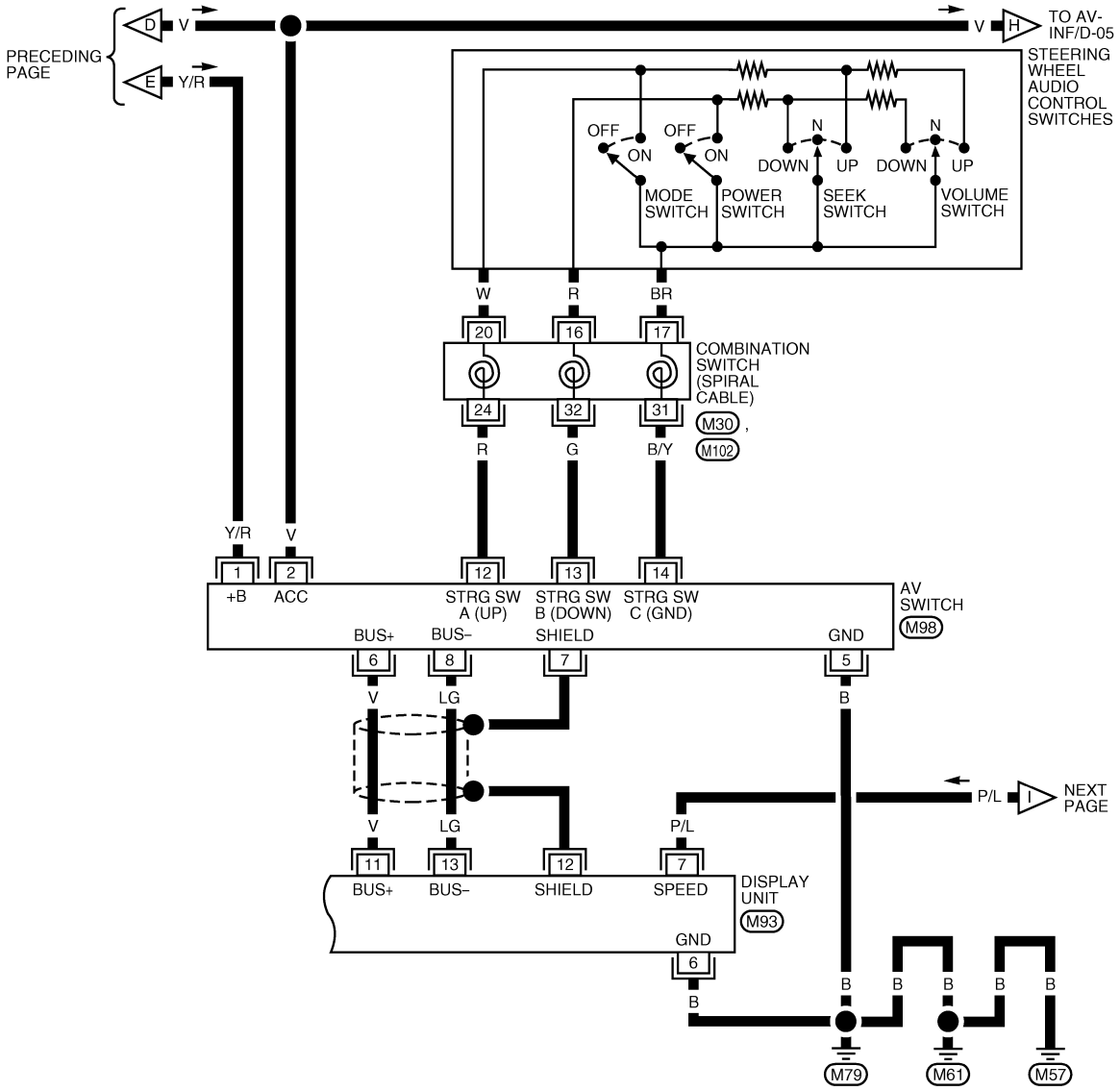




WKWA4771E


AV-INF/D-02
IGNITION SWITCH ACC OR ON
IGNITION SWITCH ON OR START
BATTERY
BATTERY
FUSE BLOCK (J/B) M4
10A 4
10A 12
15A 19
20A 31
REFER TO "PG-POWER".
: DATA LINE
BA : WITH BASE AUDIO SYSTEM
DA : WITH MID LEVEL AUDIO SYSTEM
TO AV-INF/D-04
NEXT PAGE
AUDIO UNIT M43, M45
BAT (BACK UP)
ACC
AUDIO RX
AUDIO TX
SHIELD
TO LT-ILL
DISPLAY UNIT M93
ACC
IGN
+B
ILL
AUDIO TX
AUDIO RX
SHIELD
CAN-H
CAN-L
PRECEDING PAGE
TO AV-INF/D-04
E25
M90
M4
M43
M45
M83
M90
M93
WKWA4772E

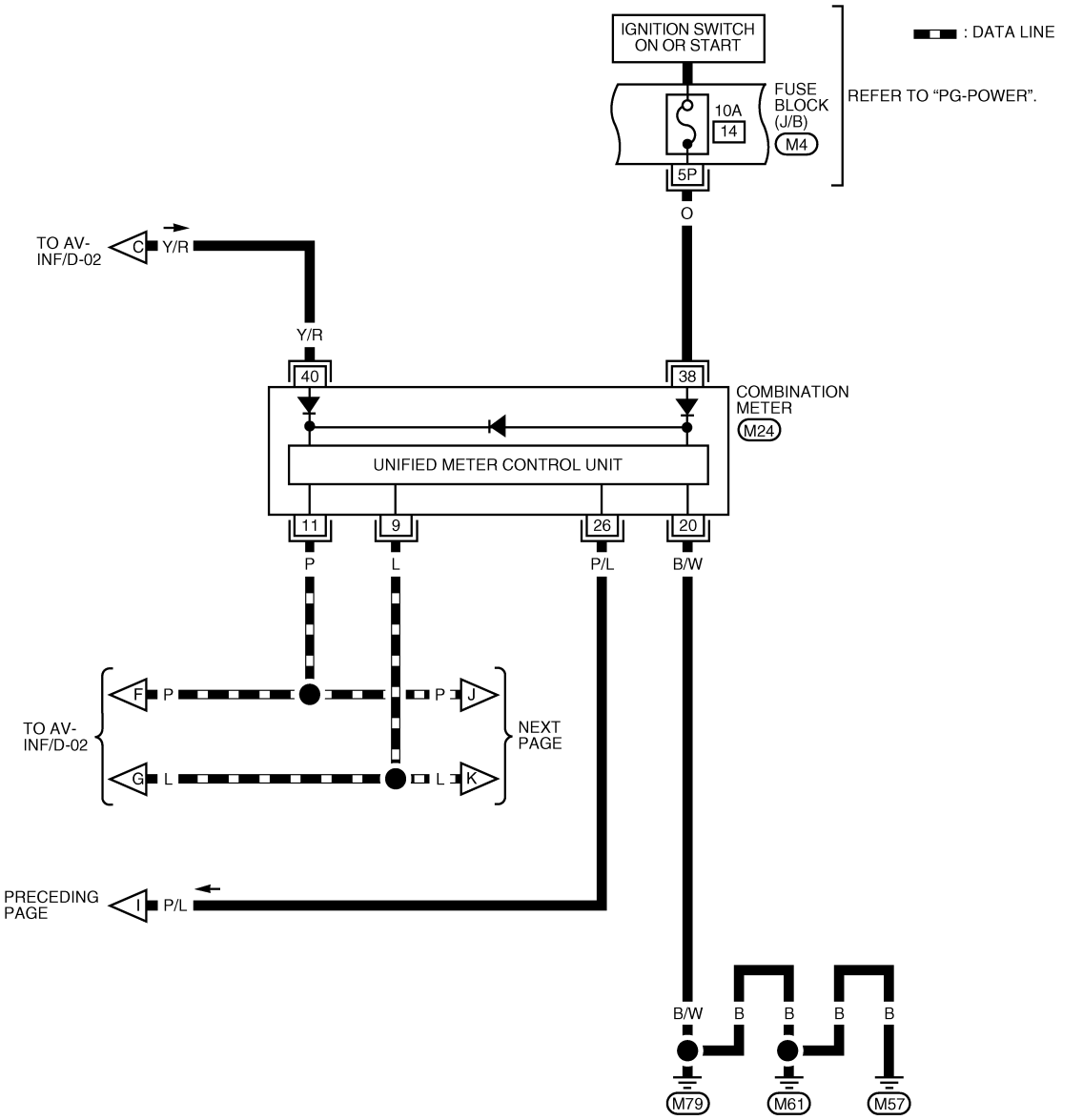
AV-INF/D-03

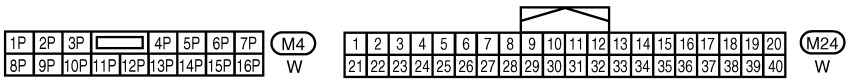


*: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

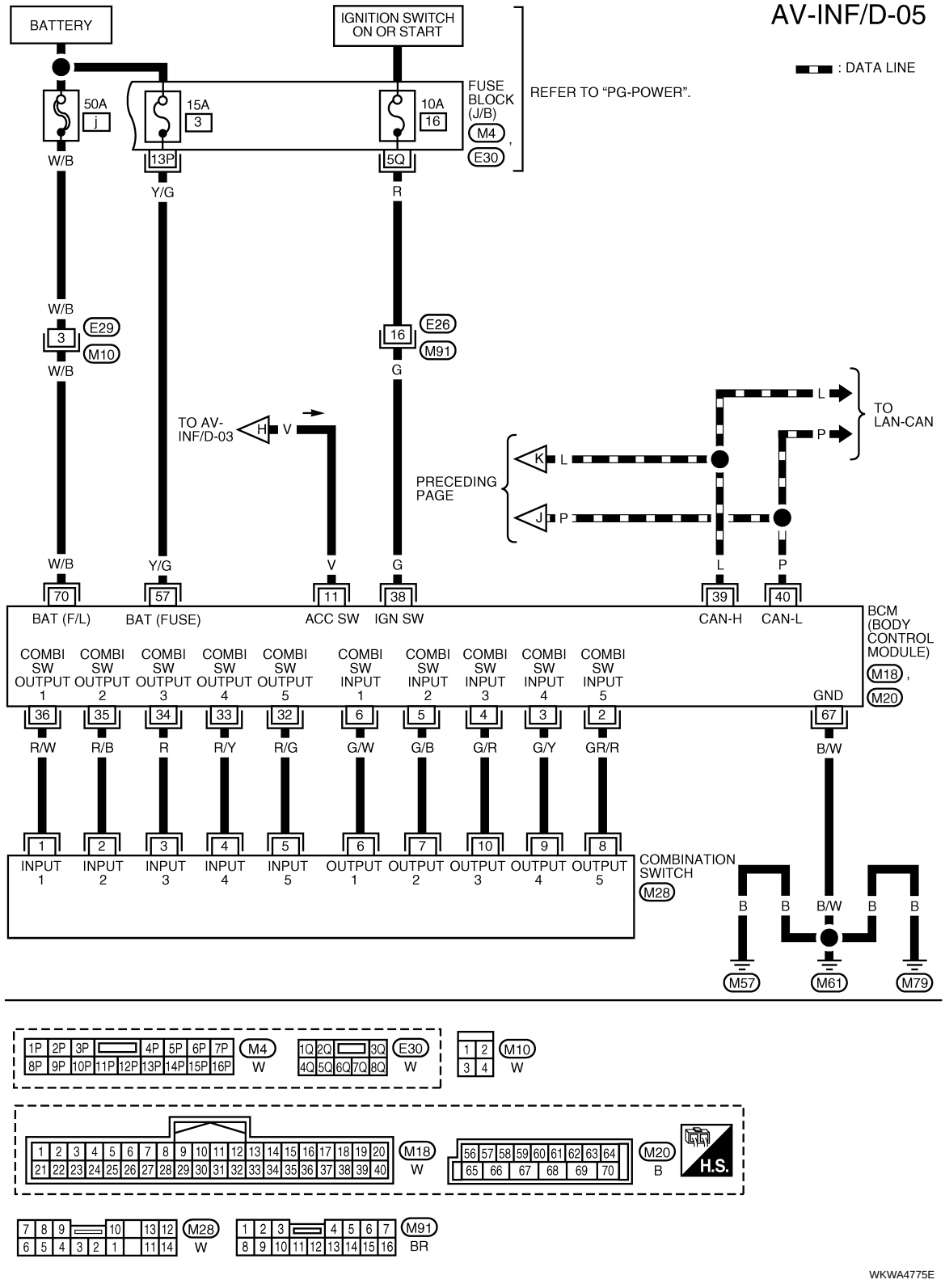
WKWA4773E

AV-INF/D-04

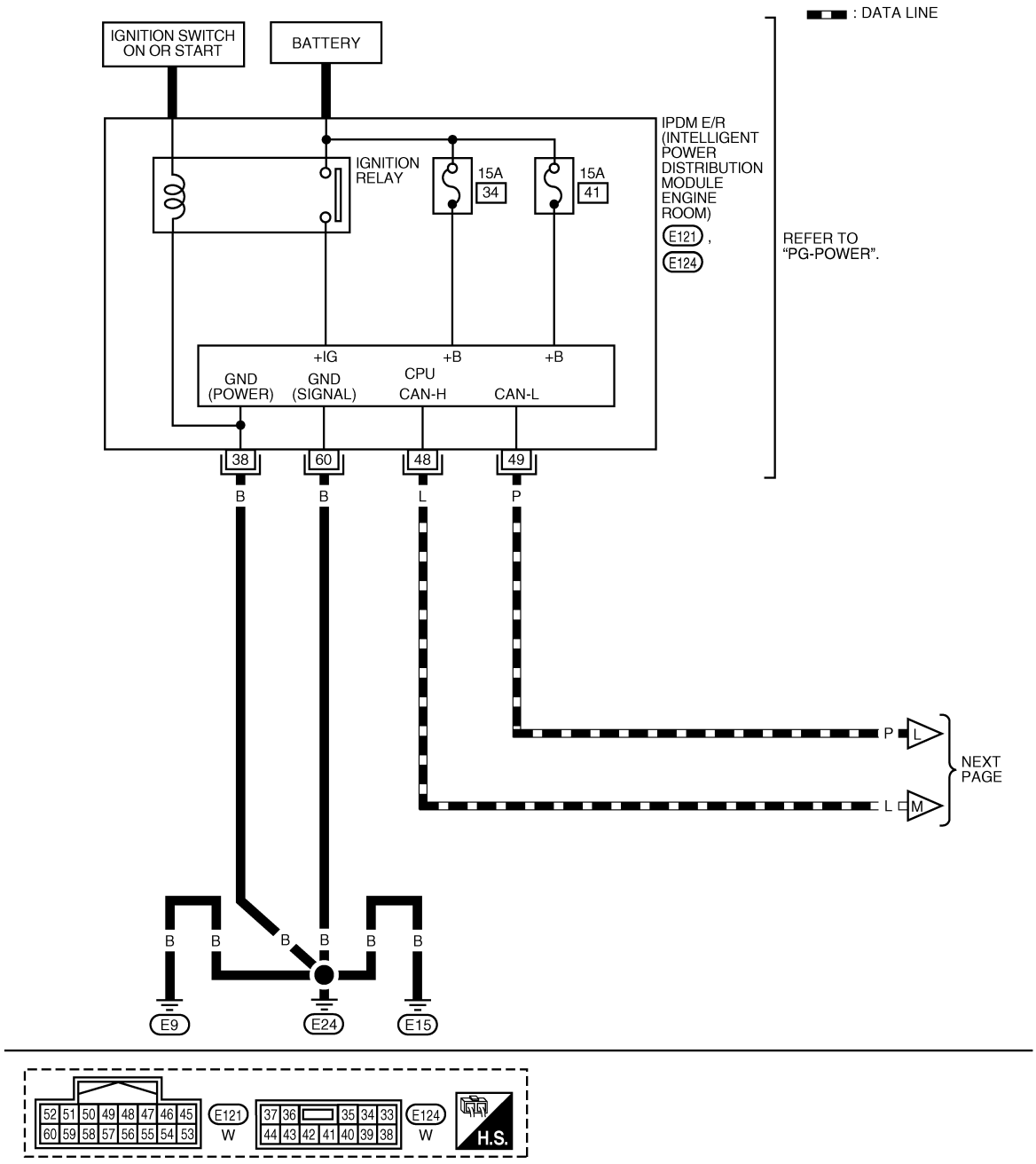




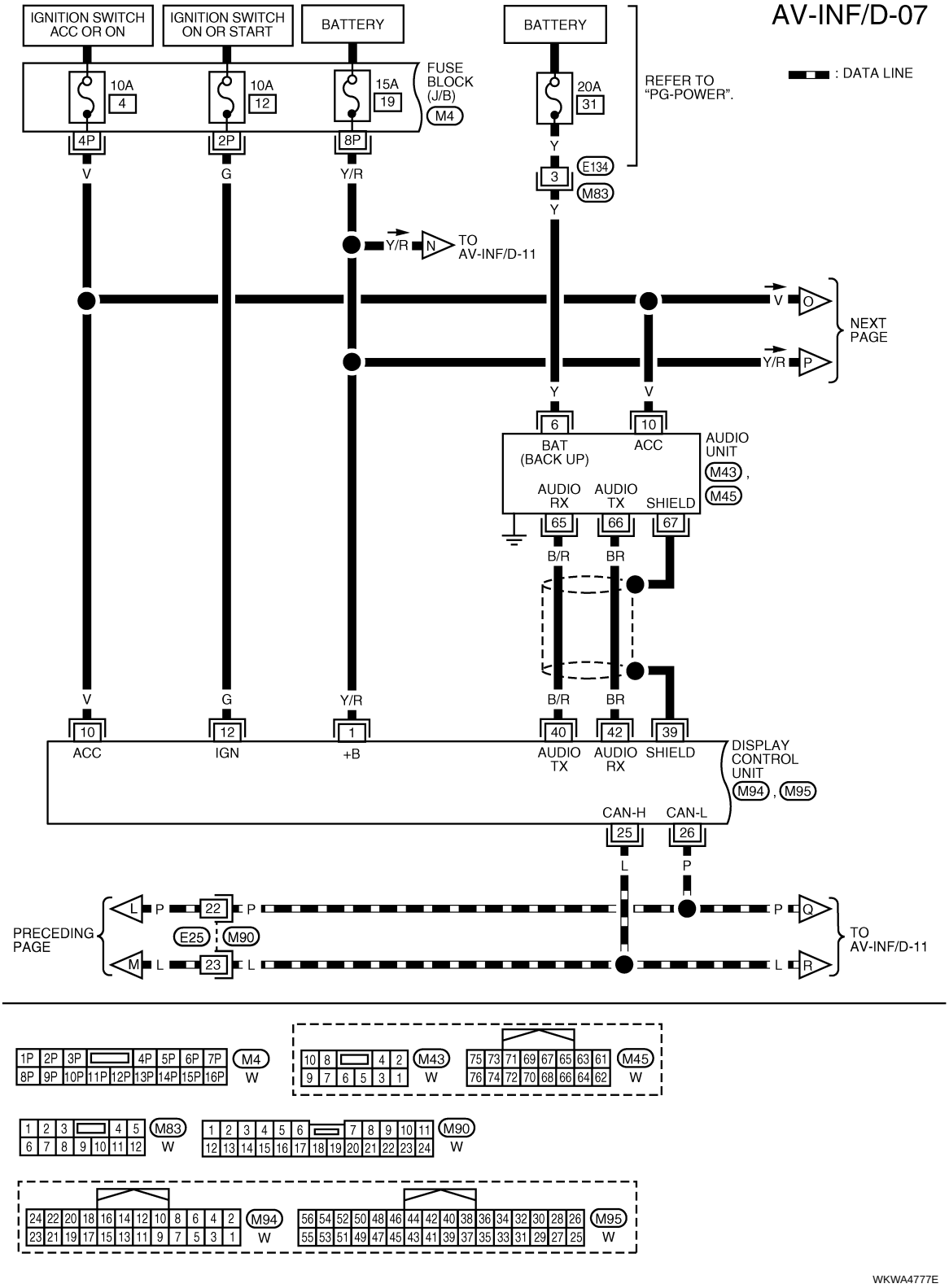
WKWA4774E


AV-INF/D-05
: DATA LINE
BATTERY
IGNITION SWITCH ON OR START
FUSE BLOCK (J/B) M4, E30
REFER TO "PG-POWER".
50A J
15A 3
10A 16
W/B
Y/G
R
13P
5Q
E29
M10
E26
M91
TO AV-INF/D-03
PRECEDING PAGE
TO LAN-CAN
BAT (F/L)
BAT (FUSE)
ACC SW
IGN SW
CAN-H
CAN-L
BCM (BODY CONTROL MODULE) M18, M20
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
R/W
R/B
R
R/Y
R/G
G/W
G/B
G/R
G/Y
GR/R
B/W
INPUT 1
INPUT 2
INPUT 3
INPUT 4
INPUT 5
OUTPUT 1
OUTPUT 2
OUTPUT 3
OUTPUT 4
OUTPUT 5
COMBINATION SWITCH M28
M57
M61
M79
M4
M10
M18
M20
M28
M91
H.S.
WKWA4775E

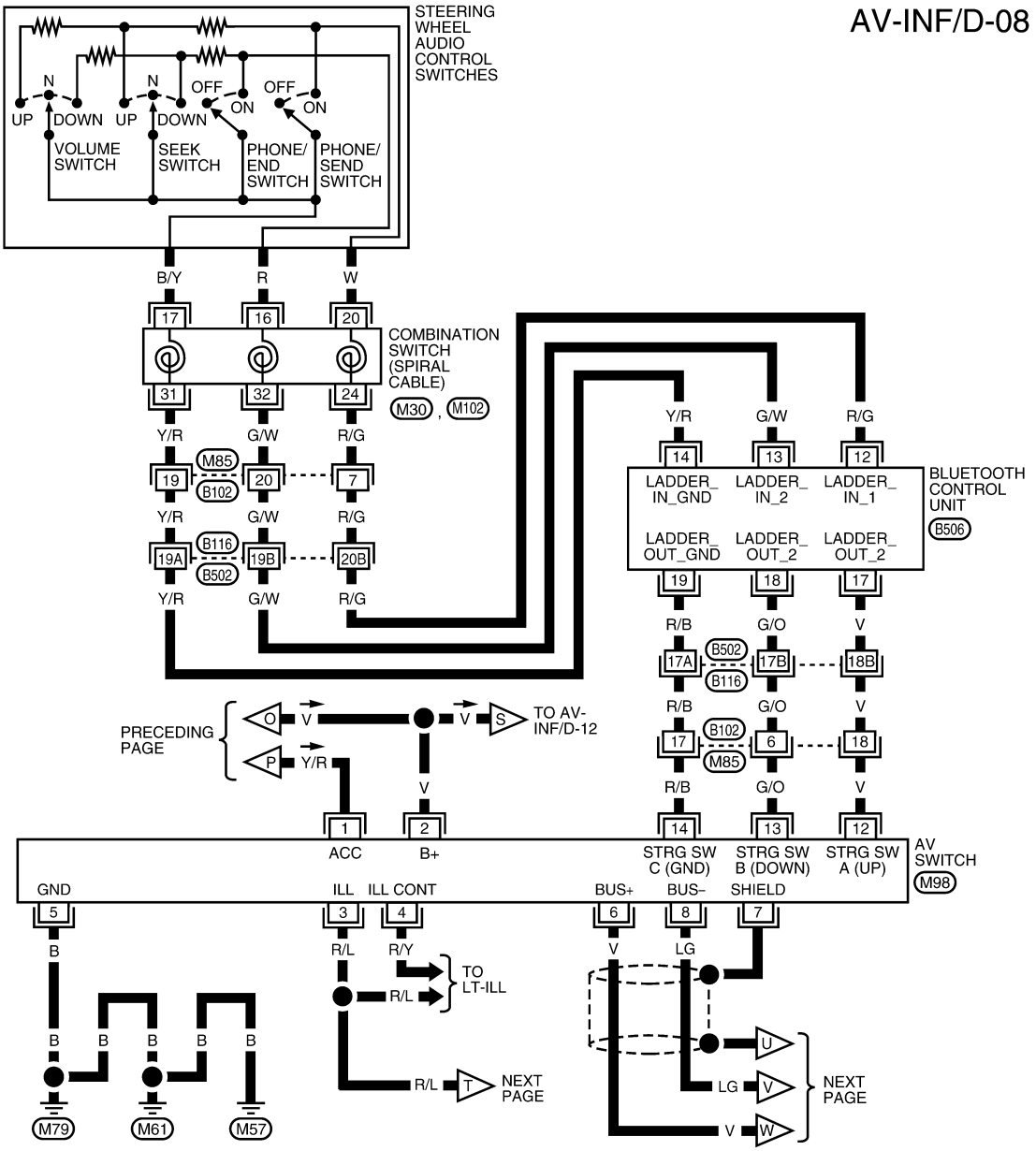
AV-INF/D-06

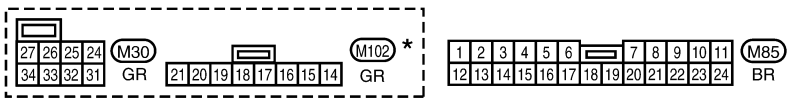


WKWA4776E


AV-INF/D-07
: DATA LINE
IGNITION SWITCH ACC OR ON
IGNITION SWITCH ON OR START
BATTERY
BATTERY
FUSE BLOCK (J/B) M4
10A 4
10A 12
15A 19
20A 31
REFER TO "PG-POWER".
4P
2P
8P
V
G
Y/R
Y
E134
3
M83
Y/R N TO AV-INF/D-11
V O
Y/R P
NEXT PAGE
6
10
BAT (BACK UP)
ACC
AUDIO UNIT M43, M45
AUDIO RX
AUDIO TX
SHIELD
65
66
67
B/R
BR
10
12
1
40
42
39
ACC
IGN
+B
AUDIO TX
AUDIO RX
SHIELD
DISPLAY CONTROL UNIT M94, M95
CAN-H
CAN-L
25
26
L
P
PRECEDING PAGE
L P 22 P
E25 M90
M L 23 L
P Q
L R
TO AV-INF/D-11
M4 W
M43 W
M45 W
M83 W
M90 W
M94 W
M95 W
WKWA4777E

AV-INF/D-08

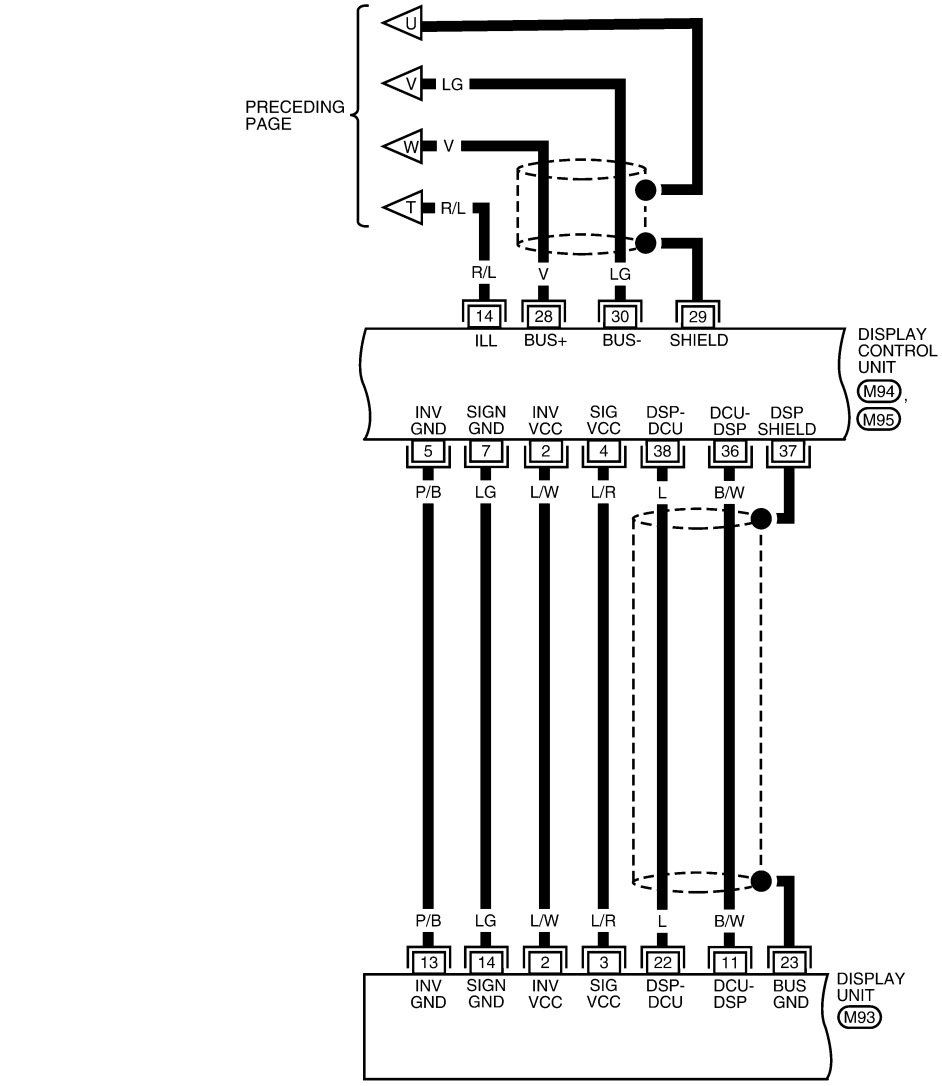


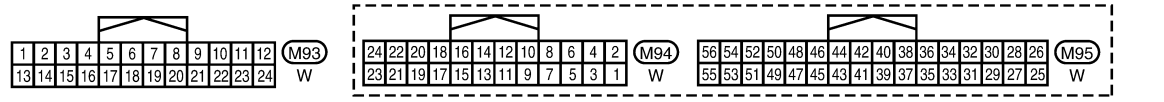


*: THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT” OF PG SECTION.

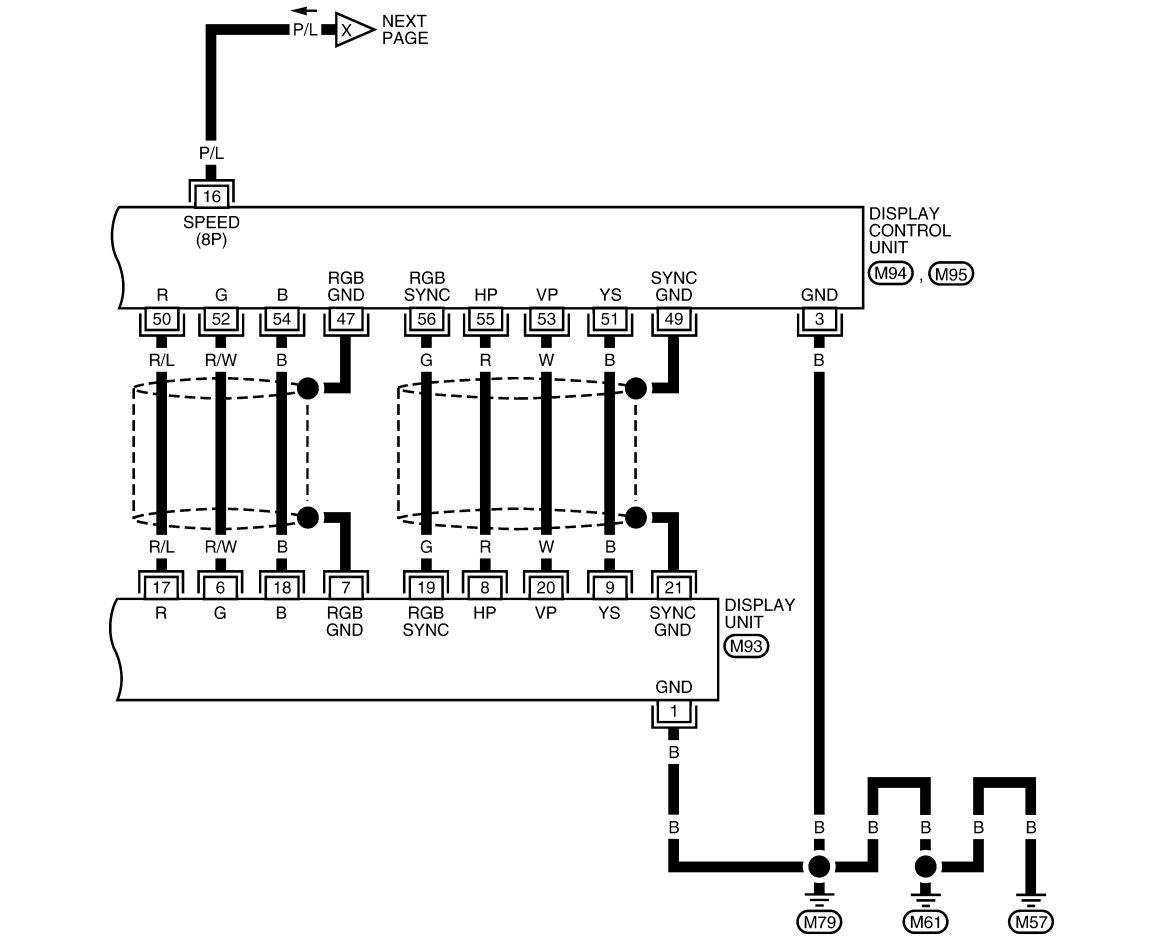
REFER TO THE FOLLOWING.
B116 - SUPER MULTIPLE JUNCTION (SMJ)

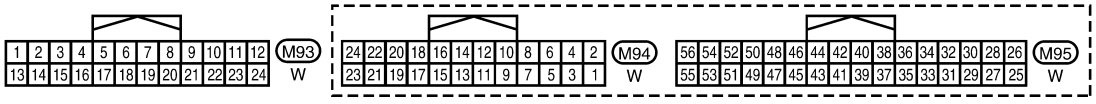
WKWA4778E


PRECEDING PAGE
U
V LG
W V
T R/L
R/L V LG
14 28 30 29
ILL BUS+ BUS- SHIELD
DISPLAY CONTROL UNIT
M94
M95
INV GND
SIGN GND
INV VCC
SIG VCC
DSP-DCU
DCU-DSP
DSP SHIELD
5 7 2 4 38 36 37
P/B LG L/W L/R L B/W
P/B LG L/W L/R L B/W
13 14 2 3 22 11 23
INV GND
SIGN GND
INV VCC
SIG VCC
DSP-DCU
DCU-DSP
BUS GND
DISPLAY UNIT
M93


1 2 3 4 5 6 7 8 9 10 11 12
13 14 15 16 17 18 19 20 21 22 23 24
M93
W
24 22 20 18 16 14 12 10 8 6 4 2
23 21 19 17 15 13 11 9 7 5 3 1
M94
W
56 54 52 50 48 46 44 42 40 38 36 34 32 30 28 26
55 53 51 49 47 45 43 41 39 37 35 33 31 29 27 25
M95
W

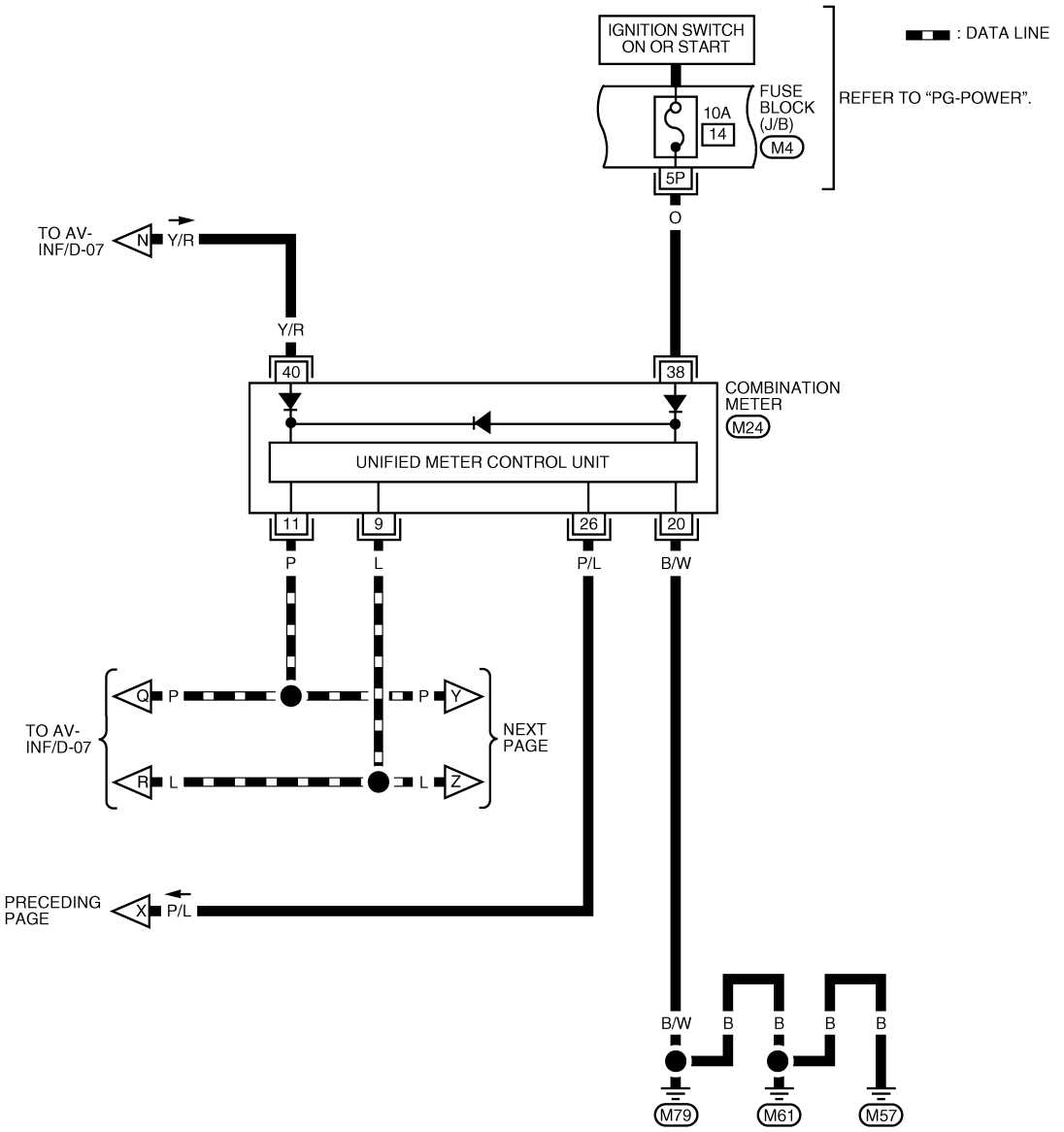
WKWA4779E

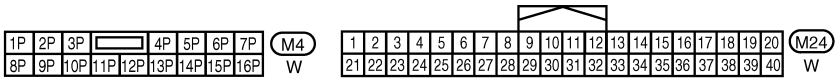

P/L
X
NEXT PAGE
P/L
16
SPEED (8P)
DISPLAY CONTROL UNIT
M94 , M95
R G B RGB GND RGB SYNC HP VP YS SYNC GND GND
50 52 54 47 56 55 53 51 49 3
R/L R/W B G R W B B
17 6 18 7 19 8 20 9 21
R G B RGB GND RGB SYNC HP VP YS SYNC GND
DISPLAY UNIT
M93
GND
1
B
M79
M61
M57


1 2 3 4 5 6 7 8 9 10 11 12
13 14 15 16 17 18 19 20 21 22 23 24
M93
W
24 22 20 18 16 14 12 10 8 6 4 2
23 21 19 17 15 13 11 9 7 5 3 1
M94
W
56 54 52 50 48 46 44 42 40 38 36 34 32 30 28 26
55 53 51 49 47 45 43 41 39 37 35 33 31 29 27 25
M95
W

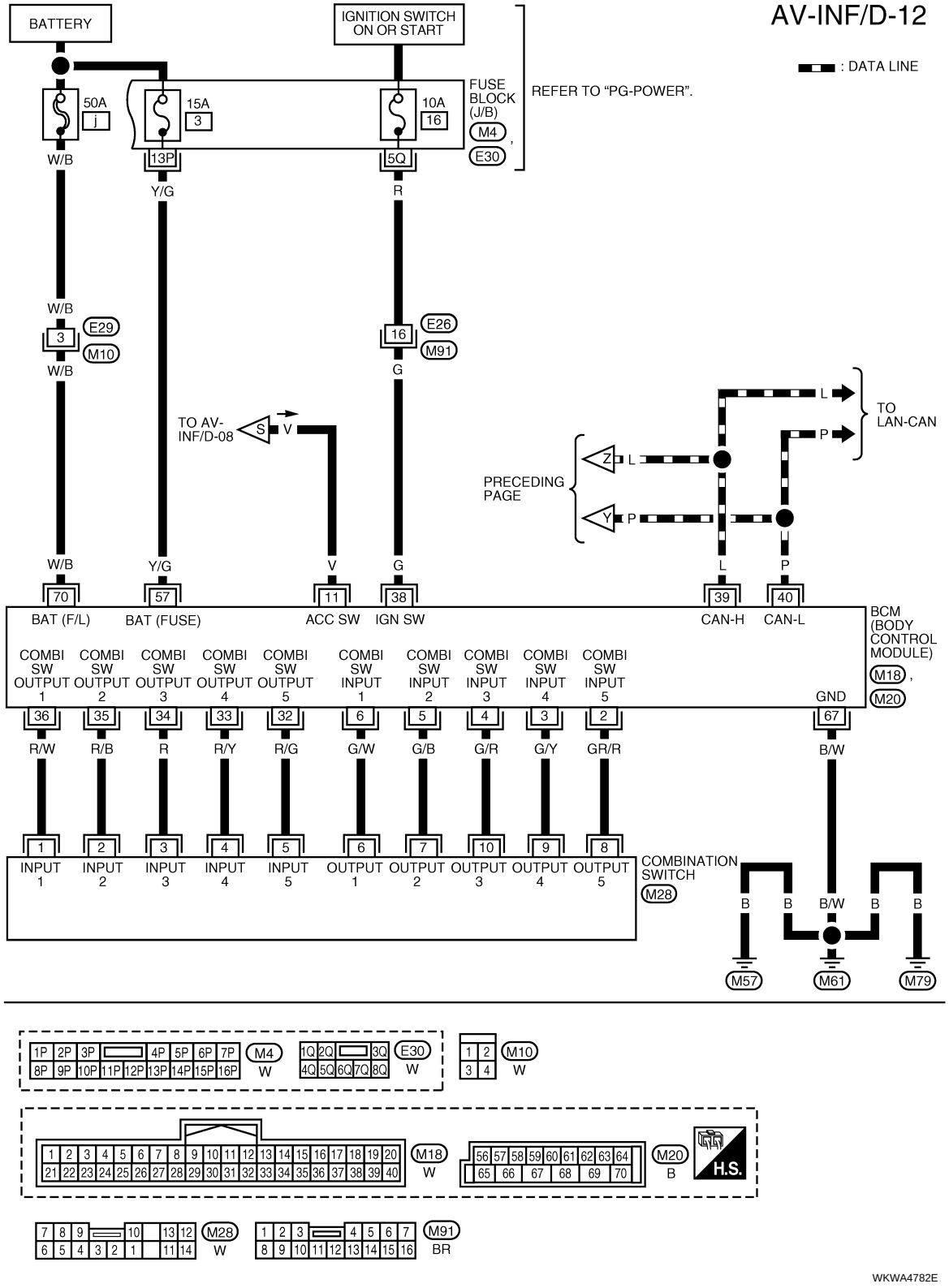
WKWA4780E

AV-INF/D-11



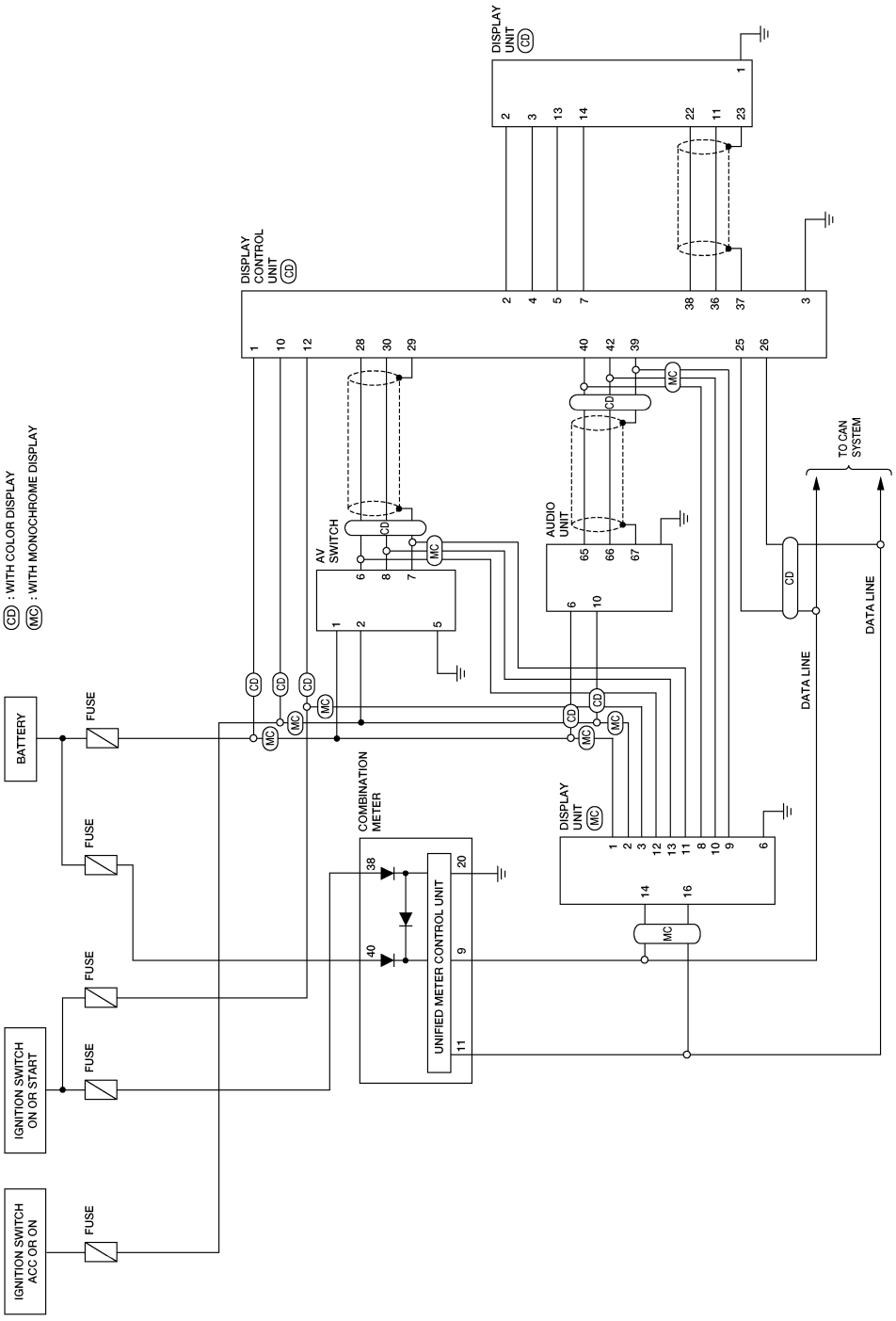


WKWA4781E


AV-INF/D-12
: DATA LINE
BATTERY
IGNITION SWITCH ON OR START
FUSE BLOCK (J/B) M4, E30
REFER TO "PG-POWER".
50A j
15A 3
10A 16
W/B
Y/G
R
13P
5Q
E29
M10
E26
M91
TO AV-INF/D-08
PRECEDING PAGE
TO LAN-CAN
BAT (F/L)
BAT (FUSE)
ACC SW
IGN SW
CAN-H
CAN-L
BCM (BODY CONTROL MODULE) M18, M20
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
R/W
R/B
R
R/Y
R/G
G/W
G/B
G/R
G/Y
GR/R
B/W
INPUT 1
INPUT 2
INPUT 3
INPUT 4
INPUT 5
OUTPUT 1
OUTPUT 2
OUTPUT 3
OUTPUT 4
OUTPUT 5
COMBINATION SWITCH M28
M57
M61
M79
M4
M10
M18
M20
M28
M91
H.S.
WKWA4782E

Schematic

INFOID:0000000004277883

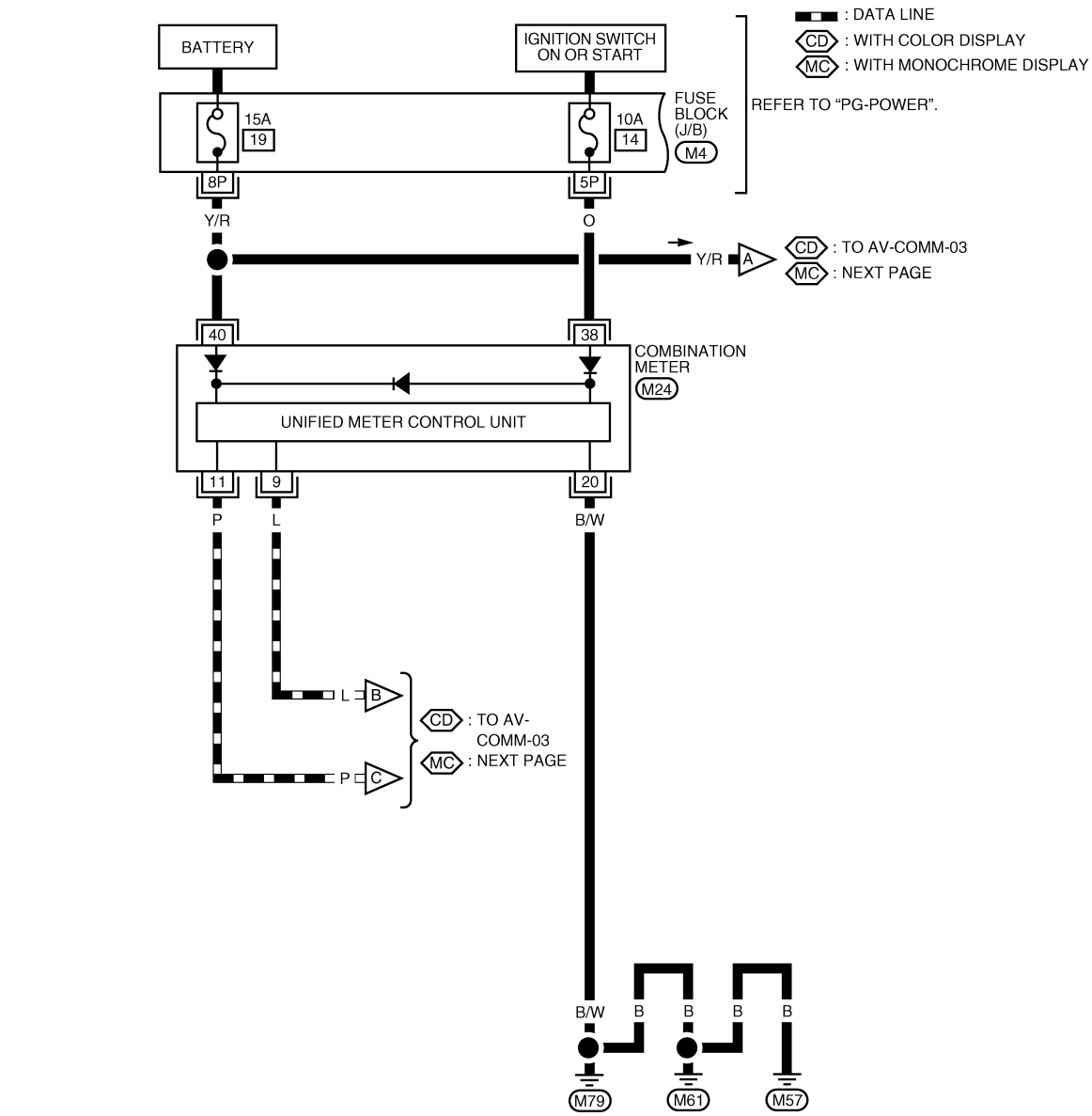


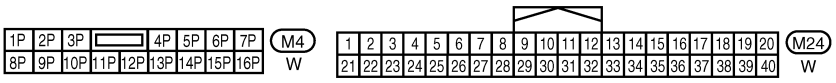
WKWA4798E

Wiring Diagram - COMM -

INFOID:0000000004277884

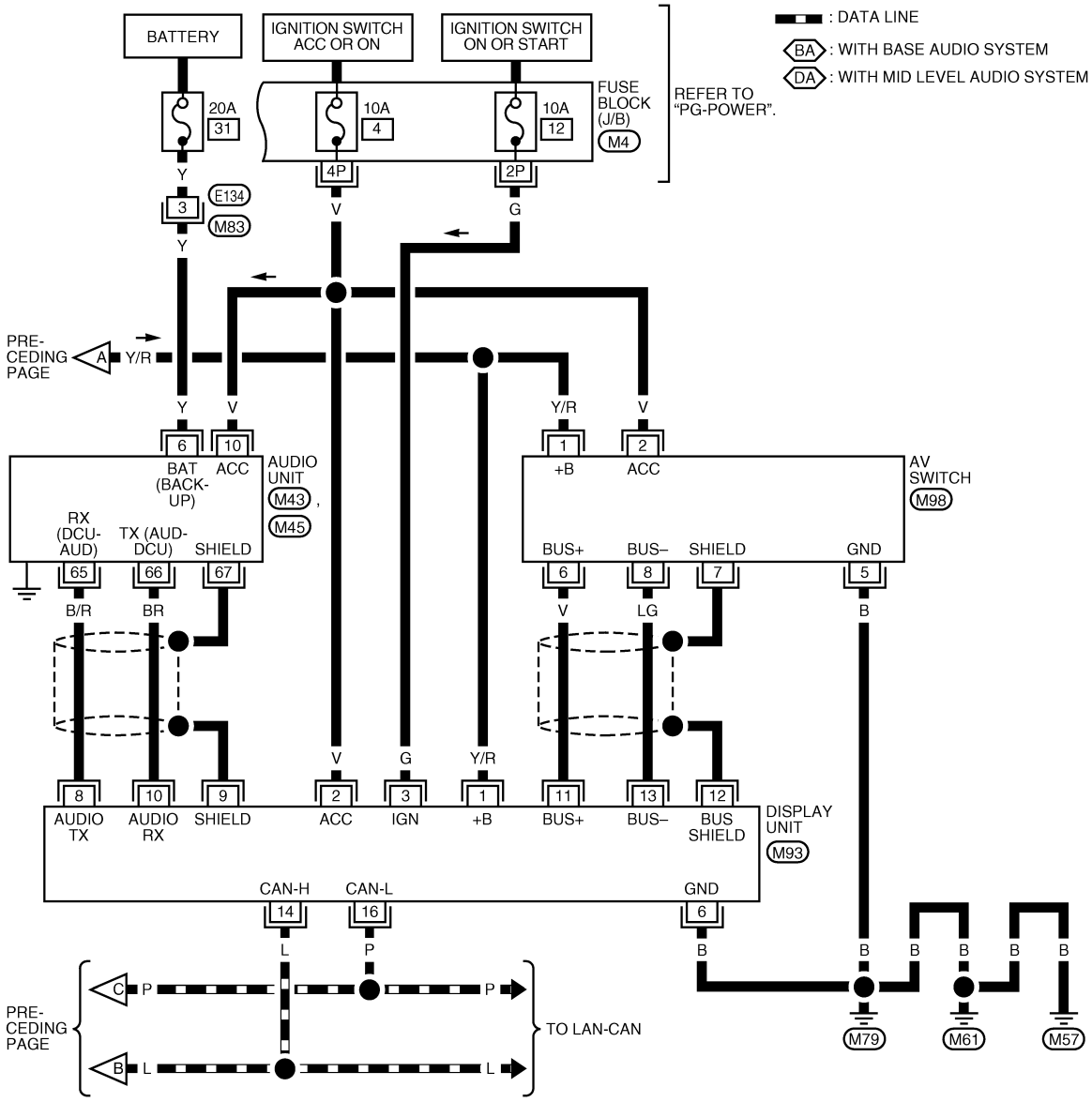
AV-COMM-01

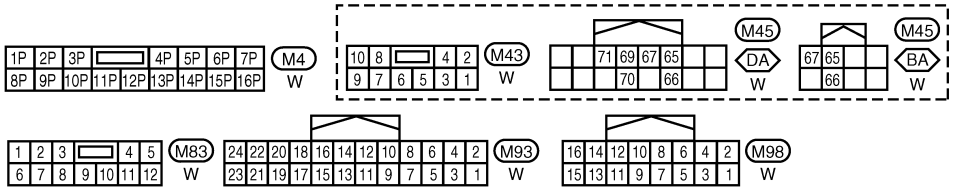




WKWA4783E

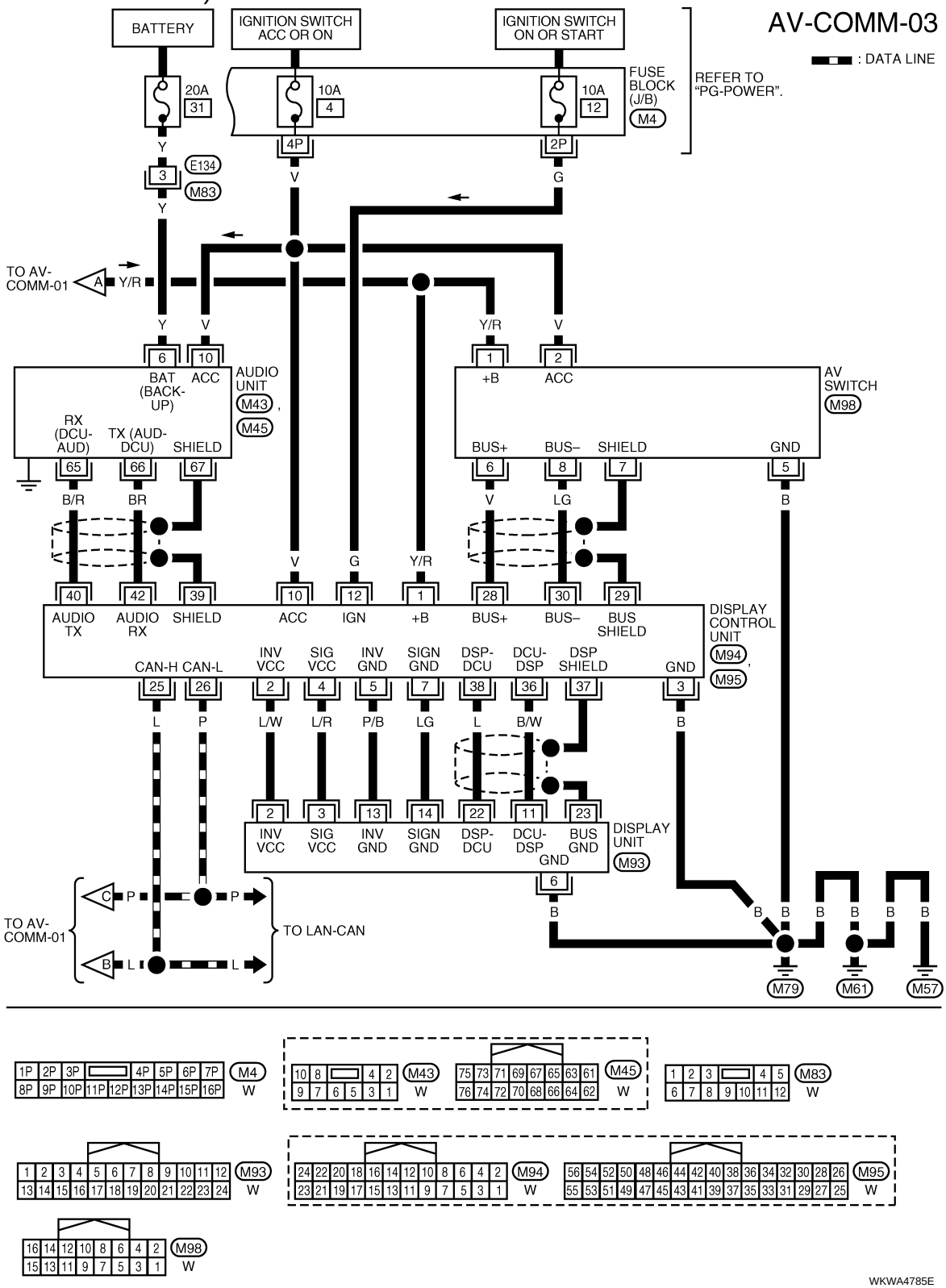
AV-COMM-02





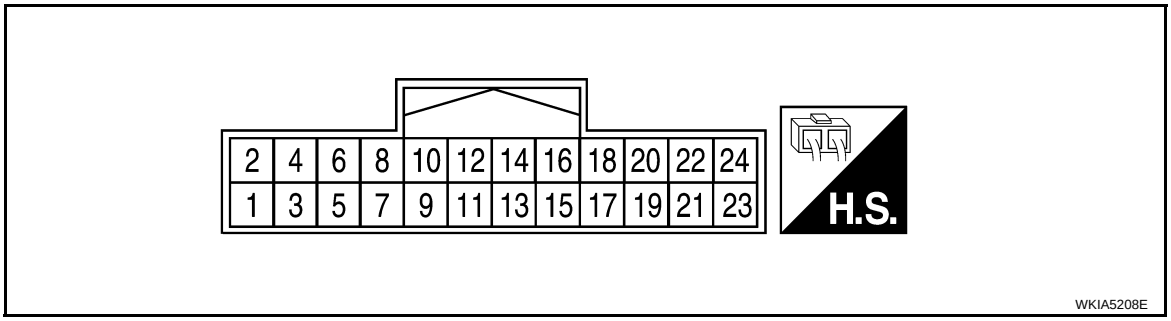
WKWA4961E

(WITH COLOR DISPLAY)



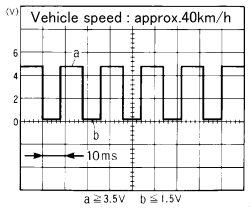
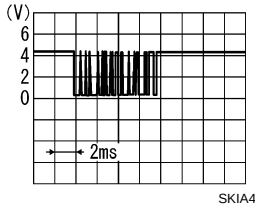
Display Unit (With Monochrome Display) Harness Connector Terminal Layout

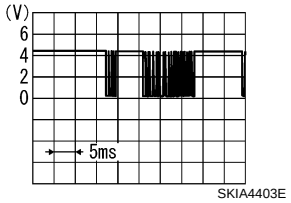
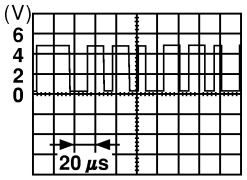
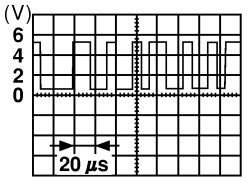
INFOID:0000000004277885



Terminal and Reference Value for Display Unit (With Monochrome Display)

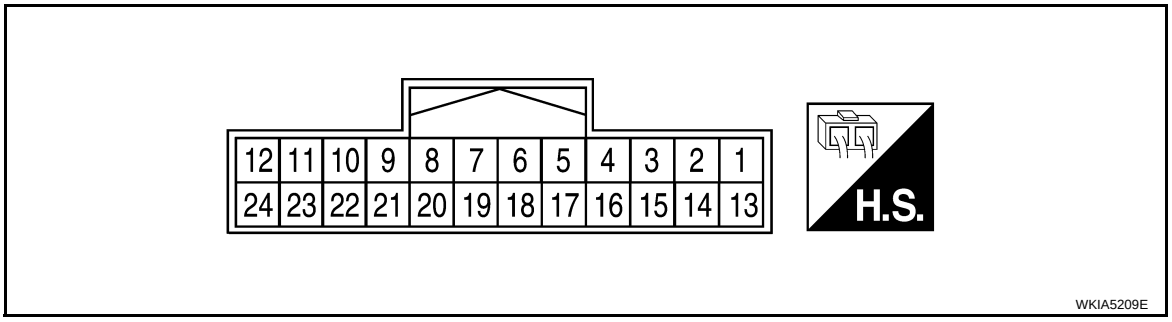
INFOID:0000000004277886

Terminal No. (Wire color)		Item	Signal input/ output	Condition		Voltage (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
1 (Y/R)	Ground	Battery power	Input	OFF	–	Battery voltage	System does not work properly.
2 (V)	Ground	ACC signal	Input	ACC	–	Battery voltage	System does not work properly.
3 (G)	Ground	Ignition signal	Input	ON	–	Battery voltage	A/C operation is not possible. Vehicle information setting is not possible.
4 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch is ON (position 1).	Battery voltage	Audio unit illumination does not come on when lighting switch is ON (position 1).
					Turn lighting switch OFF.	3.0V or less	
6 (B)	Ground	Ground	–	ON	–	0V	–
7 (P/L)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 SKIA0168E	Drive computer item is not displayed correctly.
8 (B/R)	Ground	Audio TX	Output	ON	Operate audio volume.	 SKIA4402E	Audio does not operate properly.
9	–	Shield ground	–	–	–	–	–

Terminal No. (Wire color)		Item	Signal input/ output	Condition		Voltage (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
10 (BR)	Ground	Audio RX	Input	ON	Operate audio volume.	 SKIA4403E	Audio does not operate properly.
11 (V)	Ground	Communication signal (+)	Input/ output	ON	–	 SKIA0175E	System does not work properly.
12	–	Shield ground	–	–	–	–	–
13 (LG)	Ground	Communication signal (-)	Input/ output	ON	–	 SKIA0176E	System does not work properly.
14 (L)	–	CAN-H	–	–	–	–	–
16 (P)	–	CAN-L	–	–	–	–	–

Display Unit (With Color Display) Harness Connector Terminal Layout

INFOID:0000000004277887

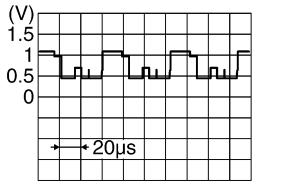
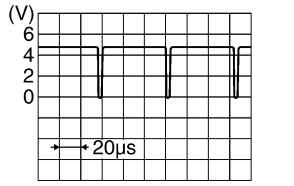
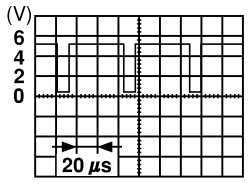
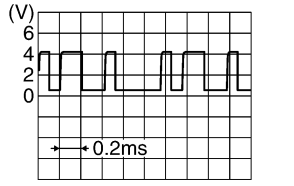
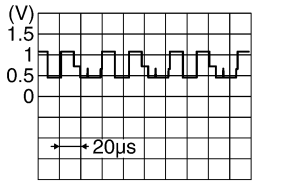
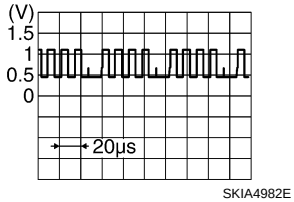


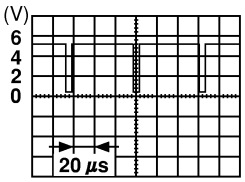
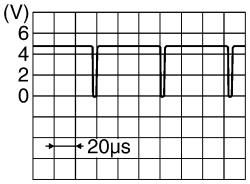
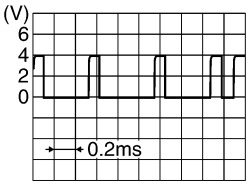
WKIA5209E

Terminal and Reference Value for Display Unit (With Color Display)

INFOID:0000000004277888

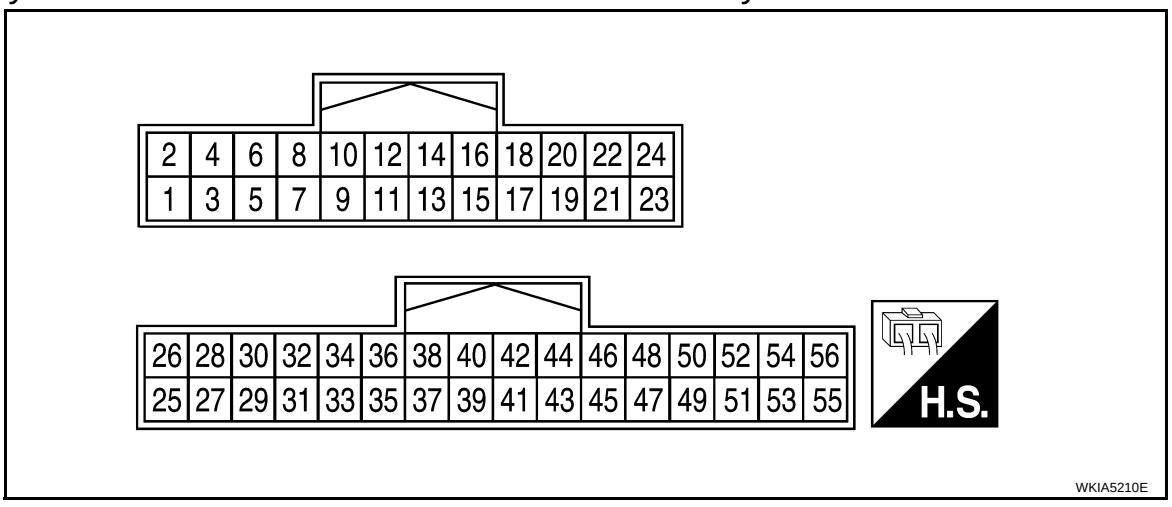
Terminal No. (Wire color)		Item	Signal input/ output	Condition		Voltage (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
1 (B)	Ground	Ground	–	ON	–	0V	–
2 (L/W)	Ground	Power supply (Inverter)	Input	ON	–	9V	Screen is not shown.
3 (L/R)	Ground	Power supply (Signal)	Input	ON	–	9V	Screen is not shown.

Terminal No. (Wire color)		Item	Signal input/ output	Condition		Voltage (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
6 (R/W)	7	RGB signal (G: green)	Input	ON	Select “Display Diagnosis (DCU)” of CONFIRMATION/ ADJUSTMENT function.	 SKIA4981E	Screen looks reddish.
7	–	Shield ground	–	–	–	–	–
8 (R)	21	Horizontal synchronizing (HP) signal	Output	ON	–	 SKIA4983E	Operating screen for audio and A/C is not displayed.
9 (B)	21	RGB area (YS) signal	Input	ON	Press the “TRIP” button.	 SKIA0162E	Operating screen for audio and A/C is not displayed.
11 (B/W)	23	Display communication signal (DCU-DSP)	Input	ON	–	 SKIA4364E	Though a screen is displayed, it is impossible to adjust brightness.
13 (P/B)	Ground	(Inverter) Ground	–	ON	–	0V	–
14 (LG)	Ground	(Signal) Ground	–	ON	–	0V	–
17 (R/L)	7	RGB signal (R: red)	Input	ON	Select “Display Diagnosis (DCU)” of CONFIRMATION/ ADJUSTMENT function.	 SKIA4980E	Screen looks bluish.
18 (B)	7	RGB signal (B: blue)	Input	ON	Select “Display Diagnosis (DCU)” of CONFIRMATION/ ADJUSTMENT function.	 SKIA4982E	Screen looks yellowish.

Terminal No. (Wire color)		Item	Signal input/ output	Condition		Voltage (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
19 (G)	21	RGB synchronizing signal	Input	ON	Press the “TRIP” button.	 SKIA0164E	Screen is rolling.
20 (W)	21	Vertical synchronizing (VP) signal	Output	ON	–	 SKIA4983E	Operating screen for audio and A/C is not displayed.
21	–	Shield ground	–	–	–	–	–
22 (L)	23	Display communication signal (DSP-DCU)	Output	ON	–	 SKIA4363E	Though a screen is displayed, it is impossible to adjust brightness.
23	–	Shield ground	–	–	–	–	–

Display Control Unit Harness Connector Terminal Layout

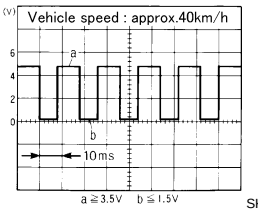
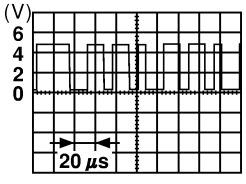
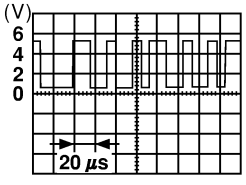
INFOID:0000000004277889

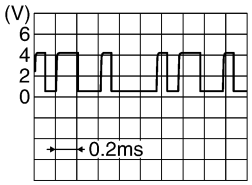
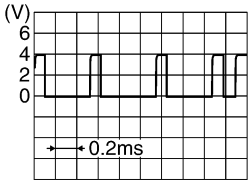
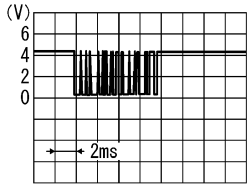
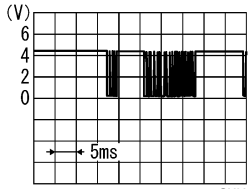
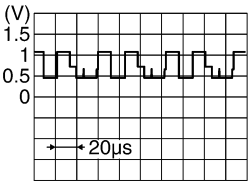
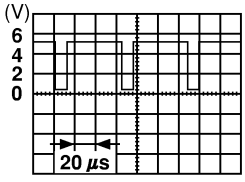


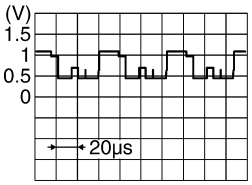
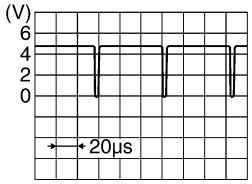
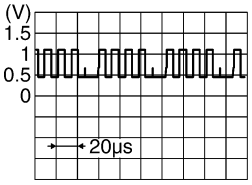
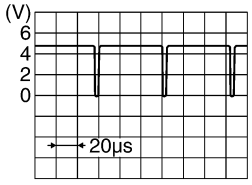
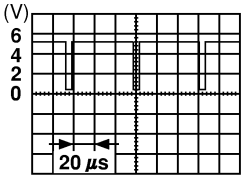
WKIA5210E

Terminal and Reference Value for Display Control Unit

INFOID:0000000004277890

Terminal No. (Wire color)		Item	Signal input/ output	Condition		Voltage (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
1 (Y/R)	Ground	Battery Power	Input	OFF	–	Battery voltage	System does not work properly.
2 (L/W)	Ground	Power Supply (Inverter)	Output	ON	–	9V	Screen is not shown.
3 (B)	Ground	Ground	–	ON	–	0V	–
4 (L/R)	Ground	Power Supply (Signal)	Output	ON	–	9V	Screen is not shown.
5 (P/B)	Ground	(Inverter) Ground	–	ON	–	0V	–
7 (LG)	Ground	(Signal) Ground	–	ON	–	0V	–
10 (V)	Ground	ACC signal	Input	ACC	–	Battery voltage	System does not work properly.
12 (G)	Ground	Ignition signal	Input	ON	–	Battery voltage	Vehicle information setting is not possible.
14 (R/L)	Ground	Illumination signal	Input	OFF	Lighting switch position 1st or 2nd	Battery voltage	Display unit does not change when lighting switch is turned to 1st position.
					Lighting switch position OFF	0V	
16 (P/L)	Ground	Vehicle speed signal (8–pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 SKIA0168E	Value of vehicle speed information is not accurately displayed.
25 (L)	–	CAN-H	–	–	–	–	–
26 (P)	–	CAN-L	–	–	–	–	–
28 (V)	Ground	Communication signal (+)	Input/ Output	ON	–	 SKIA0175E	System does not work properly.
29	–	Shield ground	–	–	–	–	–
30 (LG)	Ground	Communication signal (–)	Input/ output	ON	–	 SKIA0176E	System does not work properly.

Terminal No. (Wire color)		Item	Signal input/ output	Condition		Voltage (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
36 (B/W)	37	Display Communication signal (DCU-DSP)	Output	ON	Press the “TRIP” button.	 SKIA4364E	Though a screen is displayed, it is impossible to adjust brightness.
37	–	Shield ground	–	–	–	–	–
38 (L)	37	Display Communication signal (DSP-DCU)	Input	ON	Press the “TRIP” button.	 SKIA4363E	Though a screen is displayed, it is impossible to adjust brightness.
39	–	Shield ground	–	–	–	–	–
40 (B/R)	Ground	Audio TX Communication signal	Output	ON	Operate audio volume.	 SKIA4402E	Audio does not operate properly.
42 (BR)	Ground	Audio RX communication signal	Input	ON	Operate audio volume.	 SKIA4403E	Audio does not operate properly.
47	–	Shield ground	–	–	–	–	–
49	–	Shield ground	–	–	–	–	–
50 (R/L)	47	RGB signal (R: red)	Output	ON	Select “Display Diagnosis (DCU)” of CONFIRMATION/ ADJUSTMENT function.	 SKIA4980E	Screen looks bluish.
51 (B)	49	RGB area (YS) signal	Output	ON	Press the“TRIP” button.	 SKIA0162E	RGB screen is not shown.

Terminal No. (Wire color) +	Terminal No. (Wire color) –	Item	Signal input/ output	Condition: Ignition switch	Condition: Operation	Voltage (Approx.)	Example of symptom
52 (R/W)	47	RGB signal (G: green)	Output	ON	Select “Display Diagnosis (DCU)” of CONFIRMATION/ ADJUSTMENT function.	 SKIA4981E	Screen looks reddish.
53 (W)	49	Vertical synchronizing (VP) signal	Input	ON	–	 SKIA4983E	Operating screen for audio and A/C is not displayed.
54 (B)	47	RGB signal (B: blue)	Output	ON	Select “Display Diagnosis (DCU)” of CONFIRMATION/ ADJUSTMENT function.	 SKIA4982E	Screen looks yellowish.
55 (R)	49	Horizontal synchronizing (HP) signal	Input	ON	–	 SKIA4983E	Operating screen for audio and A/C is not displayed.
56 (G)	49	RGB synchronizing signal	Output	ON	Press the “TRIP” button.	 SKIA0164E	Screen is rolling.

Terminal and Reference Value for BCM

INFOID:0000000004277891

Refer to BCS-11, "Terminal and Reference Value for BCM".

Terminal and Reference Value for AV Switch

INFOID:0000000004277892

Refer to AV-47, "Terminal and Reference Value for AV Switch".

On Board Self-Diagnosis Function (With Monochrome Display Unit)

INFOID:0000000004277893

DESCRIPTION

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

DIAGNOSIS ITEM

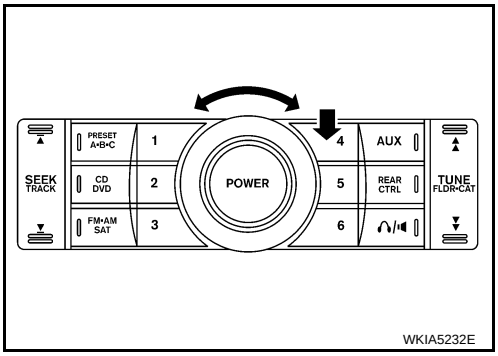
Mode	Item	Description	Reference page
Self-diagnosis	NETWORK CHECK	Check network between control unit and switch connected from display unit via communication line.	AV-120, "Self-Diagnosis Mode"
	PARTS CHECK	• Perform diagnosis and setting of display unit. • Perform self-diagnosis for auto air conditioner system.	AV-120, "Self-Diagnosis Mode"
	VERSION CHECK	Displays version of each unit.	AV-120, "Self-Diagnosis Mode"

Self-Diagnosis Mode

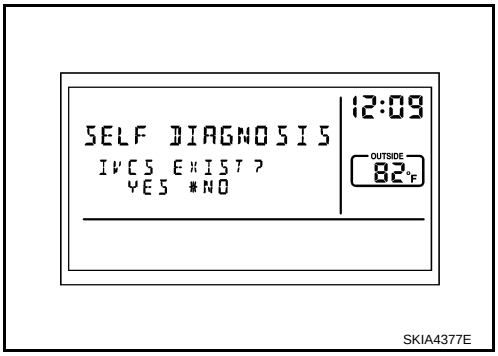
INFOID:0000000004277894

OPERATION PROCEDURES

1. Start the engine.
2. Turn the audio system off.
3. While pressing the “4” switch, turn the volume control dial clockwise or counterclockwise for 30 clicks or more. (When the self-diagnosis mode is started, a short beep will be heard.) If unable to start self-diagnosis mode refer to AV-138, "AV Communication Line Check (With Monochrome Display)".

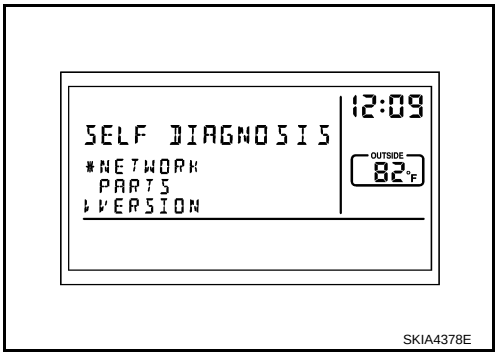


4. Display unit connection check screen.
5. Select each connecting unit (IVCS, CHANGER, SATELLITE RADIO).



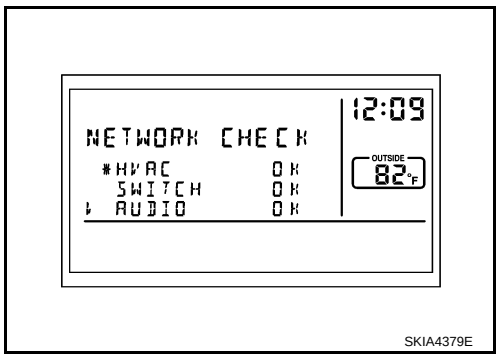
6. Self-diagnosis screen is displayed.
   • Using the joystick, select each item, and perform diagnosis.

CAUTION:
If self-diagnosis cannot be activated, refer to AV-127, "Trouble Diagnosis Chart by Symptom".



NETWORK CHECK

Selecting NETWORK CHECK on self-diagnosis screen displays self-diagnostic results.

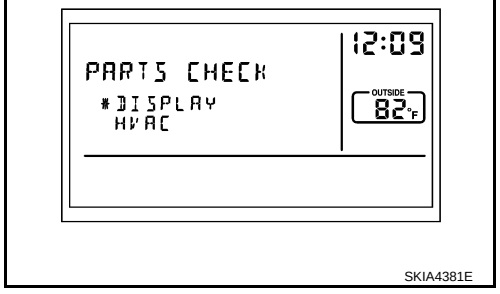


SKIA4379E

Diagnosis item	Contents	DTC return condition	Reference at error
HVAC	OK/NG	Communication error between combination meter and display unit.	"DISPLAY UNIT CIRCUIT INSPECTION"
SWITCH	OK/NG	Communication error between AV switch and display unit.	AV-138, "AV Communication Line Check (With Monochrome Display)"
AUDIO	OK/NG	Communication error between audio and display unit.	AV-134, "Audio Communication Line Check (With Monochrome Display)"

PARTS CHECK

- Selecting PARTS CHECK on self-diagnosis screen displays selection screen.
- Selecting DISPLAY indicates DISPLAY DETAIL screen. Display diagnosis and setting can be performed.
- Selecting HVAC indicates HVAC DETAIL screen. Air conditioner system self-diagnosis can be performed.

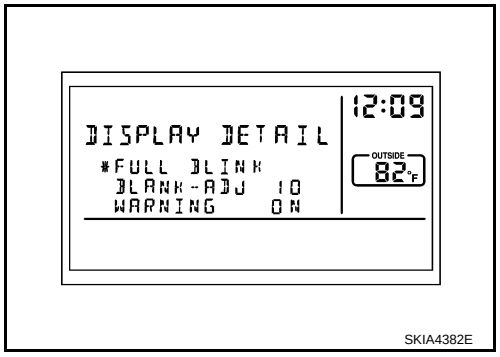


SKIA4381E

DISPLAY DETAIL SCREEN

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

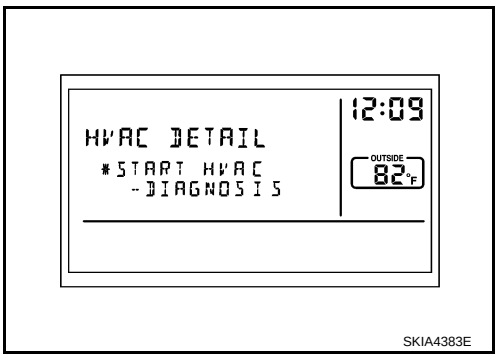
NOTE:
Except an audio screen.



SKIA4382E

HVAC DETAIL SCREEN

Press the joystick, start air conditioner system self-diagnosis. Refer to ATC-45, "A/C System Self-Diagnosis Function".



SKIA4383E

VERSION CHECK

Check ID and version of display, AV switch, and audio.

DISPLAY UNIT CIRCUIT INSPECTION

1.CHECK CONNECTOR

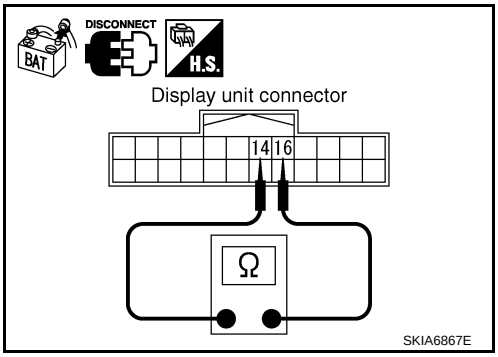
1. Turn ignition switch OFF.
2. Disconnect the battery cable from the negative terminal.
3. Check terminals and connector of display unit for damage, bent or loose connection (unit side and harness side).

OK or NG

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

2.CHECK HARNESS FOR OPEN CIRCUIT

1. Disconnect display unit connector.
2. Check resistance between display unit harness connector terminals.



SKIA6867E

Display unit connector	Terminal		Resistance (Approx.)
M93	14	16	54 - 66 Ω

OK or NG

OK >> Replace display unit. Refer to AV-148, "Removal and Installation".
NG >> Repair harness between display unit and data link connector.

On Board Self-Diagnosis Function (With Color Display)

INFOID:0000000004277895

DESCRIPTION

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

DIAGNOSIS ITEM

Mode	Description
Self-diagnosis (DCU)	Display control unit diagnosis.

Mode		Description
CONFIRMATION/ ADJUSTMENT	Display diagnosis	On display control unit mode, color tone and shading of the screen can be checked by the display of a color bar and a gray scale.
	Vehicle signals	On display control unit mode, analyzes the following vehicle signals: Vehicle speed signal, light signal[NOTE], ignition switch signal, and reverse signal.
CAN DIAG SUPPORT MONITOR		Display status of CAN communication.

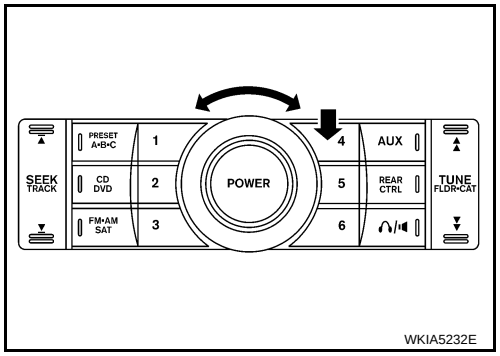
NOTE:
Make the status that is set by D/N function be shown.

Self-Diagnosis Mode (DCU)

INFOID:0000000004277896

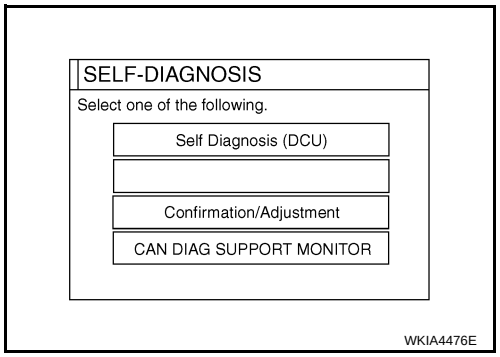
OPERATION PROCEDURE

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. If self-diagnosis mode can not be started refer to AV-138, "AV Communication Line Check (Between Display Control Unit and AV Switch)".



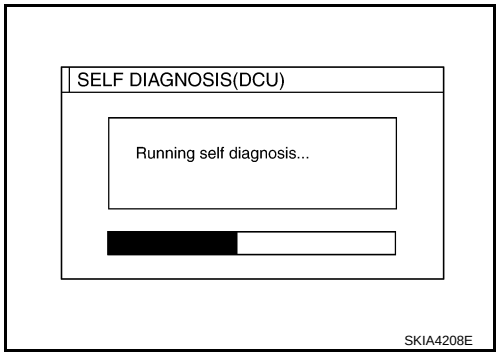
WKIA5232E

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



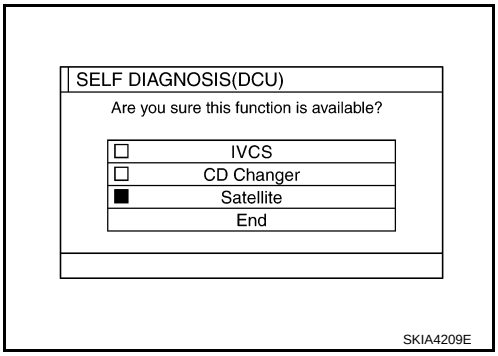
WKIA4476E

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



SKIA4208E

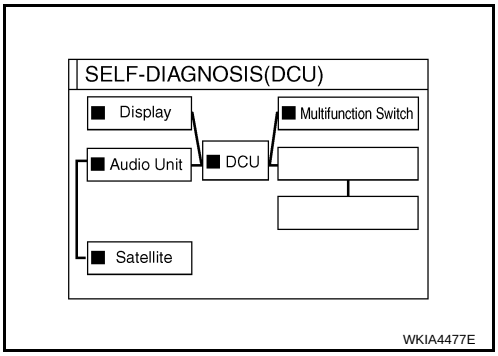
6. When the self-diagnosis completes, optional part confirmation screen will be shown.
   - When connection of an optional part is judged error, a screen to check if the optional part is actually fitted on the vehicle or not will be shown. When fitted, select the switch of the part on the screen and 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.



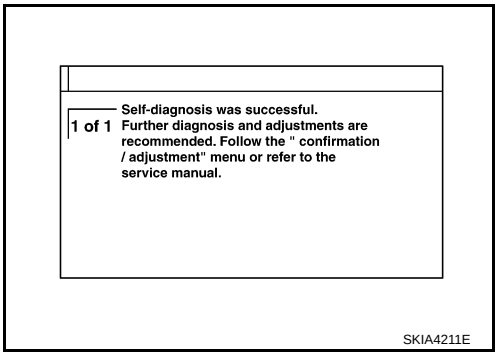
7. On the “SELF DIAGNOSIS” screen, each unit name will be colored according to the diagnosis result, as follows.

   Green : Not malfunctioning.
   Yellow : Cannot be judged by self-diagnosis results.
   Red : Unit is malfunctioning.
   Gray : Diagnosis has not been done.

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



8. Select a switch on the “SELF DIAGNOSIS” screen and comments for the diagnosis results will be shown.
   - When the switch is green, the following comment will be shown. “Self-diagnosis was successful. Further diagnosis and adjustments are recommended. Follow the “confirmation/ adjustment” menu or refer to the service manual.”
   - When the switch is yellow, the following comment will be shown. “Connection to the following unit is abnormal. See the service manual for further details”.
   - When the switch is red, the following comment will be shown. “DCU is abnormal”.



SELF–DIAGNOSIS RESULT

Quick reference table

1. Select a malfunctioning diagnosis No. in the diagnosis result quick reference table.
2. Find estimated malfunctioning system in the diagnosis No. table and perform check by referring to AV-163, "Wiring Diagram - COMM -".
3. Turn the ignition switch OFF and perform self-diagnosis again.

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

*: DCU = Display control unit

CAUTION:

- **When AV switch has a malfunction, you cannot start. Refer to AV-144, "Unable to Operate All of AV Switches (Unable to Start Self-Diagnosis)".**
- **When display unit has a malfunction, you cannot start. Refer to AV-202, "Screen Is Not Shown".**

Self-Diagnosis Codes

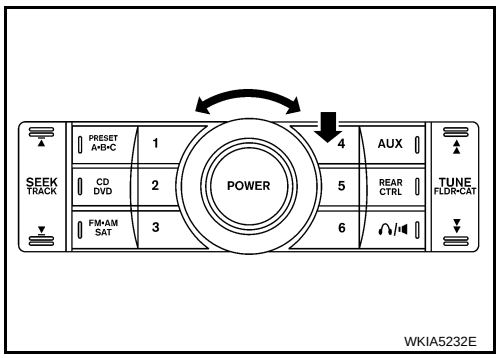
Diagnosis No.	Possible cause	Reference page
1	Display control unit malfunction.	Refer to AV-120.
2	Display communication line between display control unit and display unit.	Refer to AV-139.
3	Audio unit power supply and ground circuit. Audio communication line between display control unit and audio unit.	Refer to AV-136.

Confirmation/Adjustment Mode

INFOID:0000000004277897

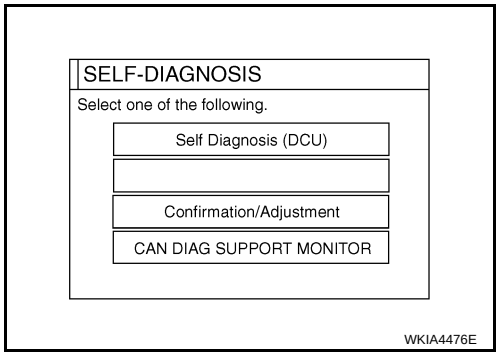
OPERATION PROCEDURE

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. If self-diagnosis mode can not be started refer to AV-136, "Audio Communication Line Check (Between Display Control Unit and Audio Unit)".



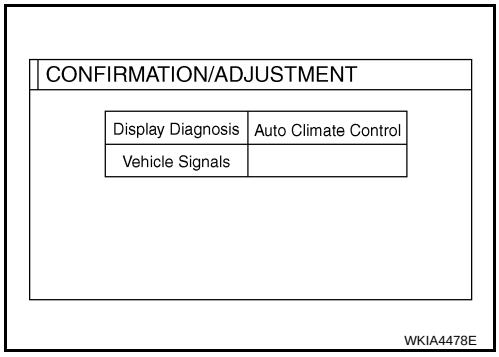
WKIA5232E

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



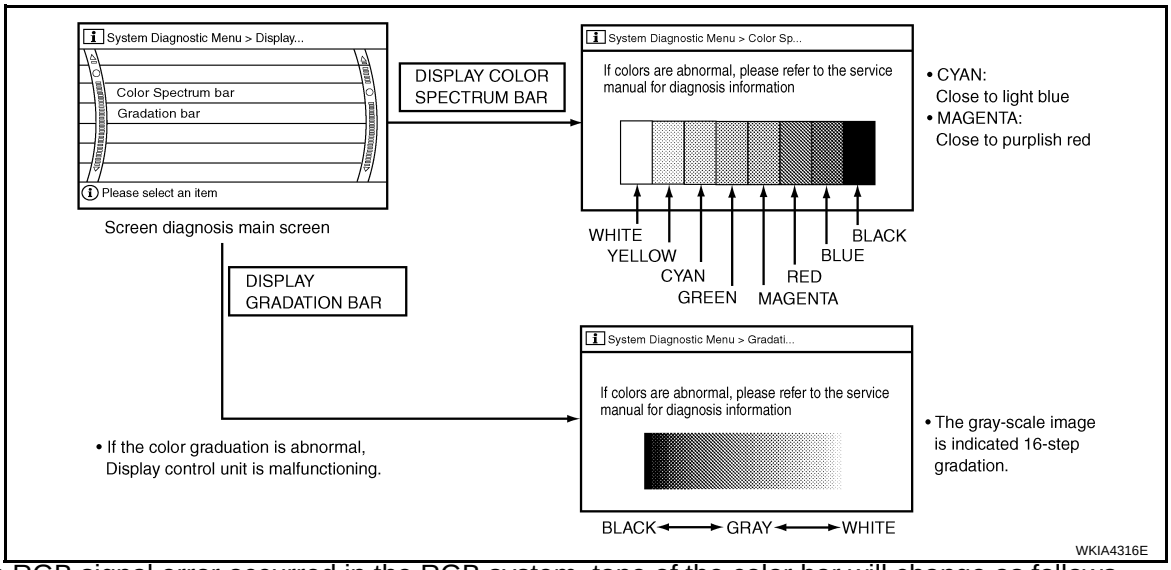
WKIA4476E

5. When “Confirmation/Adjustment” is selected on the initial trouble diagnosis screen, the operation will enter the CONFIRMATION/ ADJUSTMENT mode. In this mode, check and adjustment of each item will become possible.
6. The initial trouble diagnosis screen will be shown, and items “Display Diagnosis”, “Vehicle Signals” and “Auto Climate Control” will become selective.
7. Select each switch on “CONFIRMATION/ADJUSTMENT” screen to display the relevant diagnosis screen.



WKIA4478E

DISPLAY DIAGNOSIS



- When RGB signal error occurred in the RGB system, tone of the color bar will change as follows.

R (red) signal error : Screen looks bluish
G (green) signal error : Screen looks reddish
B (blue) signal error : Screen looks yellowish

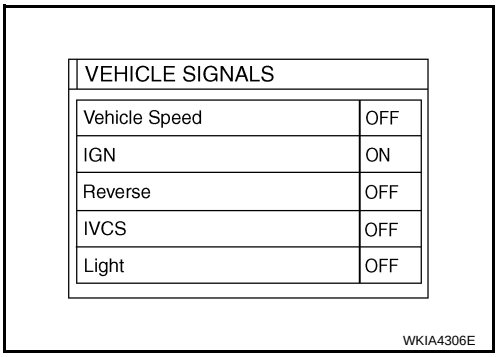
- When the color of the screen looks unusual, refer to AV-141, "Color of RGB Image Is Not Proper (All Screens Look Bluish)", AV-142, "Color of RGB Image Is Not Proper (All Screens Look Reddish)" and AV-143, "Color of RGB Image Is Not Proper (All Screens Look Yellowish)".

VEHICLE SIGNALS

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

CAUTION:
In case of confirming light signal, set D/N mode to ON/OFF of lighting switch (normal setting).
- **OFF: D (Day mode)**
- **ON: N (Night mode)**

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



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

- If vehicle speed is NG, refer to AV-132, "Vehicle Speed Signal Inspection for Display Control Unit".
- If light is NG, refer to AV-134, "Illumination Signal Inspection for Display Control Unit".

- If IGN is NG, refer to AV-134, "Ignition Signal Inspection for Display Control Unit".
- If reverse is NG, refer to AV-187, "Reverse Signal Inspection for Display Control Unit".

AV Switch Self-Diagnosis Function

INFOID:0000000004277898

Refer to AV-49, "AV Switch Self-Diagnosis Function".

Trouble Diagnosis Chart by Symptom

INFOID:0000000004277899

Symptom	Suspect Systems and reference
No screen is shown.	Refer to AV-128, "Power Supply and Ground Circuit Inspection for Monochrome Display" (with monochrome display) or AV-128, "Power Supply and Ground Circuit Inspection for Color Display" (with color display). If above is normal, replace display unit.
Screen does not switch to nighttime mode after the lighting switch is turned to 1st.	Refer to AV-133, "Illumination Signal Inspection (With Monochrome Display)" (with monochrome display) or AV-134, "Illumination Signal Inspection for Display Control Unit" (with color display). If above is normal, replace display unit.
TRIP and FUEL ECON screen do not appear.	Refer to AV-134, "Ignition Signal Inspection (With Monochrome Display)" (with monochrome display) or AV-134, "Ignition Signal Inspection for Display Control Unit" (with color display). If above is normal, replace display unit.
• Trip odometer (DIST) is not added up. • Average vehicle speed (AVG) is not displayed.	Refer to DI-18, "Vehicle Speed Signal Inspection" (with monochrome display) or AV-132, "Vehicle Speed Signal Inspection for Display Control Unit" (with color display). If above is normal, replace display unit.
Average fuel consumption (AVG) is not displayed.	• Refer to DI-18, "Vehicle Speed Signal Inspection" (with monochrome display) or AV-132, "Vehicle Speed Signal Inspection for Display Control Unit" (with color display). • Refer to AV-120, "Self-Diagnosis Mode" (with monochrome display) or AV-145, "CAN Communication Line Check (With Color Display)" (with color display unit). If above is normal, replace display.
Distance to empty (DTE) is not displayed.	• Check if speedometer operates. If it does not operate, go to DI-18, "Vehicle Speed Signal Inspection" (with monochrome display) or AV-132, "Vehicle Speed Signal Inspection for Display Control Unit" (with color display). • Check if fuel gauge operates. If it does not operate, go to DI-19, "Fuel Level Sensor Unit Inspection". • Refer to AV-120, "Self-Diagnosis Mode" (with monochrome display) or AV-145, "CAN Communication Line Check (With Color Display)" (with color display unit). If above is normal, replace display unit.
Door warning screen does not appear.	• Refer to DI-18, "Vehicle Speed Signal Inspection" (with monochrome display) or AV-132, "Vehicle Speed Signal Inspection for Display Control Unit" (with color display). • Refer to AV-120, "Self-Diagnosis Mode" (with monochrome display) or AV-145, "CAN Communication Line Check (With Color Display)" (with color display). If above is normal, replace display unit.
AV switch and all switch operation are not possible. (Do not start self-diagnosis.)	• Refer to AV-131, "Power Supply and Ground Circuit Inspection for AV Switch". • Refer to AV-127, "AV Switch Self-Diagnosis Function". • Refer to AV-138, "AV Communication Line Check (With Monochrome Display)" (with monochrome display) or AV-138, "AV Communication Line Check (Between Display Control Unit and AV Switch)" (with color display). If above is normal, replace display unit.
Audio operation is not possible.	• Refer to AV-127, "AV Switch Self-Diagnosis Function". • Refer to AV-134, "Audio Communication Line Check (With Monochrome Display)" (with monochrome display) or AV-136, "Audio Communication Line Check (Between Display Control Unit and Audio Unit)" (with color display).
Previous vehicle conditions are not stored.	Refer to AV-145, "Previous Vehicle Conditions Are Not Stored".

Power Supply and Ground Circuit Inspection for Monochrome Display

INFOID:0000000004277900

1.CHECK FUSE

Check if the following fuses for display unit are blown.

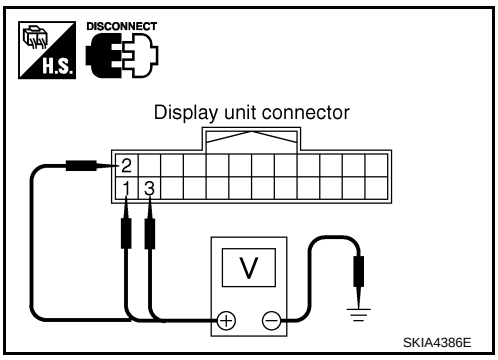
Unit	Power souse	Fuse No.
Display unit	Battery power	19
	Ignition switch ACC or ON	4
	Ignition switch ON or START	12

OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3.

2.CHECK POWER SUPPLY CIRCUIT

1. Disconnect display unit connector.
2. Check voltage between display unit connector and ground.



Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal				
M93	1	Ground	Battery voltage	Battery voltage	Battery voltage
	2	Ground	0V	Battery voltage	Battery voltage
	3	Ground	0V	0V	Battery voltage

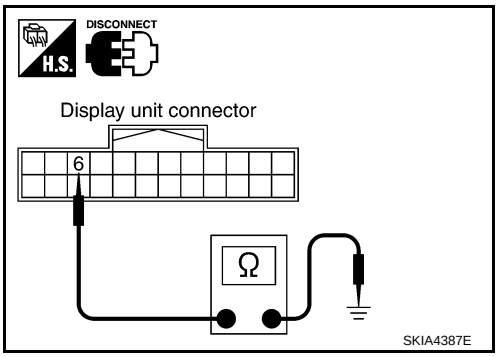
OK or NG

OK >> GO TO 3.
NG >> Check harness for open between display unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between display unit harness connector M93 terminal 6 and ground.

Continuity should exist.



OK or NG

OK >> Inspection End.
NG >> Repair ground harness.

Power Supply and Ground Circuit Inspection for Color Display

INFOID:0000000004277901

1. CHECK POWER SUPPLY AND GROUND CIRCUIT FOR DISPLAY CONTROL UNIT

Check power supply and ground circuit for display control unit. Refer to AV-130, "Power Supply and Ground Circuit Inspection for Display Control Unit".

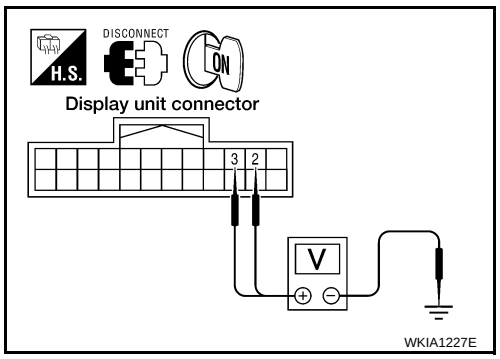
OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning part.

2. CHECK POWER SUPPLY CIRCUIT FOR DISPLAY UNIT

1. Disconnect display unit connector.
2. Turn ignition switch ON.
3. Check voltage between display unit harness connector M93 terminals 2, 3 and ground.

Approx. 9V



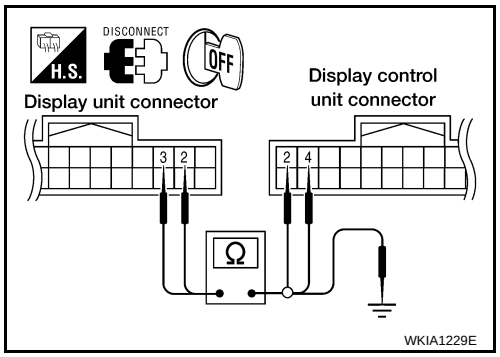
OK or NG

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

3. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display unit connector M93 and display control unit connector M94.
3. Check continuity between display control unit harness connector M94 terminals 2, 4 and display unit harness connector M93 terminals 2, 3.

Terminals				Continuity
Display control unit		Display unit		
Connector	Terminal	Connector	Terminal	
M94	2	M93	2	Yes
	4		3	



4. Check continuity between display unit and ground.

Terminals			Continuity
Display unit		—	
Connector	Terminal		
M93	2	Ground	No
	3		

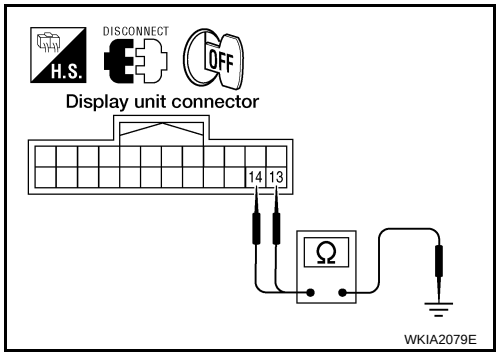
OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".
NG >> Repair harness.

4. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between display unit harness connector M93 terminals 13, 14 and ground.

Continuity should exist.



OK or NG

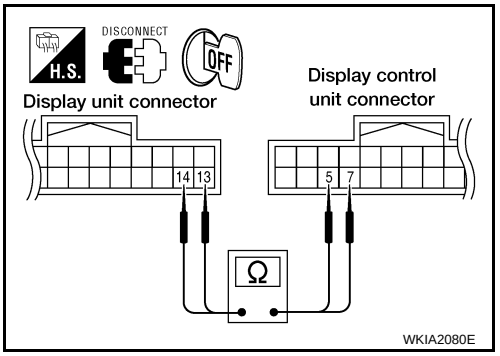
OK >> GO TO 6.
NG >> GO TO 5.

5. CHECK HARNESS

1. Disconnect display control unit connector M94.

2. Check continuity between display unit harness connector M93 terminals 13, 14 and display control unit harness connector M94 terminals 5, 7.

Continuity should exist.



OK or NG

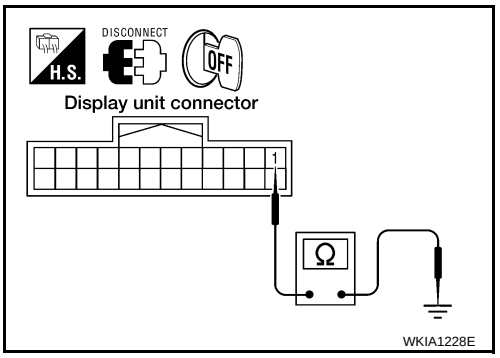
OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".
NG >> Repair harness.

6. CHECK GROUND CIRCUIT

Check continuity between display unit and ground as follows.

1.

Terminals			Ignition switch	Continuity
Connector	Terminal	—		
M93	1	Ground	OFF	Yes



OK or NG

OK >> Inspection End.
NG >> Repair harness.

Power Supply and Ground Circuit Inspection for Display Control Unit

INFOID:0000000004277902

1. CHECK FUSE

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

Terminals		Power source	Fuse No.
Connector	Terminal		
M94	1	Battery power	19
	10	ACC power	4
	12	Ignition switch ON or START	12

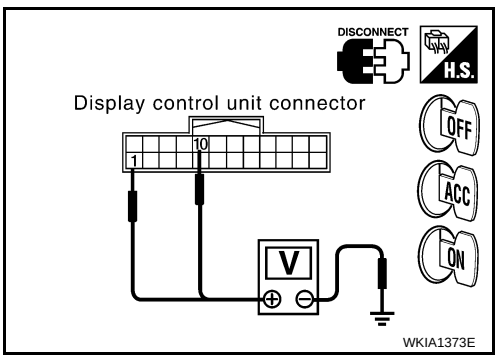
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3.

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect display control unit connector M94.
2. Check voltage between connector terminals and ground as follows.

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal				
M94	1	Ground	Battery voltage	Battery voltage	Battery voltage
	10		0V	Battery voltage	Battery voltage
	12		0V	0V	Battery voltage



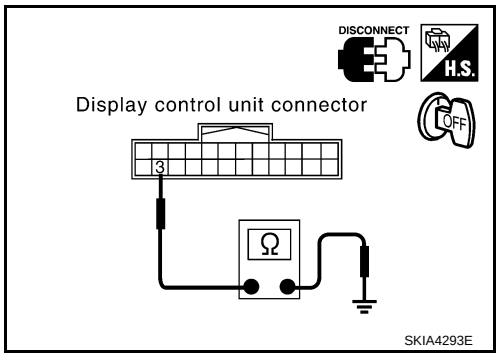
OK or NG

OK >> GO TO 3.
NG >> Check harness for open between display control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between the following display control unit terminal and ground.

Terminals			Ignition switch	Continuity
Connector	Terminal	—		
M94	3	Ground	OFF	Yes



OK or NG

OK >> Inspection End.
NG >> Repair or replace harness.

Power Supply and Ground Circuit Inspection for AV Switch

INFOID:0000000004277903

1.CHECK FUSES

Check the fuses below.

Unit	Power source	Fuse No.
AV switch	Battery power	19
	Ignition switch ACC or ON	4

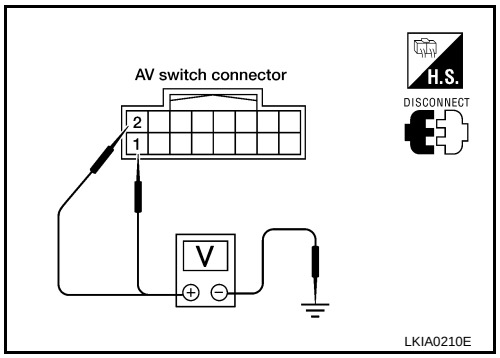
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3.

2.CHECK POWER SUPPLY CIRCUIT

1. Disconnect AV switch connector.
2. Check voltage between AV switch and ground.

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal				
M98	1	Ground	Battery voltage	Battery voltage	Battery voltage
	2	Ground	0V	Battery voltage	Battery voltage



OK or NG

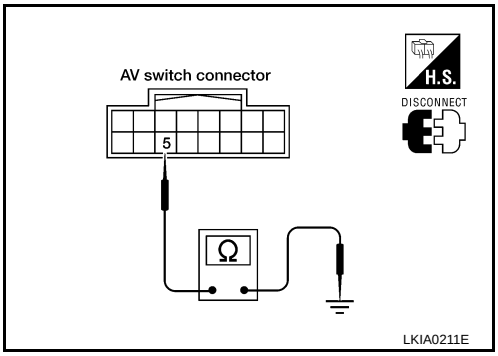
OK >> GO TO 3.
NG >> Check harness for open between AV switch and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.

2. Check continuity between AV switch harness connector M98 terminal 5 and ground.

Continuity should exist.



OK or NG

OK >> Inspection End.
NG >> Repair ground harness.

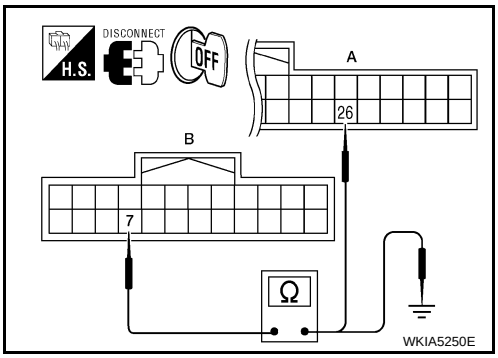
Vehicle Speed Signal Inspection (With Monochrome Display)

INFOID:0000000004277904

1.CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display unit connector M93 and combination meter connector M24.
3. Check continuity between display unit connector M93 (B) terminal 7 and combination meter connector M24 (A) terminal 26.

Continuity should exist.



4. Check continuity between display unit harness connector M93 (A) terminal 7 and ground.

Continuity should not exist.

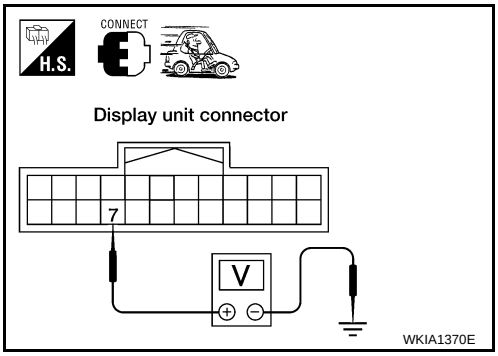
OK or NG

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

2.CHECK VEHICLE SPEED SIGNAL

1. Connect display unit and combination meter connectors.
2. Drive vehicle at a constant speed.
3. Check the signal between display unit harness connector M93 terminal 7 and ground with CONSULT-III or oscilloscope.

7 - Ground **: Refer to AV-113, "Terminal and Reference Value for Display Unit (With Monochrome Display)".**



OK or NG

OK >> Replace display unit. Refer to AV-148, "Removal and Installation".
NG >> Check combination meter system. Refer to DI-18, "Vehicle Speed Signal Inspection".

Vehicle Speed Signal Inspection for Display Control Unit

INFOID:0000000004277905

1.CHECK HARNESS

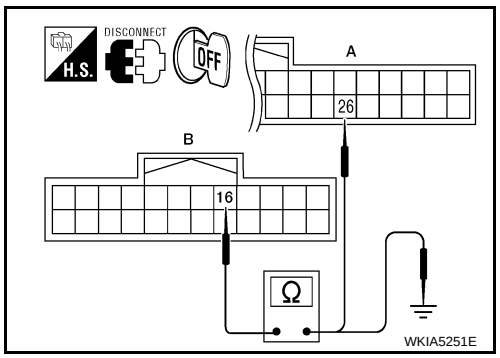
1. Turn ignition switch OFF.
2. Disconnect display control unit connector M94 and combination meter connector M24.

3. Check continuity between combination meter connector M24 (A) terminal 26 and display control unit connector M94 (B) terminal 16.

Continuity should exist.

4. Check continuity between display control unit harness connector M94 (B) terminal 16 and ground.

Continuity should not exist.



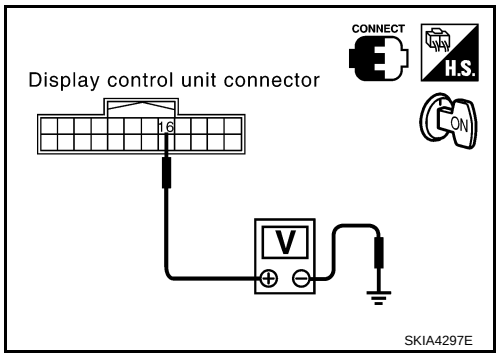
OK or NG

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

2. CHECK 1: VEHICLE SPEED SIGNAL

1. Connect display control unit connector and combination meter connector.
2. Turn ignition switch ON.
3. Check voltage between display control unit harness connector M94 terminal 16 and ground.

Approx. 3.5V or more



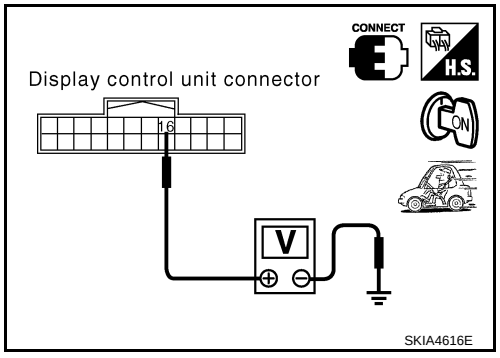
OK or NG

OK >> GO TO 3.
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

3. CHECK 2: VEHICLE SPEED SIGNAL

1. Drive vehicle at a constant speed.
2. Check signal between display control unit harness connector M94 terminal 16 and ground with CONSULT-III or oscilloscope.

16 - Ground : Refer to AV-117, "Terminal and Reference Value for Display Control Unit".



OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".
NG >> Check combination meter system. Refer to DI-18, "Vehicle Speed Signal Inspection".

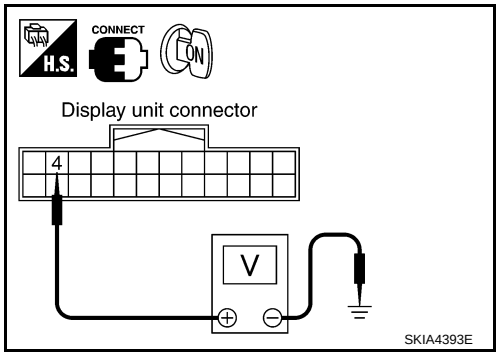
Illumination Signal Inspection (With Monochrome Display)

INFOID:0000000004277906

1. CHECK ILLUMINATION SIGNAL

1. Turn ignition switch ON.
2. Check voltage between display unit and ground.

Terminals			Lighting switch position	
(+)		(–)		
Connector	Terminal		1st or 2nd position	OFF
M93	4	Ground	Battery voltage	Approx. 3V or less



OK or NG

OK >> Replace display unit. Refer to AV-148, "Removal and Installation".

NG >> Check harness for open or short between display unit and IPDM E/R.

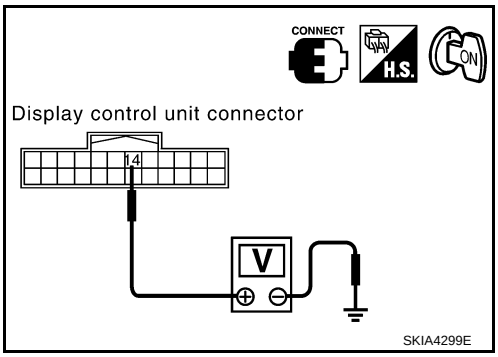
Illumination Signal Inspection for Display Control Unit

INFOID:0000000004277907

1.CHECK ILLUMINATION SIGNAL

1. Turn ignition switch ON.
2. Check voltage between display control unit and ground.

Terminals			Lighting switch position	
(+)		(–)		
Connector	Terminal		1st or 2nd position	OFF
M94	14	Ground	Battery voltage	Approx. 0V



OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".

NG >> Check harness for open or short between display control unit and IPDM E/R.

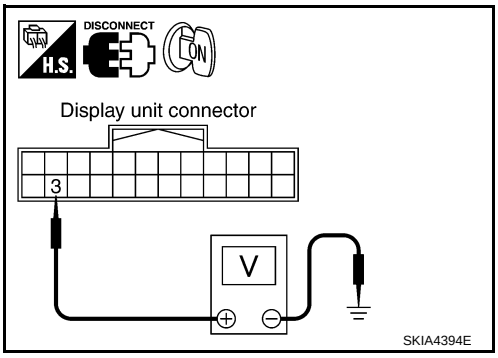
Ignition Signal Inspection (With Monochrome Display)

INFOID:0000000004277908

1.CHECK IGNITION SIGNAL

1. Disconnect the display unit connector.
2. Turn ignition switch ON.
3. Check voltage between display unit harness connector M93 terminal 3 and ground.

Battery voltage should exist.



OK or NG

OK >> Replace display unit. Refer to AV-148, "Removal and Installation".

NG >> Check harness for open or short between display unit and fuse.

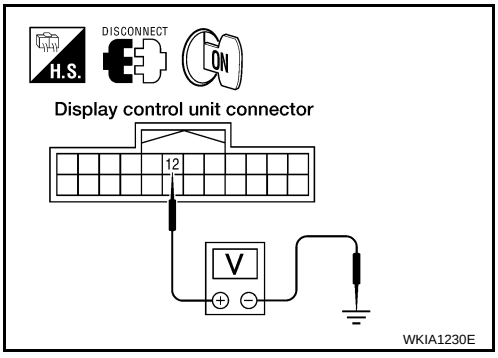
Ignition Signal Inspection for Display Control Unit

INFOID:0000000004277909

1.CHECK IGNITION SIGNAL

1. Disconnect display control unit connector M94.
2. Turn ignition switch ON.
3. Check voltage between display control unit harness connector M94 terminal 12 and ground.

Battery voltage should exist.



OK or NG

OK >> Replace display control unit. Refer to .

NG >> Check harness for open or short between display control unit and fuse.

Audio Communication Line Check (With Monochrome Display)

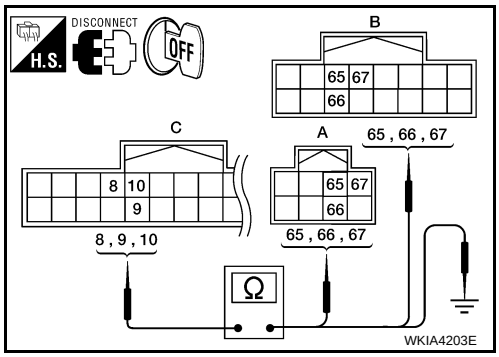
INFOID:0000000004277910

1.CHECK HARNESS

1. Turn ignition switch OFF.

2. Disconnect audio unit connector M45 and display unit connector M93.
3. Check continuity between audio unit and display unit.

C		A (Base system) B (Mid level system)		Continuity
Connector	Terminal	Connector	Terminal	
Display Unit: M93	8	Audio unit: M45	65	Yes
	10		66	
	9		67	



4. Check continuity between display unit and ground.

Terminals			Continuity
C		Ground	
Connector	Terminal		
Display unit: M93	8		No
	10		

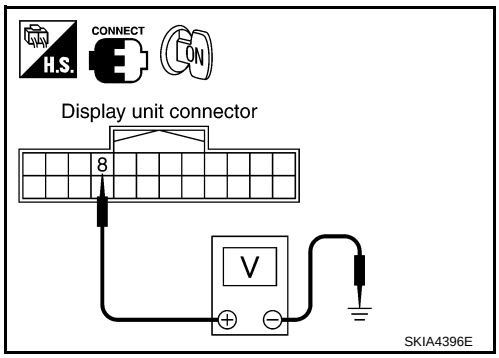
OK or NG

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

2. CHECK AUDIO TX COMMUNICATION SIGNAL

1. Connect display unit connector.
2. Turn ignition switch ON.
3. Check voltage between display unit harness connector M93 terminal 8 and ground.

Voltage : Approx. 3.5V



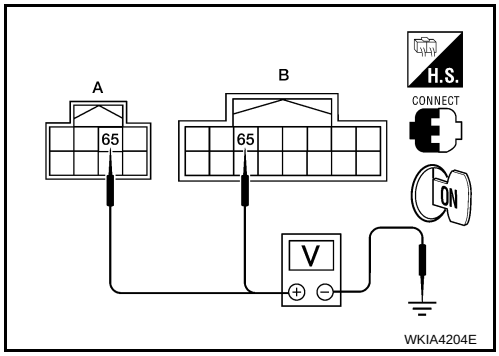
OK or NG

OK >> GO TO 3.
NG >> Replace display unit. Refer to AV-148, "Removal and Installation".

3. CHECK AUDIO RX COMMUNICATION SIGNAL

1. Turn ignition switch OFF.
2. Connect audio unit connector.
3. Turn ignition switch ON.
4. Check voltage between audio unit harness connector M45 [(A) with base system or (B) with mid level system] terminal 65 and ground.

Voltage : Approx. 3.5V



OK or NG

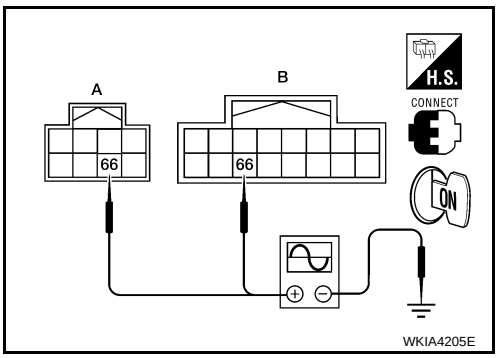
OK >> GO TO 4.
NG >> Replace audio unit. Refer to AV-72, "Removal and Installation".

4. CHECK AUDIO TX COMMUNICATION SIGNAL

1. Turn ignition switch ON.

2. Check the signal between audio unit harness connector M45 [(A) with base system or (B) with mid level system] terminal 66 and ground with CONSULT-III or oscilloscope.

66 - Ground : **Refer to AV-113, "Terminal and Reference Value for Display Unit (With Monochrome Display)".**



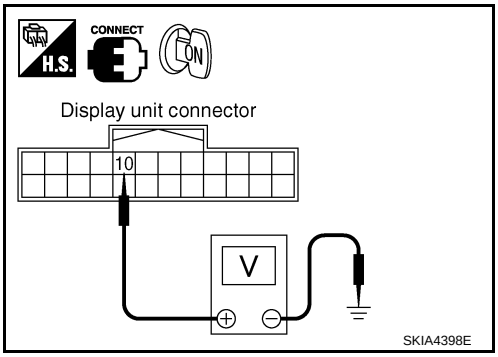
OK or NG

OK >> GO TO 5.
NG >> Replace audio unit. Refer to AV-72, "Removal and Installation".

5. CHECK AUDIO RX COMMUNICATION SIGNAL

1. Turn ignition switch ON.
2. Check the signal between display unit harness connector M93 terminal 10 and ground with CONSULT-III or oscilloscope.

10 - Ground : **Refer to AV-113, "Terminal and Reference Value for Display Unit (With Monochrome Display)".**



OK or NG

OK >> Inspection End.
NG >> Replace display unit. Refer to AV-148, "Removal and Installation".

Audio Communication Line Check (Between Display Control Unit and Audio Unit)

INFOID:0000000004277911

1. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit for audio unit. Refer to AV-53, "Power Supply Circuit Inspection".

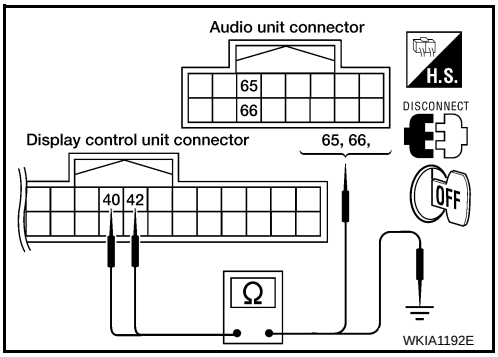
OK or NG

OK >> GO TO 2.
NG >> Check the malfunctioning parts.

2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M45 and display control unit connector M95.
3. Check continuity between audio unit and display control unit.

Terminals				Continuity
Display control unit		Audio unit		
Connector	Terminal	Connector	Terminal	
M95	40	M45	65	Yes
	42		66	



4. Check continuity between display control unit and ground.

Terminals			Continuity
Display control unit		—	
Connector	Terminal		
M95	40	Ground	No
	42		

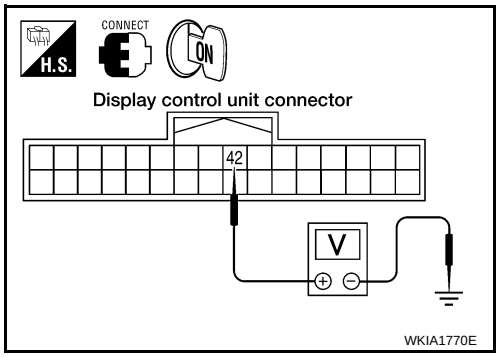
OK or NG

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

3. CHECK 1: AUDIO-TX COMMUNICATION SIGNAL

1. Connect display control unit connector M95.
2. Turn ignition switch ON.
3. Check voltage between display control unit harness connector M95 terminal 42 and ground.

Approx. 3.5V or more.



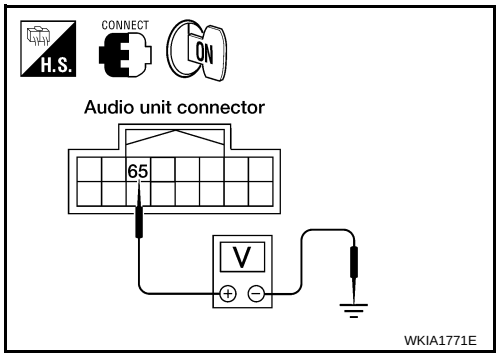
OK or NG

OK >> GO TO 4.
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

4. CHECK 2: AUDIO-RX COMMUNICATION SIGNAL

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M95.
3. Connect audio unit connector.
4. Turn ignition switch ON.
5. Check voltage between audio unit harness connector M45 terminal 65 and ground.

Approx. 3.5V or more.



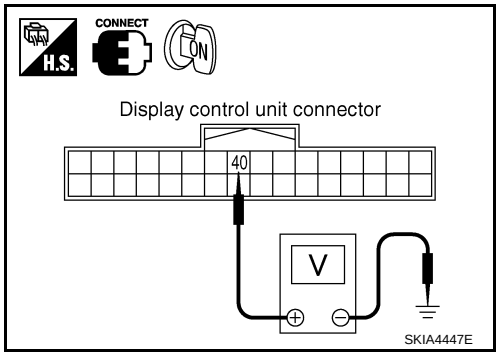
OK or NG

OK >> GO TO 5.
NG >> Replace audio unit. Refer to AV-72, "Removal and Installation".

5. CHECK 3: AUDIO-TX COMMUNICATION SIGNAL

1. Turn ignition switch OFF.
2. Connect display control unit connector.
3. Turn ignition switch ON.
4. Check signal between display control unit harness connector M95 terminal 40 and ground with CONSULT-III or oscilloscope.

40 - Ground **: Refer to AV-117, "Terminal and Reference Value for Display Control Unit".**



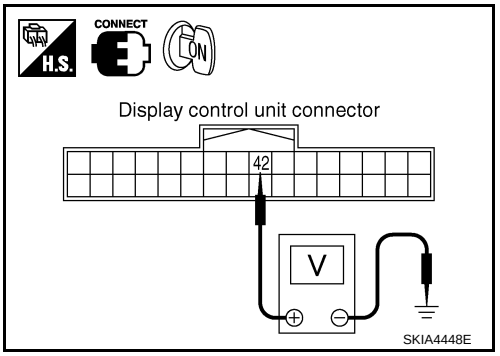
OK or NG

OK >> GO TO 6.
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

6. CHECK 4: AUDIO-RX COMMUNICATION SIGNAL

1. Turn ignition switch ON.

2. Check signal between display control unit harness connector M95 terminal 42 and ground with CONSULT-III or oscilloscope.



42 - Ground	**: Refer to AV-117, "Terminal and Reference Value for Display Control Unit".**

OK or NG

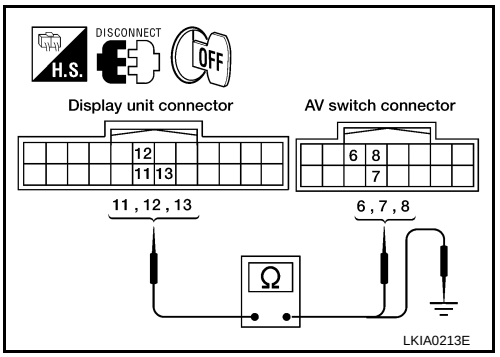
OK >> Inspection End.
NG >> Replace audio unit. Refer to AV-72, "Removal and Installation".

AV Communication Line Check (With Monochrome Display)

INFOID:0000000004277912

1.CHECK AV SWITCH CIRCUIT

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



Terminals				Continuity
Display unit		AV switch		
Connector	Terminal	Connector	Terminal	
M93	11	M98	6	Yes
	13		8	
	12		7	

4. Check continuity between display unit and ground.

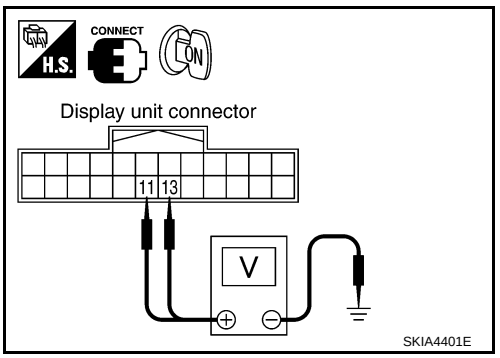
Terminals			Continuity
Connector	Terminal	Terminal	
M93	11	Ground	No
	13		

OK or NG

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

2.CHECK AV COMMUNICATION SIGNAL

1. Connect display unit connector and AV switch connector.
2. Turn ignition switch ON.
3. Check the signal between display unit harness connector M93 terminals 11, 13 and ground with CONSULT-III or oscilloscope.



11, 13 - Ground	**: Refer to AV-113, "Terminal and Reference Value for Display Unit (With Monochrome Display)".**

OK or NG

OK >> Replace AV switch. Refer to AV-72, "Removal and Installation".
NG >> Replace display unit. Refer to .

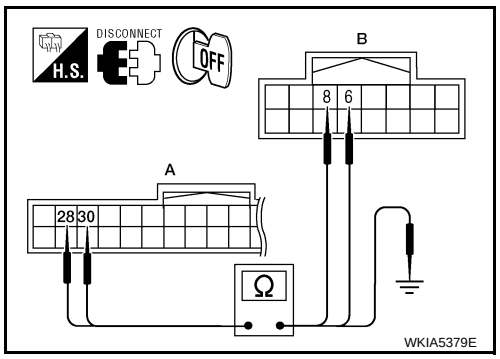
AV Communication Line Check (Between Display Control Unit and AV Switch)

INFOID:0000000004277913

1.CHECK AV SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M95 (A) and AV switch connector M98 (B).
3. Check continuity between display control unit and AV switch.

Terminals				Continuity
(A)		(B)		
Connector	Terminal	Connector	Terminal	
M95	28	M98	6	Yes
	30		8	



4. Check continuity between display control unit and ground.

Terminals			Continuity
Display control unit		—	
Connector	Terminal		
M95	28	Ground	No
	30		

OK or NG

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

2.CHECK SELF-DIAGNOSIS OF DCU

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

OK or NG

OK >> Inspection End.
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

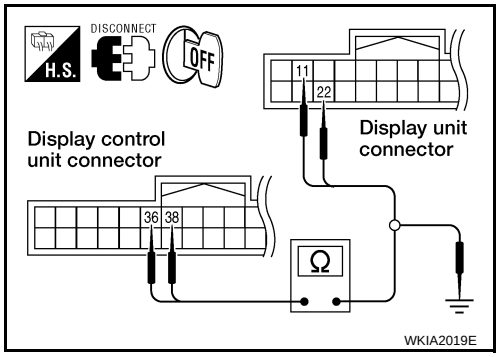
Display Communication Line Check (Between Display Control Unit and Display Unit)

INFOID:0000000004277914

1.CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display unit connector M93 and display control unit connector M95.
3. Check continuity between display control unit and display unit.

Terminals				Continuity
Display control unit		Display unit		
Connector	Terminal	Connector	Terminal	
M95	36	M93	11	Yes
	38		22	



4. Check continuity between display control unit and ground.

Terminals			Continuity
Display control unit		—	
Connector	Terminal		
M95	36	Ground	No
	38		

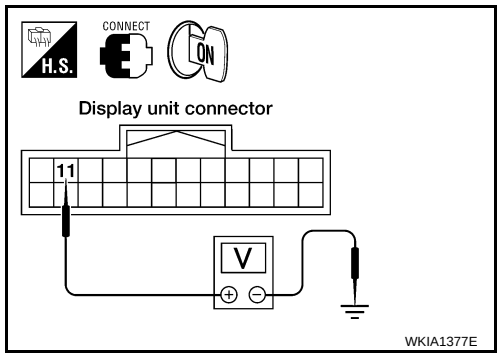
OK or NG

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

2. CHECK 1: COMMUNICATION SIGNAL (DCU–DSP)

1. Connect display unit connector.
2. Turn ignition switch ON.
3. Check voltage between display unit harness connector M93 terminal 11 and ground.

Approx. 3.5V or more.



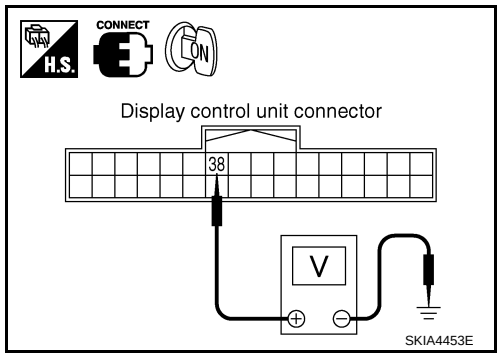
OK or NG

OK >> GO TO 3.
NG >> Replace display unit. Refer to AV-148, "Removal and Installation".

3. CHECK 2: COMMUNICATION SIGNAL (DSP–DCU)

1. Connect display control unit connector.
2. Turn ignition switch ON.
3. Check voltage between display control unit harness connector M95 terminal 38 and ground.

Approx. 3.5V or more.



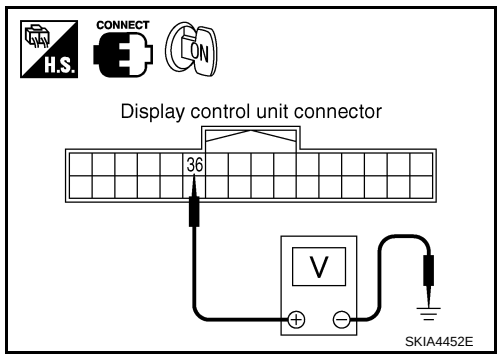
OK or NG

OK >> GO TO 4.
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

4. CHECK 3: COMMUNICATION SIGNAL (DCU–DSP)

1. Turn ignition switch ON.
2. Check signal between display control unit harness connector M95 terminal 36 and ground with CONSULT-III or oscilloscope.

36 - Ground **: Refer to AV-117, "Terminal and Reference Value for Display Control Unit".**



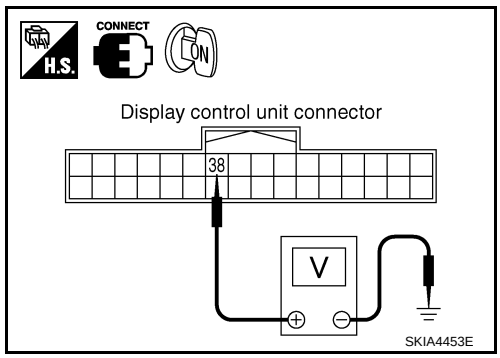
OK or NG

OK >> GO TO 5.
NG >> Replace display control unit. Refer to .

5. CHECK 4: COMMUNICATION SIGNAL (DSP–DCU)

1. Turn ignition switch ON.
2. Check signal between display control unit harness connector M95 terminal 38 and ground with CONSULT-III or oscilloscope.

38 - Ground **: Refer to AV-117, "Terminal and Reference Value for Display Control Unit".**



OK or NG

OK >> Inspection End.
NG >> Replace display unit. Refer to AV-148, "Removal and Installation".

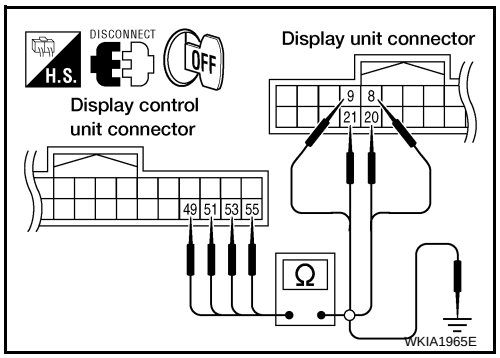
Operating Screen for Audio and A/C Is Not Displayed

INFOID:0000000004277915

1.CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M95 and display unit connector M93.
3. Check continuity between display control unit harness connector M95 terminal 49, 51, 53, 55 and display unit harness connector M93 terminal 21, 9, 20, 8.

Continuity should exist.



4. Check continuity between display control unit harness connector M95 terminal 55 and display unit harness connector M93 terminal 8.

Continuity should exist.

5. Check continuity between display control unit harness connector M95 terminal 49, 51, 53, 55 and ground.

Continuity should not exist.

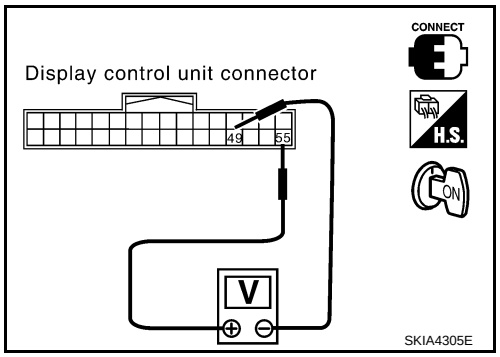
OK or NG

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

2.CHECK HORIZONTAL SYNCHRONIZATION SIGNAL

1. Connect display control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between display control unit connector M95 terminals 55 and 49 with CONSULT-III or oscilloscope.

55 - 49 : Refer to AV-117, "Terminal and Reference Value for Display Control Unit".



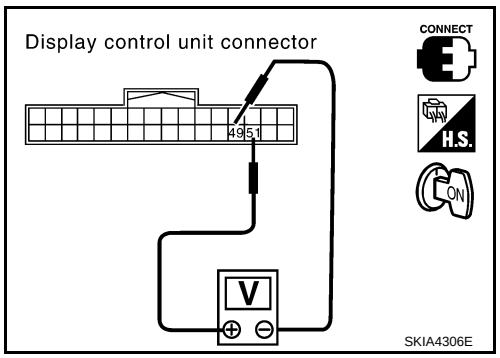
OK or NG

OK >> GO TO 3.
NG >> Replace display unit. Refer to AV-148, "Removal and Installation".

3.CHECK RGB AREA SIGNAL

1. Press the “TRIP” button.
2. Check signal between display control unit connector M95 terminals 51 and 49 with CONSULT-III or oscilloscope.

51 - 49 : Refer to AV-117, "Terminal and Reference Value for Display Control Unit".



OK or NG

OK >> Replace display unit. Refer to .
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

Color of RGB Image Is Not Proper (All Screens Look Bluish)

INFOID:0000000004277916

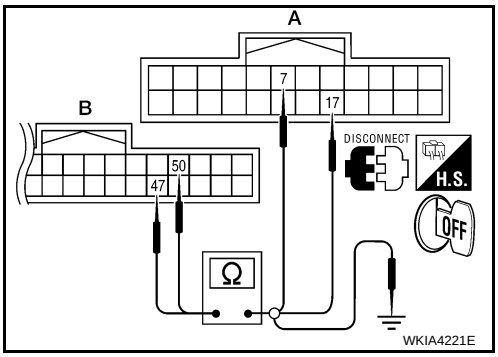
1.CHECK RGB HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M95 and display unit connector M93.
3. Check continuity between display control unit and display unit.

4. Check continuity between display control unit and ground.

- **When the screen looks bluish.**

Terminals				Continuity
B		A		
Connector	Terminal	Connector	Terminal	
Display control unit: M95	50	Display unit: M93	17	Yes
	47		7	



Terminals			Continuity
B		—	
Connector	Terminal		
Display control unit: M95	50	Ground	No
	47		

OK or NG

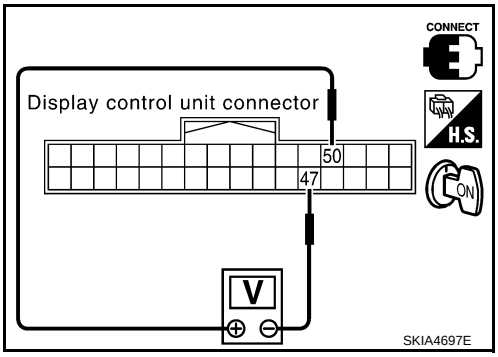
OK >> GO TO 2.
NG >> Repair harness or connector.

2.CHECK RGB SIGNAL

1. Connect display control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Display “Color bar” by “CONFIRMATION/ADJUSTMENT” mode.
4. Check the following with CONSULT-III or oscilloscope.

- **When the screen looks bluish.**
  Voltage signal between display control unit connector M95 terminal 50 and 47.

50 - 47 **: Refer to AV-117, "Terminal and Reference Value for Display Control Unit".**



OK or NG

OK >> Replace display unit. Refer to AV-148, "Removal and Installation".
NG >> Replace display control unit. Refer to .

Color of RGB Image Is Not Proper (All Screens Look Reddish)

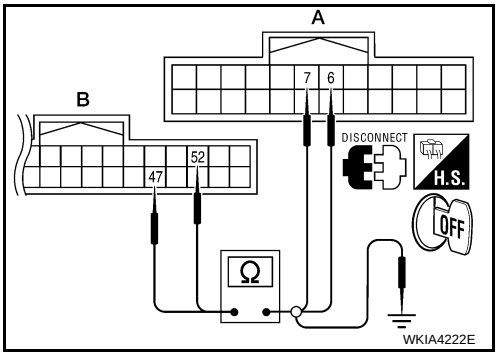
INFOID:0000000004277917

1.CHECK RGB HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M95 and display unit connector M93.
3. Check continuity between display control unit and display unit.
4. Check continuity between display control unit and ground.

- **When the screen looks reddish.**

Terminals				Continuity
B		A		
Connector	Terminal	Connector	Terminal	
Display control unit: M95	52	Display unit: M93	6	Yes
	47		7	



Terminals			Continuity
B		—	
Connector	Terminal		
Display control unit: M95	52	Ground	No
	47		

OK or NG

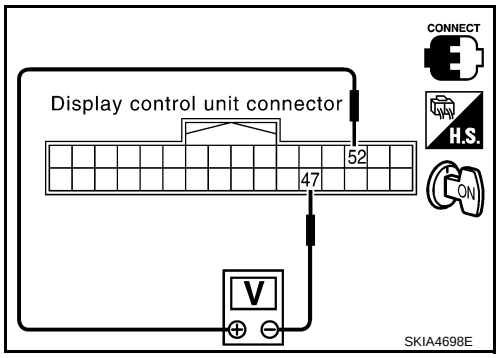
OK >> GO TO 2.
NG >> Repair harness or connector.

2.CHECK RGB SIGNAL

1. Connect display control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Display “Color bar” by “CONFIRMATION/ADJUSTMENT” mode.
4. Check the following with CONSULT-III or oscilloscope.

- **When the screen looks reddish.**
  Voltage signal between display control unit connector M95 terminal 52 and 47.

52 - 47	**: Refer to AV-117, "Terminal and Reference Value for Display Control Unit".**



OK or NG

OK >> Replace display unit. Refer to AV-148, "Removal and Installation".
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

Color of RGB Image Is Not Proper (All Screens Look Yellowish)

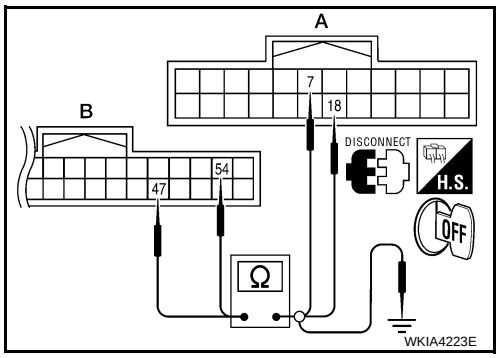
INFOID:0000000004277918

1.CHECK RGB HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M95 and display unit connector M93.
3. Check continuity between display control unit and display unit.
4. Check continuity between display control unit and ground.

- **When the screen looks yellowish.**

Terminals				Continuity
B		A		
Connector	Terminal	Connector	Terminal	
Display control unit: M95	54	Display unit: M93	18	Yes
	47		7	



Terminals			Continuity
B		—	
Connector	Terminal		
Display control unit: M95	54	Ground	No
	47		

OK or NG

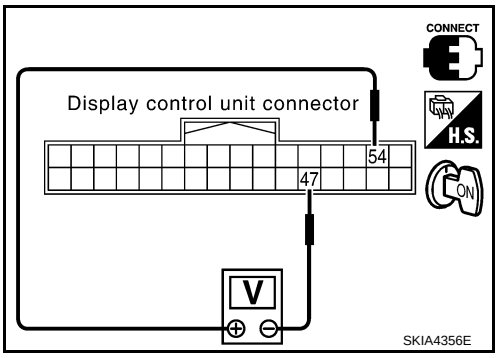
OK >> GO TO 2.
NG >> Repair harness or connector.

2.CHECK RGB SIGNAL

1. Connect display control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Display “Color bar” by “CONFIRMATION/ADJUSTMENT” mode.
4. Check the following with CONSULT-III or oscilloscope.

- **When the screen looks yellowish.**
  Voltage signal between display control unit connector M95 terminal 54 and 47.

54 - 47	**: Refer to AV-117, "Terminal and Reference Value for Display Control Unit".**



OK or NG

OK >> Replace display unit. Refer to AV-148, "Removal and Installation".
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

No Warning Message Is Displayed (Combination Meter Warning Lamp Illuminates)

INFOID:0000000004277919

1. DISPLAY CONDITION CHECK

Check display conditions of each warning screen.

Warning screen	Display condition
DOOR OPEN	Vehicle is running [approx. 5 km/h (3 MPH) or faster] and door ajar of any of the doors is detected.
LIFTGATE OPEN	Vehicle is running [approx. 5 km/h (3 MPH) or faster] and liftgate ajar is detected.

Have conditions been met to display warning screen?

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

2. SELF-DIAGNOSIS CHECK

Perform self-diagnosis. Refer to AV-123, "Self-Diagnosis Mode (DCU)".

Is self-diagnosis result OK?

YES >> Replace combination meter. Refer to DI-22, "Combination Meter".
NO >> Check the malfunctioning parts.

Unable to Operate All of AV Switches (Unable to Start Self-Diagnosis)

INFOID:0000000004277920

1. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit. Refer to AV-183, "Power Supply and Ground Circuit Inspection for AV Switch".

OK or NG

OK >> GO TO 2.
NG >> Check the malfunctioning parts.

2. AV SWITCH SELF-DIAGNOSIS

AV switch self-diagnosis. Refer to AV-180, "AV Switch Self-Diagnosis Function".

OK or NG

OK >> GO TO 3.
NG >> Check the malfunctioning parts.

3. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit. Refer to AV-130, "Power Supply and Ground Circuit Inspection for Display Control Unit".

OK or NG

OK >> GO TO 4.
NG >> Check the malfunctioning parts.

4.CHECK COMMUNICATION LINE

Check communication line. Refer to AV-138, "AV Communication Line Check (Between Display Control Unit and AV Switch)".

OK or NG

OK >> Replace AV switch. Refer to AV-72, "Removal and Installation".
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

Previous Vehicle Conditions Are Not Stored

INFOID:0000000004277921

1.CHECK BATTERY POWER

Check display control unit battery power.
Refer to AV-130, "Power Supply and Ground Circuit Inspection for Display Control Unit".

OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".
NG >> Check display control unit battery power system harness.

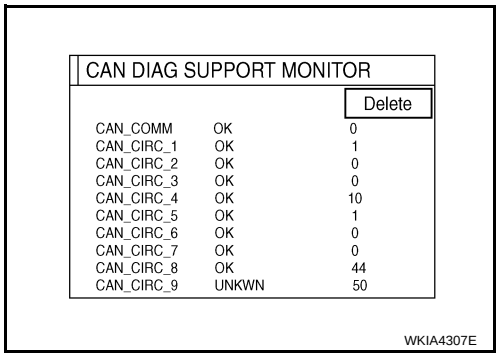
CAN Communication Line Check (With Color Display)

INFOID:0000000004277922

1.CHECK MONITOR DESCRIPTION

1. Start display control unit self-diagnosis. Refer to AV-123, "Self-Diagnosis Mode (DCU)".
2. Select “CAN DIAG SUPPORT MONITOR”. Refer to AV-179, "CAN Diagnostic Support Monitor".

>> GO TO LAN-42, "CAN System Specification Chart" after checking the state of "CAN DIAG SUPPORT MONITOR" displayed on the screen.



Steering Wheel Audio Control Switch Check (Without Bluetooth)

INFOID:0000000004277923

1.AV SWITCH SELF-DIAGNOSIS FUNCTION CHECK

1. Start AV switch self-diagnosis function. Refer to AV-127, "AV Switch Self-Diagnosis Function".
2. Operate steering wheel audio control switch.

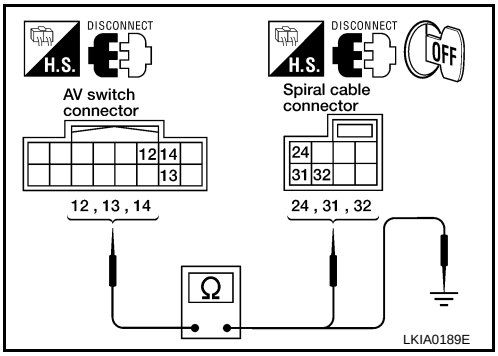
Does steering wheel audio control switch operate normally?

OK >> Inspection End.
NG >> GO TO 2.

2.CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect AV switch connector M98 and spiral cable connector M30.
3. Check continuity between spiral cable harness connector terminals and AV switch harness connector terminals.

Terminals				Continuity
Spiral cable		AV switch		
Connector	Terminal	Connector	Terminal	
M30	32	M98	13	Yes
	31		14	
	24		12	



4. Check continuity between AV switch and ground.

Terminals			Continuity
AV switch (+)		(–)	
Connector	Terminal		
M98	12	Ground	No
	13		
	14		

OK or NG

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

3.SPIRAL CABLE CHECK

Check spiral cable harness.

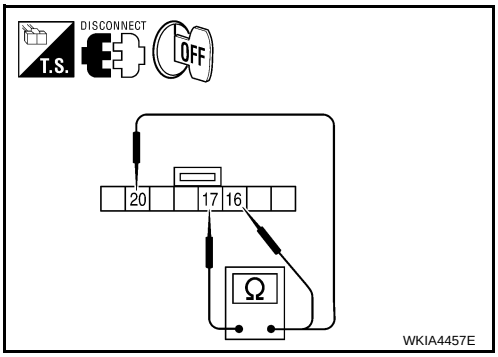
OK or NG

OK >> GO TO 4.
NG >> Replace spiral cable. Refer to SRS-36.

4.CHECK STEERING WHEEL AUDIO CONTROL SWITCH RESISTANCE

Check resistance between steering wheel audio control switch terminals.

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



OK or NG

OK >> Replace AV switch. Refer to AV-72, "Removal and Installation".
NG >> Replace steering wheel audio control switch. Refer to AV-72, "Removal and Installation".

Steering Switch Check (with bluetooth)

INFOID:0000000004277924

1.AV SWITCH SELF-DIAGNOSIS FUNCTION CHECK

1. Start AV switch self-diagnosis function. Refer to AV-49, "AV Switch Self-Diagnosis Function" .
2. Operate steering switch.

Does steering switch operate normally?

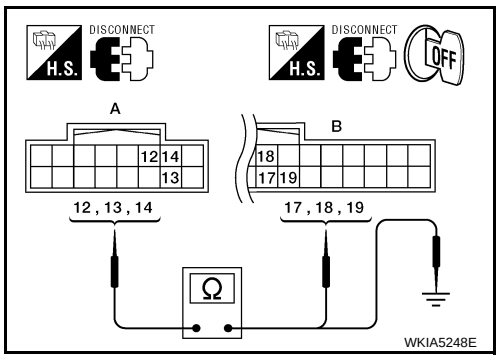
YES >> Inspection End.
NO >> GO TO 2.

2.CHECK HARNESS

1. Turn ignition switch OFF.

2. Disconnect AV switch connector and bluetooth control unit connector.
3. Check continuity between AV switch connector M98 (A) terminals 13, 14, and 12 and bluetooth control unit connector B506 (B) terminals 17, 18, and 19.

Terminal No.				Continuity
AV switch (A)		Bluetooth control unit (B)		
Connector	Terminal	Connector	Terminal	
M98	12	B506	17	Yes
	13		18	
	14		19	



4. Check continuity between AV switch and ground.

Terminal No.			Continuity
AV switch (+) (A)		(–)	
Connector	Terminal		
M98	12	Ground	No
	13		
	14		

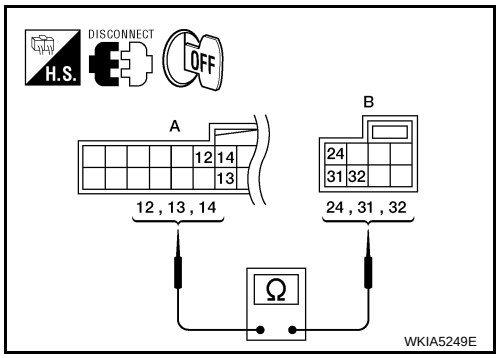
OK or NG

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

3. CHECK HARNESS

1. Disconnect spiral cable connector.
2. Check continuity between bluetooth control unit connector B506 (A) terminals 12, 13, and 14 and spiral cable connector M30 (B) terminals 24, 32, and 31.

Terminals				Continuity
Bluetooth control unit (A)		Spiral cable (B)		
Connector	Terminal	Connector	Terminal	
B506	12	M30	24	Yes
	13		32	
	14		31	



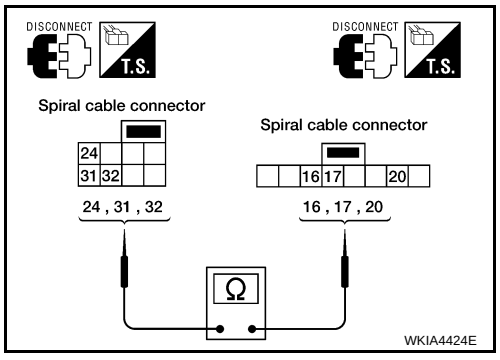
OK or NG

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

4. SPIRAL CABLE CHECK

Check continuity between spiral cable connector terminals.

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



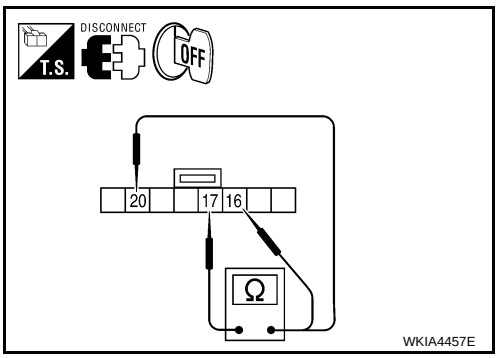
OK or NG

OK >> GO TO 5.
NG >> Replace spiral cable. Refer to SRS-36 .

5. CHECK STEERING SWITCH RESISTANCE

Check resistance between steering wheel audio control switch terminals.

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



OK or NG

OK >> Inspection End.
NG >> Replace steering switch. Refer to AV-72, "Removal and Installation".

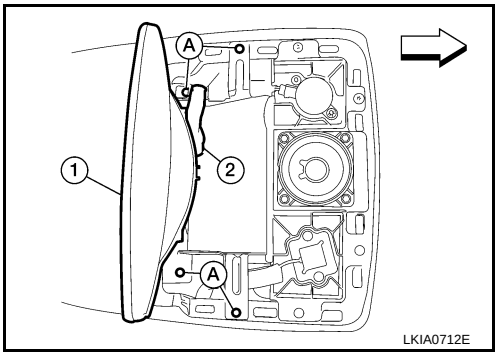
Removal and Installation

INFOID:0000000004277925

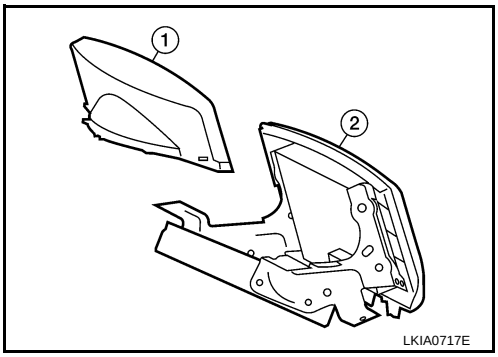
DISPLAY UNIT

Removal

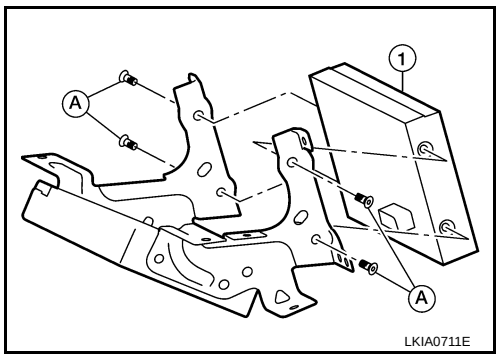
1. Remove cluster lid D. Refer to IP-13, "Cluster Lid D".
2. Remove the display unit assembly (1) by removing the screws (A) and disconnecting the harness connectors (2).



3. Remove the rear cover (1) and front cover (2).



4. Remove the screws (A) and the display screen (1).

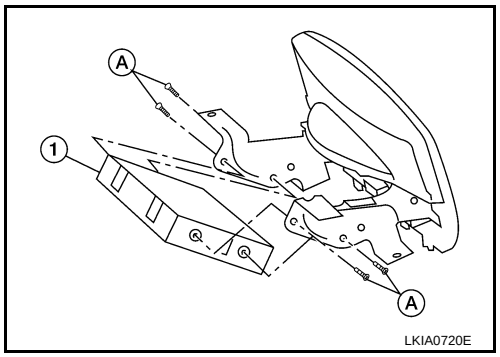


Installation
Installation is in reverse order of removal.

DISPLAY CONTROL UNIT

Removal

1. Remove display unit assembly. Refer to "DISPLAY UNIT".
2. Remove the screws (A) and the display control unit (1).



Installation
Installation is in reverse order of removal.

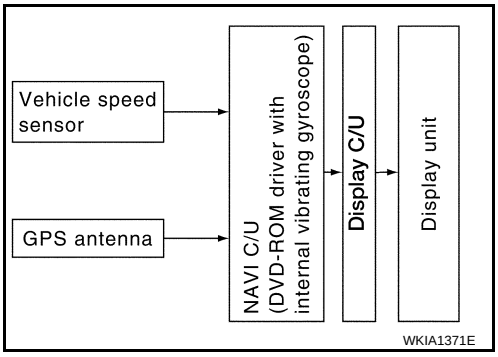
NAVIGATION SYSTEM

System Description

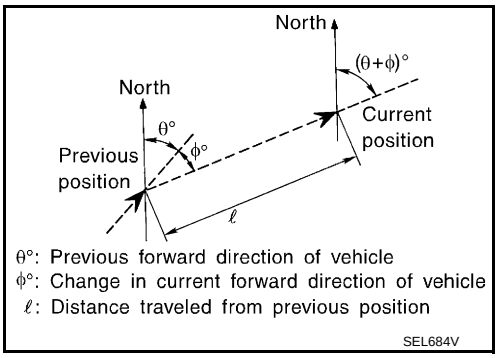
INFOID:0000000004277926

NOTE:
Refer to NAVI System Owner's Manual for system operation.

The navigation system periodically calculates the vehicle's current position according to the following three signals: Travel distance of the vehicle as determined by the vehicle speed sensor, turning angle of the vehicle as determined by the gyroscope (angular velocity sensor), and the direction of vehicle travel as determined by the GPS antenna (GPS information).
The current position of the vehicle is then identified by comparing the calculated vehicle position with map data read from the map DVD-ROM, which is stored in the DVD-ROM drive (map-matching), and indicated on the screen with a current-location mark.



By comparing the vehicle position detection results found by the GPS and by map-matching, more accurate vehicle position data can be used.
The current vehicle position will be calculated by detecting the distance the vehicle moved from the previous calculation point and its direction.



TRAVEL DISTANCE

Travel distance calculations are based on the vehicle speed sensor input signal. Therefore, the calculation may become incorrect as the tires wear down. To prevent this, an automatic distance fine adjustment function has been adopted. Adjustments can be made in extreme cases (such as driving with tire chain fitted on tires). Refer to AV-173, "Confirmation/Adjustment Mode".

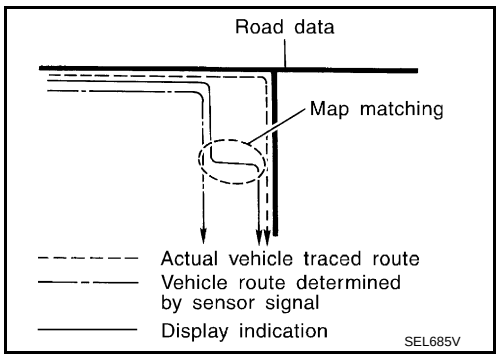
TRAVEL DIRECTION

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

Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	• Can detect the vehicle's turning angle quite accurately.	• Direction errors may accumulate when the 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 the vehicle speed is low.

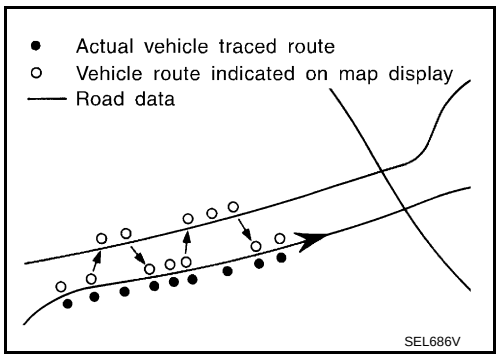
MAP–MATCHING

Map–matching is a function that repositions the vehicle on the road map when a new location is judged to be the most accurate. This is done by comparing the current vehicle position, calculated by the method described in the position detection principle, with the road map data around the vehicle, read from the map DVD-ROM stored in the DVD-ROM drive.
Therefore, the vehicle position may not be corrected after the vehicle is driven over a certain distance or time in which GPS information is hard to receive. In this case, the current-location mark on the display must be corrected manually.

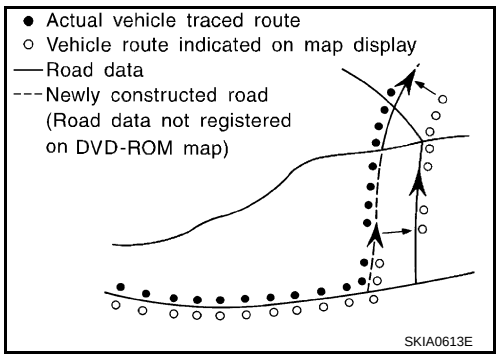


CAUTION:
The road map data is based on data stored in the map DVD-ROM.

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

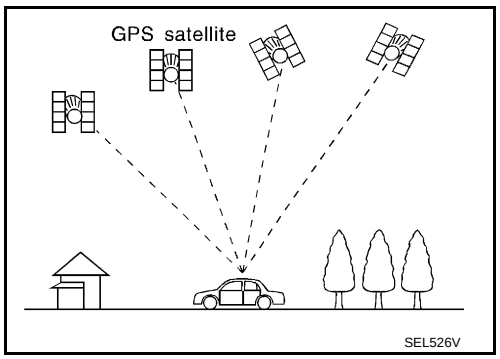


- Map-matching does not function correctly when the road on which the vehicle is driving is new and not recorded in the map DVD-ROM, or when the road pattern stored in the map data and the actual road pattern are different due to repair.
  When driving on a road not present in the map, the map-matching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



GPS (GLOBAL POSITIONING SYSTEM)

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



Accuracy of the GPS will deteriorate under the following conditions.

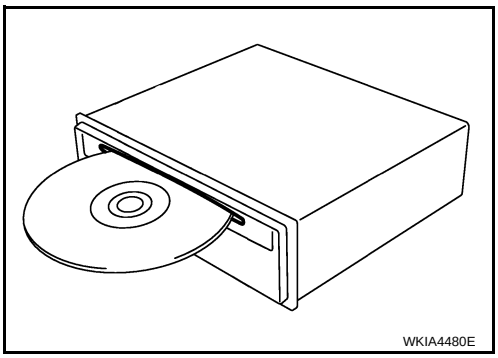
- In two-dimensional positioning, the GPS accuracy will deteriorate when the altitude of the vehicle position changes.
- There may be an error of approximately 10 m (30 ft.) in position detected by three-dimensional positioning, which is more accurate than two-dimensional positioning. The accuracy can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

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

COMPONENT DESCRIPTION

NAVI Control Unit

- The gyro (angular speed sensor) and the DVD-ROM drive are built-in units that control the navigation functions.
- Signals are received from the gyro, the vehicle speed sensor, and the GPS antenna. Vehicle location is determined by combining this data with the data contained in the DVD-ROM map. Location information is shown on liquid crystal display (display unit).
- Maps, traffic control regulations, and other pertinent information can be easily read from the DVD-ROM disc.
- The oscillator gyro sensor is used to detect changes in vehicle steering angle.



Map DVD-ROM

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

Display Control Unit

The display control unit coordinates audio and video signals between the NAVI control unit and the display unit.

Display Unit

Displays NAVI system information.

AV Switch

AV switch allows user to input NAVI display settings. Self diagnostics are initiated using AV switch.

GPS Antenna

GPS antenna sends signals to NAVI control unit.

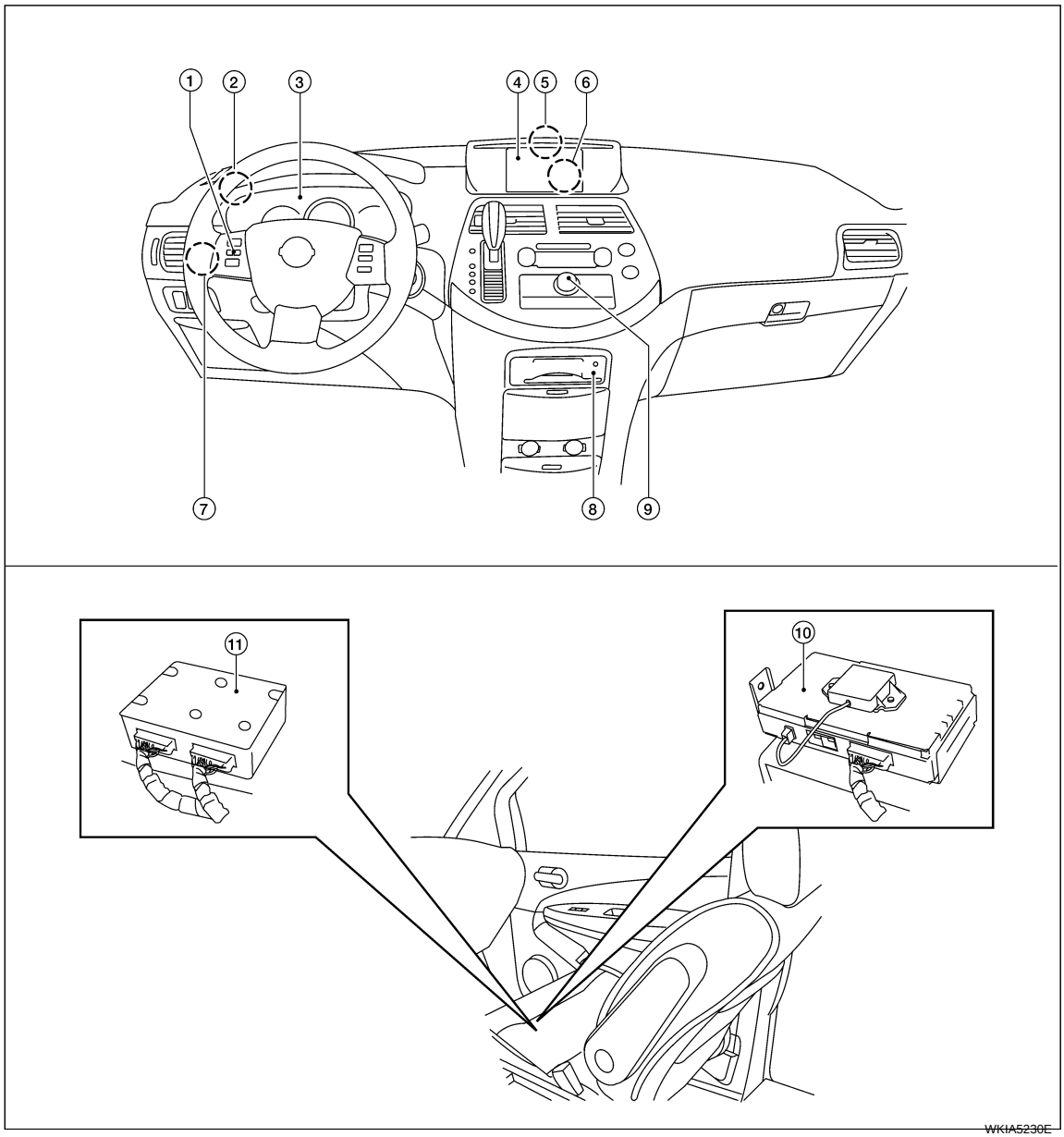
CAN Communication System Description

INFOID:0000000004277927

Refer to LAN-3, "CAN Communication System".

Component Parts Location

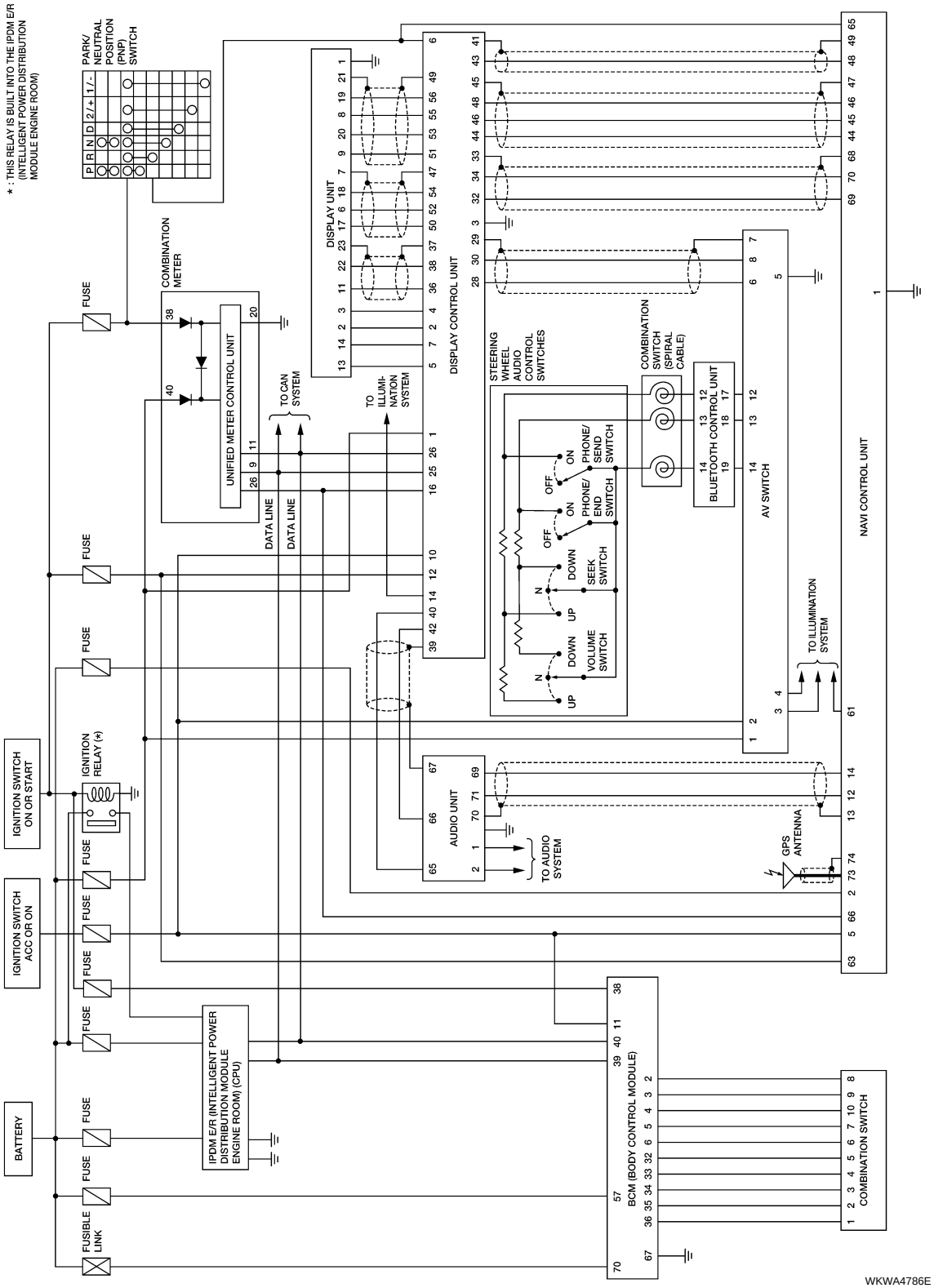
INFOID:0000000004277928



1. Steering wheel audio control switches
2. BCM M18, M19
3. Combination meter M24
4. Display unit M93
5. GPS antenna
6. Display control unit M94, M95
7. Combination switch M28
8. Audio unit M43, M45
9. AV switch M98
10. Bluetooth control unit B506, B507
11. NAVI control unit B504, B505 (view with seat removed)

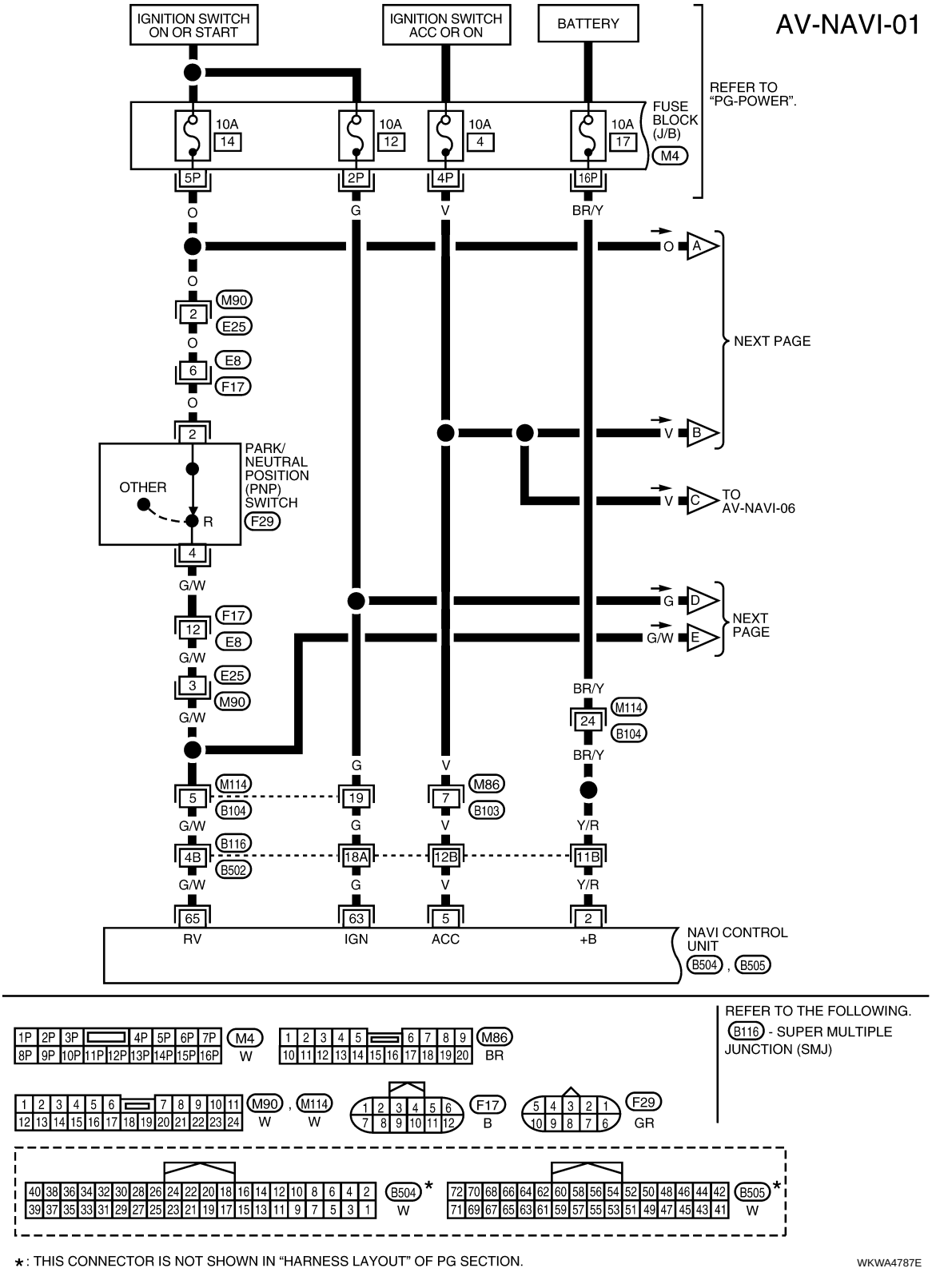
Schematic

INFOID:0000000004277929

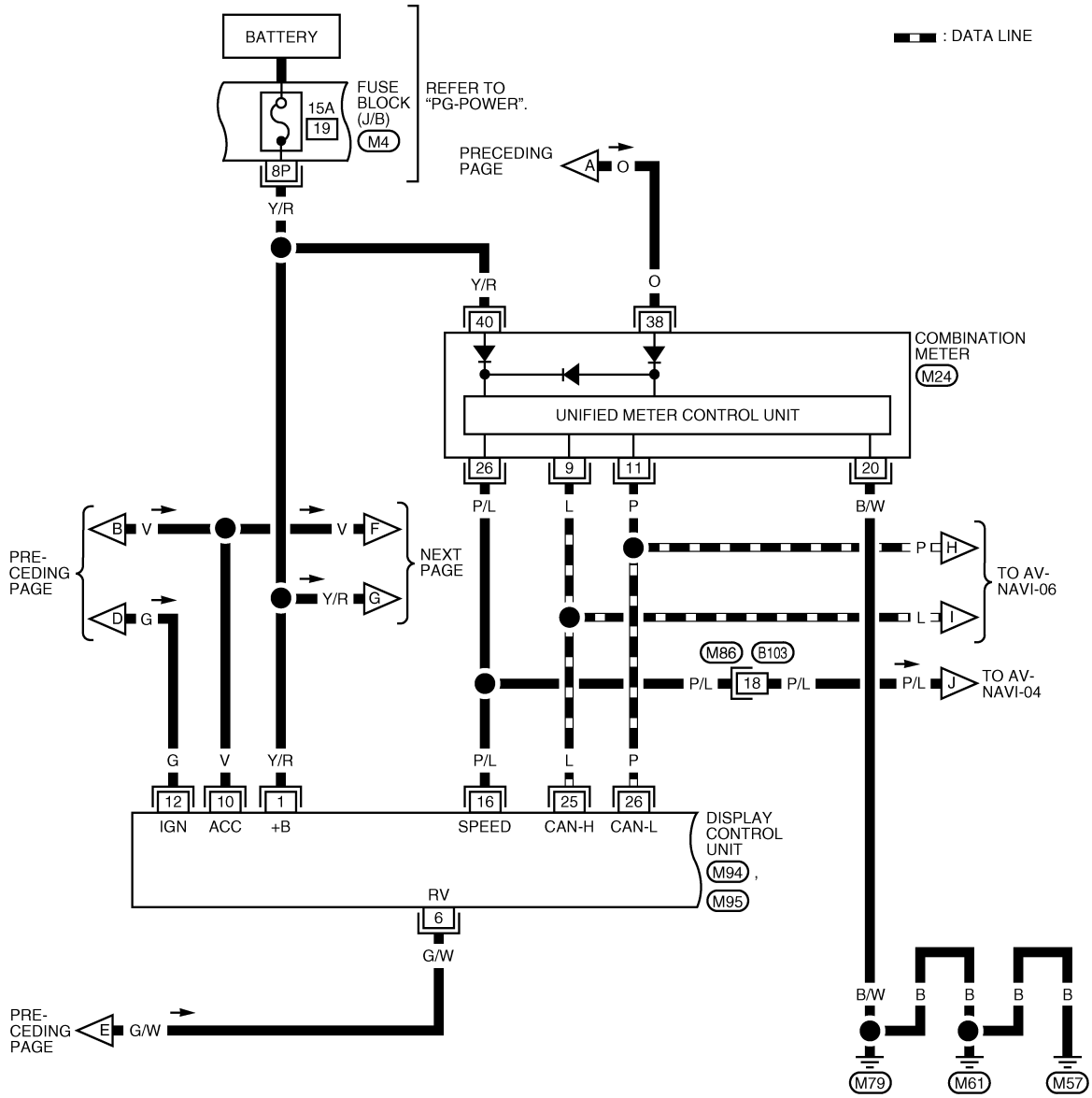


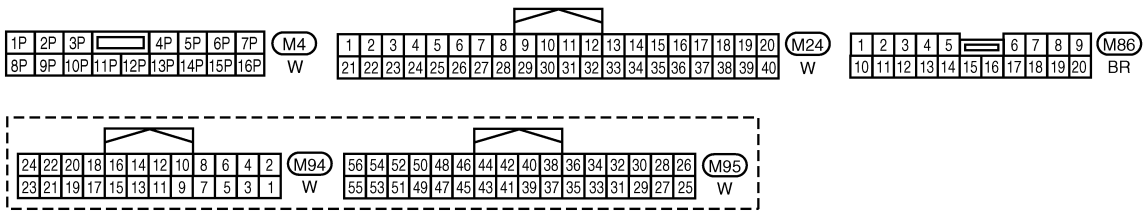
Wiring Diagram - NAVI -

INFOID:0000000004277930



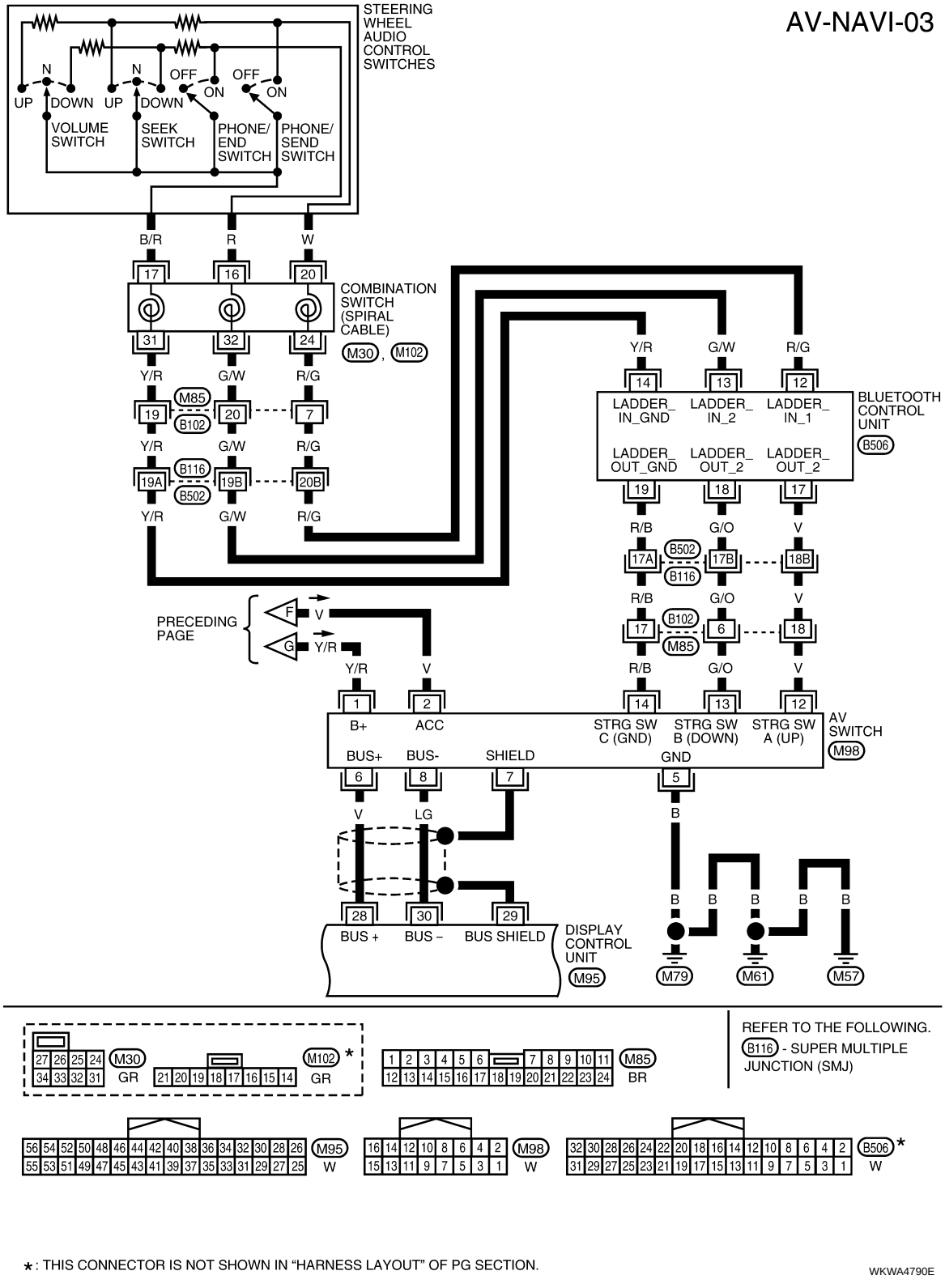
AV-NAVI-02





WKWA4788E

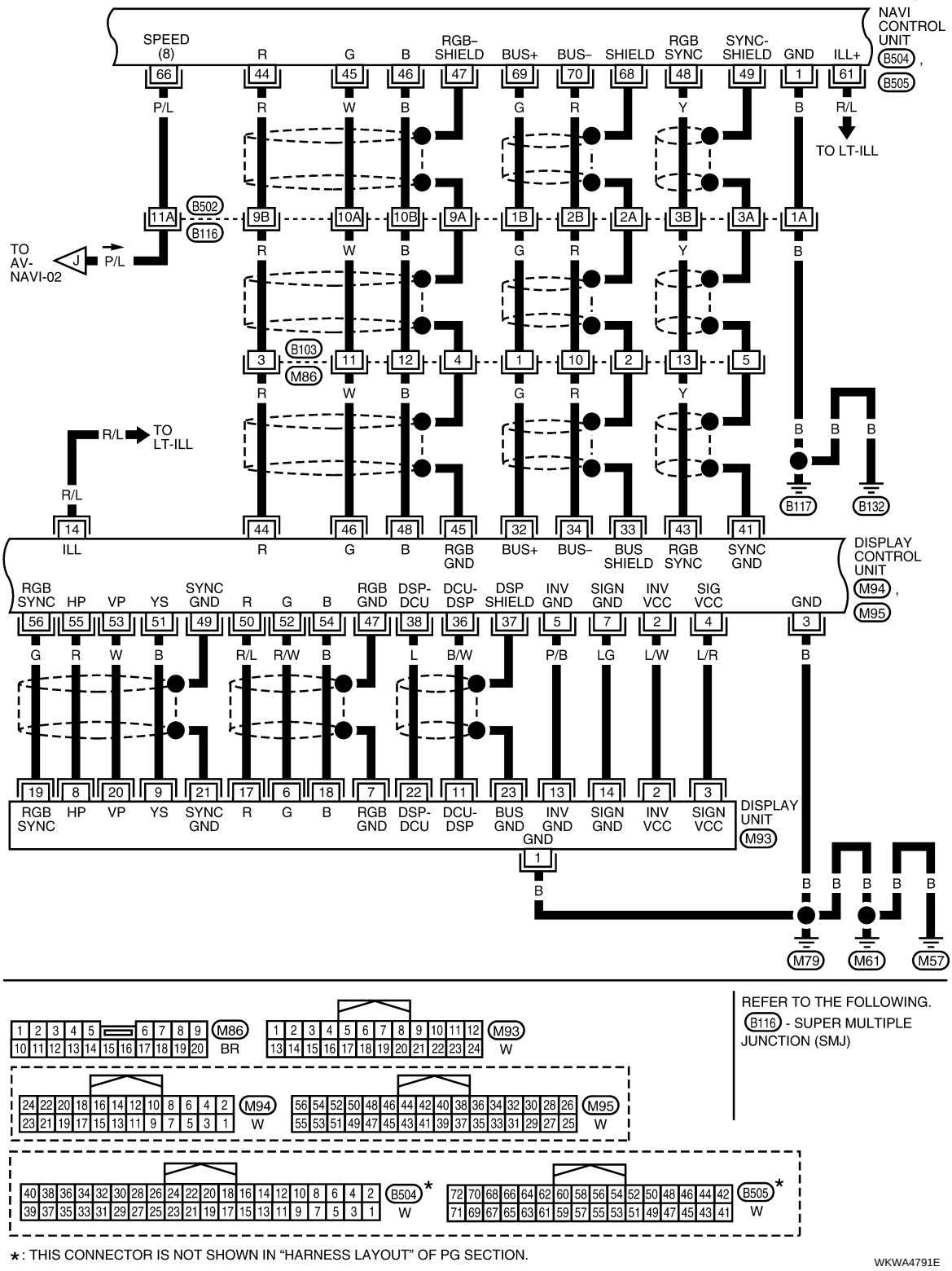
AV-NAVI-03



*: THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT” OF PG SECTION.

WKWA4790E

AV-NAVI-04

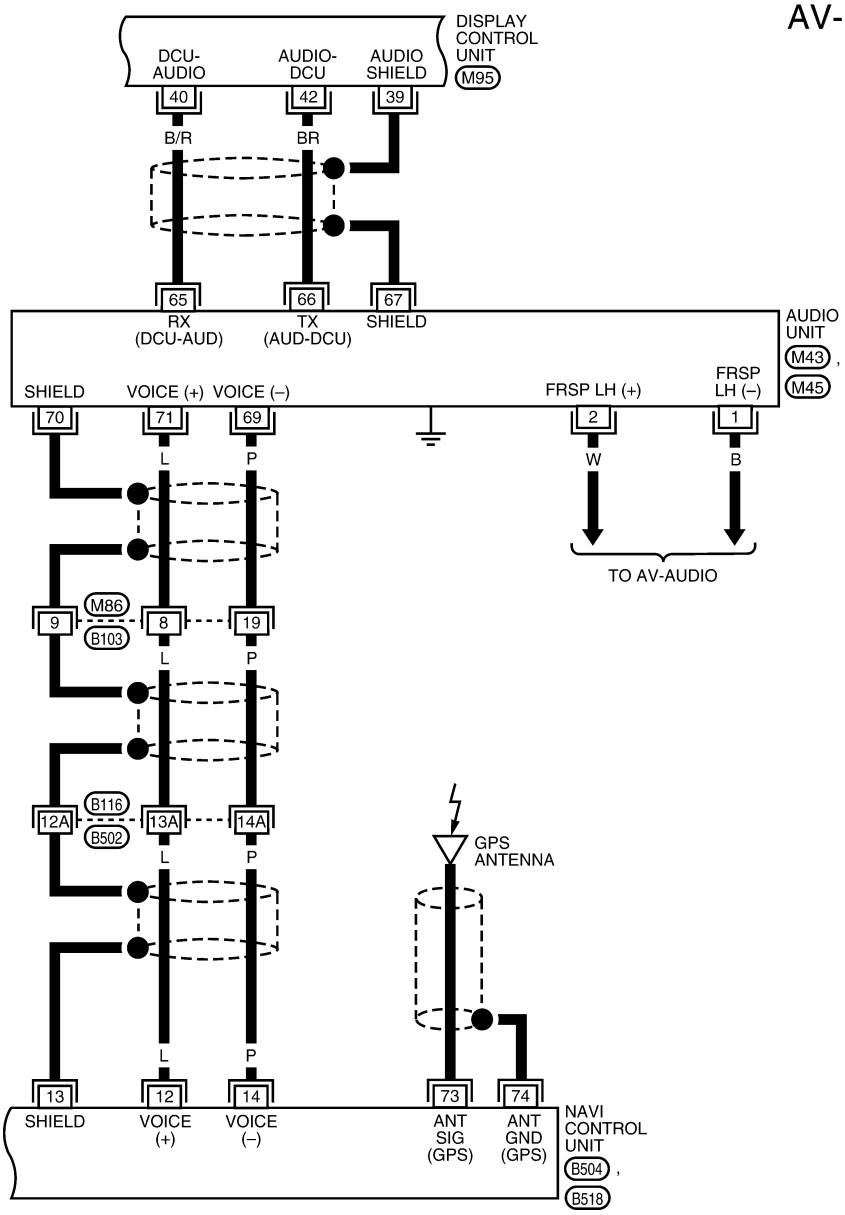


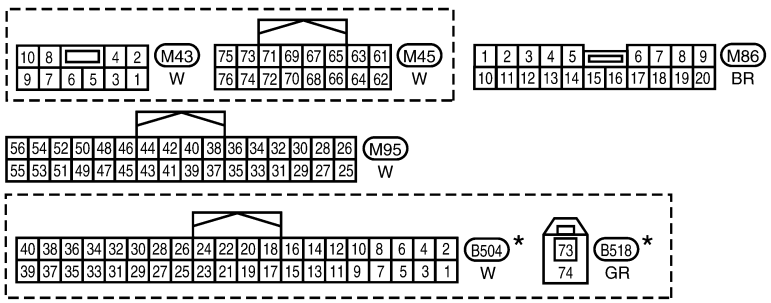
REFER TO THE FOLLOWING.
B116 - SUPER MULTIPLE JUNCTION (SMJ)

*: THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT” OF PG SECTION.

WKWA4791E

AV-NAVI-05

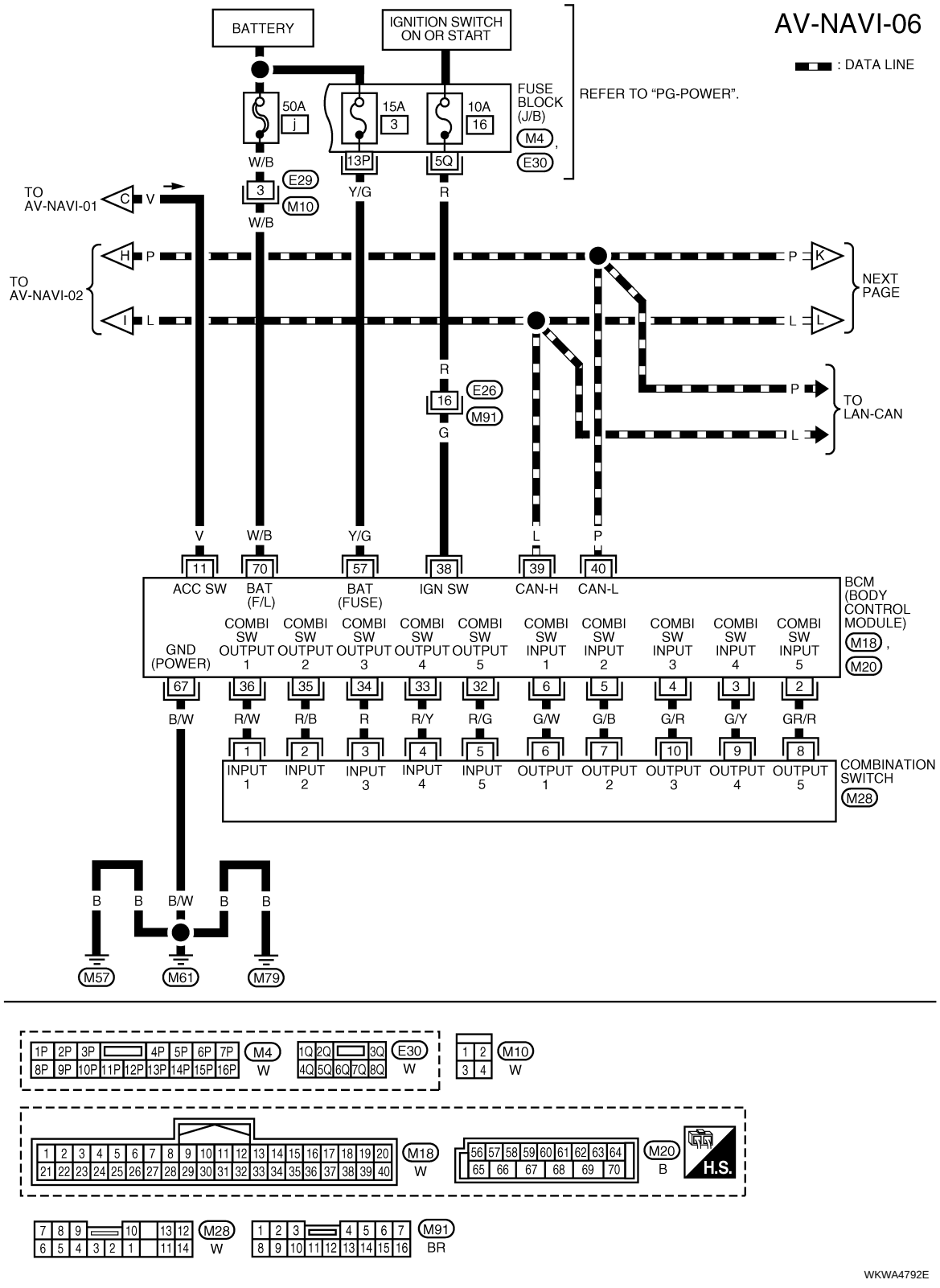




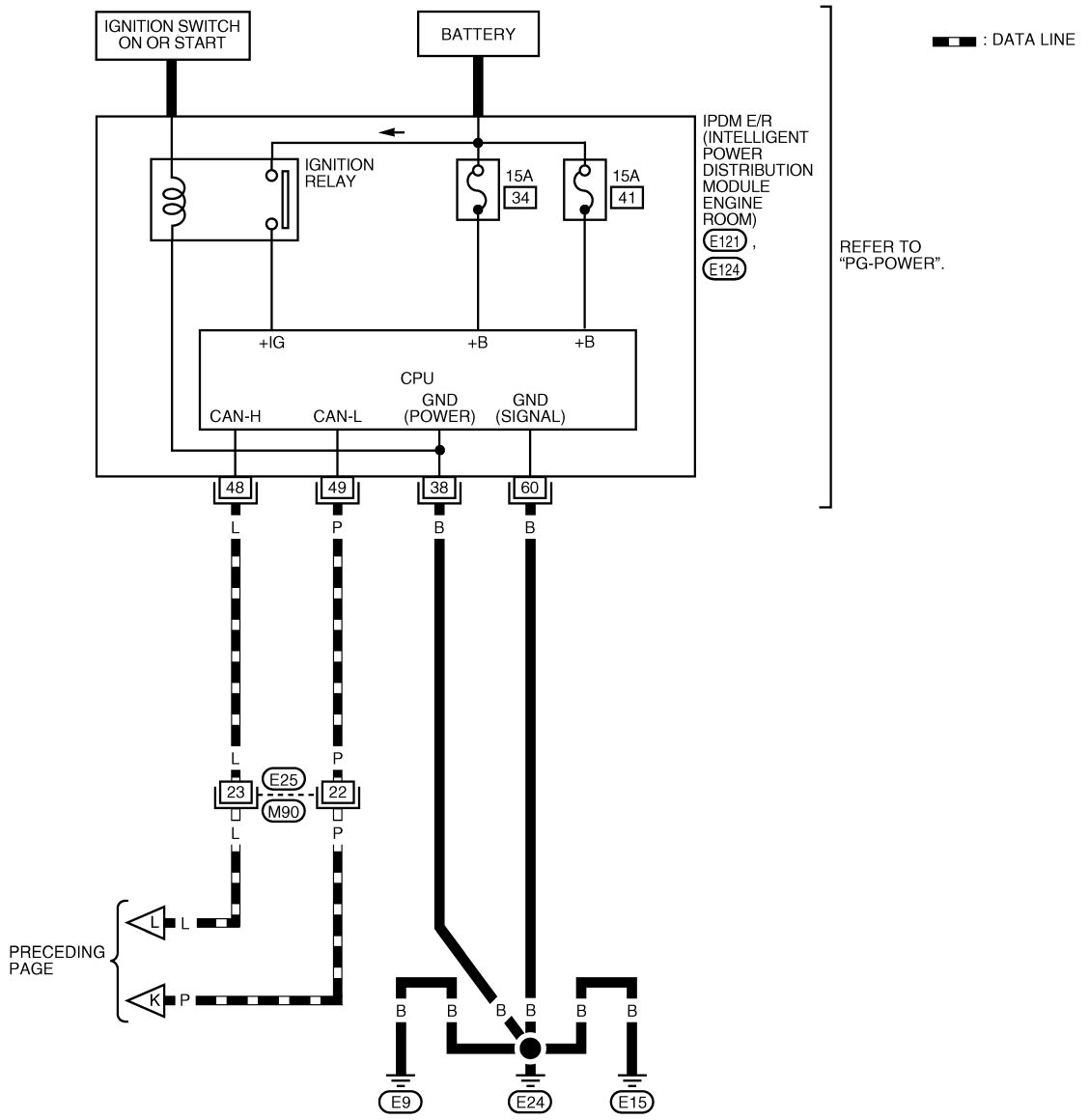
★: THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.

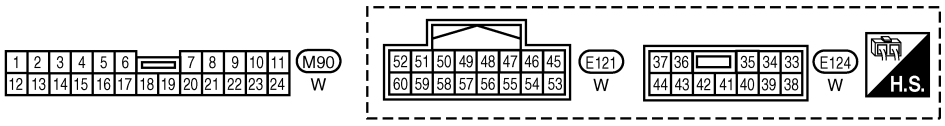
REFER TO THE FOLLOWING.
B116 - SUPER MULTIPLE JUNCTION (SMJ)

WKWA4789E


AV-NAVI-06
: DATA LINE
BATTERY
IGNITION SWITCH ON OR START
FUSE BLOCK (J/B) M4, E30
REFER TO "PG-POWER".
50A j
15A 3
10A 16
W/B
13P
5Q
E29
M10
Y/G
R
TO AV-NAVI-01
TO AV-NAVI-02
NEXT PAGE
TO LAN-CAN
E26
M91
G
V
W/B
Y/G
L
P
11
70
57
38
39
40
ACC SW
BAT (F/L)
BAT (FUSE)
IGN SW
CAN-H
CAN-L
BCM (BODY CONTROL MODULE) M18, M20
GND (POWER)
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
67
36
35
34
33
32
6
5
4
3
2
B/W
R/W
R/B
R
R/Y
R/G
G/W
G/B
G/R
G/Y
GR/R
INPUT 1
INPUT 2
INPUT 3
INPUT 4
INPUT 5
OUTPUT 1
OUTPUT 2
OUTPUT 3
OUTPUT 4
OUTPUT 5
COMBINATION SWITCH M28
B
B
B/W
B
B
M57
M61
M79
M4 W
E30 W
M10 W
M18 W
M20 B
H.S.
M28 W
M91 BR
WKWA4792E

AV-NAVI-07

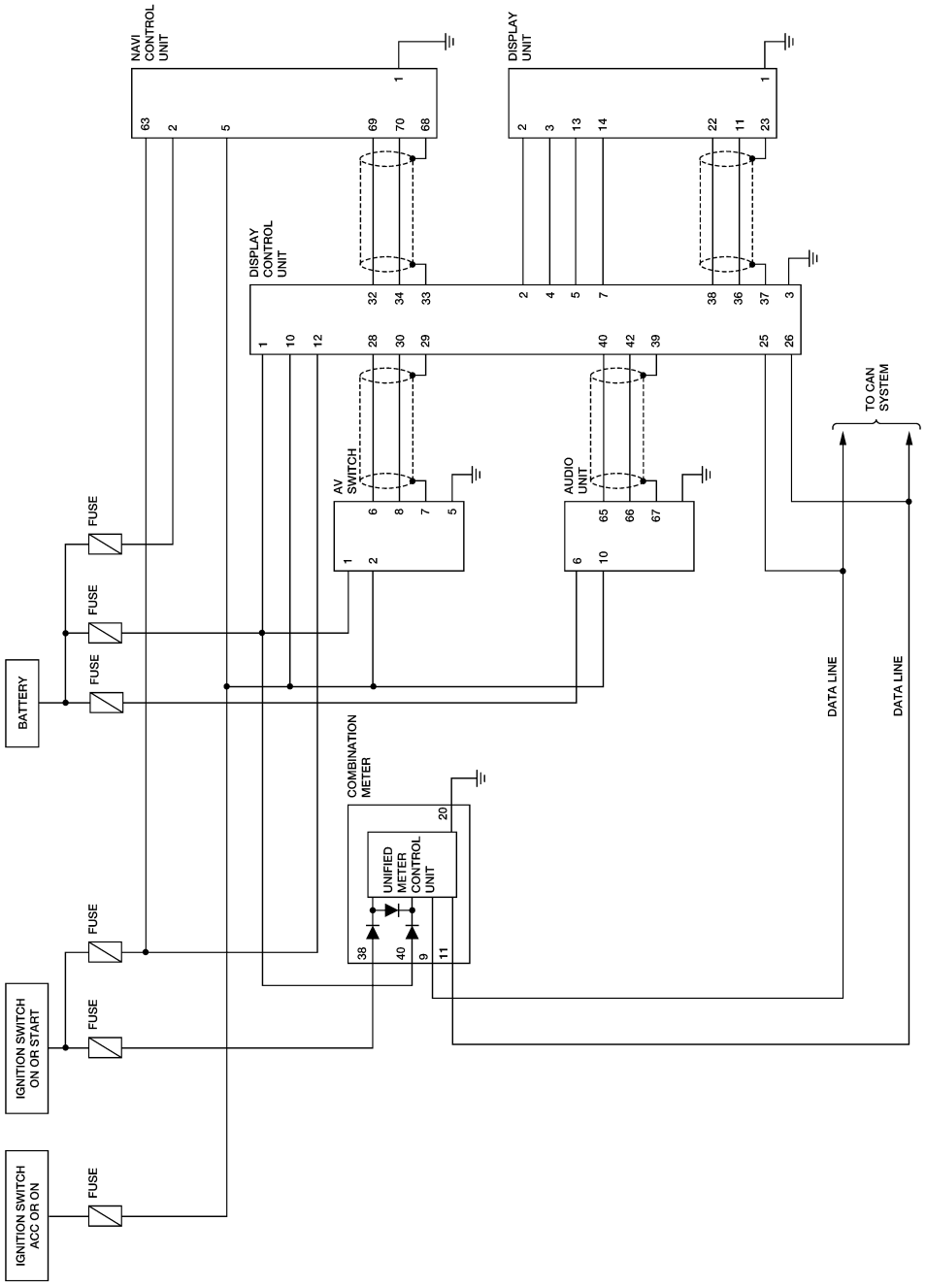




WKWA4793E

Schematic

INFOID:0000000004277931

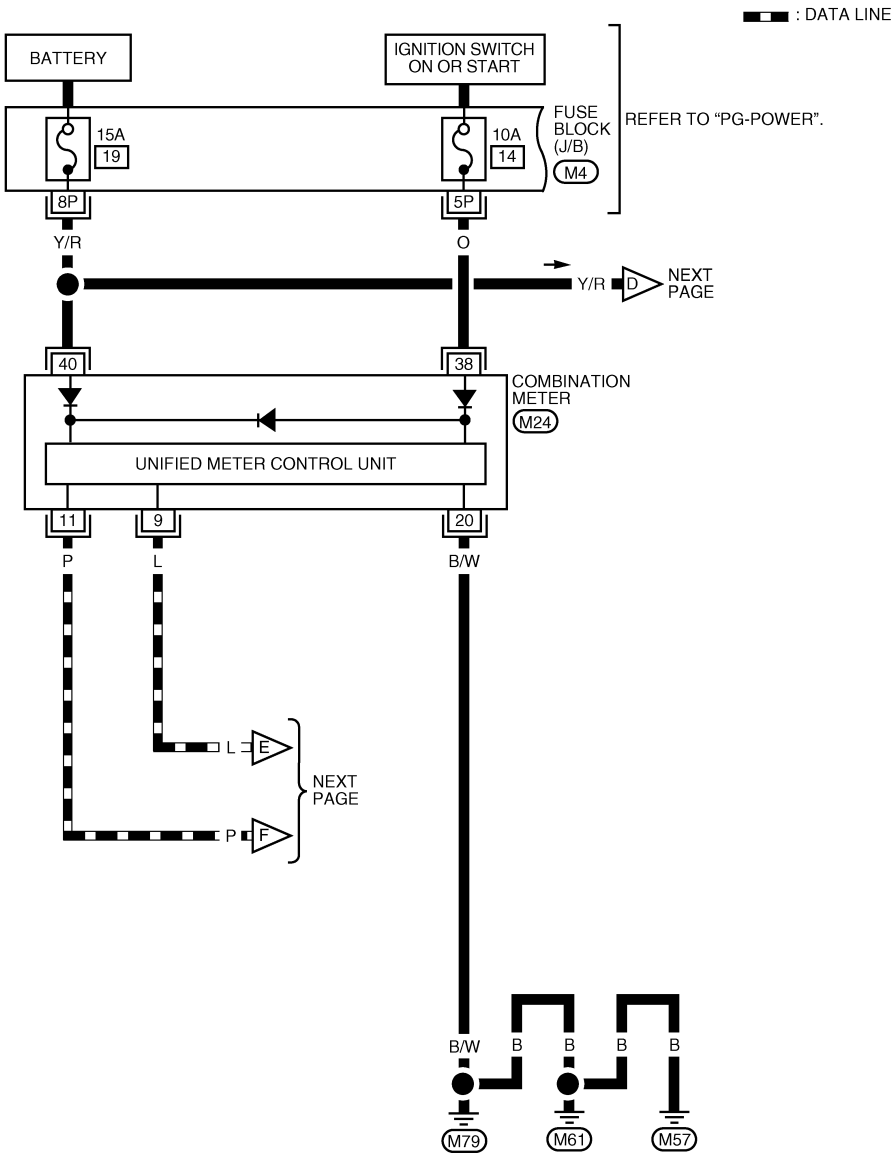


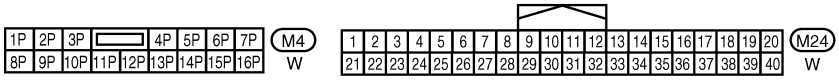
WKWA4794E

Wiring Diagram - COMM -

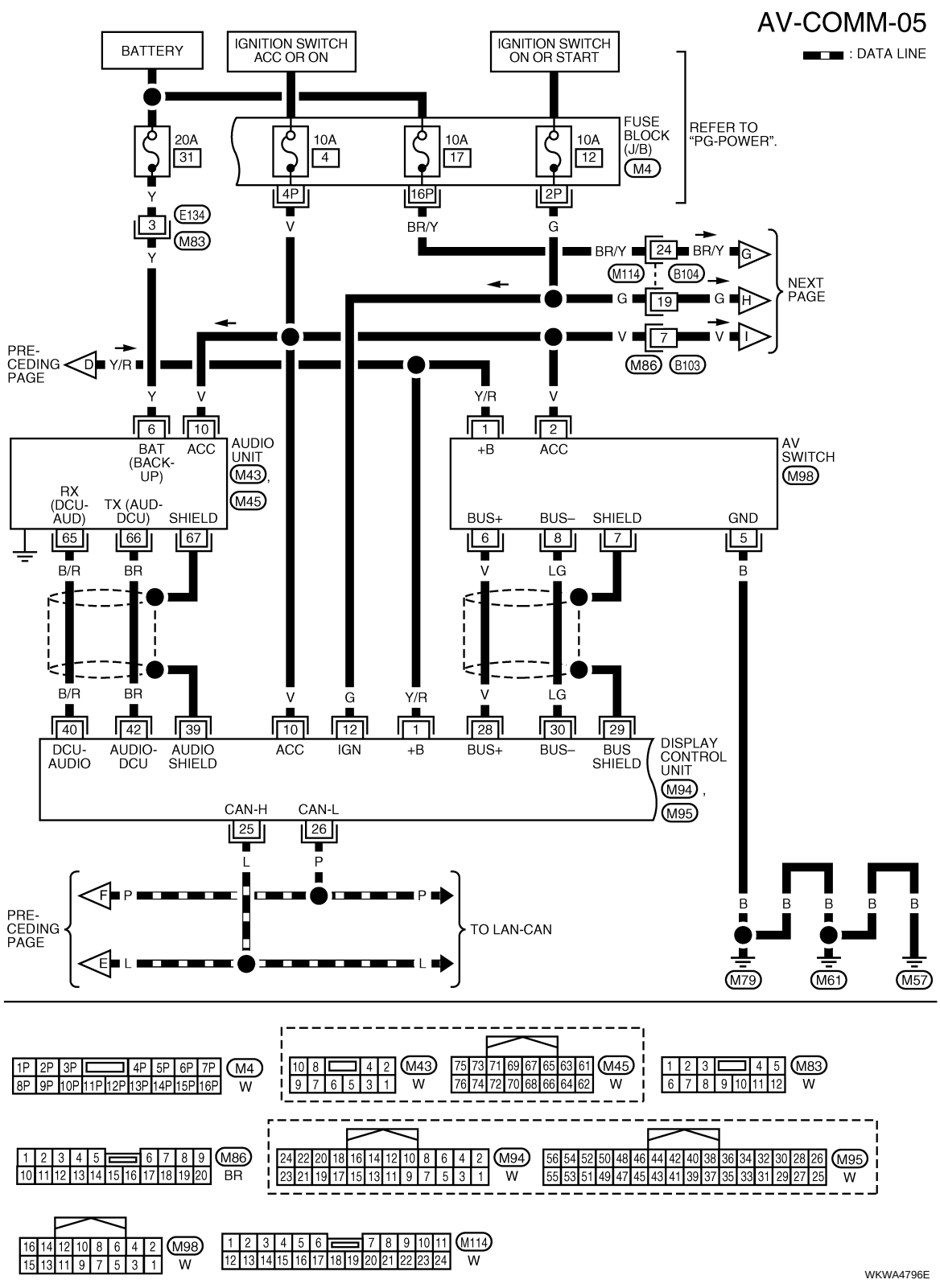
INFOID:0000000004277932

AV-COMM-04

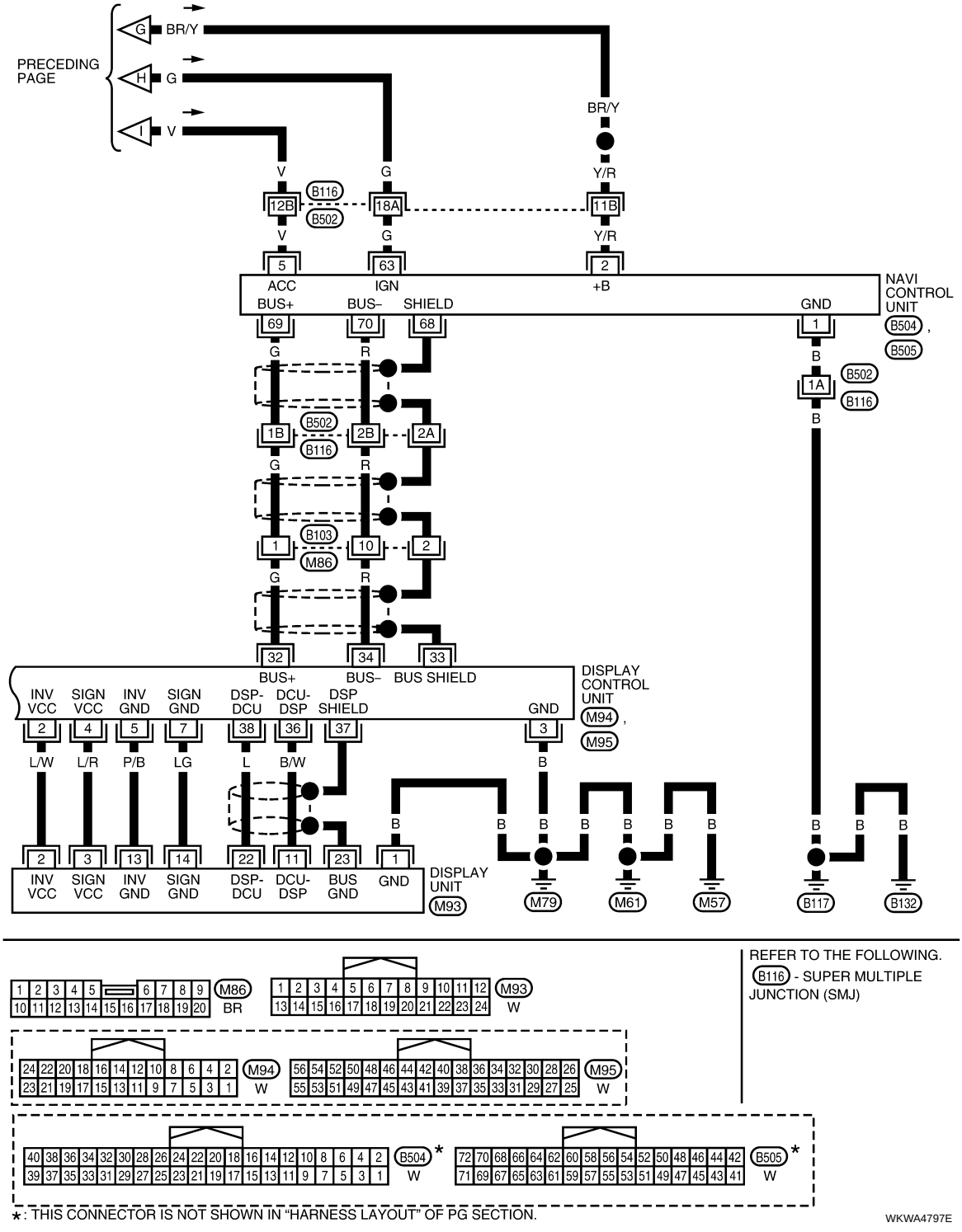




WKWA4795E

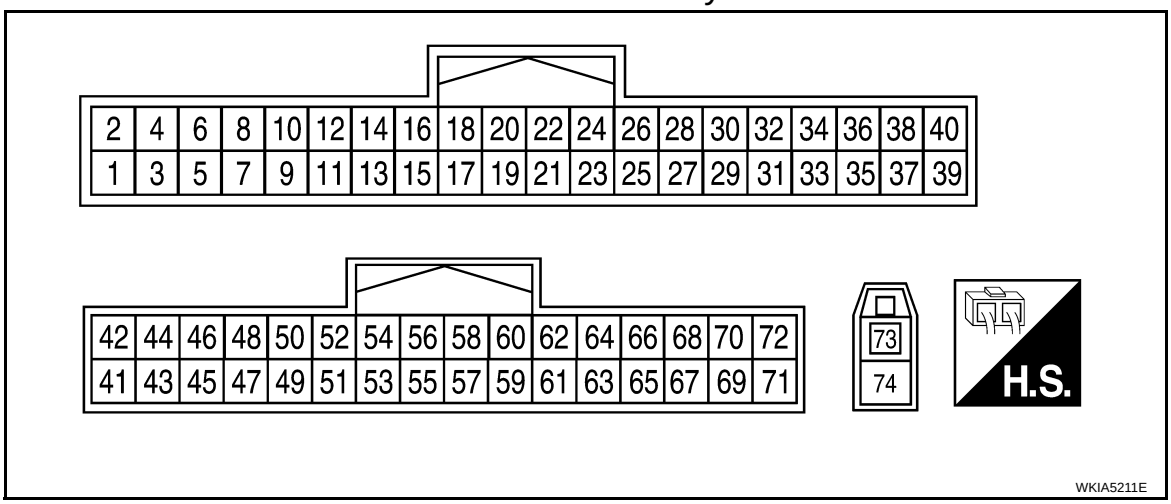

AV-COMM-05
: DATA LINE
BATTERY
IGNITION SWITCH ACC OR ON
IGNITION SWITCH ON OR START
FUSE BLOCK (J/B) M4
REFER TO "PG-POWER".
20A 31
10A 4
10A 17
10A 12
4P
16P
2P
E134
M83
NEXT PAGE
PRE-CEDING PAGE
M114
B104
M86
B103
AUDIO UNIT M43, M45
BAT (BACK-UP)
ACC
RX (DCU-AUD)
TX (AUD-DCU)
SHIELD
AV SWITCH M98
+B
BUS+
BUS–
GND
DISPLAY CONTROL UNIT M94, M95
DCU-AUDIO
AUDIO-DCU
AUDIO SHIELD
IGN
BUS SHIELD
CAN-H
CAN-L
TO LAN-CAN
M79
M61
M57
M4 W
M43 W
M45 W
M83 W
M86 BR
M94 W
M95 W
M98 W
M114 W
WKWA4796E

AV-COMM-06


PRECEDING PAGE
G BR/Y
H G
I V
BR/Y
V G Y/R
B116
B502
12B 18A 11B
V G Y/R
5 63 2
ACC IGN +B
BUS+ BUS– SHIELD GND
NAVI CONTROL UNIT
B504 , B505
69 70 68 1
G R B
B502
1A
B116
1B 2B 2A
B103
M86
1 10 2
32 34 33
BUS+ BUS– BUS SHIELD
DISPLAY CONTROL UNIT
M94 , M95
INV VCC SIGN VCC INV GND SIGN GND DSP-DCU DCU-DSP DSP SHIELD GND
2 4 5 7 38 36 37 3
L/W L/R P/B LG L B/W B
2 3 13 14 22 11 23 1
INV VCC SIGN VCC INV GND SIGN GND DSP-DCU DCU-DSP BUS GND GND
DISPLAY UNIT
M93
M79 M61 M57 B117 B132
M86 BR
M93 W
M94 W
M95 W
B504 * W
B505 * W
REFER TO THE FOLLOWING.
B116 - SUPER MULTIPLE JUNCTION (SMJ)
* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT" OF PG SECTION.
WKWA4797E

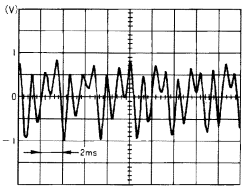
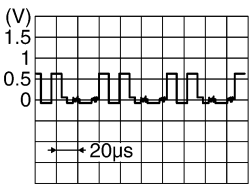
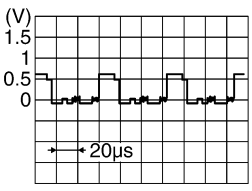
NAVI Control Unit Harness Connector Terminal Layout

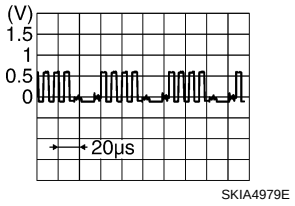
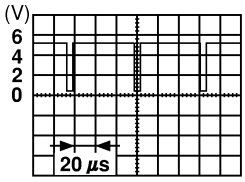
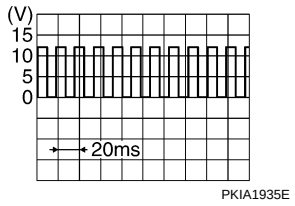
INFOID:0000000004277933

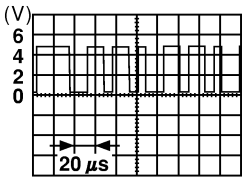
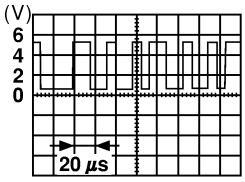


Terminal and Reference Value for NAVI Control Unit

INFOID:0000000004277934

Terminal No. (Wire color)		Item	Signal input/ output	Condition		Voltage (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
1 (B)	Ground	Ground	–	ON	–	0V	–
2 (Y/R)	Ground	Battery power	Input	OFF	–	Battery voltage	System does not work properly.
5 (V)	Ground	ACC signal	Input	ACC	–	Battery voltage	System does not work properly.
12 (L)	14 (P)	Voice guide signal	Output	ON	Press the “GUIDE/ VOICE” button.	 SKIA0171J	Only route guide and operation guide are not heard.
13	–	Shield ground	–	–	–	–	Audio noise interference.
44 (R)	47	RGB signal (R: red)	Output	ON	Select “Display Diagnosis (NAVI)” of CONFIRMATION/ ADJUSTMENT function.	 SKIA4977E	NAVI screen looks bluish.
45 (W)	47	RGB signal (G: green)	Output	ON	Select “Display Diagnosis (NAVI)” of CONFIRMATION/ ADJUSTMENT function.	 SKIA4978E	NAVI screen looks reddish.

Terminal No. (Wire color) +	Terminal No. (Wire color) –	Item	Signal input/ output	Condition: Ignition switch	Condition: Operation	Voltage (Approx.)	Example of symptom
46 (B)	47	RGB signal (B: blue)	Output	ON	Select “Display Diagnosis (NAVI)” of CONFIRMATION/ ADJUSTMENT function.	 SKIA4979E	NAVI screen looks yellowish.
47	–	Shield ground	–	–	–	–	Video display interference.
48 (Y)	49	RGB synchronizing signal	Output	ON	Press the “MAP” button.	 SKIA0164E	NAVI screen is rolling.
49	–	Shield ground	–	–	–	–	Video display interference.
61 (R/L)	Ground	Illumination signal	Input	ON	Lighting switch in 1st position	Battery voltage	Display unit illumination does not change when lighting switch is turned to 1st position.-
					Lighting switch is OFF	3V or less	
63 (G)	Ground	Ignition signal	Input	ON	–	Battery voltage	Navigation current location mark does not indicate the correct position.
65 (G/W)	Ground	Reverse signal	Input	ON	A/T selector lever in R position	Battery voltage	The navigation current-location mark moves strangely when the vehicle is moving backwards.
					A/T selector lever not in R position	0V	
66 (P/L)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH)	 PKIA1935E	Navigation current location mark does not indicate the correct position.
68	–	Shield ground	–	–	–	–	–

Terminal No. (Wire color)		Item	Signal input/ output	Condition		Voltage (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
69 (G)	Ground	Communication signal (+)	Input/ output	ON	–	 SKIA0175E	System does not work properly.
70 (R)	Ground	Communication signal (–)	Input/ output	ON	–	 SKIA0176E	System does not work properly.
73	74	GPS signal	Input	ON	Connector is not connected.	5V	Navigation system GPS correction is not possible.

Terminal and Reference Value for Display Control Unit

INFOID:0000000004277935

Refer to AV-117, "Terminal and Reference Value for Display Control Unit".

Terminal and Reference Value for Display Unit

INFOID:0000000004277936

Refer to AV-114, "Terminal and Reference Value for Display Unit (With Color Display)".

Terminal and Reference Value for AV Switch

INFOID:0000000004277937

Refer to AV-119, "Terminal and Reference Value for AV Switch".

Terminal and Reference Value for BCM

INFOID:0000000004277938

Refer to BCS-11, "Terminal and Reference Value for BCM".

On Board Self-Diagnosis Function

INFOID:0000000004277939

DESCRIPTION

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

DIAGNOSIS ITEM

Mode	Description
Self-diagnosis (DCU)	Display control unit diagnosis.
Self-diagnosis (NAVI)	• NAVI Control unit diagnosis (DVD-ROM drive) will not be diagnosed when no map DVD-ROM is in it. • Analyzes connection between the NAVI control unit and the GPS antenna and operation of each unit.

Mode				Description
CONFIRMATION/ ADJUSTMENT	Display diagnosis			On display control unit mode, color tone and shading of the screen can be checked by the display of a color bar and a gray scale.
	Vehicle signals			On display control unit mode, analyzes the following vehicle signals: Vehicle speed signal, light signal[NOTE], ignition switch signal, and reverse signal.
	Auto Climate Control			A/C self-diagnosis of A/C system.
	Navigation	Display diagnosis		On NAVI C/U mode, color tone and shading of the screen can be checked by the display of a color bar and a gray scale.
		Vehicle signals		On NAVI C/U mode, analyzes the following vehicle signals: Vehicle speed signal, light signal, ignition switch signal, and reverse signal.
		History of Errors		Diagnosis results previously stored in the memory (before turning ignition switch ON) are displayed in this mode. Time and location when/where the errors occurred are also displayed.
		Navigation	Display Longitude & Latitude	Display the map. Use the joystick to adjust position. Longitude and latitude will be displayed.
			Speed Calibration	Under ordinary conditions, the navigation system distance measuring function will automatically compensate for minute decreases in wheel and tire diameter caused by tire wear or low -pressure. Speed calibration immediately restores system accuracy in cases such as when distance calibration is needed because of the use of tire chains in inclement weather.
			Angle adjustment	Corrects difference between actual turning angle of a vehicle and turning angle of the car mark on the display.
			Initialize Location	This mode is for initializing the current location. Use when the vehicle is transported a long distance on a trailer, etc.
CAN DIAG SUPPORT MONITOR				Display status of CAN communication.

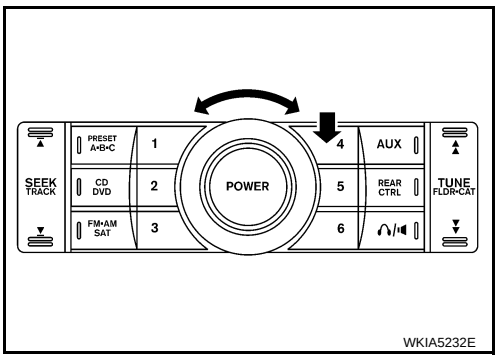
NOTE:
Make the status that is set by D/N function be shown.

Self-Diagnosis Mode (DCU)

INFOID:0000000004277940

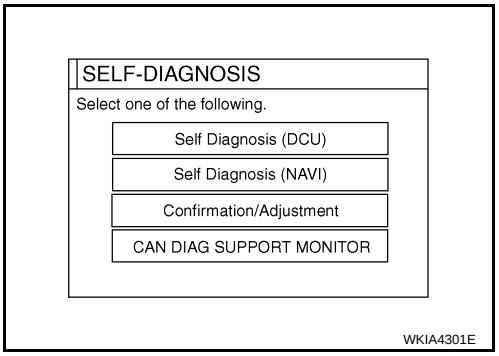
OPERATION PROCEDURE

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.)



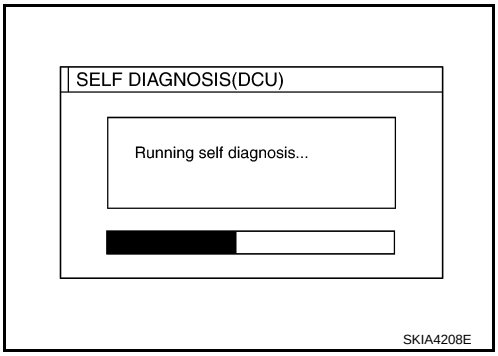
WKIA5232E

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.

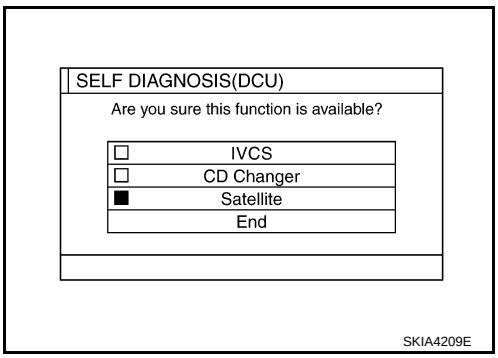


WKIA4301E

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



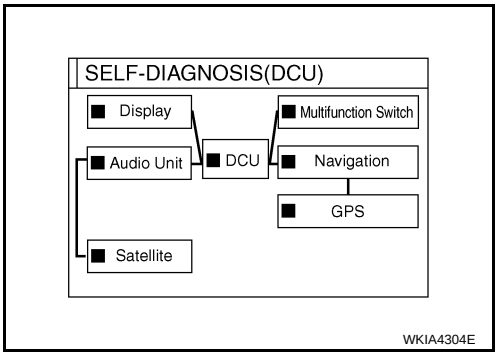
6. When the self-diagnosis completes, optional part confirmation screen will be shown.
   - When connection of an optional part is judged error, a screen to check if the optional part is actually fitted on the vehicle or not will be shown. When fitted, select the switch of the part on the screen and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



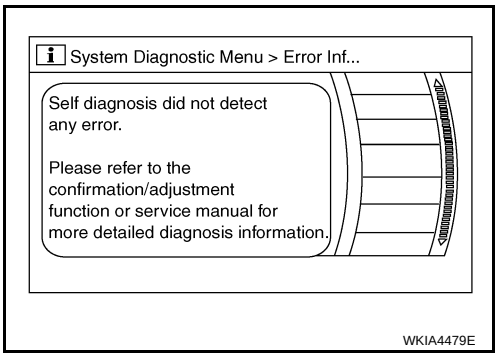
7. On the “SELF DIAGNOSIS” screen, each unit name will be colored according to the diagnosis result, as follows.

   Green : Not malfunctioning.
   Yellow : Cannot be judged by self-diagnosis results.
   Red : Unit is malfunctioning.
   Gray : Diagnosis has not been done.

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



8. Select a switch on the “SELF DIAGNOSIS” screen and comments for the diagnosis results will be shown.
   - When the switch is green, the following comment will be shown. “Self-diagnosis did not detect any error. Please refer to the “confirmation/adjustment” function or service manual for more detailed diagnosis information.”
   - When the switch is yellow, the following comment will be shown. “Connection to the following unit is abnormal. See the service manual for further details”.
   - When the switch is red, the following comment will be shown. “DCU is abnormal”.



SELF–DIAGNOSIS RESULT

Quick reference table

1. Select a malfunctioning diagnosis No. in the diagnosis result quick reference table.
2. Find estimated malfunctioning system in the diagnosis No. table and perform check by referring to AV-163, "Wiring Diagram - COMM -".
3. Turn the ignition switch OFF and perform self-diagnosis again.

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

*: DCU = Display control unit

CAUTION:

- **When AV switch has a malfunction, you cannot start. Refer to AV-204, "Unable to Operate All of AV Switches (Unable to Start Self-Diagnosis)".**
- **When display unit has a malfunction, you cannot start. Refer to AV-202, "Screen Is Not Shown".**

Self-Diagnosis Codes

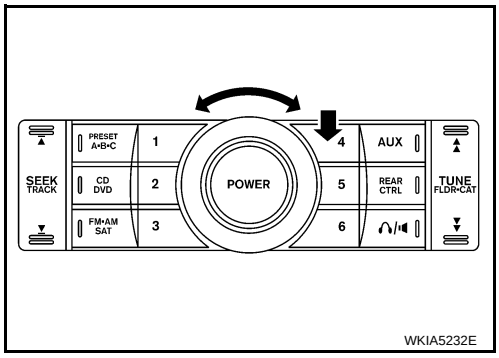
Diagnosis No.	Possible cause	Reference page
1	Display control unit malfunction.	Refer to AV-148.
2	Display communication line between display control unit and display unit.	Refer to AV-190.
3	Audio unit power supply and ground circuit. Audio communication line between display control unit and audio unit.	Refer to AV-189.
4	NAVI control unit power supply and ground circuit. AV communication line between display control unit and NAVI control unit.	Refer to AV-215.

Self-Diagnosis Mode (NAVI)

INFOID:0000000004277941

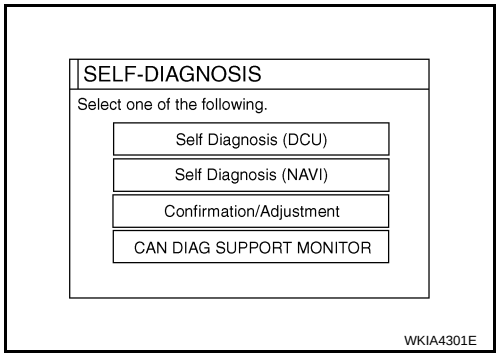
OPERATION PROCEDURE

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.)



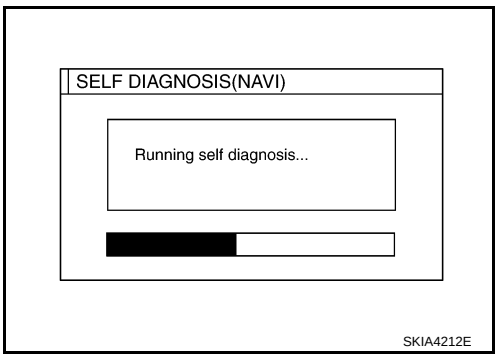
WKIA5232E

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.



WKIA4301E

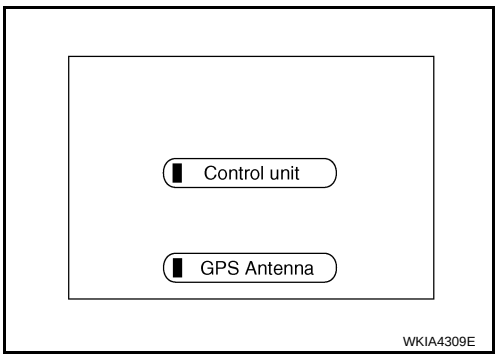
5. Perform self-diagnosis by selecting the “Self-diagnosis (NAVI)”.
   - Self-diagnosis subdivision screen will be shown and the operation enters the self-diagnosis mode.
   - A bar graph shown below the self-diagnosis subdivision screen indicates progress of the diagnosis.



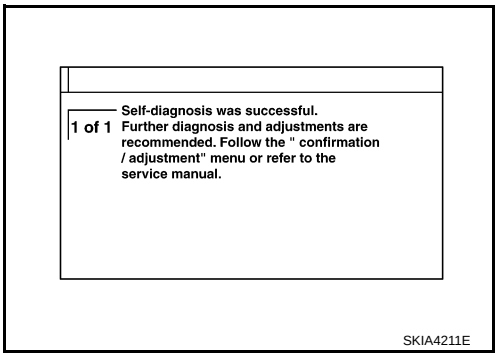
6. On the “SELF DIAGNOSIS” screen, each unit name will be colored according to the diagnosis result, as follows.

   Green : Not malfunctioning.
   Yellow : Cannot be judged by self-diagnosis results.
   Red : Unit is malfunctioning.
   Gray : Diagnosis has not been done.

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



7. Select a switch on the “SELF DIAGNOSIS” screen and comments for the diagnosis results will be shown.
   - When the switch is green, the following comment will be shown. “Self-diagnosis was successful. Further diagnosis and adjustments are recommended. Follow the “Confirmation and Adjustments” menu or refer to the service manual.”
   - When the switch is yellow, the following comment will be shown. “Connection to the following unit is abnormal. See the service manual for further details”.
   - When the switch is red, the following comment will be shown. “Center Control Unit is abnormal”.
   - When the switch is gray, the following comment will be shown. “Self-diagnosis for DVD-ROM DRIVER of NAVI was not conducted because no DVD-ROM was available.”



SELF–DIAGNOSIS RESULT

Quick reference table

1. Select a malfunctioning diagnosis No. in the diagnosis result quick reference table.
2. Find estimated malfunctioning system in the diagnosis No. table and perform check by referring to AV-163, "Wiring Diagram - COMM -".
3. Turn the ignition switch OFF and perform self-diagnosis again.

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

*: Center Control unit = NAVI control unit

CAUTION:

- **When AV switch has a malfunction, you cannot start. Refer to AV-204, "Unable to Operate All of AV Switches (Unable to Start Self-Diagnosis)".**
- **When display unit has a malfunction, you cannot start. Refer to AV-202, "Screen Is Not Shown".**

Self-diagnosis codes

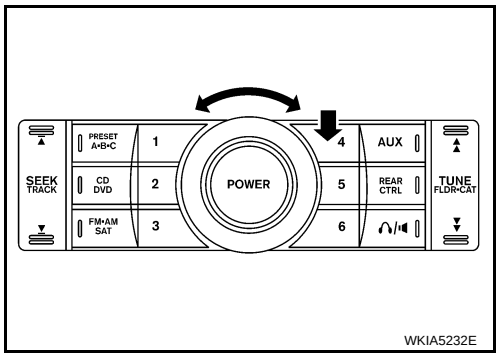
Diagnosis No.	Possible cause	Reference page
1	NAVI control unit malfunction.	Refer to AV-215
2	No map DVD-ROM is inserted in the NAVI control unit.	Refer to AV-193
3	When “DVD-ROM error. Please check disc.” is shown. 1. Eject map DVD-ROM and check if it is compatible with the system. 2. Check ejected DVD-ROM for dirt, damage, and warpage. 3. If no error is found, insert a known good map DVD-ROM of the same type and perform self-diagnosis again. If same result is shown, the NAVI control unit is malfunctioning. If result is normal, the map DVD-ROM is malfunctioning.	Refer to AV-193
4	If “Error found in DVD-ROM or DVD-ROM driver in control unit. Please perform diagnosis in accordance with service manual” is shown, carry out same inspection as diagnosis No. 3.	Refer to AV-193
5	GPS antenna system. 1. Visually check for a broken wire in the GPS antenna coaxial cable. 2. Disconnect GPS antenna connector, and make sure approximately 5V is supplied from the NAVI control unit. If not, the NAVI control unit is malfunctioning. If 5V is supplied, replace the GPS antenna. If the connection is still malfunction after the replacement of the GPS antenna, the NAVI control unit is malfunctioning.	Refer to AV-215

Confirmation/Adjustment Mode

INFOID:0000000004277942

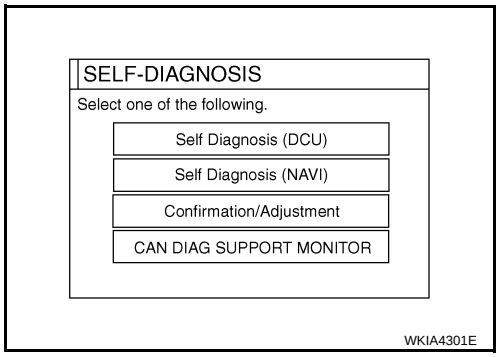
OPERATION PROCEDURE

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.)



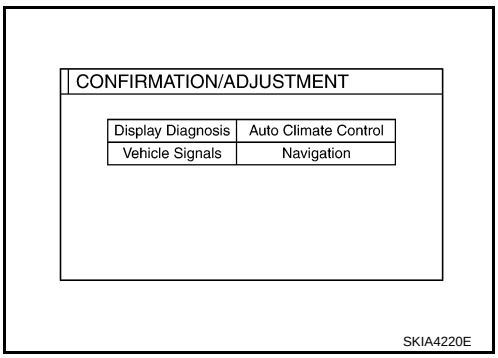
WKIA5232E

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.

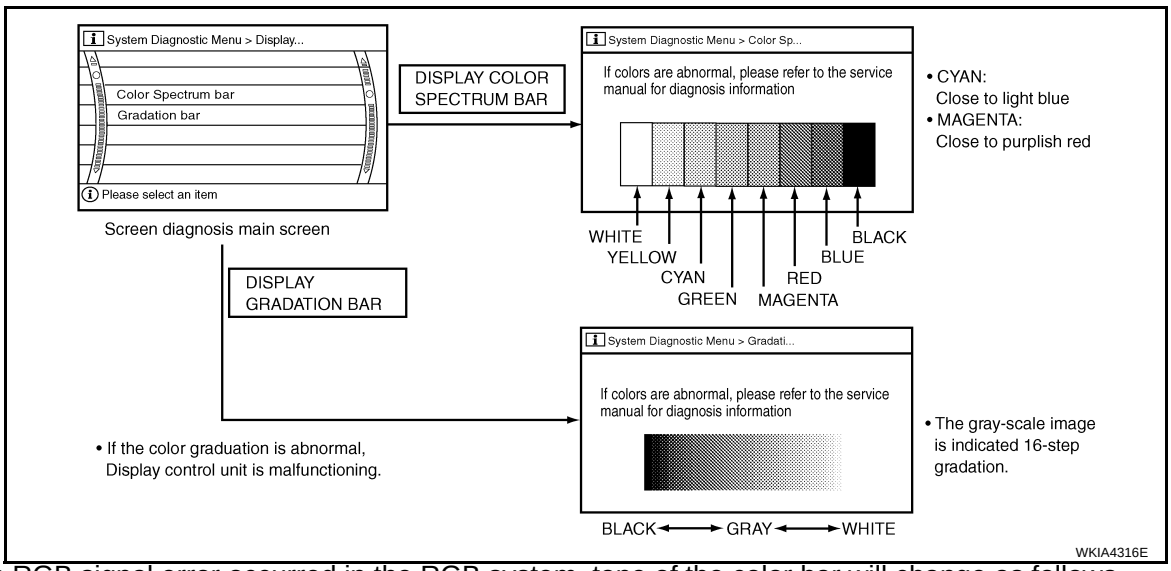


WKIA4301E

5. When “Confirmation/Adjustment” is selected on the initial trouble diagnosis screen, the operation will enter the CONFIRMATION/ ADJUSTMENT mode. In this mode, check and adjustment of each item will become possible.
6. The initial trouble diagnosis screen will be shown, and items “Display Diagnosis”, “Vehicle Signals”, “Auto Climate Control” and “Navigation” will become selective.
7. Select each switch on “CONFIRMATION/ADJUSTMENT” screen to display the relevant diagnosis screen.



DISPLAY DIAGNOSIS



- When RGB signal error occurred in the RGB system, tone of the color bar will change as follows.

R (red) signal error : Screen looks bluish
G (green) signal error : Screen looks reddish
B (blue) signal error : Screen looks yellowish

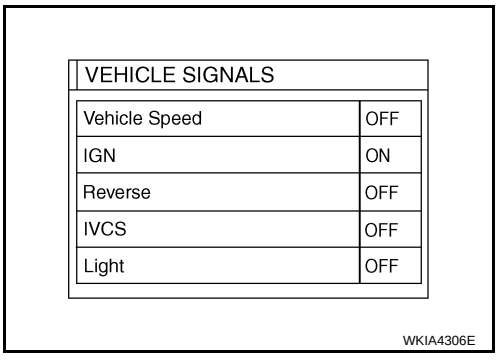
- When the color of the screen looks unusual, refer to AV-197, "Color of RGB Image Is Not Proper (All Screens Look Bluish)", AV-198, "Color of RGB Image Is Not Proper (All Screens Look Reddish)" and AV-199, "Color of RGB Image Is Not Proper (All Screens Look Yellowish)".

VEHICLE SIGNALS

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

CAUTION:
In case of confirming light signal, set D/N mode to ON/OFF of lighting switch (normal setting).
- **OFF: D (Day mode)**
- **ON: N (Night mode)**

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



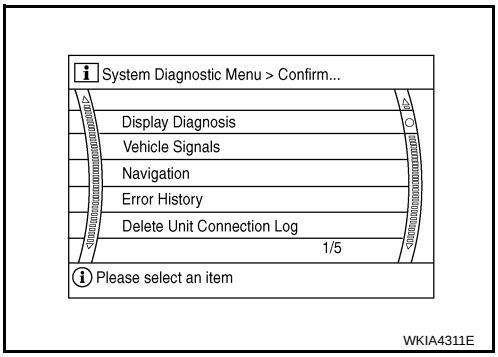
Diagnosis item	Display	Condition	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed by approx. 1.5 seconds. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
	–	Ignition switch in ACC position	

Diagnosis item	Display	Condition	Remarks
Light	ON	Lighting switch ON	–
	OFF	Lighting switch OFF	
IGN	ON	Ignition switch ON	–
	OFF	Ignition switch ACC	
Reverse	ON	Selector lever in R position	Changes in indication may be delayed by approx. 1.5 seconds. This is normal.
	OFF	Selector lever in other than R position	
	–	Ignition switch in ACC position	

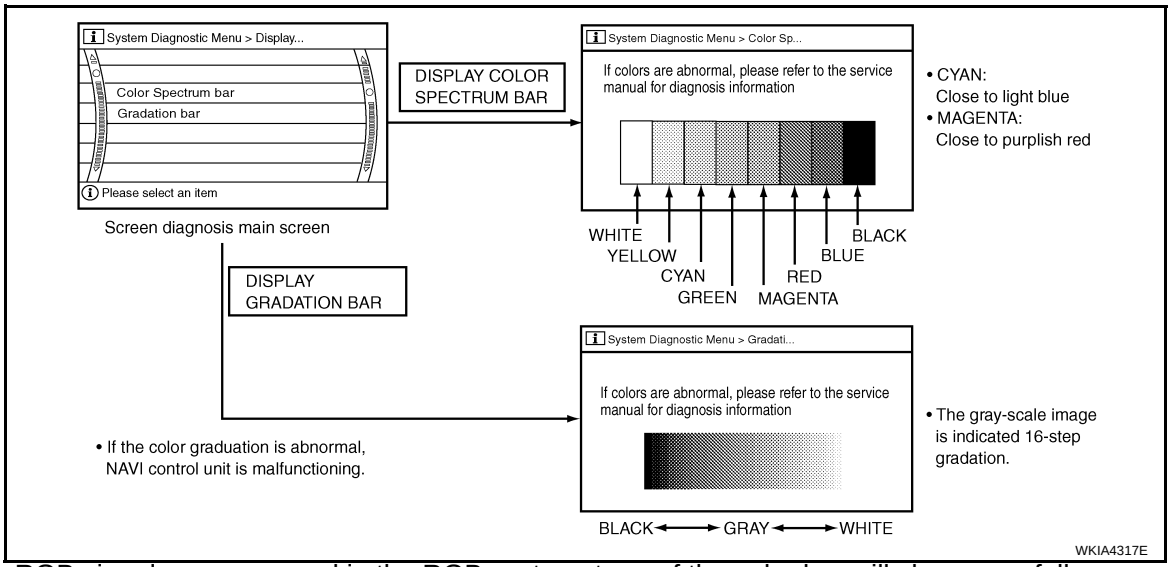
- If vehicle speed is NG, refer to AV-185, "Vehicle Speed Signal Inspection for Display Control Unit".
- If light is NG, refer to AV-186, "Illumination Signal Inspection for Display Control Unit".
- If IGN is NG, refer to AV-187, "Ignition Signal Inspection for Display Control Unit".
- If reverse is NG, refer to AV-187, "Reverse Signal Inspection for Display Control Unit".

NAVIGATION

1. The initial trouble diagnosis screen will be shown, and items “Display Diagnosis”, “Vehicle Signals”, "Navigation", “Error History” and "Delete Unit Connection Log" will be displayed.
2. Select each switch on “CONFIRMATION/ADJUSTMENT” screen to display the relevant diagnosis screen.



DISPLAY DIAGNOSIS



- When RGB signal error occurred in the RGB system, tone of the color bar will change as follows.

R (red) signal error : Screen looks bluish
G (green) signal error : Screen looks reddish
B (blue) signal error : Screen looks yellowish

- When the color of the screen looks unusual, refer to AV-195, "Color of RGB Image Is Not Proper (Only NAVI Screen Looks Bluish)", AV-196, "Color of RGB Image Is Not Proper (Only NAVI Screen Looks Reddish)" and AV-199, "Color of RGB Image Is Not Proper (All Screens Look Yellowish)".

VEHICLE SIGNALS

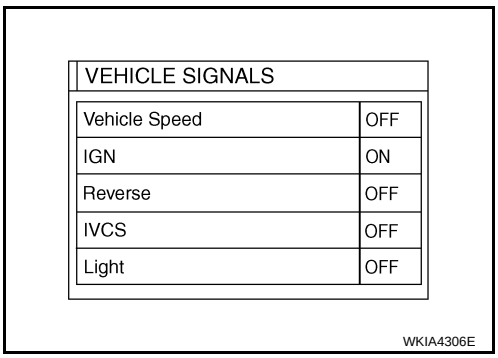
- A comparison check can be made of each actual vehicle signal and the signals recognized by the system.

CAUTION:

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

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

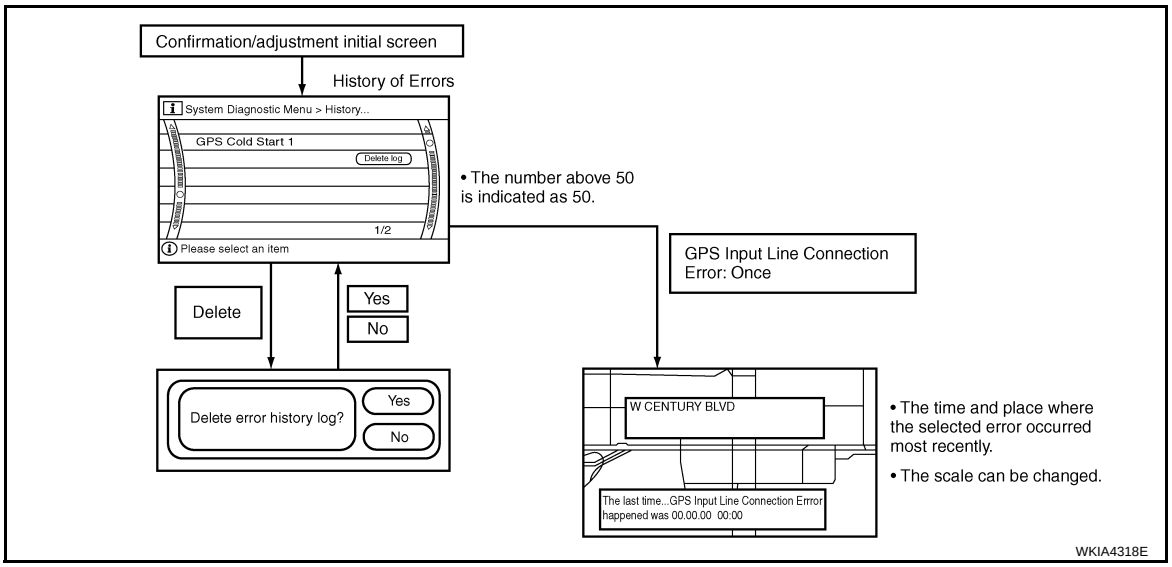
Unless above setting, light signal (ON/OFF) may not be accurately displayed.



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

- If vehicle speed is NG, refer to AV-184, "Vehicle Speed Signal Inspection for NAVI Control Unit".
- If light is NG, refer to AV-186, "Illumination Signal Inspection for NAVI Control Unit".
- If IGN is NG, refer to AV-186, "Ignition Signal Inspection for NAVI Control Unit".
- If reverse is NG, refer to AV-187, "Reverse Signal Inspection for NAVI Control Unit".

ERROR HISTORY



DIAGNOSIS BY ERROR HISTORY

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

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

The 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 current-location mark at the time when the error occurred. If the current-location mark has deviated from the correct position, then the place of the error occurrence may be located correctly.
- The maximum number of occurrences which can be stored is 50. For the 51st and later occurrences, the displayed number remains 50.

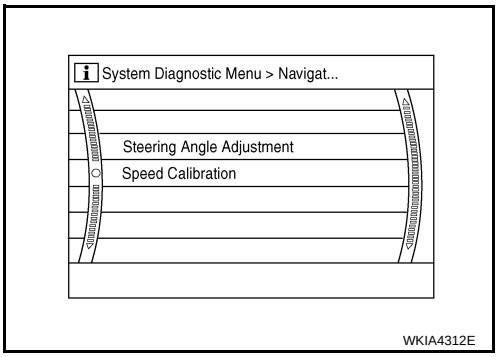
When a reproducible malfunction occurred but its cause cannot be identified because several errors are present, record the item, number and place (longitude/latitude) of error occurrence (or delete the error history), then turn the ignition switch from OFF to ON to reproduce the malfunction. Check the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

Error item	Possible causes Action/symptom	Example of symptom
Gyro sensor disconnected	Communications malfunction between NAVI control unit and internal gyro. • Perform self-diagnosis. • When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	• Navigation location detection performance has deteriorated. (Angular velocity cannot be detected.)
GPS disconnected	Communication error between NAVI control unit and internal GPS substrate. • Perform self-diagnosis. • When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	• Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) • GPS receiving status remains gray.
GPS transmission cable malfunction	Malfunctioning transmission wires to NAVI control unit and internal GPS substrate. • Perform self-diagnosis. • When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	• During self-diagnosis, GPS diagnosis is not performed.
GPS input line connection error	Malfunctioning receiving wires to NAVI control unit and internal GPS substrate. • Perform self-diagnosis. • When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	• Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) • GPS receiving status remains gray.
GPS TCX0 over GPS TCX0 under	Oscillating frequency of the GPS substrate frequency synchronizing oscillation circuit exceeded (or below) the specification • Perform self-diagnosis. • When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference, or the control unit may have been subjected to excessively high or low temperatures.	• Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) • GPS receiving status remains gray.
GPS ROM malfunction GPS RAM malfunction	Contents of ROM (or RAM) in GPS substrate are malfunctioning. • Perform self-diagnosis. • When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	• Location detection accuracy of the navigation system will deteriorate, depending on the error area in the memory, because GPS cannot make correct positioning. (Location correction using GPS is not performed.)

Error item	Possible causes Action/symptom	Example of symptom
GPS RTC malfunction	Clock IC in GPS substrate is malfunctioning. • Perform self-diagnosis. • When the NAVI control unit is judged normal by self-diagnosis, the symptom may be intermittent, caused by strong radio interference.	• Correct time may not be displayed. • After the power is turned on, the system always takes some time until GPS positioning becomes possible. (The GPS receiver starts positioning without re-collecting the whole satellite information when it judged the data stored in the receiver is correct.) • Correct time of error occurrence may not be stored in the error history.
GPS antenna disconnected	Malfunctioning connection between GPS substrate in NAVI control unit and GPS antenna. • Perform self-diagnosis. • When connection between NAVI control unit and GPS antenna is judged normal by self-diagnosis, the symptom may be intermittent, caused by impact or vibration.	• Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) • GPS receiving status remains gray.
Low voltage of GPS	The power voltage supplied to the GPS circuit board has decreased. • Perform self-diagnosis. • When connection between NAVI control unit and GPS antenna is judged normal by self-diagnosis, the symptom may be intermittent, caused by impact or vibration.	• Navigation location detection performance has deteriorated. (Location correction using GPS is not performed.) • GPS receiving status remains gray.
DVD-ROM Malfunction DVD-ROM Read error DVD-ROM Response Error	Malfunctioning NAVI control unit.	-
	Dedicated map DVD-ROM is in the system, but the data cannot be read. • Is map DVD-ROM damaged, warped, or dirty? - If damaged or warped, the map DVD-ROM is malfunctioning. - If dirty, wipe the DVD-ROM clean with a soft cloth. • Perform self-diagnosis. • When NAVI control unit is judged normal by self-diagnosis, the symptom is judged intermittent, caused by vibration.	• The map of a particular location cannot be displayed. • Specific guidance information cannot be displayed. • Map display is slow. • Guidance information display is slow. • System has been affected by vibration.

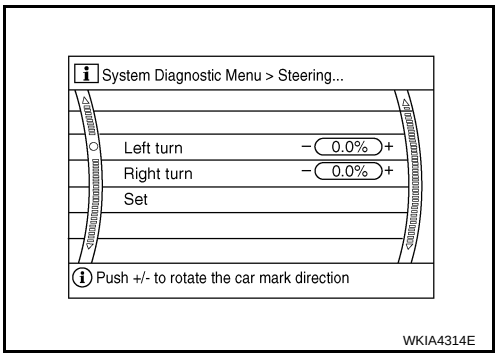
NAVIGATION

1. The initial trouble diagnosis screen will be shown, and items “Steering Angle Adjustment” and “Speed Calibration” will become selective.
2. Select each switch on “NAVIGATION” screen to display the relevant diagnosis screen.



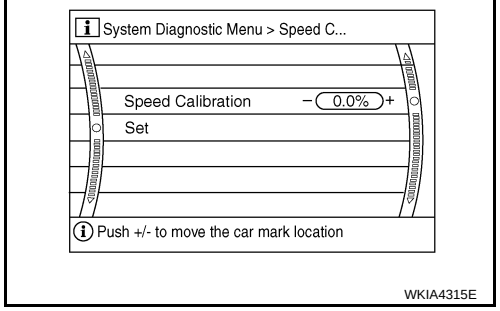
Angle adjustment

- Adjusts turning angle output detected by the gyroscope.



Speed Calibration

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



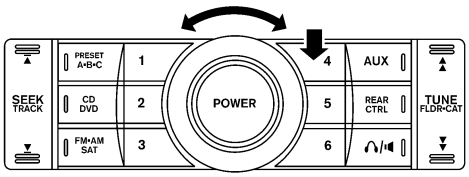
WKIA4315E

CAN Diagnostic Support Monitor

INFOID:0000000004277943

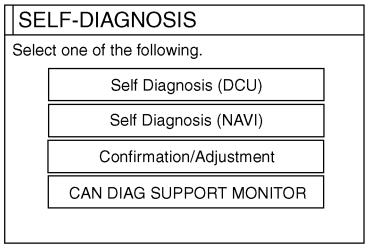
OPERATION PROCEDURE

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.)



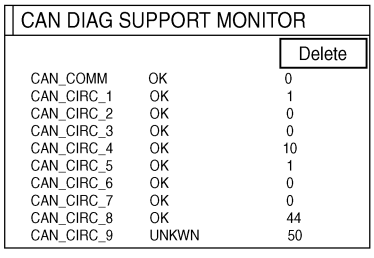
WKIA5232E

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”.



WKIA4301E

6. Display status of CAN communication.



WKIA4307E

Item	Content	Error counter
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

- If the ignition is turned on and UNKWN is shown on the screen, the value of the counter will be up. (MAX50)
- The value of the counter does not change if the ignition changes to OFF. (MAX50)
- If the counter shows the value of 50 and UNKWN is shown, the value of 50 will not be changed.

AV Switch Self-Diagnosis Function

INFOID:0000000004277944

Refer to AV-49, "AV Switch Self-Diagnosis Function".

Power Supply and Ground Circuit Inspection for NAVI Control Unit

INFOID:0000000004277945

1.CHECK FUSES

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

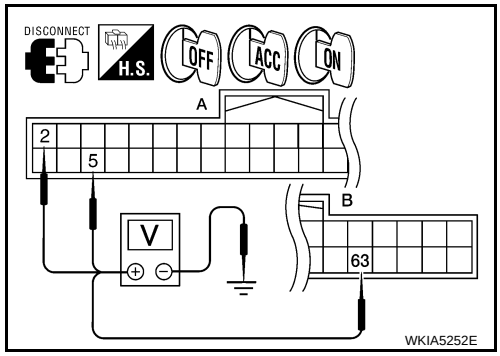
Terminals		Power source	Fuse No.
Connector	Terminal		
B504	2	Battery power	17
	5	ACC or ON power	4
B505	63	ON or START	12

OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3.

2.CHECK POWER SUPPLY CIRCUITS

1. Disconnect NAVI control unit connectors.
2. Check voltage between connector terminals and ground as follows.



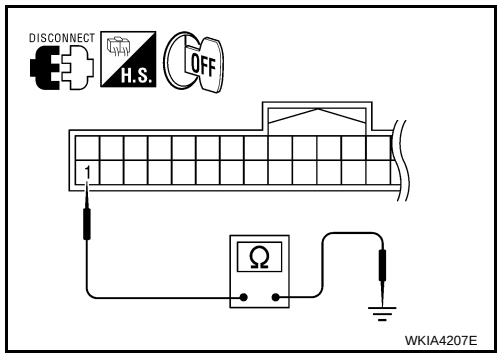
Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal				
B504 (A)	2	Ground	Battery voltage	Battery voltage	Battery voltage
	5		0V	Battery voltage	Battery voltage
B505 (B)	63		0V	0V	Battery voltage

OK or NG

OK >> GO TO 3.
NG >> Check harness for open between NAVI control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between the following NAVI control unit terminals and ground.



Terminals			Ignition switch	Continuity
Connector	Terminal	—		
B504	1	Ground	OFF	Yes

OK or NG

OK >> Inspection End.
NG >> Repair or replace harness.

Power Supply and Ground Circuit Inspection for Display Control Unit

INFOID:0000000004277946

1. CHECK FUSE

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

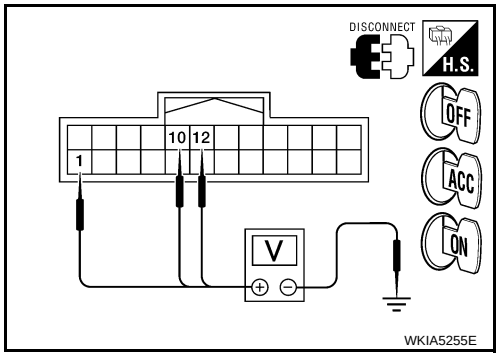
Terminals		Power source	Fuse No.
Connector	Terminal		
M94	1	Battery power	19
	10	ACC power	4
	12	Ignition switch ON or START	12

OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3.

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect display control unit connector M94.
2. Check voltage between connector terminals and ground as follows.



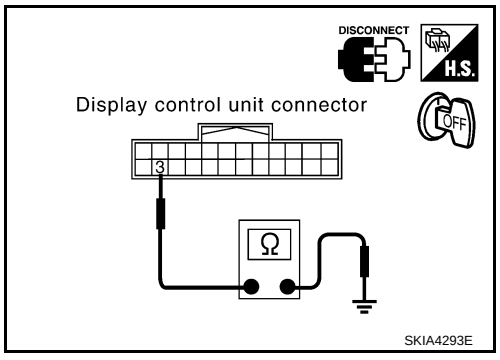
Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal				
M94	1	Ground	Battery voltage	Battery voltage	Battery voltage
	10		0V	Battery voltage	
	12		0V	0V	

OK or NG

OK >> GO TO 3.
NG >> Check harness for open between display control unit and fuse.

3. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between the following display control unit terminal and ground.



Terminals			Ignition switch	Continuity
Connector	Terminal	—		
M94	3	Ground	OFF	Yes

OK or NG

OK >> Inspection End.
NG >> Repair or replace harness.

Power Supply and Ground Circuit Inspection for Display Unit

INFOID:0000000004277947

1. CHECK POWER SUPPLY AND GROUND CIRCUIT FOR DISPLAY CONTROL UNIT

1. Check power supply and ground circuit for display control unit. Refer to AV-181, "Power Supply and Ground Circuit Inspection for Display Control Unit".

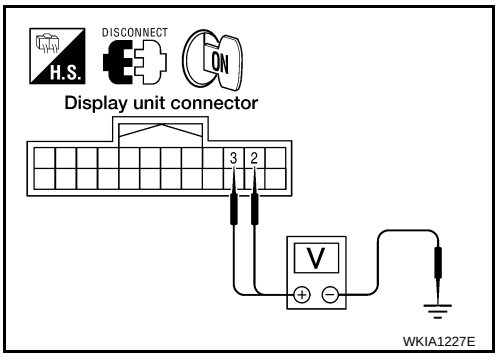
OK or NG

OK >> GO TO 2.
NG >> Repair malfunctioning part.

2. CHECK POWER SUPPLY CIRCUIT FOR DISPLAY UNIT

1. Disconnect display unit connector.
2. Turn ignition switch ON.
3. Check voltage between display unit harness connector M93 terminals 2, 3 and ground.

Approx. 9V



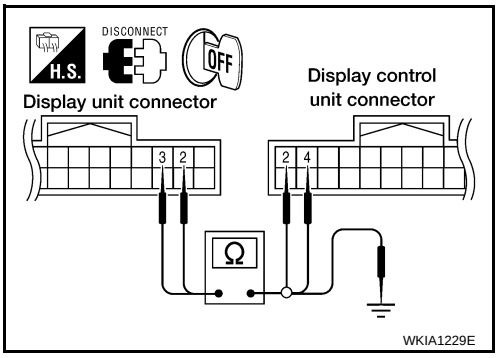
OK or NG

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

3. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M94.
3. Check continuity between display control unit harness connector M94 terminals 2, 4 and display unit harness connector M93 terminals 2, 3.

Terminals				Continuity
Display control unit		Display unit		
Connector	Terminal	Connector	Terminal	
M94	2	M93	2	Yes
	4		3	



4. Check continuity between display unit and ground.

Terminals			Continuity
Display unit		—	
Connector	Terminal		
M93	2	Ground	No
	3		

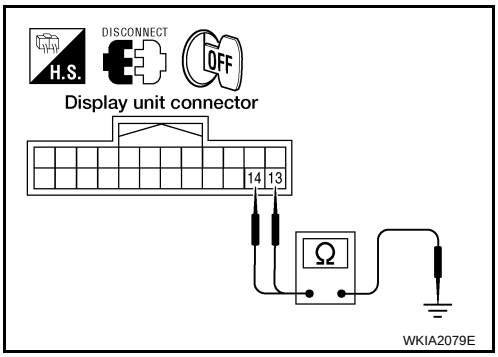
OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".
NG >> Repair harness.

4. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between display unit harness connector M93 terminals 13, 14 and ground.

Continuity should exist.



OK or NG

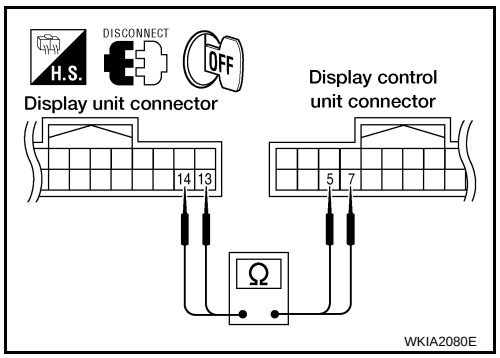
OK >> GO TO 6.
NG >> GO TO 5.

5. CHECK HARNESS

1. Disconnect display control unit connector M94.

2. Check continuity between display unit harness connector M93 terminals 13, 14 and display control unit harness connector M94 terminals 5, 7.

Continuity should exist.



OK or NG

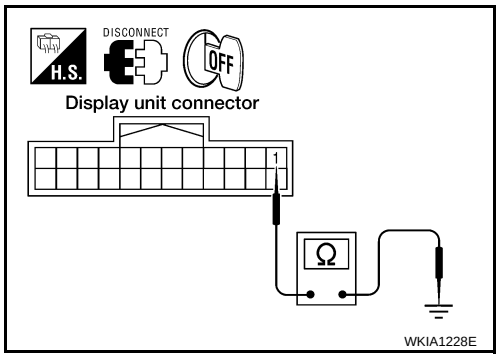
OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".
NG >> Repair harness.

6. CHECK GROUND CIRCUIT

Check continuity between display unit and ground as follows.

1.

Terminals			Ignition switch	Continuity
Connector	Terminal	—		
M93	1	Ground	OFF	Yes



OK or NG

OK >> Inspection End.
NG >> Repair harness.

Power Supply and Ground Circuit Inspection for AV Switch

INFOID:0000000004277948

1. CHECK FUSE

Make sure the following fuses of the AV switch are not blown.

Terminals		Power source	Fuse No.
Connector	Terminal		
M98	1	Battery power	19
	2	ACC power	4

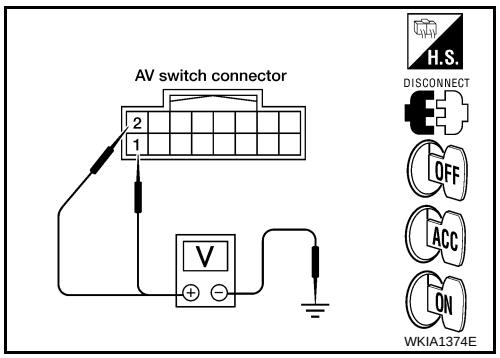
OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3.

2. CHECK POWER SUPPLY CIRCUIT

1. Disconnect AV switch connector.
2. Check voltage between connector terminals and ground as follows.

Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal				
M98	1	Ground	Battery voltage	Battery voltage	Battery voltage
	2		0V	Battery voltage	Battery voltage



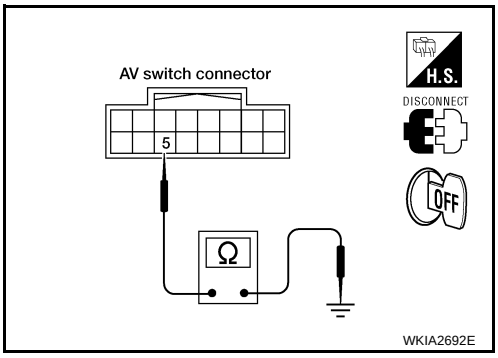
OK or NG

OK >> GO TO 3.
NG >> Check harness for open between AV switch and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between AV switch and ground as follows.

Terminals			Ignition switch	Continuity
Connector	Terminal	(–)		
M98	5	Ground	OFF	Yes



OK or NG

OK >> Inspection End.
NG >> Repair or replace harness.

Vehicle Speed Signal Inspection for NAVI Control Unit

INFOID:0000000004277949

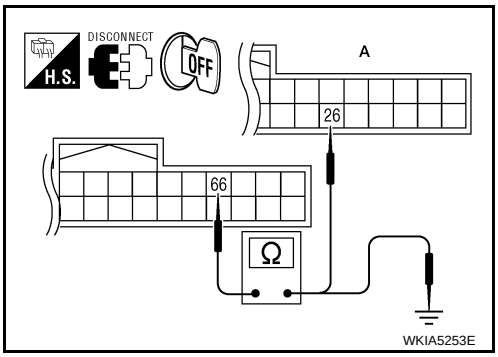
1.CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector B505, display control unit connector M94 and combination meter connector M24.
3. Check continuity between NAVI control unit harness connector B505 (B) terminal 66 and combination meter harness connector M24 (A) terminal 26.

Continuity should exist.

4. Check continuity between NAVI control unit harness connector B505 (B) terminal 66 and ground.

Continuity should not exist.



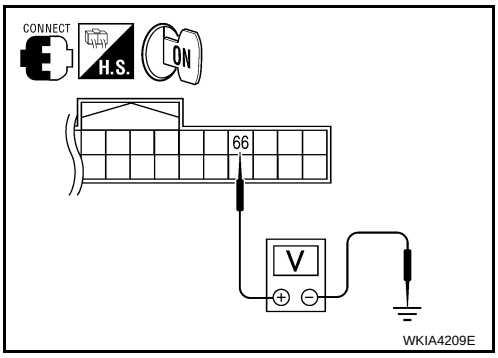
OK or NG

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

2.CHECK 1: VEHICLE SPEED SIGNAL

1. Connect NAVI control unit connector, display control unit connector and combination meter connector.
2. Turn ignition switch ON.
3. Check voltage between NAVI control unit harness connector B505 terminal 66 and ground.

Approx. 3.5V or more



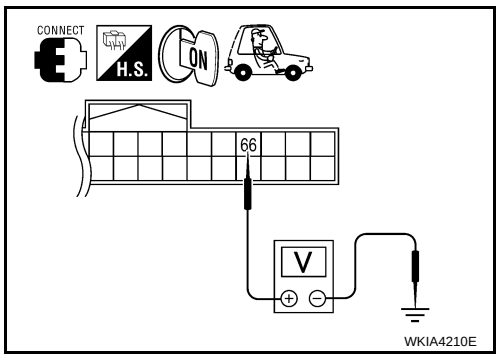
OK or NG

OK >> GO TO 3.
NG >> Replace NAVI control unit. Refer to AV-215, "Removal and Installation".

3.CHECK 2: VEHICLE SPEED SIGNAL

1. Drive vehicle at a constant speed.

2. Check signal between NAVI control unit harness connector B505 terminal 66 and ground with CONSULT-III or oscilloscope.



66 - Ground **: Refer to AV-166, "Terminal and Reference Value for NAVI Control Unit".**

OK or NG

OK >> Replace NAVI control unit. Refer to AV-215, "Removal and Installation".

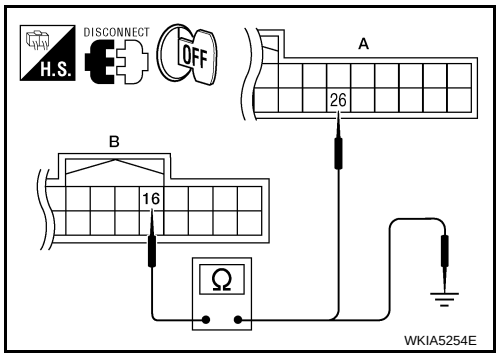
NG >> Check combination meter system. Refer to DI-18, "Vehicle Speed Signal Inspection".

Vehicle Speed Signal Inspection for Display Control Unit

INFOID:0000000004277950

1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M94, NAVI control unit connector B505 and combination meter connector M24.
3. Check continuity between combination meter connector M24 (A) terminal 26 and display control unit connector M94 (B) terminal 16.



Continuity should exist.

4. Check continuity between display control unit harness connector M94 (B) terminal 16 and ground.

Continuity should not exist.

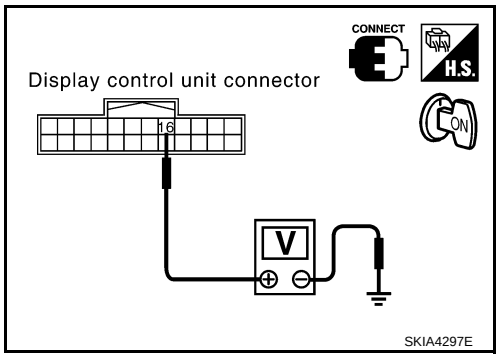
OK or NG

OK >> GO TO 2.

NG >> Repair harness.

2. CHECK 1: VEHICLE SPEED SIGNAL

1. Connect display control unit connector, NAVI control unit connector and combination meter connector.
2. Turn ignition switch ON.
3. Check voltage between display control unit harness connector M94 terminal 16 and ground.



Approx. 3.5V or more

OK or NG

OK >> GO TO 3.

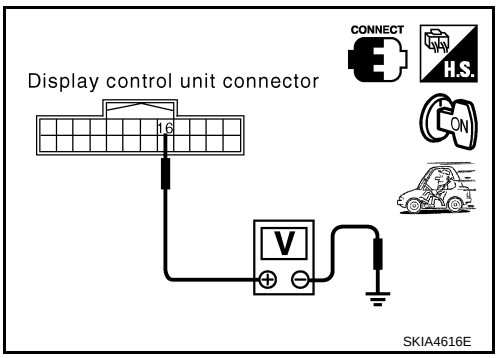
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

3. CHECK 2: VEHICLE SPEED SIGNAL

1. Drive vehicle at a constant speed.

2. Check signal between display control unit harness connector M94 terminal 16 and ground with CONSULT-III or oscilloscope.

16 - Ground	**: Refer to AV-168, "Terminal and Reference Value for Display Control Unit".**



OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".

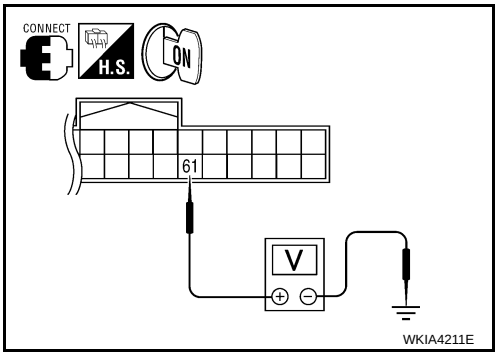
NG >> Check combination meter system. Refer to DI-18, "Vehicle Speed Signal Inspection".

Illumination Signal Inspection for NAVI Control Unit

INFOID:0000000004277951

1.CHECK ILLUMINATION SIGNAL

1. Turn the ignition switch ON.
2. Check voltage between NAVI control unit and ground.



Terminals			Lighting switch position	
(+)		(–)		
Connector	Terminal		1st or 2nd position	OFF
B505	61	Ground	Battery voltage	Approx. 0V

OK or NG

OK >> Replace NAVI control unit. Refer to AV-215, "Removal and Installation".

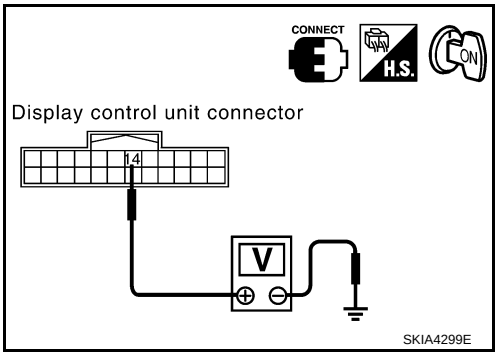
NG >> Check harness for open or short between NAVI control unit and IPDM E/R.

Illumination Signal Inspection for Display Control Unit

INFOID:0000000004277952

1.CHECK ILLUMINATION SIGNAL

1. Turn ignition switch ON.
2. Check voltage between display control unit and ground.



Terminals			Lighting switch position	
(+)		(–)		
Connector	Terminal		1st or 2nd position	OFF
M94	14	Ground	Battery voltage	Approx. 0V

OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".

NG >> Check harness for open or short between display control unit and IPDM E/R.

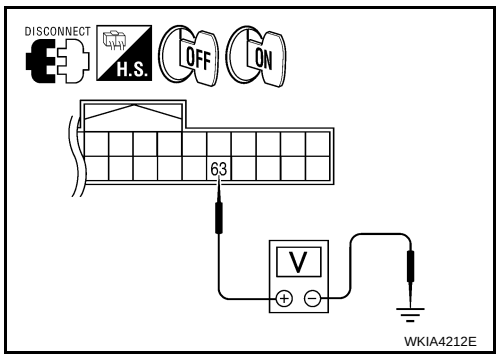
Ignition Signal Inspection for NAVI Control Unit

INFOID:0000000004277953

1.CHECK IGNITION SIGNAL

1. Disconnect NAVI control unit connector B505.
2. Turn ignition switch ON.
3. Check voltage between NAVI control unit harness connector B505 terminal 63 and ground.

Battery voltage should exist.



OK or NG

OK >> Replace NAVI control unit. Refer to AV-215, "Removal and Installation".

NG >> Check harness for open or short between NAVI control unit and fuse.

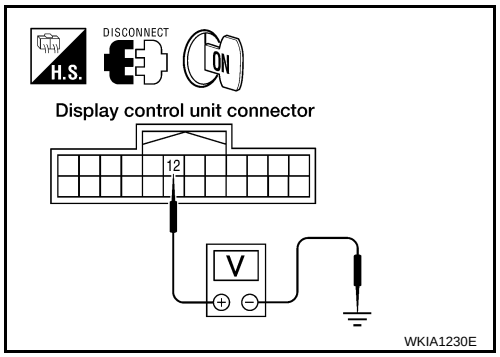
Ignition Signal Inspection for Display Control Unit

INFOID:0000000004277954

1.CHECK IGNITION SIGNAL

1. Disconnect display control unit connector M94.
2. Turn ignition switch ON.
3. Check voltage between display control unit harness connector M94 terminal 12 and ground.

Battery voltage should exist.



OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".

NG >> Check harness for open or short between display control unit and fuse.

Reverse Signal Inspection for NAVI Control Unit

INFOID:0000000004277955

1.CHECK REVERSE LAMP

1. Turn ignition switch ON.
2. Place A/T selector lever into R-position. Do back-up lamps come on?

YES or NO

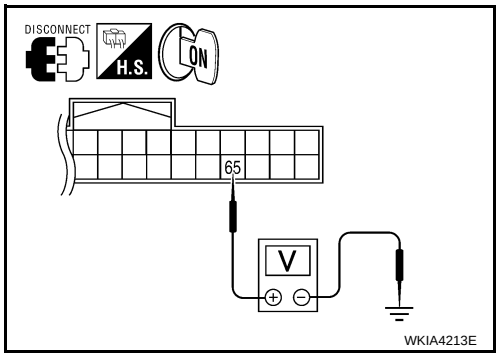
YES >> GO TO 2.

NO >> Check back-up lamp system. Refer to LT-88.

2.CHECK REVERSE SIGNAL

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

Terminals			Selector lever position	
(+)		(–)		
Connector	Terminal		R-position	Other than R-position
B505	65	Ground	Battery voltage	Approx. 0V



OK or NG

OK >> Replace NAVI control unit. Refer to AV-215, "Removal and Installation".

NG >> Check harness for open or short between NAVI control unit and back-up lamp position relay.

Reverse Signal Inspection for Display Control Unit

INFOID:0000000004277956

1.CHECK REVERSE LAMP

1. Turn ignition switch ON.

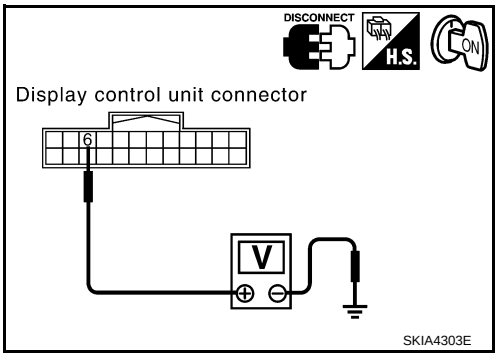
2. Place A/T selector lever into R-position. Do back-up lamps come on?

YES or NO

YES >> GO TO 2.
NO >> Check back-up lamp system. Refer to LT-88.

2.CHECK REVERSE SIGNAL

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



Terminals			Selector lever position	
(+)		(–)		
Connector	Terminal		R-position	Other than R-position
M94	6	Ground	Battery voltage	Approx. 0V

OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".
NG >> Check harness for open or short between display control unit and back-up lamp position relay.

AV Communication Line Check (Between Display Control Unit and NAVI Control Unit)

INFOID:0000000004277957

1.CHECK POWER SUPPLY AND GROUND CIRCUIT

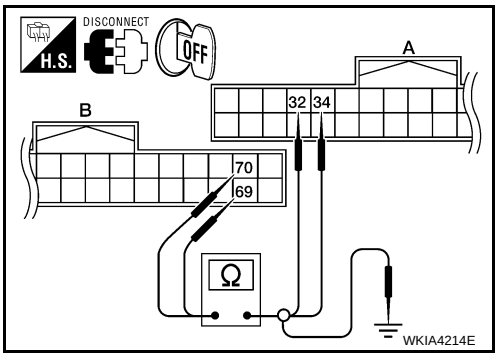
Check power supply and ground circuit for NAVI control unit. Refer to AV-180, "Power Supply and Ground Circuit Inspection for NAVI Control Unit".

OK or NG

OK >> GO TO 2.
NG >> Check the malfunctioning parts.

2.CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector B505 and display control unit connector M95.
3. Check continuity between NAVI control unit and display control unit.



Terminals				Continuity
B		A		
Connector	Terminal	Connector	Terminal	
NAVI control unit: B505	69	Display control unit: M95	32	Yes
	70		34	

4. Check continuity between NAVI control unit and ground.

Terminals			Continuity
B		—	
Connector	Terminal		
NAVI control unit: B505	69	Ground	No
	70		

OK or NG

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

3.CHECK SELF-DIAGNOSIS OF DCU

1. Replace NAVI control unit.
2. Connect NAVI control unit connector and display control unit connector.

3. Turn ignition switch ON.
4. Start self-diagnosis of DCU and check the self-diagnosis result.

OK or NG

OK >> Inspection End.
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

Audio Communication Line Check (Between Display Control Unit and Audio Unit)

INFOID:0000000004277958

1. CHECK POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit for audio unit. Refer to AV-53, "Power Supply Circuit Inspection".

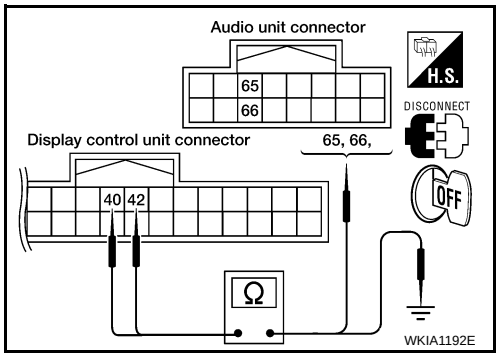
OK or NG

OK >> GO TO 2.
NG >> Check the malfunctioning parts.

2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect audio unit connector M45 and display control unit connector M95.
3. Check continuity between audio unit and display control unit.

Terminals				Continuity
Display control unit		Audio unit		
Connector	Terminal	Connector	Terminal	
M95	40	M45	65	Yes
	42		66	



4. Check continuity between display control unit and ground.

Terminals			Continuity
Display control unit		—	
Connector	Terminal		
M95	40	Ground	No
	42		

OK or NG

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

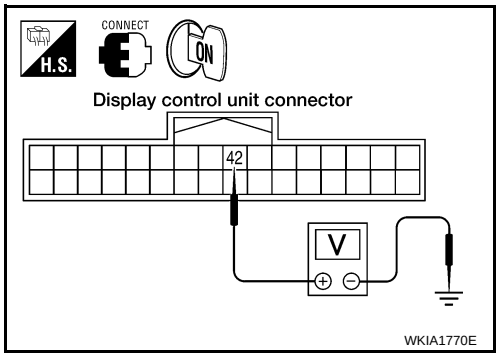
3. CHECK 1: AUDIO-TX COMMUNICATION SIGNAL

1. Connect display control unit connector M95.
2. Turn ignition switch ON.
3. Check voltage between display control unit harness connector M95 terminal 42 and ground.

Approx. 3.5V or more.

OK or NG

OK >> GO TO 4.
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

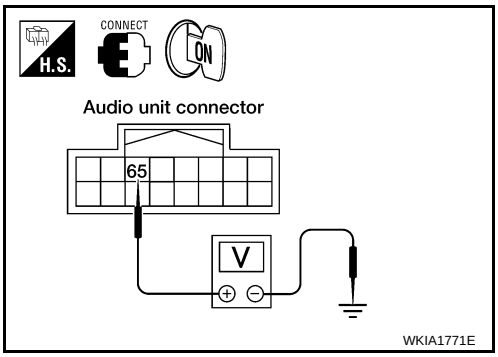


4. CHECK 2: AUDIO-RX COMMUNICATION SIGNAL

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M95.
3. Connect audio unit connector.

4. Turn ignition switch ON.
5. Check voltage between audio unit harness connector M45 terminal 65 and ground.

Approx. 3.5V or more.



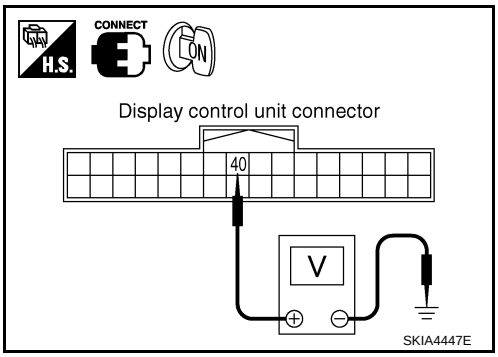
OK or NG

OK >> GO TO 5.
NG >> Replace audio unit. Refer to AV-72, "Removal and Installation".

5. CHECK 3: AUDIO-TX COMMUNICATION SIGNAL

1. Turn ignition switch OFF.
2. Connect display control unit connector.
3. Turn ignition switch ON.
4. Check signal between display control unit harness connector M95 terminal 40 and ground with CONSULT-III or oscilloscope.

40 - Ground : Refer to AV-168, "Terminal and Reference Value for Display Control Unit".



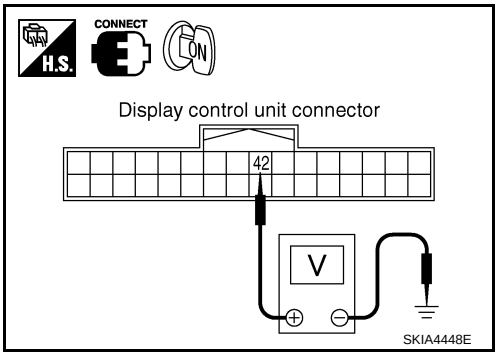
OK or NG

OK >> GO TO 6.
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

6. CHECK 4: AUDIO-RX COMMUNICATION SIGNAL

1. Turn ignition switch ON.
2. Check signal between display control unit harness connector M95 terminal 42 and ground with CONSULT-III or oscilloscope.

42 - Ground : Refer to AV-168, "Terminal and Reference Value for Display Control Unit".



OK or NG

OK >> Inspection End.
NG >> Replace audio unit. Refer to AV-72, "Removal and Installation".

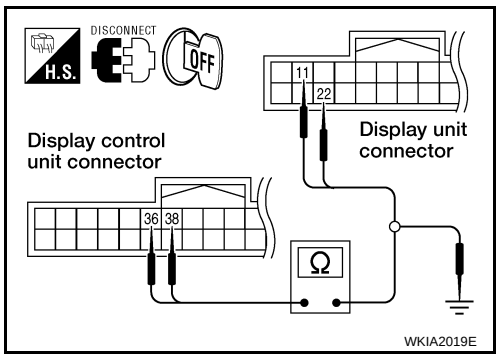
Display Communication Line Check (Between Display Control Unit and Display Unit)

INFOID:0000000004277959

1. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display unit connector M93 and display control unit connector M95.
3. Check continuity between display control unit and display unit.

Terminals				Continuity
Display control unit		Display unit		
Connector	Terminal	Connector	Terminal	
M95	36	M93	11	Yes
	38		22	



4. Check continuity between display control unit and ground.

Terminals			Continuity
Display control unit		—	
Connector	Terminal		
M95	36	Ground	No
	38		

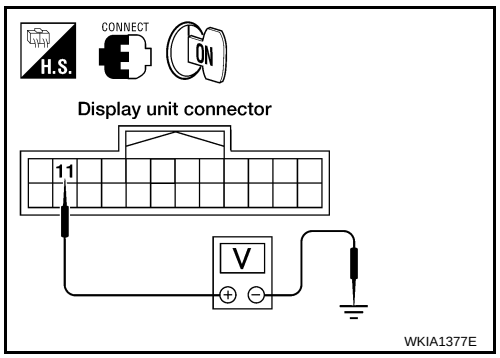
OK or NG

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

2. CHECK 1: COMMUNICATION SIGNAL (DCU–DSP)

1. Connect display unit connector.
2. Turn ignition switch ON.
3. Check voltage between display unit harness connector M93 terminal 11 and ground.

Approx. 3.5V or more.



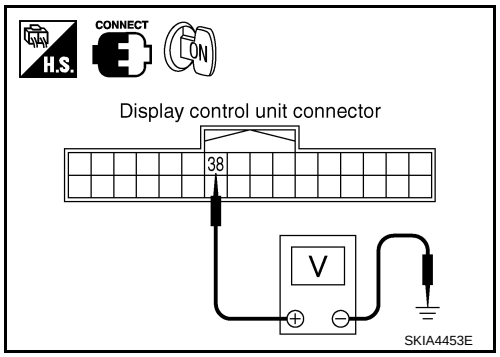
OK or NG

OK >> GO TO 3.
NG >> Replace display unit. Refer to AV-148, "Removal and Installation".

3. CHECK 2: COMMUNICATION SIGNAL (DSP–DCU)

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M95.
3. Connect display control unit connector.
4. Turn ignition switch ON.
5. Check voltage between display control unit harness connector M95 terminal 38 and ground.

Approx. 3.5V or more.



OK or NG

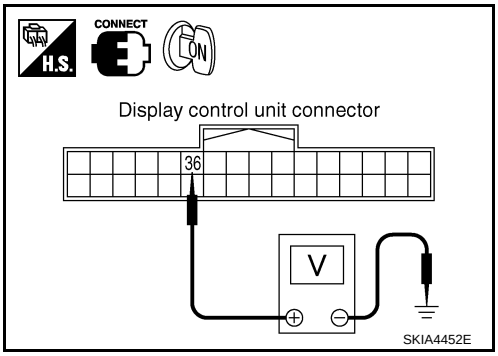
OK >> GO TO 4.
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

4. CHECK 3: COMMUNICATION SIGNAL (DCU–DSP)

1. Turn ignition switch OFF.
2. Connect display unit connector.
3. Turn ignition switch ON.

4. Check signal between display control unit harness connector M95 terminal 36 and ground with CONSULT-III or oscilloscope.

36 - Ground	**: Refer to AV-168, "Terminal and Reference Value for Display Control Unit".**



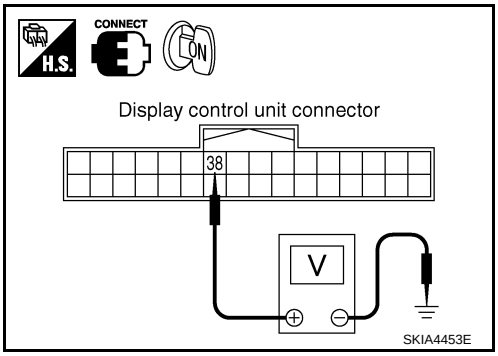
OK or NG

OK >> GO TO 5.
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

5. CHECK 4: COMMUNICATION SIGNAL (DSP–DCU)

1. Turn ignition switch ON.
2. Check signal between display control unit harness connector M95 terminal 38 and ground with CONSULT-III or oscilloscope.

38 - Ground	**: Refer to AV-168, "Terminal and Reference Value for Display Control Unit".**



OK or NG

OK >> Inspection End.
NG >> Replace display unit. Refer to AV-148, "Removal and Installation".

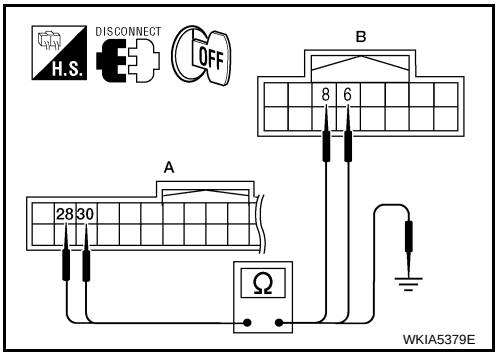
AV Communication Line Check (Between Display Control Unit and AV Switch)

INFOID:0000000004277960

1. CHECK AV SWITCH CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M95 and AV switch connector M98.
3. Check continuity between display control unit and AV switch.

Terminals				Continuity
A		B		
Connector	Terminal	Connector	Terminal	
Display control unit: M95	28	M98	6	Yes
	30		8	



4. Check continuity between display control unit and ground.

Terminals			Continuity
A		—	
Connector	Terminal		
Display control unit: M95	28	Ground	No
	30		

OK or NG

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

2. CHECK SELF-DIAGNOSIS OF DCU

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

OK or NG

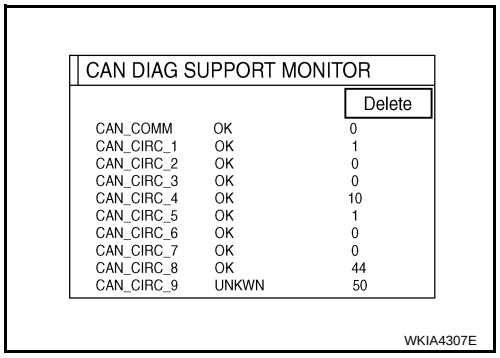
OK >> Inspection End.
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

CAN Communication Line Check

INFOID:0000000004277961

1.CHECK MONITOR DESCRIPTION

1. Start display control unit self-diagnosis. Refer to AV-169, "Self-Diagnosis Mode (DCU)".
2. Select “CAN DIAG SUPPORT MONITOR”. Refer to AV-179, "CAN Diagnostic Support Monitor".



Item	content		Error counter
	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	OK	UNKWN	0-50

3. Record each item display description (OK/NG/UKNWN) 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-39.

If NAVI control unit detects that DVD-ROM map Is not inserted

INFOID:0000000004277962

1.CHECK DVD-ROM

Make sure identified DVD-ROM map is inserted.

OK or NG

OK >> Replace NAVI control unit. Refer to AV-215, "Removal and Installation".
NG >> Insert identified DVD-ROM map.

If NAVI control unit detects that inserted DVD-ROM map Is malfunctioning or if it Is impossible to load data from DVD-ROM map

INFOID:0000000004277963

1.CHECK 1: DVD-ROM

Remove inserted DVD-ROM map to check that it is identified.

OK or NG

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

2.CHECK 2: DVD-ROM

Check DVD-ROM for dirt, scratches and warpage.

OK or NG

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

3.CHECK 3: DVD-ROM

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

OK or NG

OK >> Replace NAVI control unit. Refer to AV-215, "Removal and Installation".
NG >> Replace DVD-ROM map.

If Connection Between NAVI Control Unit and GPS Antenna Is Malfunctioning

INFOID:0000000004277964

1.CHECK GPS ANTENNA

Check cable for GPS antenna for damage.

OK or NG

OK >> GO TO 2.
NG >> Replace GPS antenna. Refer to AV-215, "Removal and Installation".

2.CHECK BY REPLACEMENT OF GPS ANTENNA

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

Result of self-diagnosis; Found same result?

YES >> Replace NAVI control unit. Refer to AV-215, "Removal and Installation".
NO >> Replace GPS antenna. Refer to AV-215, "Removal and Installation".

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

INFOID:0000000004277965

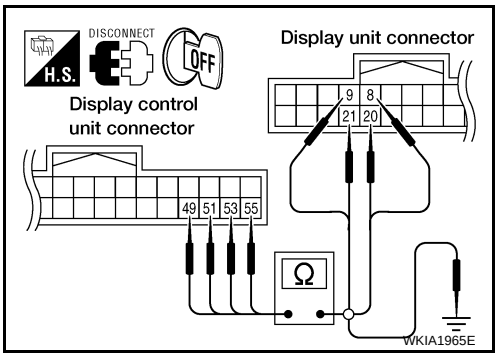
1.CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M95 and display unit connector M93.
3. Check continuity between display control unit harness connector M95 terminal 49, 51, 53, 55 and display unit harness connector M93 terminal 21, 9, 20, 8.

Continuity should exist.

4. Check continuity between display control unit harness connector M95 terminal 49, 51, 53, 55 and ground.

Continuity should not exist.



OK or NG

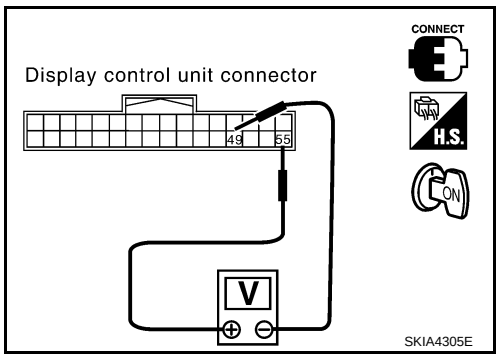
OK >> GO TO 2.
NG >> Repair harness.

2.CHECK HORIZONTAL SYNCHRONIZATION SIGNAL

1. Connect display control unit connector and display unit connector.
2. Turn ignition switch ON.

3. Check signal between display control unit connector M95 terminals 55 and 49 with CONSULT-III or oscilloscope.

55 - 49 **: Refer to AV-168, "Terminal and Reference Value for Display Control Unit".**



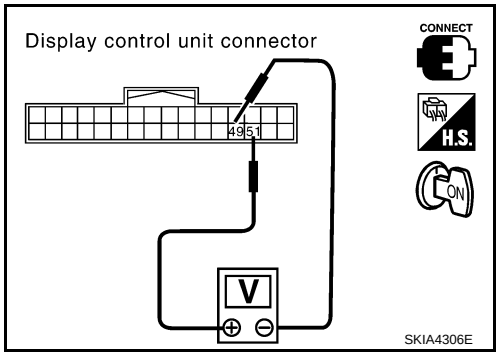
OK or NG

OK >> GO TO 3.
NG >> Replace display unit. Refer to AV-148, "Removal and Installation".

3. CHECK RGB AREA SIGNAL

1. Press the “TRIP” button.
2. Check signal between display control unit connector M95 terminals 51 and 49 with CONSULT-III or oscilloscope.

51 - 49 **: Refer to AV-168, "Terminal and Reference Value for Display Control Unit".**



OK or NG

OK >> Replace display unit. Refer to AV-148, "Removal and Installation".
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

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

INFOID:0000000004277966

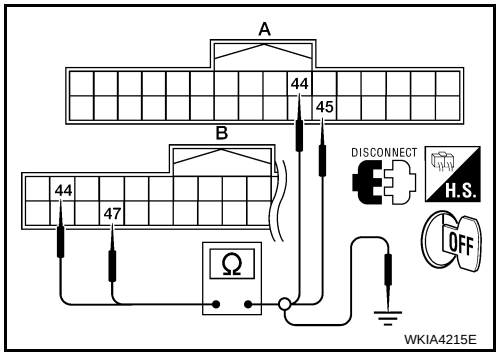
1. CHECK RGB HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector B505 and display control unit connector M95.
3. Check continuity between NAVI control unit and display control unit.
4. Check continuity between NAVI control unit and ground.

• **When the screen looks bluish.**

Terminals				Continuity
B		A		
Connector	Terminal	Connector	Terminal	
NAVI control unit: B505	44	Display control unit: M95	44	Yes
	47		45	

Terminals			Continuity
B		—	
Connector	Terminal		
NAVI control unit: B505	44	Ground	No
	47		



OK or NG

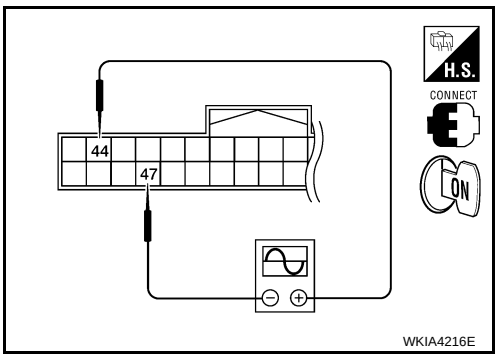
OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK RGB SIGNAL

1. Connect NAVI control unit connector and display control unit connector.
2. Turn ignition switch ON.
3. Display “Color bar” by “CONFIRMATION/ADJUSTMENT” mode.

4. Check signal between NAVI control unit connector B505 terminal 44 and 47 with CONSULT-III or oscilloscope.

• **When the screen looks bluish.**
Voltage signal between NAVI control unit connector B505 terminal 44 and 47.



44 - 47	**: Refer to AV-166, "Terminal and Reference Value for NAVI Control Unit".**

OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".

NG >> Replace NAVI control unit. Refer to AV-215, "Removal and Installation".

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

INFOID:0000000004277967

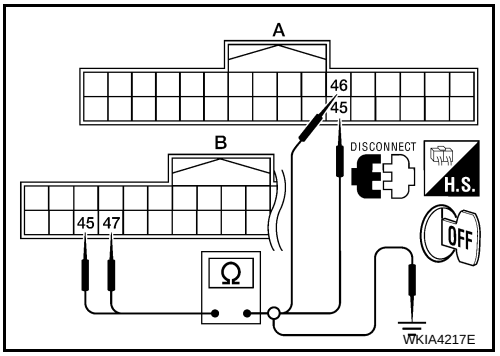
1. CHECK RGB HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector B505 and display control unit connector M95.
3. Check continuity between NAVI control unit and display control unit.
4. Check continuity between NAVI control unit and ground.

• **When the screen looks reddish.**

Terminals				Continuity
B		A		
Connector	Terminal	Connector	Terminal	
NAVI control unit: B505	45	Display control unit: M95	46	Yes
	47		45	

Terminals			Continuity
B		—	
Connector	Terminal		
NAVI control unit: B505	45	Ground	No
	47		



OK or NG

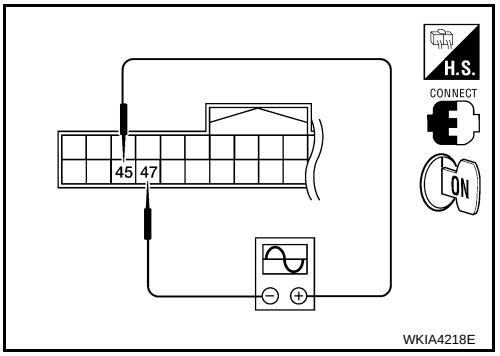
OK >> GO TO 2.

NG >> Repair harness or connector.

2. CHECK RGB SIGNAL

1. Connect NAVI control unit connector and display control unit connector.
2. Turn ignition switch ON.
3. Display "Color bar" by "CONFIRMATION/ADJUSTMENT" mode.
4. Check signal between NAVI control unit connector B505 terminal 45 and 47 with CONSULT-III or oscilloscope.

• **When the screen looks reddish.**
Voltage signal between NAVI control unit connector B505 terminal 45 and 47.



45 - 47	**: Refer to AV-166, "Terminal and Reference Value for NAVI Control Unit".**

OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".

NG >> Replace NAVI control unit. Refer to AV-215, "Removal and Installation".

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

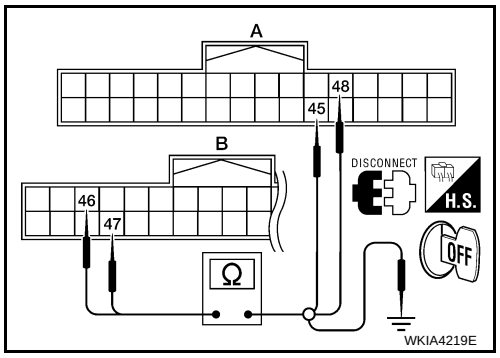
INFOID:0000000004277968

1. CHECK RGB HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector B505 and display control unit connector M95.
3. Check continuity between NAVI control unit and display control unit.
4. Check continuity between NAVI control unit and ground.

- **When the screen looks yellowish.**

Terminals				Continuity
B		A		
Connector	Terminal	Connector	Terminal	
NAVI control unit: B505	46	Display control unit: M95	48	Yes
	47		45	



Terminals			Continuity
B		—	
Connector	Terminal		
NAVI control unit: B505	46	Ground	No
	47		

OK or NG

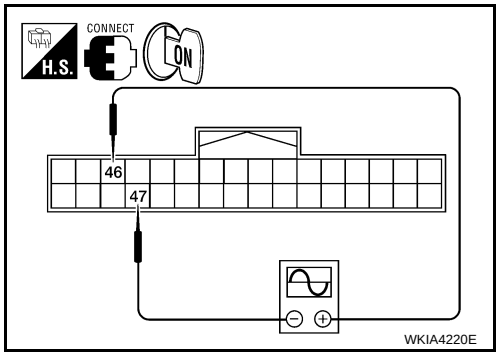
OK >> GO TO 2.
NG >> Repair harness or connector.

2. CHECK RGB SIGNAL

1. Connect NAVI control unit connector and display control unit connector.
2. Turn ignition switch ON.
3. Display "Color bar" by "CONFIRMATION/ADJUSTMENT" mode.
4. Check signal between NAVI control unit connector B505 terminal 46 and 47 with CONSULT-III or oscilloscope.

- **When the screen looks yellowish.**
  Voltage signal between NAVI control unit connector B505 terminal 46 and 47.

46 - 47 : **Refer to AV-166, "Terminal and Reference Value for NAVI Control Unit".**



OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".
NG >> Replace NAVI control unit. Refer to AV-215, "Removal and Installation".

Color of RGB Image Is Not Proper (All Screens Look Bluish)

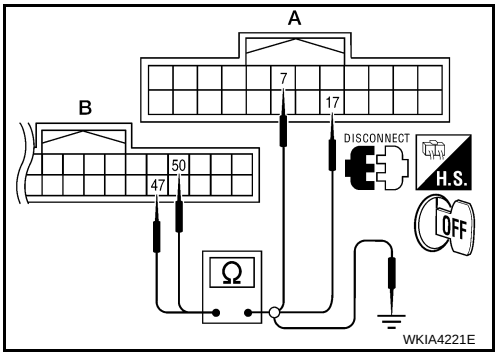
INFOID:0000000004277969

1. CHECK RGB HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M95 and display unit connector M93.
3. Check continuity between display control unit and display unit.
4. Check continuity between display control unit and ground.

- **When the screen looks bluish.**

Terminals				Continuity
B		A		
Connector	Terminal	Connector	Terminal	
Display control unit: M95	50	Display unit: M93	17	Yes
	47		7	



Terminals			Continuity
B		—	
Connector	Terminal		
Display control unit: M95	50	Ground	No
	47		

OK or NG

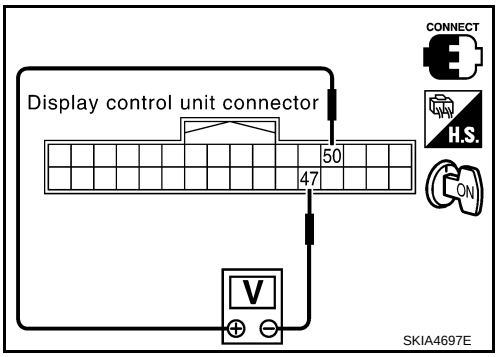
OK >> GO TO 2.
NG >> Repair harness or connector.

2.CHECK RGB SIGNAL

1. Connect display control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Display “Color bar” by “CONFIRMATION/ADJUSTMENT” mode.
4. Check the following with CONSULT-III or oscilloscope.

- **When the screen looks bluish.**
  Voltage signal between display control unit connector M95 terminal 50 and 47.

50 - 47 **: Refer to AV-168, "Terminal and Reference Value for Display Control Unit".**



OK or NG

OK >> Replace display unit. Refer to AV-148, "Removal and Installation".
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

Color of RGB Image Is Not Proper (All Screens Look Reddish)

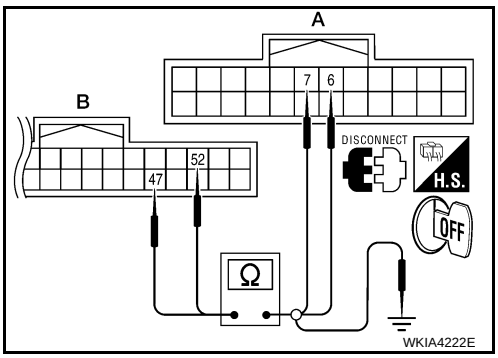
INFOID:0000000004277970

1.CHECK RGB HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M95 and display unit connector M93.
3. Check continuity between display control unit and display unit.
4. Check continuity between display control unit and ground.

- **When the screen looks reddish.**

Terminals				Continuity
B		A		
Connector	Terminal	Connector	Terminal	
Display control unit: M95	52	Display unit: M93	6	Yes
	47		7	



Terminals			Continuity
B		—	
Connector	Terminal		
Display control unit: M95	52	Ground	No
	47		

OK or NG

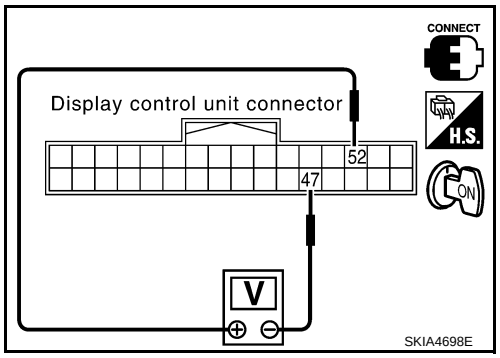
OK >> GO TO 2.
NG >> Repair harness or connector.

2.CHECK RGB SIGNAL

1. Connect display control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Display “Color bar” by “CONFIRMATION/ADJUSTMENT” mode.
4. Check the following with CONSULT-III or oscilloscope.

- **When the screen looks reddish.**
  Voltage signal between display control unit connector M95 terminal 52 and 47.

52 - 47 **: Refer to AV-168, "Terminal and Reference Value for Display Control Unit".**



OK or NG

OK >> Replace display unit. Refer to AV-148, "Removal and Installation".
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

Color of RGB Image Is Not Proper (All Screens Look Yellowish)

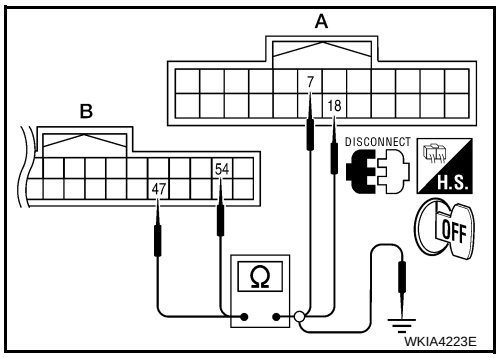
INFOID:0000000004277971

1.CHECK RGB HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M95 and display unit connector M93.
3. Check continuity between display control unit and display unit.
4. Check continuity between display control unit and ground.

- **When the screen looks yellowish.**

Terminals				Continuity
B		A		
Connector	Terminal	Connector	Terminal	
Display control unit: M95	54	Display unit: M93	18	Yes
	47		7	



Terminals			Continuity
B		—	
Connector	Terminal		
Display control unit: M95	54	Ground	No
	47		

OK or NG

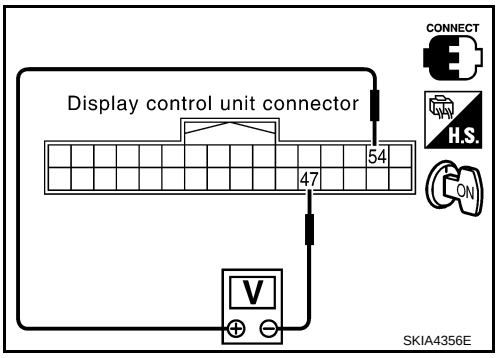
OK >> GO TO 2.
NG >> Repair harness or connector.

2.CHECK RGB SIGNAL

1. Connect display control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Display “Color bar” by “CONFIRMATION/ADJUSTMENT” mode.
4. Check the following with CONSULT-III or oscilloscope.

- **When the screen looks yellowish.**
  Voltage signal between display control unit connector M95 terminal 54 and 47.

54 - 47 **: Refer to AV-168, "Terminal and Reference Value for Display Control Unit".**



OK or NG

OK >> Replace display unit. Refer to AV-148, "Removal and Installation".
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

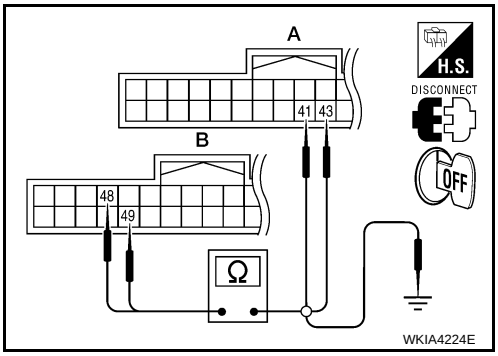
NAVI Screen Is Rolling

INFOID:0000000004277972

1.CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector B505 and display control unit connector M95.
3. Check continuity between NAVI control unit and display control unit.

Terminals				Continuity
B		A		
Connector	Terminal	Connector	Terminal	
NAVI control unit: B505	48	Display control unit: M95	43	Yes
	49		41	



4. Check continuity between NAVI control unit and ground.

Terminals			Continuity
B		—	
Connector	Terminal		
NAVI control unit: B505	48	Ground	No
	49		

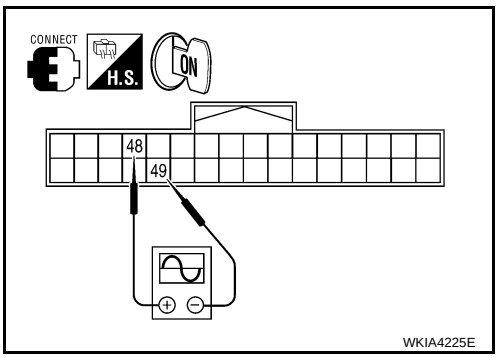
OK or NG

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

2.CHECK RGB SYNCHRONIZING SIGNAL

1. Connect NAVI control unit connector and display control unit connector.
2. Turn ignition switch ON.
3. Check signal between NAVI control unit connector B505 terminals 48 and 49 with CONSULT-III or oscilloscope.

48 - 49 **: Refer to AV-166, "Terminal and Reference Value for NAVI Control Unit".**



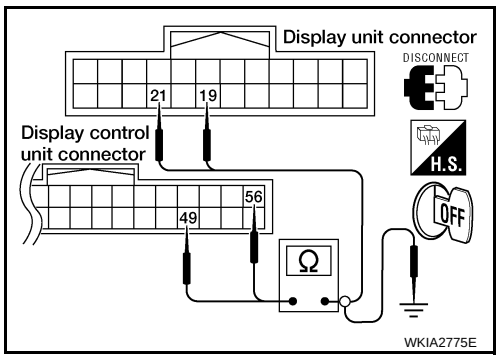
OK or NG

OK >> GO TO 3.
NG >> Replace NAVI control unit. Refer to AV-215, "Removal and Installation".

3.CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect display control unit connector M95 and display unit connector M93.
3. Check continuity between display control unit and display unit.

Terminals				Continuity
Display control unit		Display unit		
Connector	Terminal	Connector	Terminal	
M95	56	M93	19	Yes
	49		21	



4. Check continuity between display control unit and ground.

Terminals			Continuity
Display control unit		—	
Connector	Terminal		
M95	56	Ground	No
	49		

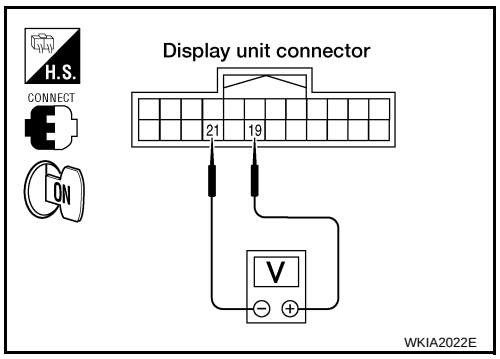
OK or NG

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

4. CHECK RGB SYNCHRONIZING SIGNAL

1. Connect display control unit connector and display unit connector.
2. Turn ignition switch ON.
3. Check signal between display unit connector M93 terminals 19 and 21 with CONSULT-III or oscilloscope.

19 - 21 **: Refer to AV-168, "Terminal and Reference Value for Display Unit".**



OK or NG

OK >> Replace display unit. Refer to AV-148, "Removal and Installation".
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

Guide Sound Is Not Heard

INFOID:0000000004277973

1. CHECK VOICE GUIDE SETTING

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

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

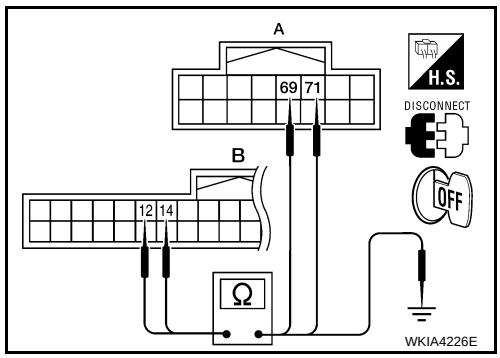
Yes or No

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

2. CHECK HARNESS

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector B504 and audio unit connector M45.
3. Check continuity between NAVI control unit and audio unit.

Terminals				Continuity
B		A		
Connector	Terminal	Connector	Terminal	
NAVI control unit: B504	12	Audio unit: M45	71	Yes
	14		69	



4. Check continuity between NAVI control unit and ground.

Terminals			Continuity
B		—	
Connector	Terminal		
NAVI control unit: B504	12	Ground	No
	14		

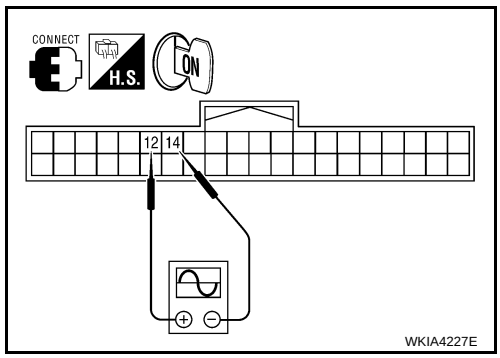
Ok or NG

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

3.CHECK VOICE GUIDE

1. Connect NAVI control unit connector and audio unit connector.
2. Turn ignition switch ON.
3. Check signal between NAVI control unit harness connector B504 terminal 12 and 14 with CONSULT-III or oscilloscope.

12 - 14 **: Refer to AV-166, "Terminal and Reference Value for NAVI Control Unit".**



OK or NG

OK >> Replace audio unit. Refer to AV-72, "Removal and Installation".
NG >> Replace NAVI control unit. Refer to AV-215, "Removal and Installation".

Screen Is Not Shown

INFOID:0000000004277974

1.POWER SUPPLY AND GROUND CIRCUIT CHECK

Check power supply and ground circuit. Refer to AV-181, "Power Supply and Ground Circuit Inspection for Display Control Unit".

OK or NG

OK >> Replace display unit. Refer to AV-148, "Removal and Installation".
NG >> Check the malfunctioning parts.

A/C Screen Is Not Shown (NAVI Screen Is Shown)

INFOID:0000000004277975

1.CHECK IGNITION SIGNAL

Check ignition signal. Refer to AV-187, "Ignition Signal Inspection for Display Control Unit".

OK or NG

OK >> GO TO 2.
NG >> Check the malfunctioning parts.

2.CHECK CAN COMMUNICATION LINE

Check CAN communication line. Refer to LAN-3, "CAN Communication System".

OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".

NG >> After filling out CAN DIAG SUPPORT MONITOR check sheet, GO TO LAN-42, "CAN System Specification Chart".

FUEL ECONOMY Screen Is Not Shown

INFOID:0000000004277976

1. CHECK IGNITION SIGNAL

Check ignition signal. Refer to AV-187, "Ignition Signal Inspection for Display Control Unit".

OK or NG

OK >> GO TO 2.
NG >> Check the malfunctioning parts.

2. CHECK CAN COMMUNICATION LINE

Check CAN communication line. Refer to LAN-42, "CAN System Specification Chart".

OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".
NG >> After filling out CAN DIAG SUPPORT MONITOR check sheet, GO TO LAN-42, "CAN System Specification Chart".

Average Fuel Economy Display Is Not Shown (" *** " Is Shown)

INFOID:0000000004277977

1. CHECK VEHICLE SPEED SIGNAL

Check vehicle speed signal. Refer to AV-185, "Vehicle Speed Signal Inspection for Display Control Unit".

OK or NG

OK >> GO TO 2.
NG >> Check the malfunctioning parts.

2. CHECK CAN COMMUNICATION LINE

Check CAN communication line. Refer to AV-193, "CAN Communication Line Check".

OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".
NG >> After filling out CAN DIAG SUPPORT MONITOR check sheet, GO TO LAN-39.

Distance to Empty Display Is Not Shown (" *** " Is Shown)

INFOID:0000000004277978

1. CHECK SPEEDOMETER

Confirm that speedometer is functioning.

Is speedometer functioning?

YES >> GO TO 2.
NO >> Refer to DI-18, "Vehicle Speed Signal Inspection".

2. CHECK FUEL GAUGE

Confirm that fuel gauge is functioning.

Is fuel gauge functioning?

YES >> GO TO 3.
NO >> Refer to DI-19, "Fuel Level Sensor Unit Inspection".

3. CHECK CAN COMMUNICATION LINE

Check CAN communication line. Refer to AV-193, "CAN Communication Line Check".

OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".
NG >> After filling out CAN DIAG SUPPORT MONITOR check sheet, GO TO LAN-39.

Driving Distance or Average Speed Display Is Not Shown (" *** " Is Shown)

INFOID:0000000004277979

1. CHECK IGNITION SIGNAL

Check ignition signal. Refer to AV-187, "Ignition Signal Inspection for Display Control Unit".

OK or NG

OK >> GO TO 2.
NG >> After filling out CAN DIAG SUPPORT MONITOR check sheet, GO TO LAN-39.

2.CHECK VEHICLE SPEED SIGNAL

Check vehicle speed signal. Refer to AV-185, "Vehicle Speed Signal Inspection for Display Control Unit".

OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".
NG >> Check the malfunctioning parts.

No Warning Message Is Displayed (Combination Meter Warning Lamp Illuminates)

INFOID:0000000004277980

1. DISPLAY CONDITION CHECK

Check display conditions of each warning screen.

Warning screen	Display condition
DOOR OPEN	Vehicle is running [approx. 5 km/h (3 MPH) or faster] and door ajar of any of the doors is detected.
LIFTGATE OPEN	Vehicle is running [approx. 5 km/h (3 MPH) or faster] and liftgate ajar is detected.

Have conditions been met to display warning screen?

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

2.SELF-DIAGNOSIS CHECK

Perform self-diagnosis. Refer to AV-169, "Self-Diagnosis Mode (DCU)".

Is self-diagnosis result OK?

YES >> Replace combination meter. Refer to DI-22, "Combination Meter".
NO >> Check the malfunctioning parts.

Unable to Operate All of AV Switches (Unable to Start Self-Diagnosis)

INFOID:0000000004277981

1.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit. Refer to AV-183, "Power Supply and Ground Circuit Inspection for AV Switch".

OK or NG

OK >> GO TO 2.
NG >> Check the malfunctioning parts.

2.AV SWITCH SELF-DIAGNOSIS

AV switch self-diagnosis. Refer to AV-180, "AV Switch Self-Diagnosis Function".

OK or NG

OK >> GO TO 3.
NG >> Check the malfunctioning parts.

3.CHECK POWER SUPPLY AND GROUND CIRCUIT

Check power supply and ground circuit. Refer to AV-181, "Power Supply and Ground Circuit Inspection for Display Control Unit".

OK or NG

OK >> GO TO 4.
NG >> Check the malfunctioning parts.

4.CHECK COMMUNICATION LINE

Check communication line. Refer to AV-192, "AV Communication Line Check (Between Display Control Unit and AV Switch)".

OK or NG

OK >> Replace AV switch. Refer to AV-72, "Removal and Installation".
NG >> Replace display control unit. Refer to AV-148, "Removal and Installation".

Navigation System Does Not Activate

INFOID:0000000004277982

1.POWER SUPPLY AND GROUND CIRCUIT CHECK

Check power supply and ground circuit. Refer to AV-180, "Power Supply and Ground Circuit Inspection for NAVI Control Unit".

OK or NG

OK >> Replace NAVI control unit. Refer to AV-215, "Removal and Installation".
NG >> Check the malfunctioning parts.

Previous NAVI Conditions Are Not Stored

INFOID:0000000004277983

1.CHECK BATTERY POWER

Check NAVI control unit battery power.
Refer to AV-180, "Power Supply and Ground Circuit Inspection for NAVI Control Unit".

OK or NG

OK >> Replace NAVI control unit. Refer to AV-215, "Removal and Installation".
NG >> Check NAVI control unit battery power system harness.

Previous Vehicle Conditions Are Not Stored

INFOID:0000000004277984

1.CHECK BATTERY POWER

Check display control unit battery power.
Refer to AV-181, "Power Supply and Ground Circuit Inspection for Display Control Unit".

OK or NG

OK >> Replace display control unit. Refer to AV-148, "Removal and Installation".
NG >> Check display control unit battery power system harness.

Position of Current Location Mark Is Not Correct

INFOID:0000000004277985

1.SELF-DIAGNOSIS

Perform “Self-diagnosis mode” of the self-diagnosis function. Refer to AV-171, "Self-Diagnosis Mode (NAVI)".

OK or NG

OK >> GO TO 2.
NG >> Check the malfunctioning parts.

2.ERROR HISTORY DIAGNOSIS

Was any error stored in AV-173, "Confirmation/Adjustment Mode" of the CONFIRMATION/ADJUSTMENT mode?

YES or NO

YES >> AV-173, "Confirmation/Adjustment Mode".
NO >> AV-206, "Driving Test".

Radio Wave from GPS Satellite Is Not Received

INFOID:0000000004277986

1.CHECK ENVIRONMENT

Check if any metal object that intercepts radio waves or an object that emits radio waves (such as a portable phone) is located near the GPS antenna. Check if the vehicle is shielded by a building.

OK or NG

OK >> System is not malfunctioning. The GPS antenna may not be able to receive radio waves from the GPS satellite if it is shielded by metal object or an object emitting radio waves is placed near it.
NG >> GO TO 2.

2.SELF-DIAGNOSIS

Perform “Self-diagnosis mode” of the self-diagnosis function. Refer to AV-171, "Self-Diagnosis Mode (NAVI)".

OK or NG

OK >> Replace GPS antenna. Refer to AV-215, "Removal and Installation".
NG >> Check the malfunctioning parts.

Driving Test

INFOID:0000000004277987

1. DRIVING TEST 1

1. Scroll the map screen to display the area to make correction. Press “ENTER” and select “CURRENT LOCATION CORRECTION”.
2. Correct direction of the vehicle mark.
3. Perform the distance correction of the CONFIRMATION/ADJUSTMENT mode.
   Note: Normally, adjustment is not necessary because this system has automatic distance correction function. However, when a tire chain is fitted, adjustment in accordance with the tire diameter ratio must be made.
4. Are symptoms malfunctioning to the AV-206, "Example of Symptom Judged Not Malfunction" after driving the vehicle?

YES or NO

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

2. DRIVING TEST 2

- Did any malfunction occur when the proper test in the following test patterns is performed?
- Test pattern
  Driving test finds the difference between the symptoms monitored with and without each sensor.
- Test pattern 1: Test method with no GPS location correction
  Disconnect GPS antenna connector (GT5) connected to the NAVI control unit. Accurately adjust the current location and the direction, then drive the vehicle.
- Test pattern 2: Test method with no map-matching
  Accurately adjust the current location and the direction. Eject the map DVD-ROM from the NAVI control unit with ignition switch turned to OFF, then drive the vehicle. After driving, insert the map DVD-ROM back in the unit, display the track of the vehicle on the map screen and compare it with the actual road configuration.
- Sample tests
- <To determine if the current-location mark skips at the same position, if so, whether it is caused by map-matching or by GPS>
  Perform test pattern 1.
- <To determine if the pattern of streets displayed is correct or not>
  Perform test pattern 1 & 2.
  Compare the track of the vehicle on the map screen and the actual road configuration. For fairly accurate tracking, plotting shall be made every several hundred meters (feet).
- <When the distance is adjusted accurately>
  Perform test pattern 1 & 2.
  Drive on a road of which distance is accurately known (by utilizing distance posts on a highway). Calculate the rate of change (increased/decreased) of the distance by comparing with the actual distance.
  Correction = A/B
  A: Distance shown on the screen
  B: Actual distance

YES or NO

YES >>
- If adjustment is insufficient, perform adjustment again.
- If any error is found in the map, please contact map data supplier. Refer to Navigation System Owner's Manual for contact information.
- Replace NAVI control unit. Refer to AV-215, "Removal and Installation".

NO >> Limit of the location detection capacity of the navigation system.

Example of Symptom Judged Not Malfunction

INFOID:0000000004277988

BASIC OPERATION

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

VEHICLE MARK

Symptom	Cause	Remedy
Map screen and BIRDVIEW™ Name of the place varies with the screen.	Some thinning of the character data is done to prevent the display becoming to complex. In some cases and in some locations, the display contents may differ. The same place name, street name, etc. may not be displayed every time on account of the data processing.	System is not malfunctioning.
Vehicle mark is not positioned correctly.	Vehicle is transferred by ferry or by towing after its ignition switch is turned to OFF.	Drive the vehicle for a while in the GPS satellite signal receiving condition.
Screen will not switch to nighttime mode after the lighting switch is turned ON.	The daytime screen is selected by the “SWITCH SCREENS” when the last time the screen dimming setting is done. Switching between daytime/nighttime screen may be inhibited by the automatic illumination adjustment function.	Perform screen dimming and select the nighttime screen by “SWITCH SCREENS”.
Map screen will not scroll in accordance with the vehicle travel.	Current location is not displayed.	Press “MAP” button to display the current location.
Vehicle mark will not be shown.	Current location is not displayed.	Press “MAP” button to display the current location.
Accuracy indicator (GPS satellite mark) on the map screen stays gray.	GPS satellite signal is intercepted because the vehicle is in or behind a building.	Move the vehicle out to an open space.
	GPS satellite signal cannot be received because an obstacle is placed on top of the instrument panel.	Do not place anything in the center on top of the display.
	GPS satellites are not visible from current location.	Wait until GPS satellites are visible by moving the vehicle.
Vehicle location accuracy is low.	Accuracy indicator (GPS satellite mark) on the map screen stays gray.	Current location is not determined.
	Vehicle speed setting by the vehicle speed pulse has been deviated (advanced or retarded) from the actual vehicle speed because tire chain is fitted or the system has been used on another vehicle.	Drive the vehicle for a while [for approx. 30 minutes at approx. 30 km/h (19 MPH)] and the deviation will be automatically adjusted. If advancement or retard still occur, perform the distance adjustment by CONFIRMATION/ADJUSTMENT mode of diagnosis function.
	Map data has error or omission. (Vehicle mark is always deviated to the same position.)	As a rule, an updated map DVD–ROM will be released once a year.

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

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

VOICE GUIDE

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

ROUTE SEARCH

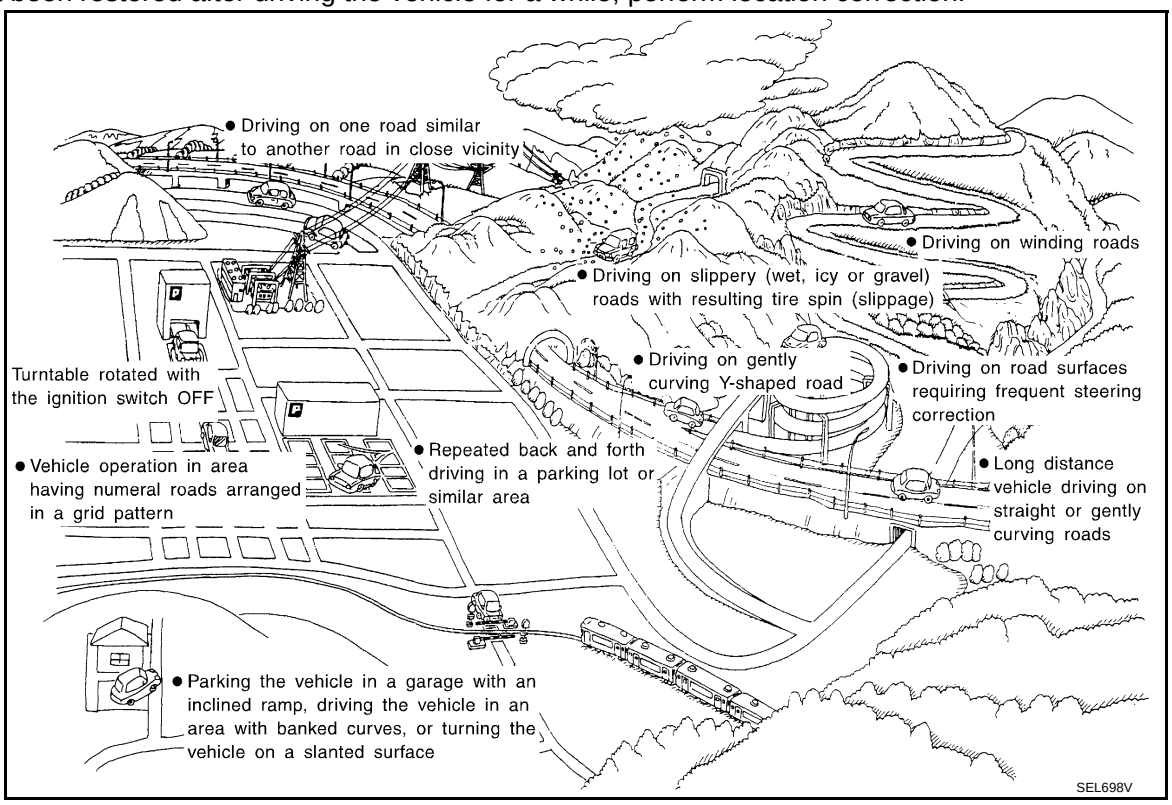
Symptom	Cause	Remedy
No route is shown.	No road to be searched is found around the destination.	Find wider road (orange road or wider) nearby and reset the destination and passing points onto it. Take care of the traveling direction when there are separate up and down roads.
	Starting point and the destination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

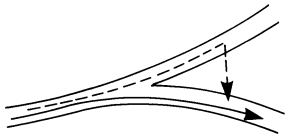
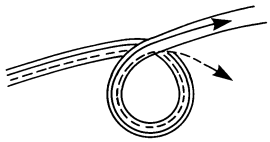
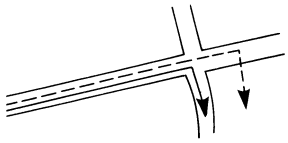
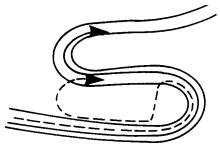
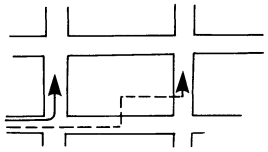
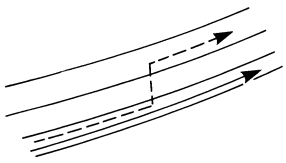
NOTE:

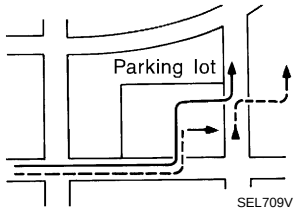
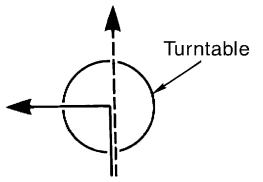
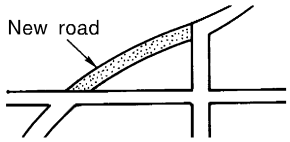
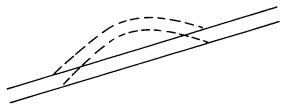
Except for the ordinance-designated cities. (Malfunctioning areas may be changed in the updated map disc.)

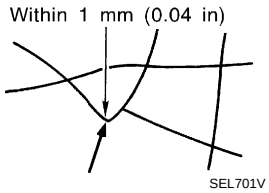
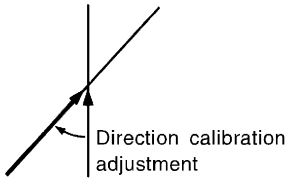
EXAMPLES OF CURRENT-LOCATION MARK DISPLACEMENT

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



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

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

Cause (condition) –: While driving ooo: Display		Driving condition	Remarks (correction, etc.)
Precautions for driving	Just after the engine is started	If the vehicle is driven just after the engine is started when the gyroscope (angular speed sensor) correction is not completed, the vehicle can lose its direction and may have deviated from the correct location.	Wait for a short while before driving after starting the engine.
	Continuous driving without stopping	When driving long distances without stopping, direction errors may accumulate, and the current-location mark may deviate from the correct road.	Stop and adjust the orientation.
	Abusive driving	Spinning the wheels or engaging in other kinds of abusive driving may result in the system being unable perform correct detection, and may cause the vehicle mark to deviate from the correct road.	If after travelling about 10 km (6 miles) the correct location has not been restored, perform location correction and, if necessary, direction correction.
How to correct location	Position correction accuracy  SEL701V	If the accuracy of location settings is poor, accuracy may be reduced when the correct road cannot be found, particularly in places where there are many roads.	Enter in the road displayed on the screen with an accuracy of approx. 1mm. Caution: Whenever possible, use detailed map for the correction.
	Direction when location is corrected  SEL702V	If the accuracy of location settings during correction is poor, accuracy may be reduced afterwards.	Perform direction correction.

CURRENT-LOCATION MARK SHOWS A POSITION WHICH IS COMPLETELY WRONG

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

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

CURRENT-LOCATION MARK JUMPS

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

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

CURRENT-LOCATION MARK IS IN A RIVER OR SEA

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

WHEN DRIVING ON SAME ROAD, SOMETIMES CURRENT-LOCATION MARK IS IN RIGHT

PLACE AND SOMETIMES IT IS WRONG PLACE

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

LOCATION CORRECTION BY MAP-MATCHING IS SLOW

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

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

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

NAME OF CURRENT PLACE IS NOT DISPLAYED

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

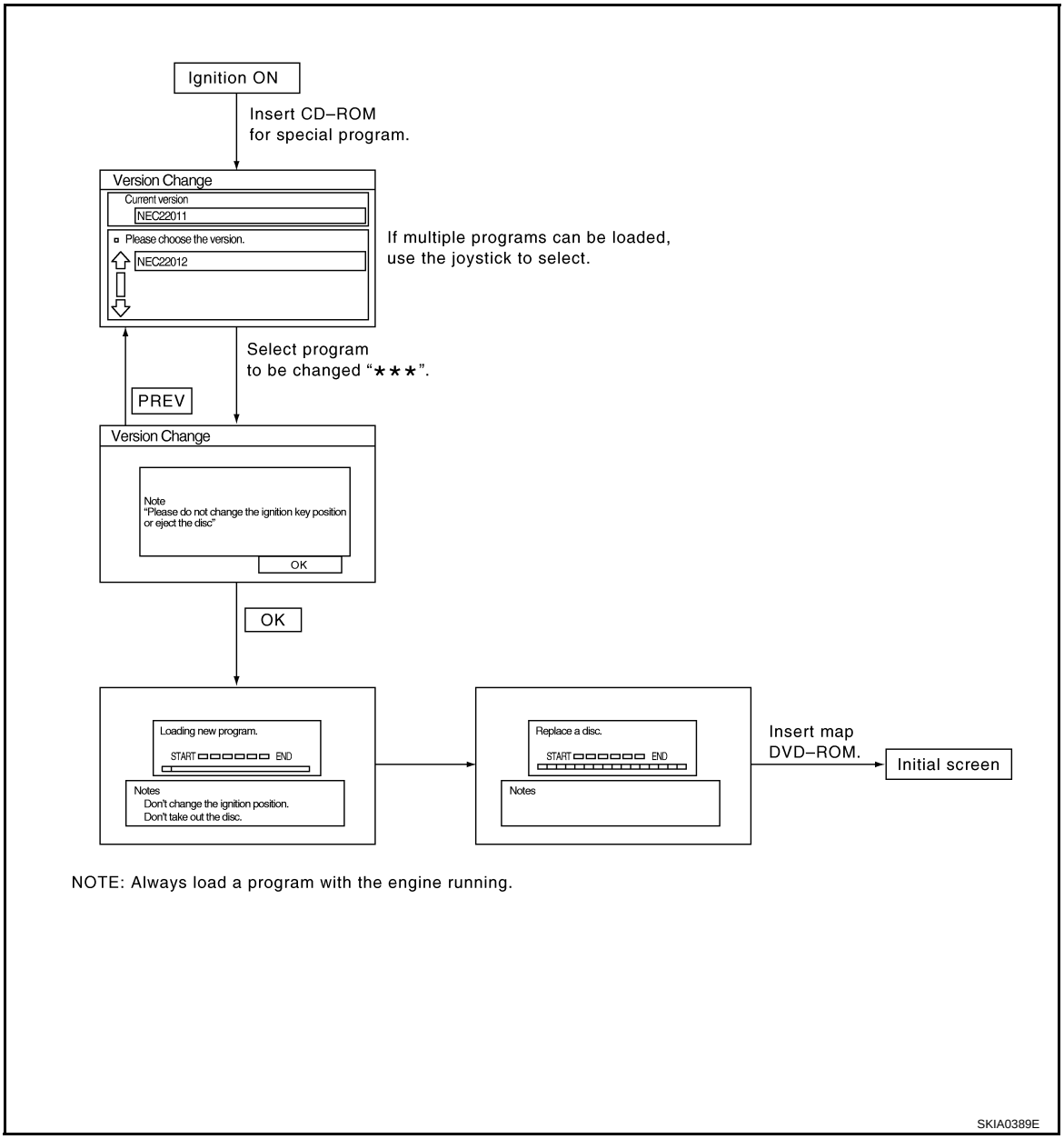
CONTENTS OF DISPLAY DIFFER FOR BIRDVIEW™ AND THE (FLAT) MAP SCREEN

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

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

Program Loading of NAVI Control Unit

INFOID:0000000004277989



NOTE: Always load a program with the engine running.

Removal and Installation

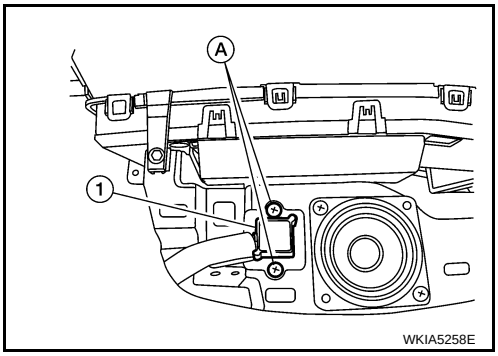
INFOID:0000000004277990

GPS ANTENNA

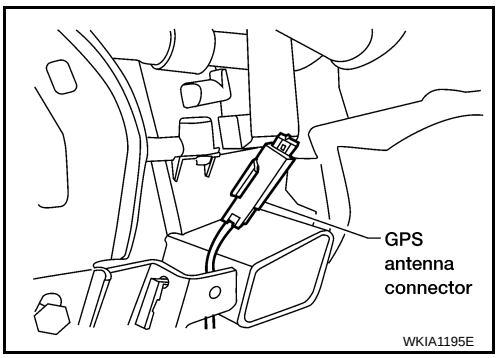
Removal

1. Remove cluster lid D. Refer to IP-13, "Cluster Lid D".
2. Remove glove box. Refer to IP-14, "Glove Box".
3. Remove instrument panel side cover RH. Refer to IP-10.

4. Separate the GPS antenna (1) from the bracket by removing the screws (A).



5. Disconnect GPS antenna connector and remove GPS antenna and feeder assembly out the top.



Installation
Installation is in the reverse order of removal.

NAVI CONTROL UNIT

Removal

CAUTION:

To avoid damage, eject map DVD-ROM before removing the NAVI control unit.

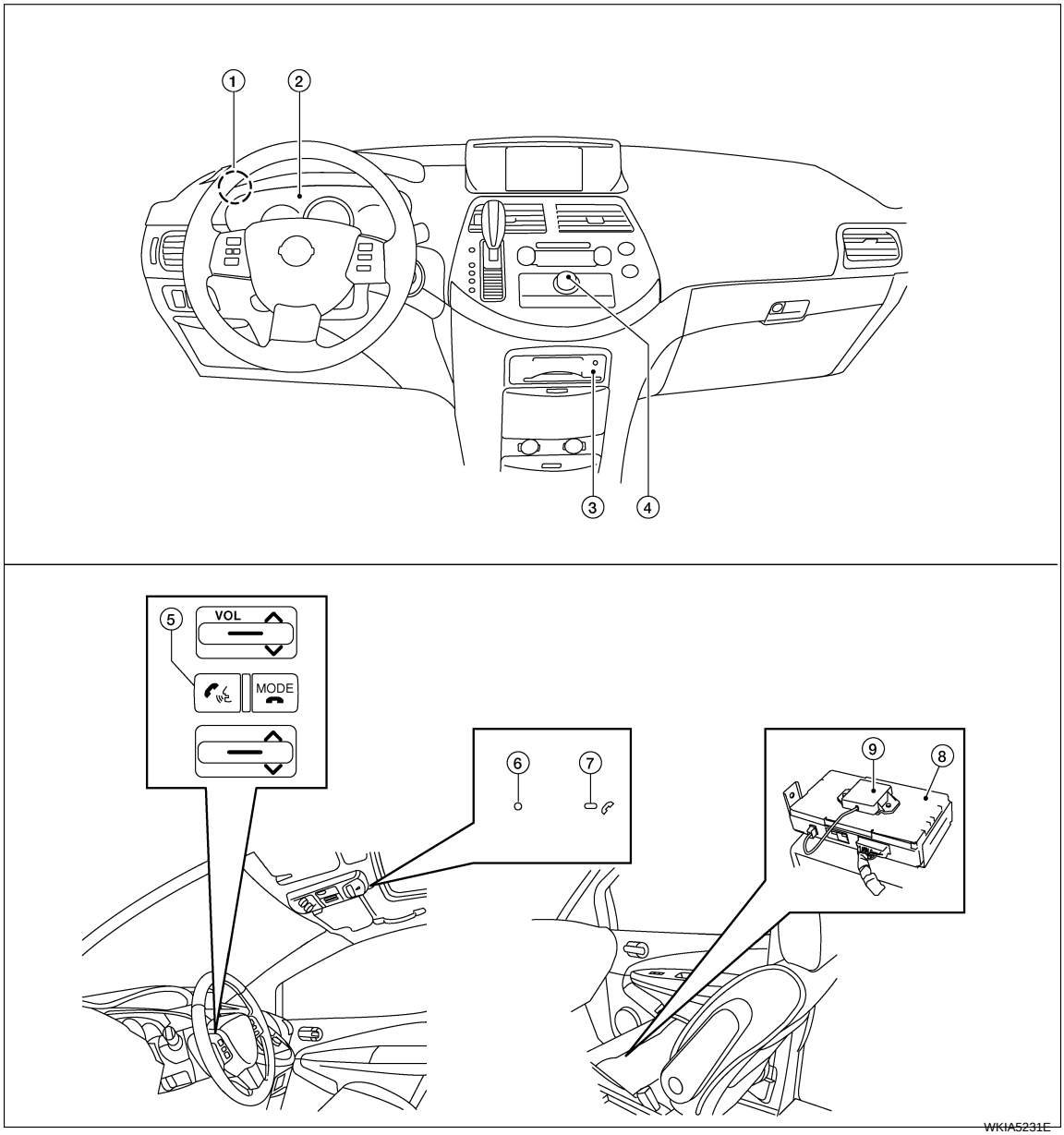
1. Remove front seat RH. Refer to SE-75, "Removal and Installation".
2. Remove NAVI control unit from the seat.

Installation
Installation is in the reverse order of removal.

TELEPHONE

Component Parts and Harness Connector Location

INFOID:0000000004277991



1. BCM M18, M19	2. Combination meter M24	3. Audio unit M45
4. AV switch M98	5. Steering wheel audio control switches	6. Microphone R20
7. Bluetooth ON indicator R16	8. Bluetooth control unit B506, B507 (View with seat removed)	9. Bluetooth antenna (View with seat removed)

System Description

INFOID:0000000004277992

BLUETOOTH® HANDS-FREE PHONE SYSTEM

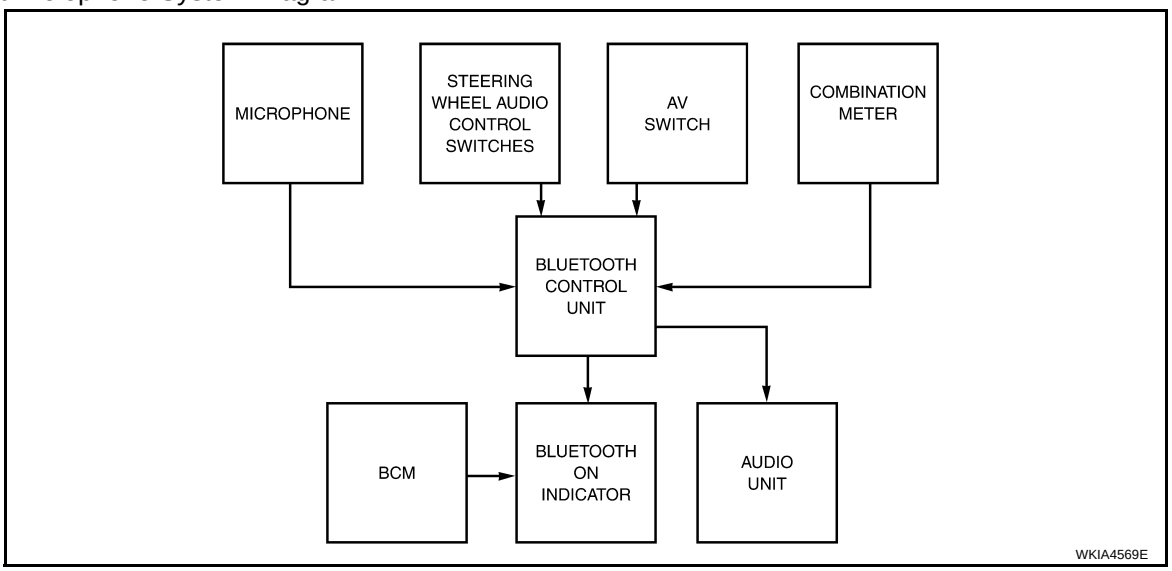
Refer to the Owner's Manual for Bluetooth telephone system operating instructions.

NOTE:

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

Bluetooth telephone system allows users who have a Bluetooth cellular telephone to make a wireless connection between their cellular telephone and the Bluetooth control unit. Hands-free cellular telephone calls can be sent and received. Personal memos can be created using the Voice Recognition system. Some Bluetooth cellular telephones may not be recognized by the Bluetooth control unit. When a cellular telephone or the Bluetooth control unit is replaced, the telephone must be paired with the Bluetooth control unit. Different cellular telephones may have different pairing procedures. Refer to the cellular telephone operating manual.

Bluetooth Telephone System Diagram



Bluetooth Control Unit

When the ignition switch is turned to ACC or ON, the Bluetooth control unit will power up. During power up, the Bluetooth control unit is initialized and performs various self checks. Initialization may take up to 10 seconds. During this time the Bluetooth ON indicator will flash until initialization is complete. Voice Recognition will then become active and the Bluetooth ON indicator will remain on. Bluetooth telephone functions can be turned off using the voice recognition system.

BCM

The BCM supplies power for the Bluetooth ON indicator.

Steering Wheel Audio Control Switches

When buttons on the steering wheel audio control switch are pushed, the resistance in steering wheel audio control switch circuit changes depending on which button is pushed. The Bluetooth control module uses this signal to perform various functions while navigating through the voice recognition system.

The following functions can be performed using the steering wheel audio control switch:

- Initiate Self Diagnosis of the Bluetooth telephone system
- Start a voice recognition session
- Answer and end telephone calls
- Adjust the volume of calls
- Record memos

AV Switch

Call volume can be adjusted using the AV switch.

Microphone

The microphone is located in the roof console assembly. The microphone sends a signal to the Bluetooth control unit.

Combination Meter

The combination meter supplies speed signals to the Bluetooth control unit. Vehicle speed signals are used to determine which voice command functions will be disabled based on driving conditions.

Bluetooth ON Indicator

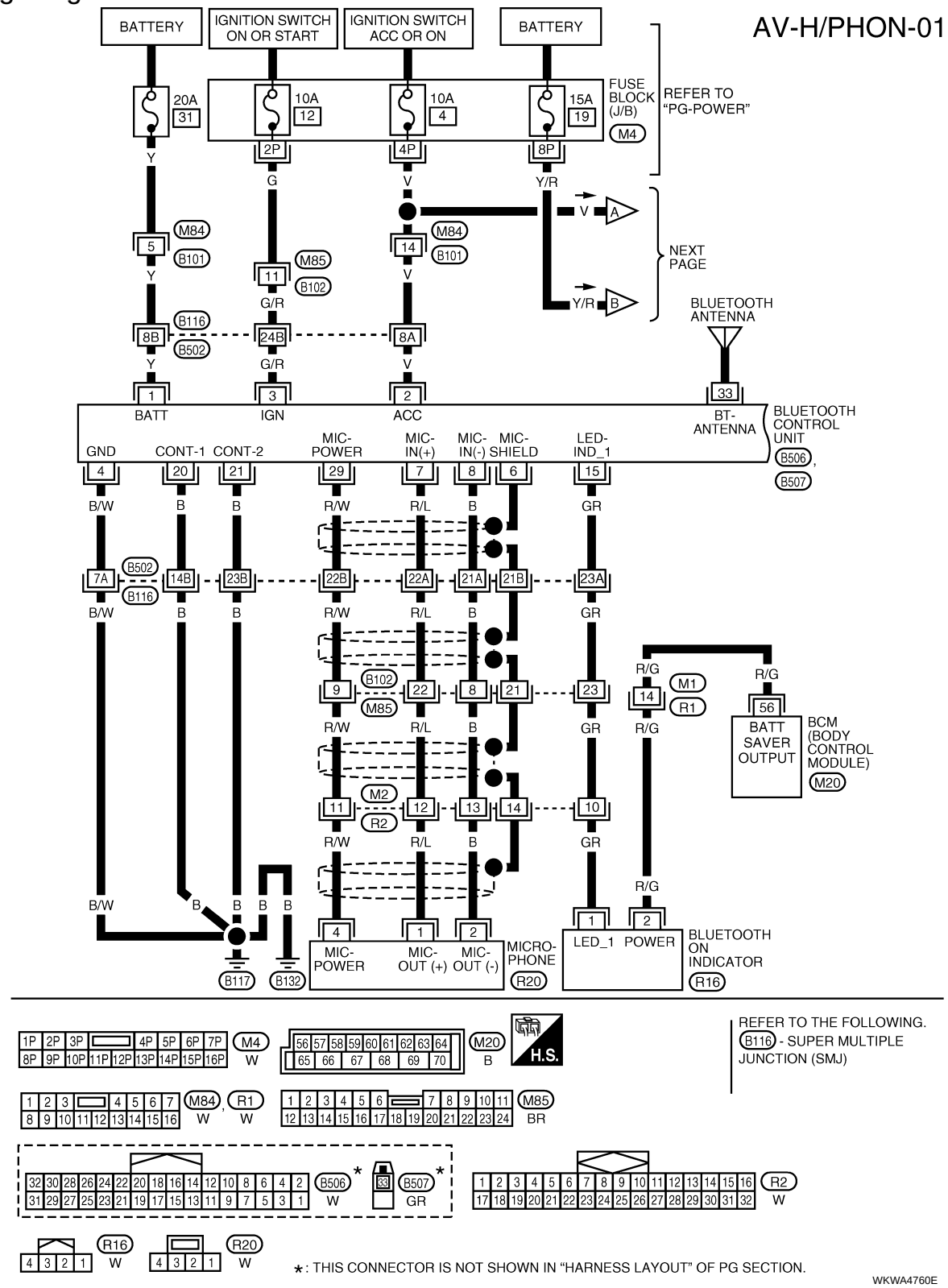
The Bluetooth ON indicator is located in the overhead console. The indicator will flash during power up while the Bluetooth control unit is initializing. This process may take up to 10 seconds. After initialization, the indicator will remain on to indicate that the system is ready for voice commands.

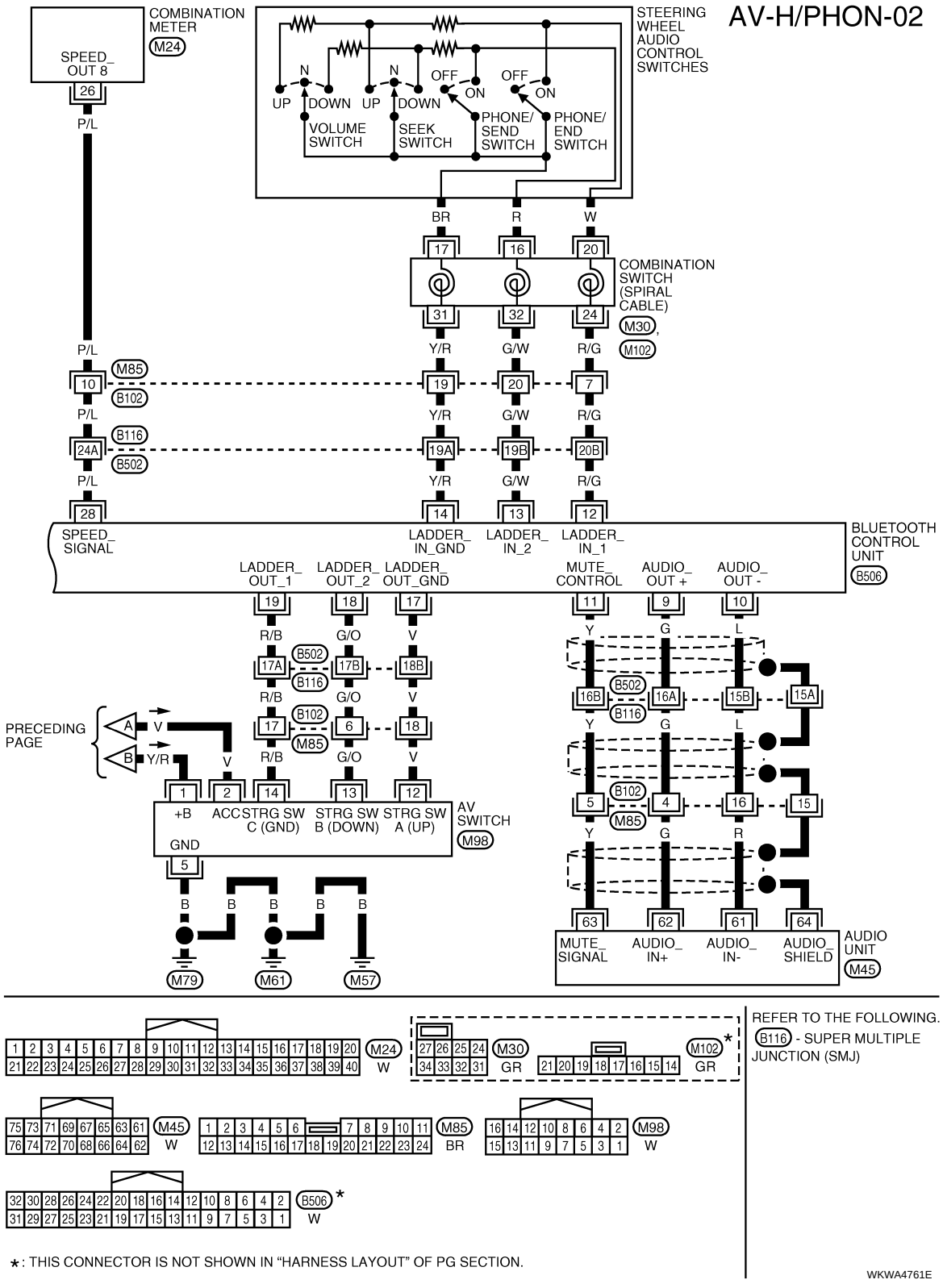
Audio Unit

The audio unit receives signals from the Bluetooth control unit and sends audio signals to the speakers.

Wiring Diagram - H/PHON -

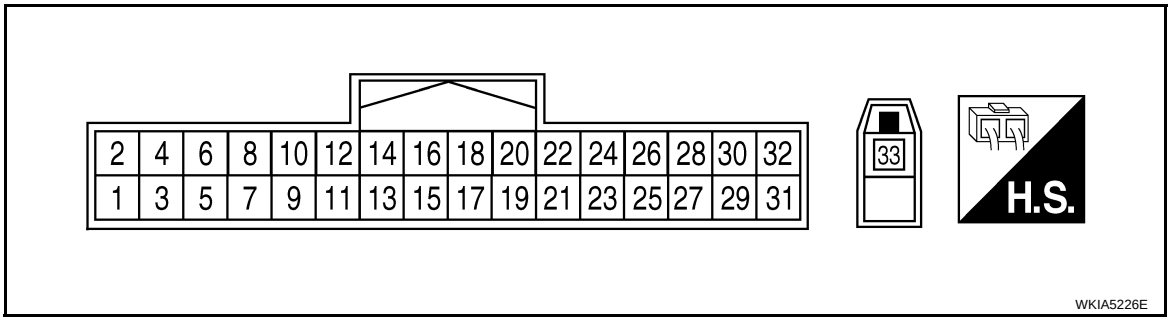
INFOID:0000000004277993




AV-H/PHON-02
COMBINATION METER
M24
SPEED_ OUT 8
26
P/L
STEERING WHEEL AUDIO CONTROL SWITCHES
N
UP
DOWN
VOLUME SWITCH
N
UP
DOWN
SEEK SWITCH
OFF
ON
PHONE/ SEND SWITCH
OFF
ON
PHONE/ END SWITCH
BR
R
W
17
16
20
COMBINATION SWITCH (SPIRAL CABLE)
31
32
24
M30
M102
Y/R
G/W
R/G
M85
10
B102
19
20
7
B116
24A
B502
19A
19B
20B
28
14
13
12
SPEED_ SIGNAL
LADDER_ IN_GND
LADDER_ IN_2
LADDER_ IN_1
BLUETOOTH CONTROL UNIT
B506
LADDER_ OUT_1
LADDER_ OUT_2
LADDER_ OUT_GND
MUTE_ CONTROL
AUDIO_ OUT +
AUDIO_ OUT -
19
18
17
11
9
10
R/B
G/O
V
Y
G
L
17A
17B
18B
16B
16A
15B
15A
17
6
18
5
4
16
15
PRECEDING PAGE
A
B
V
Y/R
1
2
14
13
12
+B
ACC
STRG SW C (GND)
STRG SW B (DOWN)
STRG SW A (UP)
AV SWITCH
M98
GND
5
B
M79
M61
M57
63
62
61
64
MUTE_ SIGNAL
AUDIO_ IN+
AUDIO_ IN-
AUDIO_ SHIELD
AUDIO UNIT
M45
M24
W
M30
GR
M102
GR
M45
W
M85
BR
M98
W
B506
W
REFER TO THE FOLLOWING.
B116 - SUPER MULTIPLE JUNCTION (SMJ)
: THIS CONNECTOR IS NOT SHOWN IN “HARNESS LAYOUT” OF PG SECTION.
WKWA4761E

Bluetooth Control Unit Harness Connector Terminal Layout

INFOID:0000000004277994



Terminal and Reference Value for Bluetooth Control Unit

INFOID:0000000004277995

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
1 (Y)	Ground	Battery power	Input	–	–	Battery voltage	System does not work properly.
2 (V)	Ground	ACC power	Input	ACC/ ON	–	Battery voltage	System does not work properly.
3 (G/R)	Ground	IGN power	Input	ON/ START	–	Battery voltage	System does not work properly.
4 (B/W)	–	Ground	–	–	–	–	–
6	–	Shield	–	–	–	–	–
7 (R/L)	8 (B)	Mic-in signal	Input	ON	–	–	–
9 (G)	10 (L)	Audio out	Output	–	–	–	–
11(Y)	–	Mute	–	–	–	–	–
12 (R/G)	Ground	Remote control A	Input	ON	Press MODE switch	Approx. 0V	Steering wheel audio controls do not function.
					Press SEEK UP switch	Approx. 0.75V	
					Press VOL UP switch	Approx. 2V	
					Except for above	Approx. 5V	
13 (G/W)	Ground	Remote control B	Input	ON	Press POWER switch	Approx. 0V	Steering wheel audio controls do not function.
					Press SEEK DOWN switch	Approx. 0.75V	
					Press VOL DOWN switch	Approx. 2V	
					Except for above	Approx. 5V	
14 (Y/R)	–	Remote control ground	–	–	–	–	Steering wheel audio controls do not function.
15 (GR)	–	LED	–	–	–	–	–
17 (V)	–	—	–	–	–	–	–
18 (G/O)	–	–	–	–	–	–	–
19 (R/B)	–	–	–	–	–	–	–
20 (B)	–	Ground	–	–	–	–	–
21 (B)	–	Ground	–	–	–	–	–

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value (Approx.)	Example of symptom
+	–			Ignition switch	Operation		
28 (P/L)	–	Speed signal	–	–	–	–	–
29 (R/W)	–	Microphone power	–	–	–	–	–
33	–	Bluetooth antenna signal	Input	–	–	–	–

Bluetooth Control Unit Self-Diagnosis Function

INFOID:0000000004277996

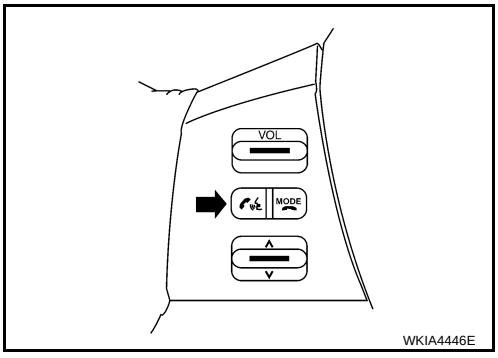
The Bluetooth control unit has two diagnostic checks. The first diagnostic check is performed automatically every ignition cycle during control unit initialization. The second diagnostic check is performed by the technician using the steering wheel audio control switches prior to trouble diagnosis.

BLUETOOTH CONTROL UNIT INITIALIZATION CHECKS

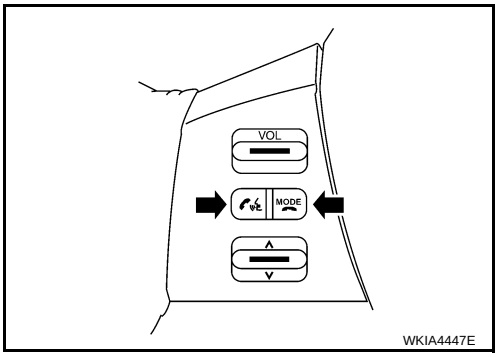
- Internal control unit failure
- Bluetooth antenna connection open or shorted
- Steering wheel audio control switches (SEND/END) stuck closed
- Vehicle speed pulse count
- Microphone connection test (with playback to operator)
- Bluetooth inquiry check

STARTING THE DIAGNOSTIC MODE

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



4. While the prompt is playing, momentarily press both the steering wheel audio control switches SEND and END buttons simultaneously. The Bluetooth system will sound a 5 second beep.
5. While the beep is sounding, momentarily press both the steering wheel audio control switches SEND and END buttons simultaneously again.
6. The Bluetooth system has now entered into the diagnostic mode. Results of the diagnostic checks will be verbalized to the technician by the system.



Power Supply and Ground Circuit Inspection for Bluetooth Control Unit

INFOID:0000000004277997

1. CHECK FUSES

Make sure the following fuses for the Bluetooth control unit are not blown.

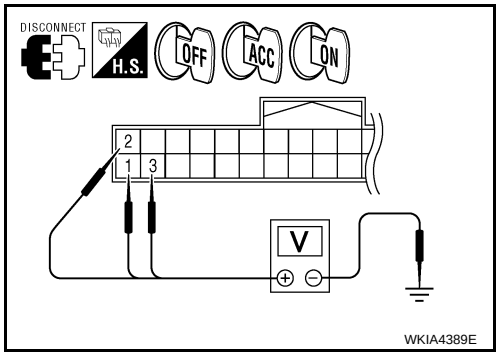
Terminals		Ignition Switch	Fuse No.
Connector	Terminal		
B506	1	All positions	31
	2	ACC/ON	4
	3	ON/START	12

OK or NG

OK >> GO TO 2.
NG >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse. Refer to PG-3.

2.CHECK POWER SUPPLY CIRCUIT

1. Disconnect Bluetooth control unit connector B506.
2. Check voltage between connector terminals and ground as follows.



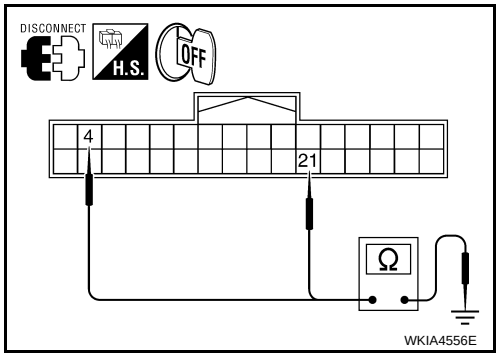
Terminals			Ignition switch position		
(+)		(–)	OFF	ACC	ON
Connector	Terminal				
B506	1	Ground	Battery voltage	Battery voltage	Battery voltage
	2		0V	Battery voltage	Battery voltage
	3		0V	0V	Battery voltage

OK or NG

OK >> GO TO 3.
NG >> Check harness for open between Bluetooth control unit and fuse.

3.CHECK GROUND CIRCUITS

1. Turn ignition switch OFF.
2. Check continuity between the following Bluetooth control unit terminals and ground.



Terminals			Continuity
Connector	Terminal	—	
B506	4	Ground	Yes
	20		
	21		

OK or NG

OK >> Inspection End.
NG >> Repair or replace harness.

Removal and Installation

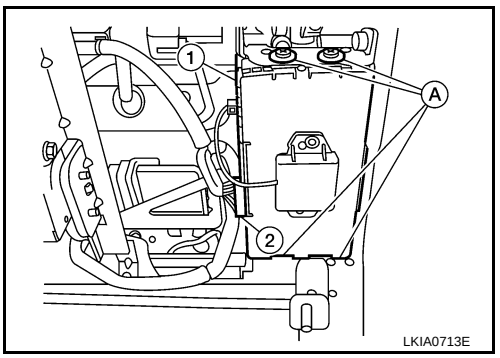
INFOID:0000000004277998

BLUETOOTH CONTROL UNIT

Removal

1. Remove front passenger seat. Refer to SE-75, "Removal and Installation".

2. Remove Bluetooth control unit (1) from bluetooth control unit bracket by removing screws (A) and disconnecting harness connector (2).

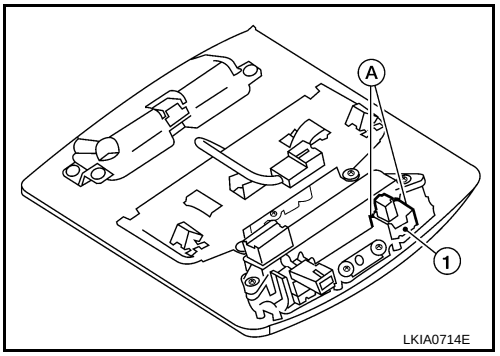


Installation
Installation is in the reverse order of removal.
NOTE:
When replacing bluetooth control unit, Perform pairing procedure. Refer to Owner's Manual Pairing Procedure.

BLUETOOTH ON INDICATOR

Removal

1. Remove front overhead console. Refer to EI-38.
2. Release Bluetooth ON indicator tabs (A) and remove indicator (1).

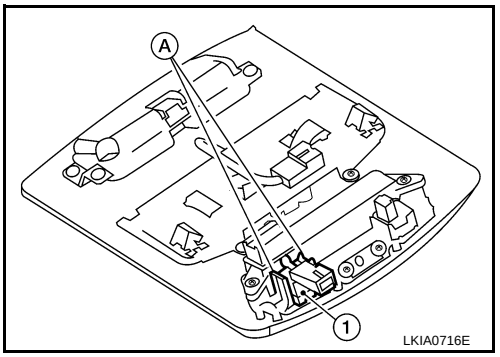


Installation
Installation is in the reverse order of removal.

MICROPHONE

Removal

1. Remove front overhead console. Refer to EI-38.
2. Release microphone tabs (A) and remove microphone (1).



Installation
Installation is in the reverse order of removal.