

SECTION **AV**

AUDIO-VISUAL SYSTEM

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PRECAUTIONS

PRECAUTIONS

PFP:00001

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

EKS00Q9X

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. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

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

Wiring Diagrams and Trouble Diagnosis

EKS00PE1

When reading wiring diagrams, refer to the following:

- Refer to [GI-15, "How to Read Wiring Diagrams"](#) .
- Refer to [PG-4, "POWER SUPPLY ROUTING CIRCUIT"](#) .

When performing trouble diagnosis, refer to the following:

- Refer to [GI-11, "HOW TO FOLLOW TEST GROUPS IN TROUBLE DIAGNOSES"](#) .
- Refer to [GI-24, "How to Perform Efficient Diagnosis for an Electrical Incident"](#) .

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SYSTEM DESCRIPTION

SYSTEM DESCRIPTION

PF0:00000

System Functions

EKS00Q5X

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

AUDIO

Speed Sensitive Volume (6CD Player Type)

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

NATS AUDIO LINK (WITHOUT NAVIGATION SYSTEM)

Description

The link with the NATS IMMU implies that the audio unit can basically only be operated if connected to the matching NATS IMMU to which the audio unit was initially fitted on the production line.

Since radio operation is impossible after the link with the NATS is disrupted theft of the audio unit is basically useless since special equipment is required to reset the audio unit.

Initialization Process for Audio Units That Are Linked to The NATS IMMU

New audio units will be delivered to the factories in the "NEW" state, i.e. ready to be linked with the vehicle's NATS. When the audio unit in "NEW" state is first switched on at the factory, it will start up communication with the vehicle's immobilizer control unit (IMMU) and send a code (the "audio unit Code") to the IMMU. The IMMU will then store this code, which is unique to each audio unit, in its (permanent) memory.

Upon receipt of the code by the IMMU, the NATS will confirm correct receipt of the audio unit code to the audio unit. Hereafter, the audio unit will operate as normal.

During the initialization process, "NEW" is displayed on the audio unit display. Normally though, communication between audio unit and IMMU takes such a short time (300 ms) that the audio unit seems to switch on directly without showing "NEW" on its display.

Normal Operation

Each time the audio unit is switched on afterwards, the audio unit code will be verified between the audio unit and the NATS before the audio unit becomes operational. During the code verification process, "WAIT" is shown on the audio unit display. Again, the communication takes such a short time (300 ms) that the audio unit seems to switch on directly without showing "WAIT" on its display.

When The Radio Is Locked

In case of a audio unit being linked with the vehicle's NATS (immobilizer system), disconnection of the link between the audio unit and the IMMU will cause the audio unit to switch into the lock ("SECURE") mode in which the audio unit is fully inoperative. Hence, repair of the audio unit is basically impossible, unless the audio unit is reset to the "NEW" state for which special decoding equipment is required.

Clarion has provided their authorized service representatives with so called "decoder boxes" which can bring the audio unit back to the "NEW" state, enabling the audio unit to be switched on after which repair can be performed. Subsequently, when the repaired audio unit is delivered to the final user again, it will be in the "NEW" state to enable re-linking the audio unit to the vehicle's immobilizer system. As a result of the above, repair of the audio unit can only be done by an authorized Clarion representative (when the owner of the vehicle requests repair and can show personal identification).

Service Procedure

Item	Service procedure	Description
Battery disconnection	No additional action required.	—
Radio needs repair	Repair needs to be done by authorized representative of radio manufacturer since radio cannot be operated unless it is reset to NEW state, using special decoding equipment.	—
Replacement of radio by new part	No additional action required.	Radio is delivered in NEW state.
Transferring radio to another vehicle/ replacement of radio by an "old" part	Radio needs to be reset to NEW state by authorized representative of radio manufacturer.	—
Replacement of IMMU	Radio needs to be reset to NEW state by authorized representative of Clarion.	After switching on the radio, it will display "SECURE" after 1 minute.

SYSTEM DESCRIPTION

Item	Service procedure	Description
No communication from IMMU to radio	<ol style="list-style-type: none"> 1. If NATS is malfunctioning, check NATS system. 2. After NATS is repaired, reset radio to NEW state by authorized representative of Clarion. 	After switching on the radio, the radio will display "SECURE" after 1 minute. Further use of radio is impossible until communication is established again, or after radio is reset by authorized representative of Clarion.
When initialized between ECM and IMMU.	Radio needs to be reset to NEW status by authorized representative of Clarion.	After switching on the radio, it will display "SECURE" after 1 minute.

Personal Audio Setting

The radio is designed to store several settings (volume, bass, treble, preset stations) with every NATS ignition key used. Up to a maximum of 4 NATS keys can be registered. During the communication mentioned under "Anti-Theft System", the radio will recognize the used ignition key and select the accompanying settings.

VEHICLE INFORMATION SYSTEM

- The status of audio system, fuel consumption, rear view monitor and navigation system are displayed.
- NAVI control unit receives the data signal from ECM, combination meter via CAN communication. It calculates the values of fuel economy, and trip computer from the received information and displays them.

NAVIGATION SYSTEM

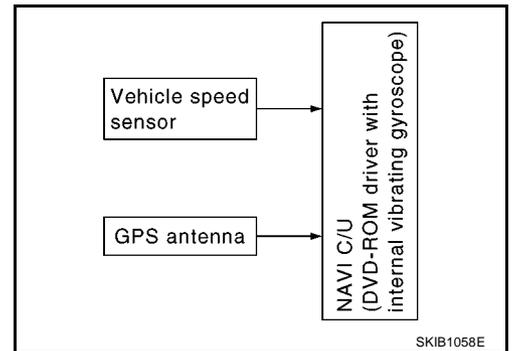
Refer to Owner's Manual or navigation system Owner's Manual for navigation system operating instructions.

Location Detection Principle

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

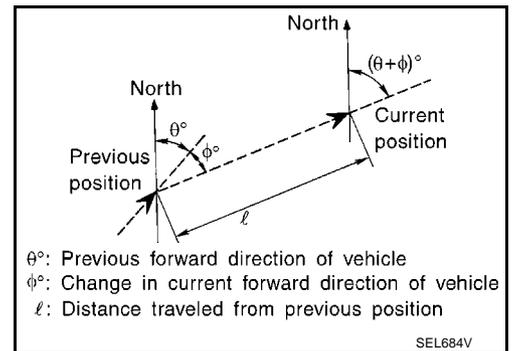
- Travel distance of the vehicle as determined by the vehicle speed sensor
- Turning angle of the vehicle as determined by the gyroscope (angular velocity sensor)
- Direction of vehicle travel as determined by the GPS antenna (GPS information)

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



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

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



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

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

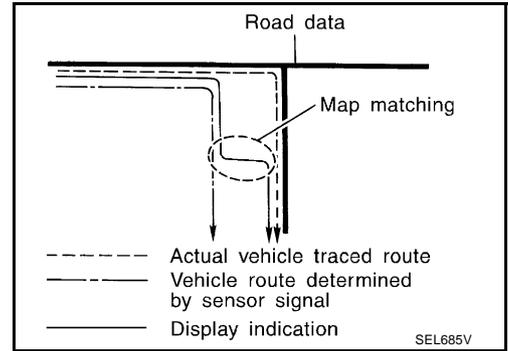
SYSTEM DESCRIPTION

Map-Matching

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

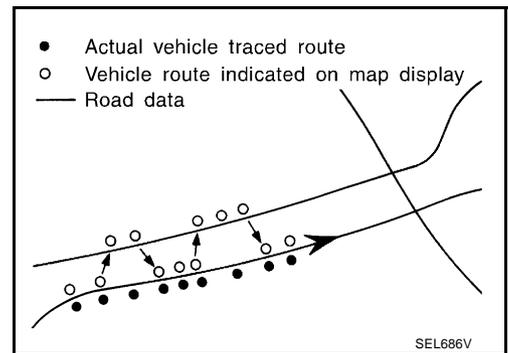
NOTE:

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

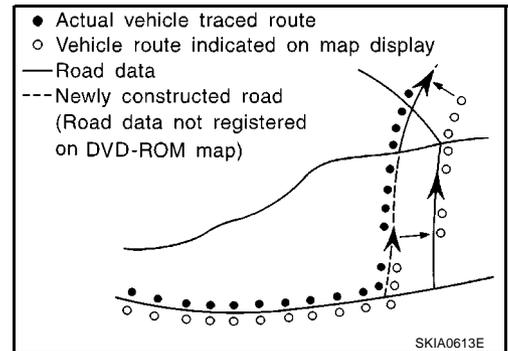


The vehicle position may not be corrected under the following circumstances and after driving for a certain time when GPS information is difficult to receive. In this case, the vehicle mark on the display must be corrected manually.

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



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



SYSTEM DESCRIPTION

GPS (Global Positioning System)

GPS (Global Positioning System) was developed for and is controlled by the US Department of Defense. The system utilizes GPS satellites (NAVSTAR), sending out radio waves while flying on an orbit around the earth at an altitude of approximately 21,000 km (13,000 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 with radio waves from four or more GPS satellites (two-dimensional positioning).

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

Accuracy of GPS will deteriorate under the following conditions:

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

NOTE:

- Even a high-precision three dimensional positioning, the detection result has an error about 10 m (33 ft).
- Because the signals of GPS satellite is controlled by the Tracking and Control Center in the United States, the accuracy may be degraded lower intentionally or the radio waves may stop.

Traffic Information (RDS-TMC)

NOTE:This system is built-in NAVI control unit.

The Traffic Information broadcast allows to you to avoid delays due to traffic incidents.

Traffic jams, roadwork, closed roads around your current location, etc. are represented graphically on the map by icons depicting the nature of the event.

Incidents on the route are automatically brought to your attention when they are approached.

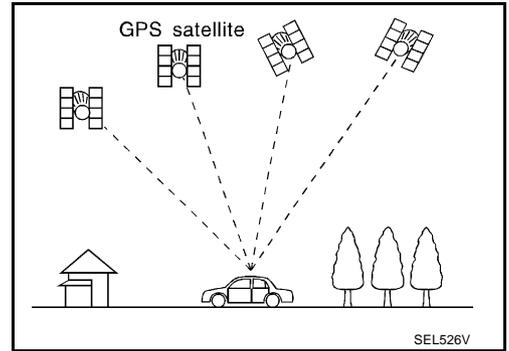
The Traffic Information feature gives you the opportunity to forecast traffic incidents, determine how serious they are and, via the guidance mode, allows you to detour around traffic incidents.

The navigation system receives traffic information from best available sources and enables the RDS-TMC (Radio Data System-Traffic Information Channel) to inform and guide you.

The RDS-TMC broadcast is fed by a dedicated FM tuner so that you can still tune your radio station while Traffic Information is being broadcasted.

HANDS-FREE PHONE

- NAVI control unit has Bluetooth module. It can perform wireless hands-free telephone calls using a cellular phone in vehicle compartment.
- 5 or more portable phones can be registered into the NAVI control unit.



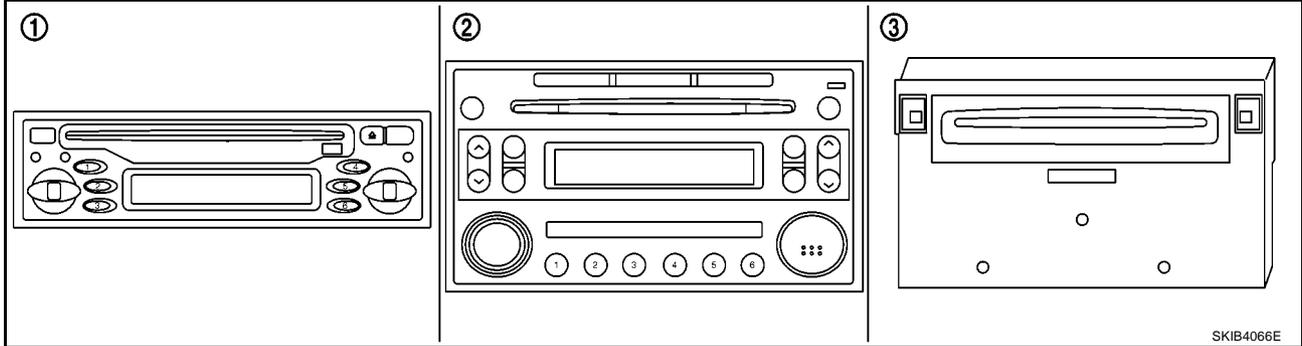
SYSTEM DESCRIPTION

EKS00Q5Y

Component Description

AUDIO UNIT

Perform AUDIO operation by AV SWITCH for models with navigation system.



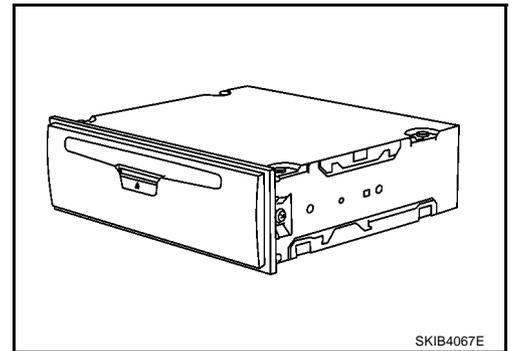
1. 1CD player type

2. 6CD player type

3. 6CD player type (With navigation system)

NAVI CONTROL UNIT

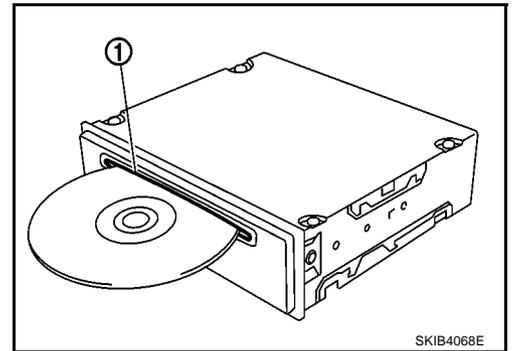
- The gyro (angular speed sensor) and the DVD-ROM drive are built-in units that control the navigation functions.
- Signals are received from the gyro, the vehicle speed sensor, and the GPS antenna. Vehicle location is determined by combining this data with the data contained in the DVD-ROM map. Locational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



DVD-ROM Drive

- DVD loading slot (1)

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



Map DVD-ROM

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

Gyro (Angular Speed Sensor)

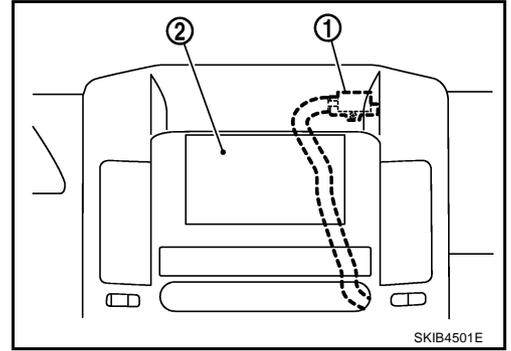
- The oscillator gyro sensor is used to detect changes in vehicle steering angle.
- The gyro is built into the navigation (NAVI) control unit.

SYSTEM DESCRIPTION

GPS ANTENNA

- GPS antenna (1)
- Display (2)

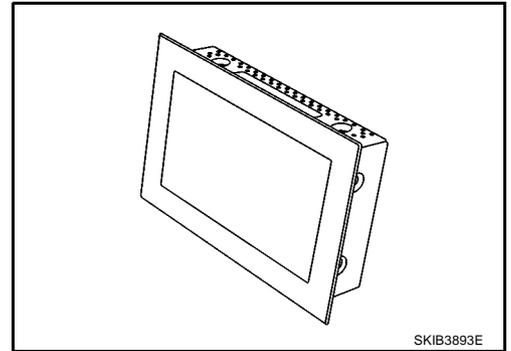
The GPS antenna receives and amplifies the radio waves from the GPS satellites, and then transmits the GPS signal to NAVI control unit.



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DISPLAY UNIT

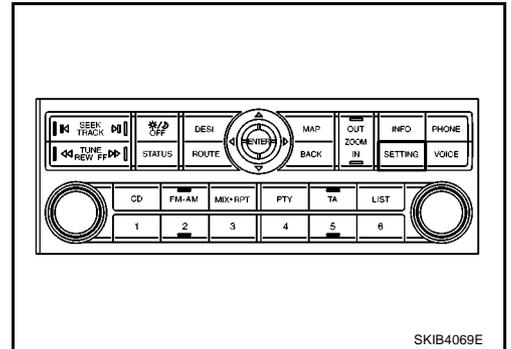
- Images on the display include RGB image such as map screen and rear-view image displayed when set the select lever to R range.
- NAVI control unit controls images on the display.



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AV SWITCH

For operation panel, centralized switch integrated with the audio and NAVI operation has been adopted. The operation signal is sent to NAVI control unit via communication.

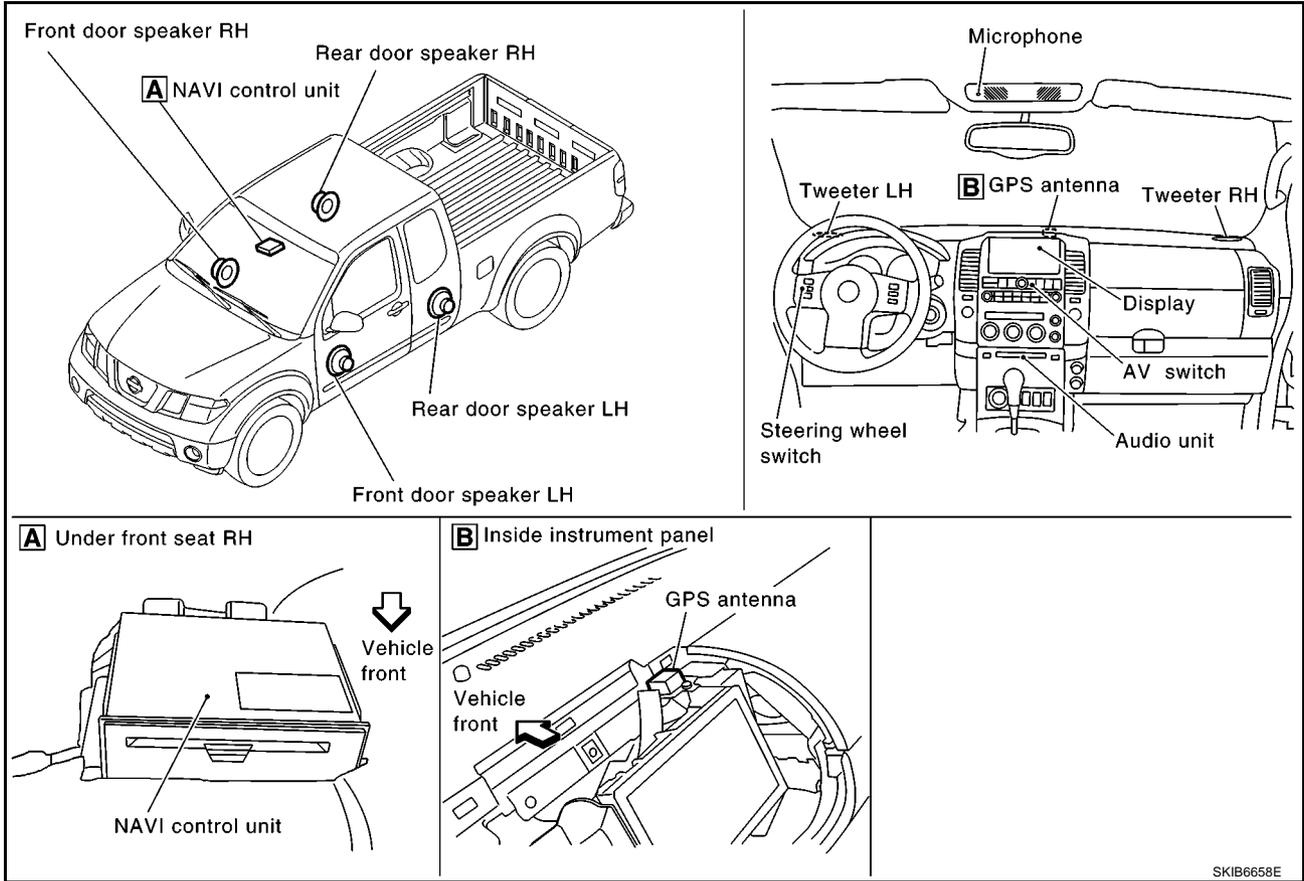


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SYSTEM DESCRIPTION

Component Parts Location

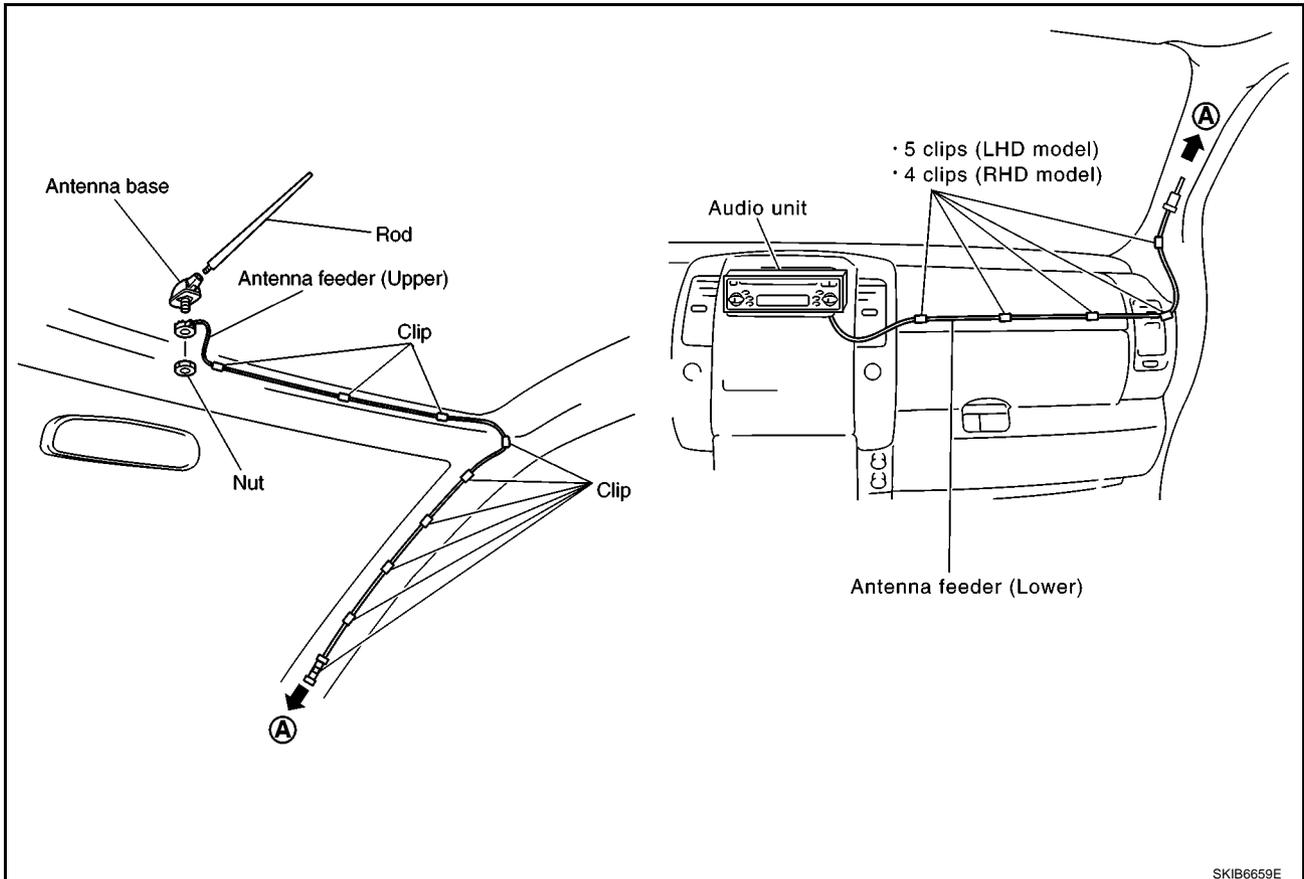
EKS00Q5Z



Location Of Antenna

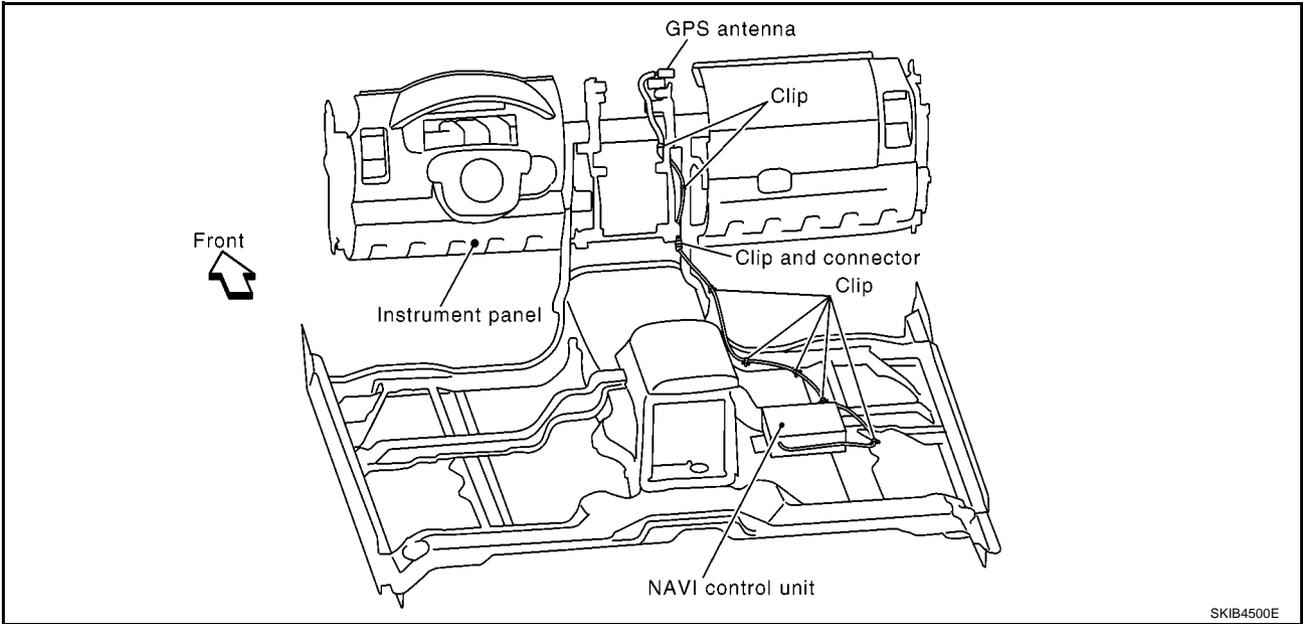
EKS00Q60

ROOF ANTENNA



SYSTEM DESCRIPTION

GPS ANTENNA



NOTE:

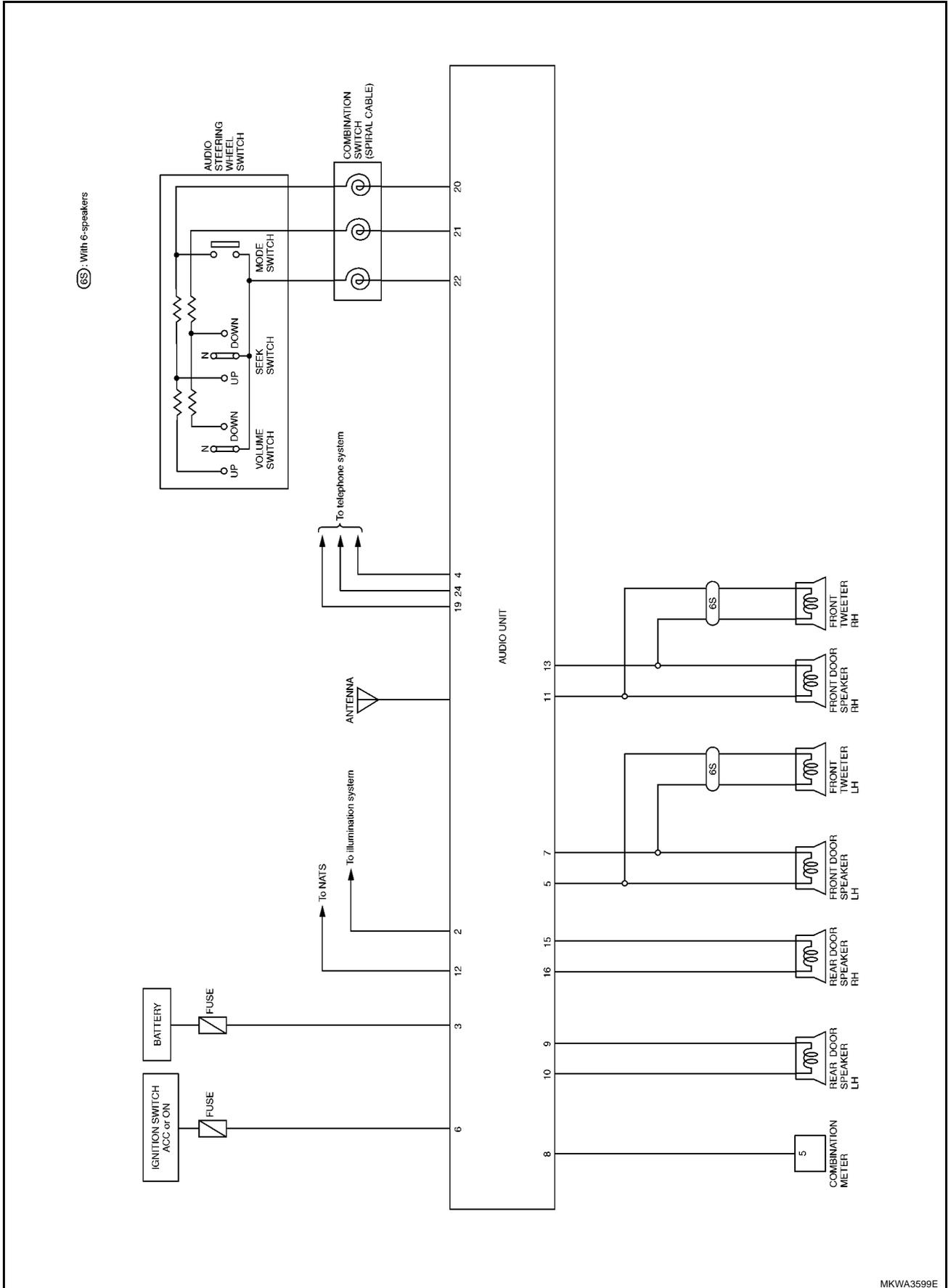
The figure shows LHD models. The installation position of GPS antenna for RHD models is also similar.

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SYSTEM DESCRIPTION

Schematic — AUDIO — / With 1CD Player Type

EKS00Q61



MKWA3599E

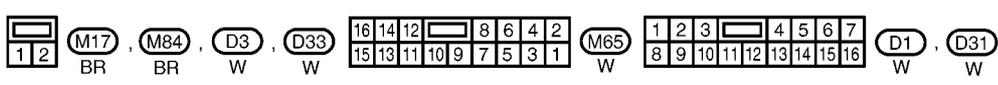
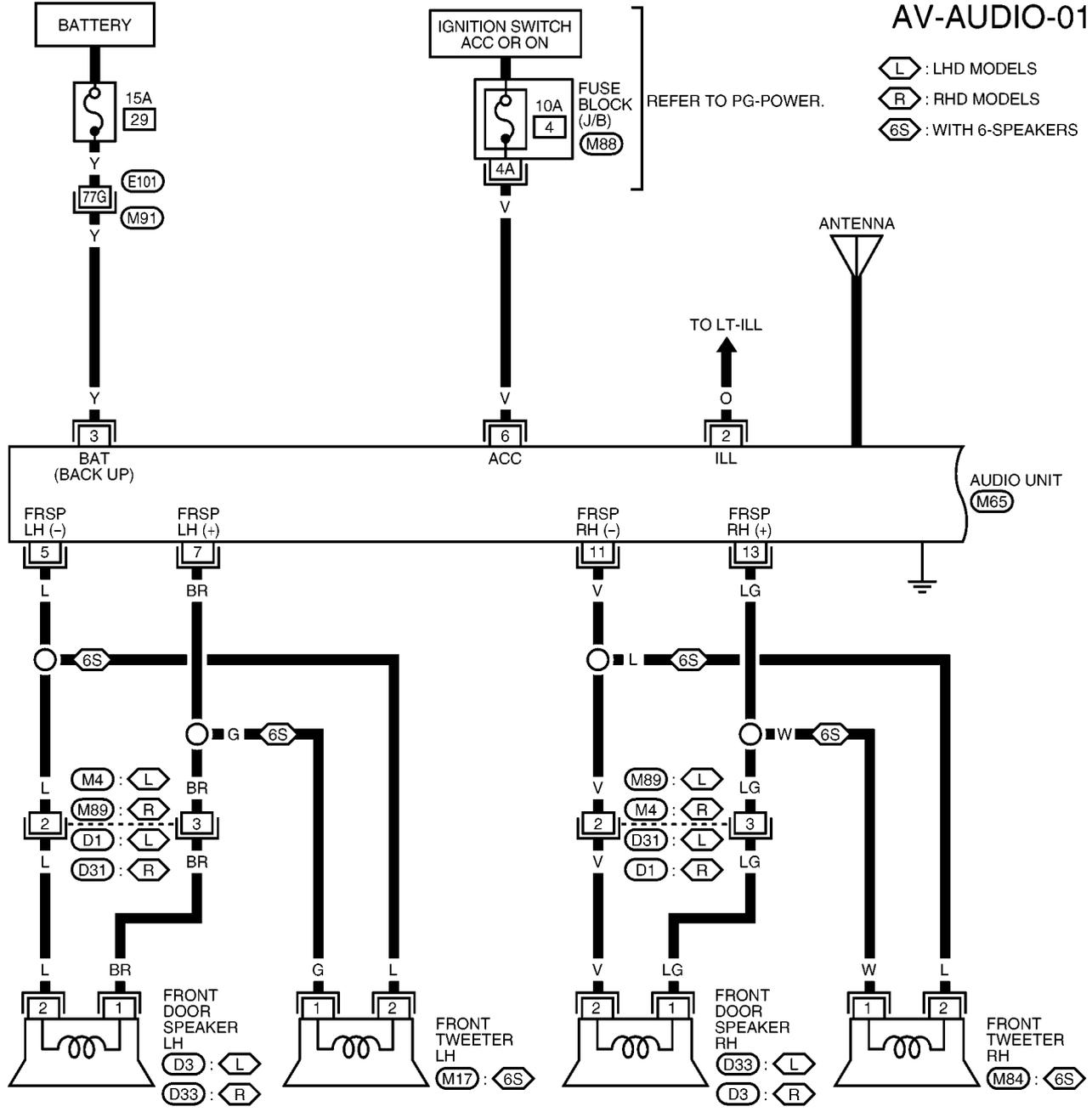
SYSTEM DESCRIPTION

Wiring Diagram — AUDIO — / With 1CD Player Type

EKS00Q62

AV-AUDIO-01

- (L) : LHD MODELS
- (R) : RHD MODELS
- (6S) : WITH 6-SPEAKERS



REFER TO THE FOLLOWING.

(M91) - SUPER MULTIPLE JUNCTION (SMJ)

(M88) - FUSE BLOCK - JUNCTION BOX (J/B)

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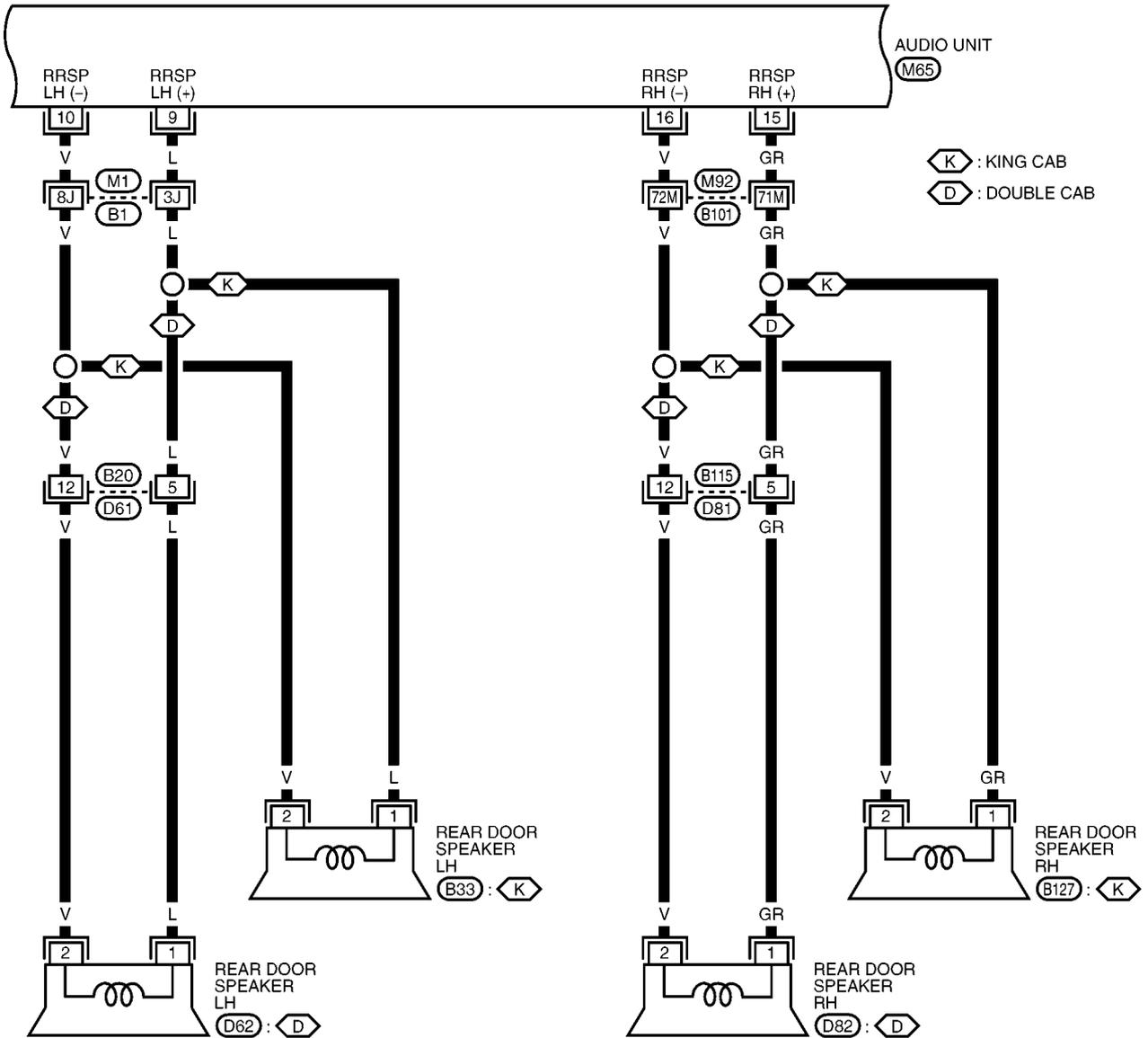
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SYSTEM DESCRIPTION

AV-AUDIO-02



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

(M65)
W

1	2
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(B33),
W

(B127),
W

(D62),
W

(D82),
W

1	2	3	4	5		
6	7	8	9	10	11	12

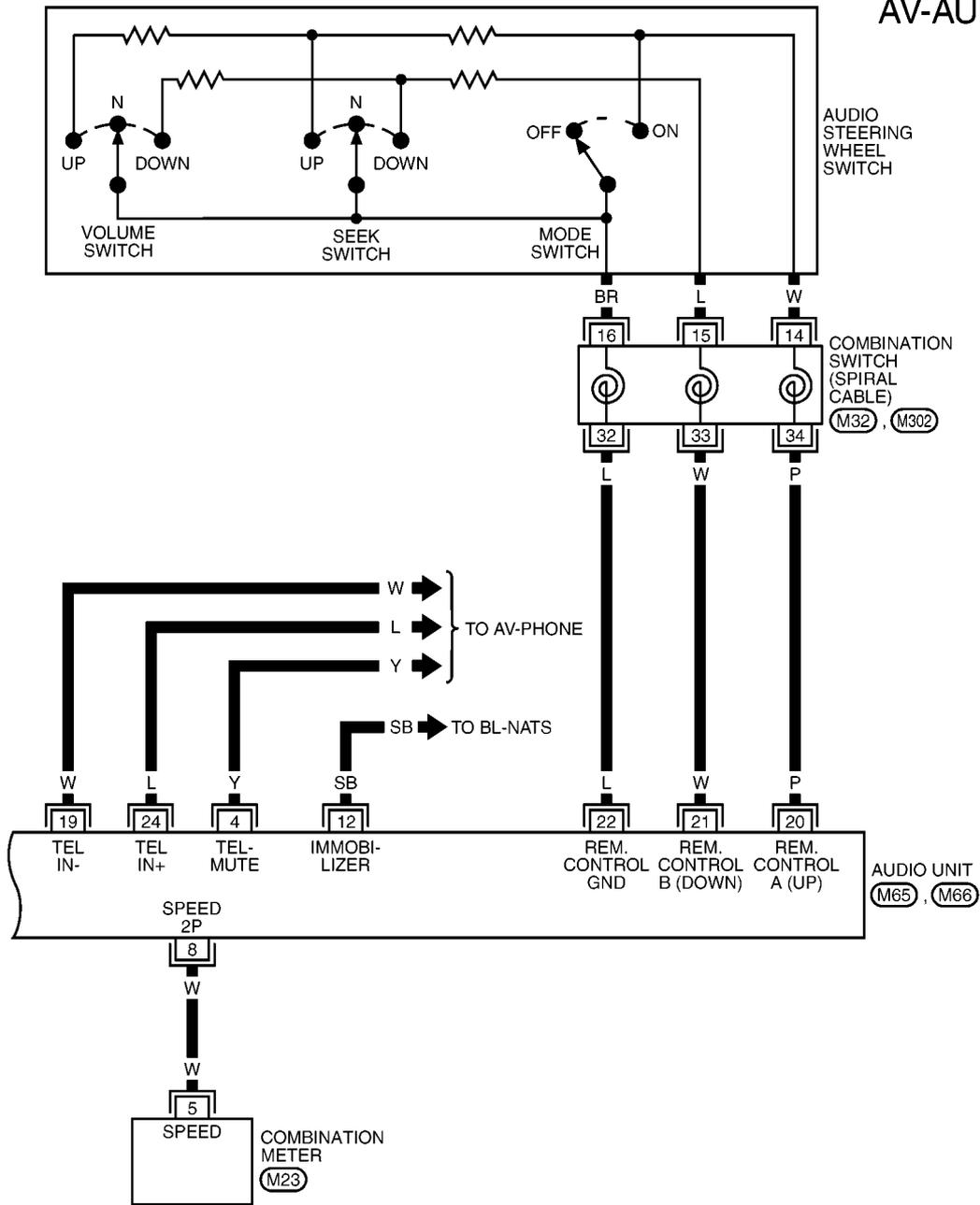
(D61),
W

(D81),
W

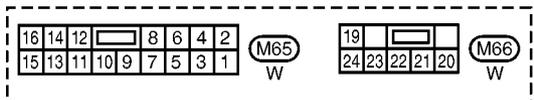
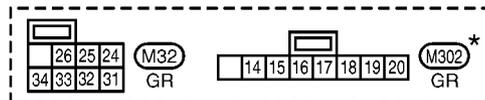
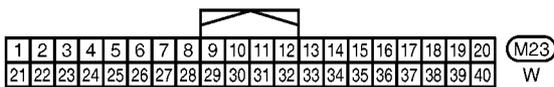
REFER TO THE FOLLOWING.
 (M1), (M92) - SUPER
 MULTIPLE JUNCTION (SMJ)

SYSTEM DESCRIPTION

AV-AUDIO-03



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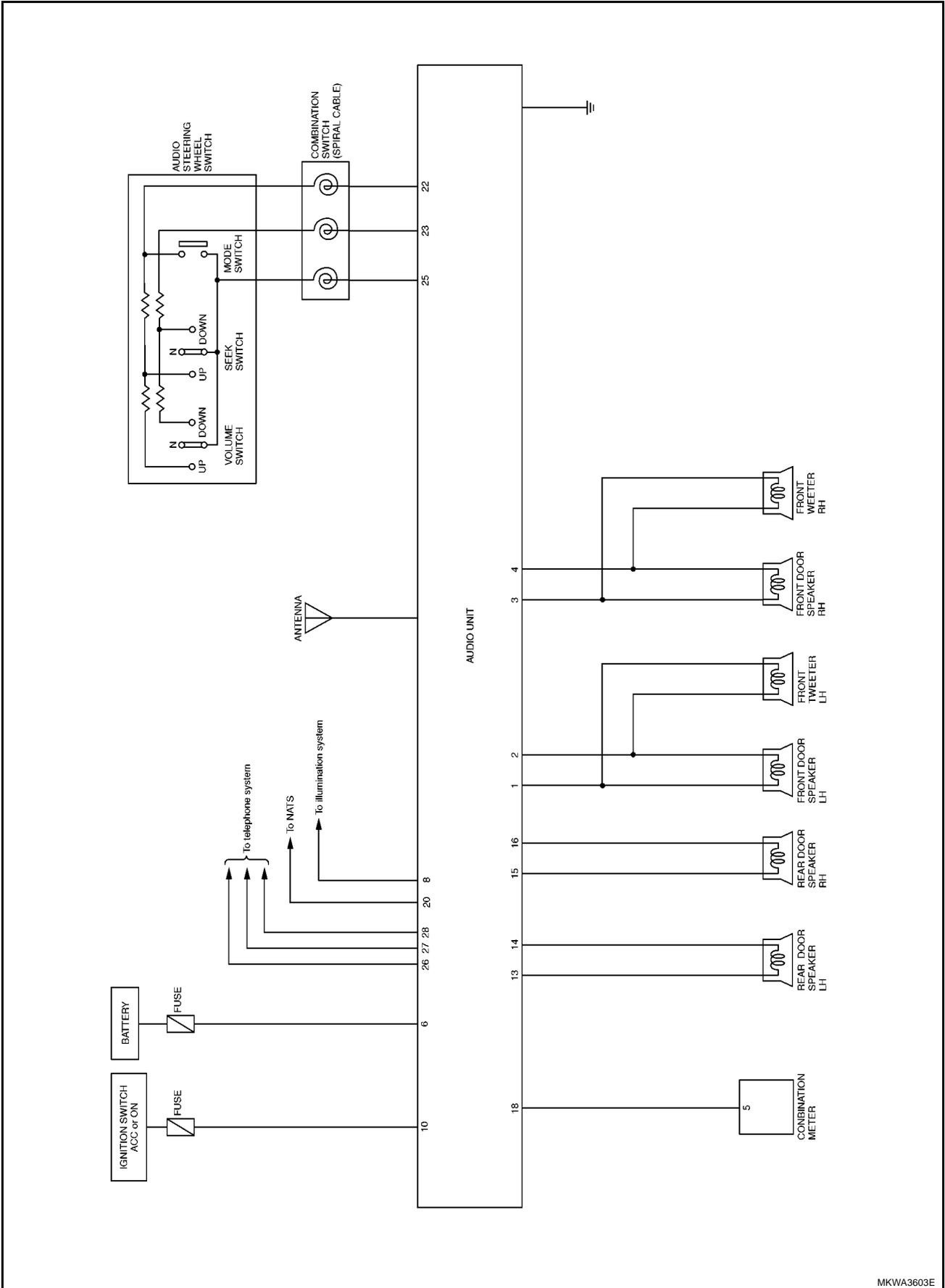
* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

MKWA3602E

SYSTEM DESCRIPTION

Schematic — AUDIO — / With 6CD Player Type

EKS00Q63



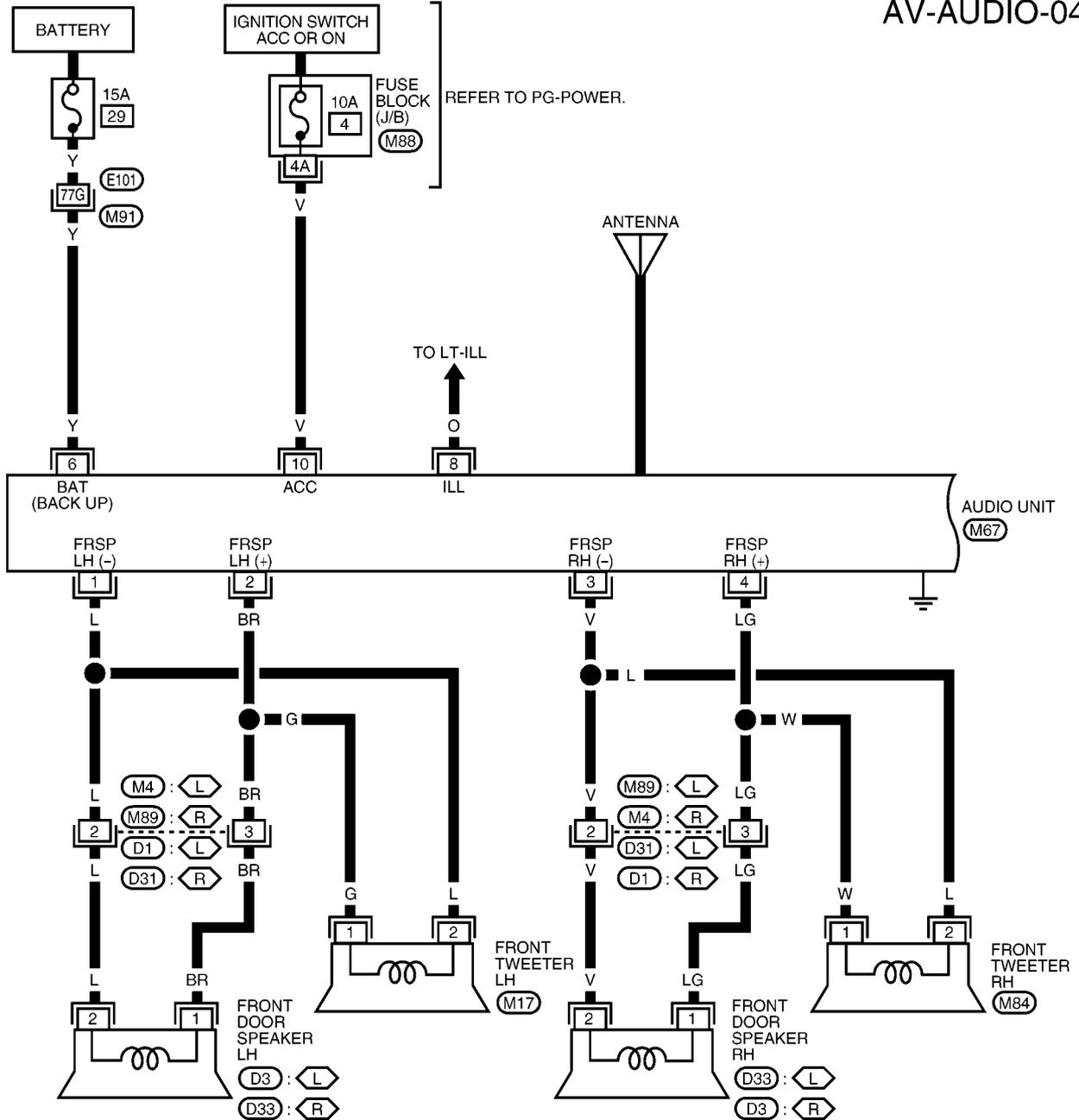
MKWA3603E

SYSTEM DESCRIPTION

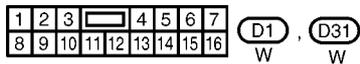
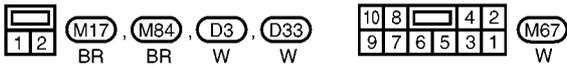
Wiring Diagram — AUDIO — / With 6CD Player Type

EKS00Q64

AV-AUDIO-04



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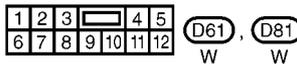
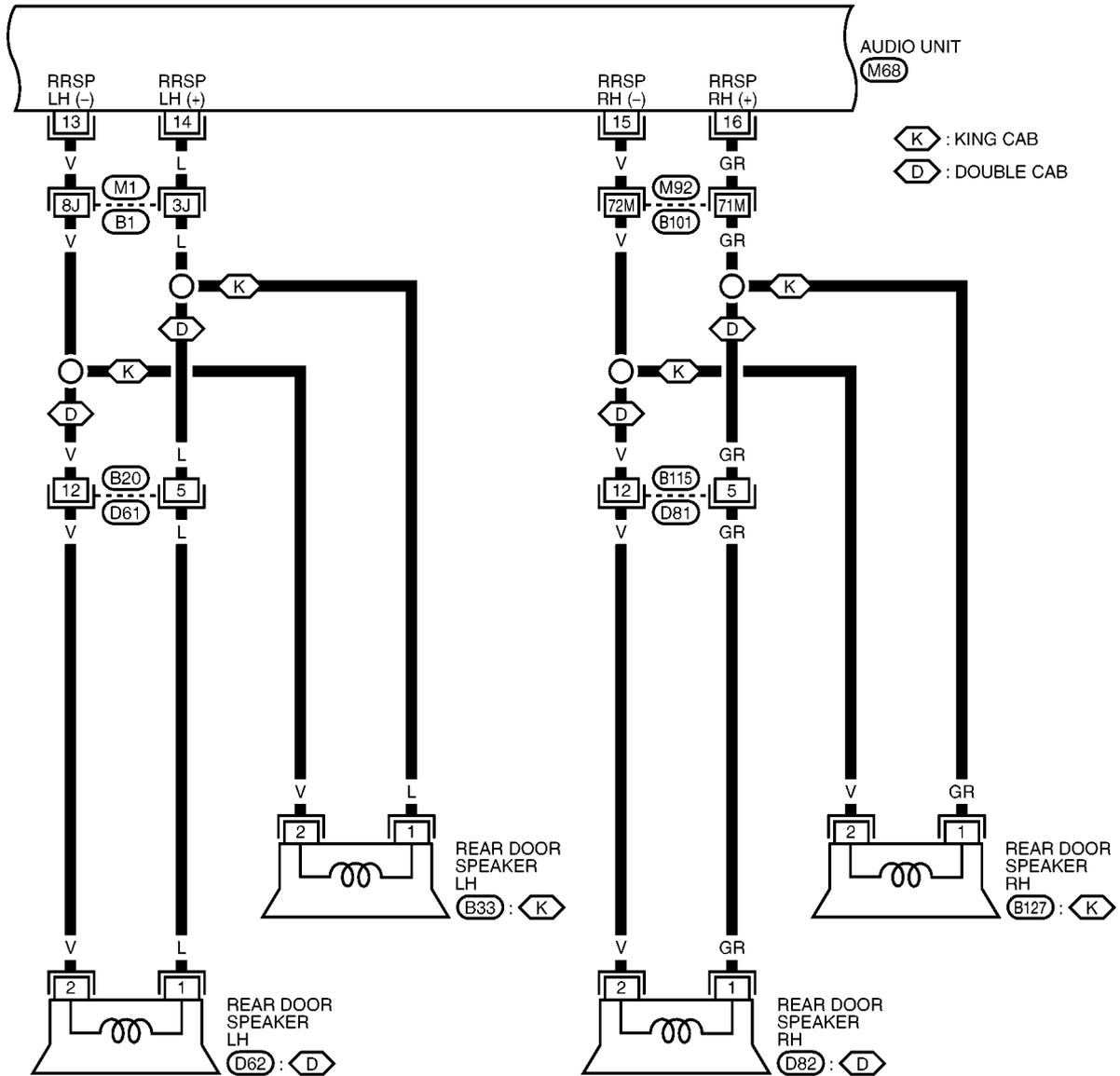
REFER TO THE FOLLOWING.

- (M91) - SUPER MULTIPLE JUNCTION (SMJ)
- (M88) - FUSE BLOCK - JUNCTION BOX (J/B)

MKWA3604E

SYSTEM DESCRIPTION

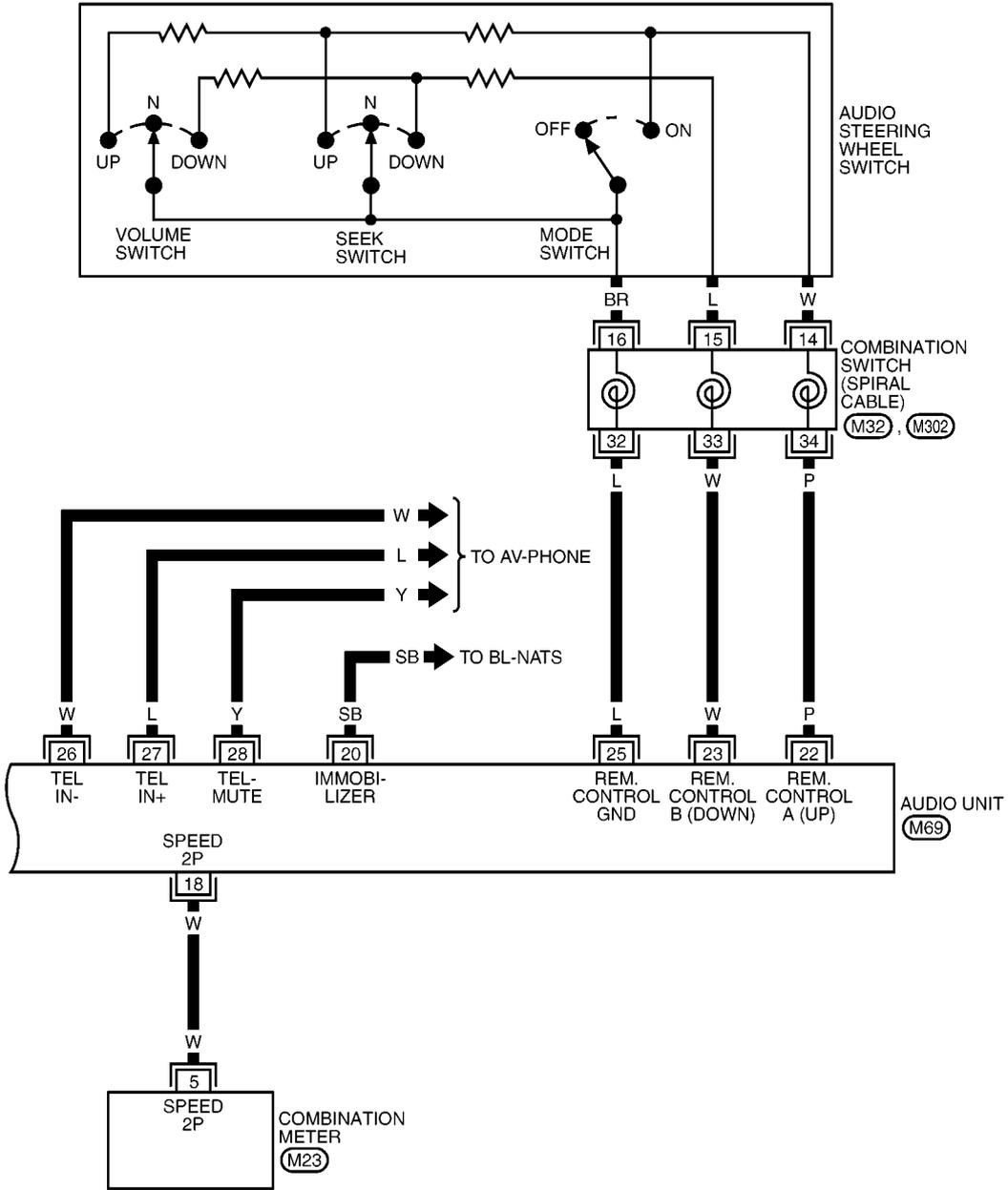
AV-AUDIO-05



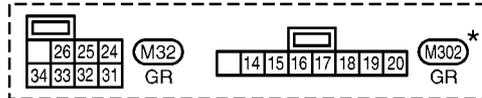
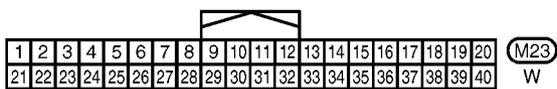
REFER TO THE FOLLOWING.
 (M1), (M92) - SUPER
 MULTIPLE JUNCTION (SMJ)

SYSTEM DESCRIPTION

AV-AUDIO-06



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

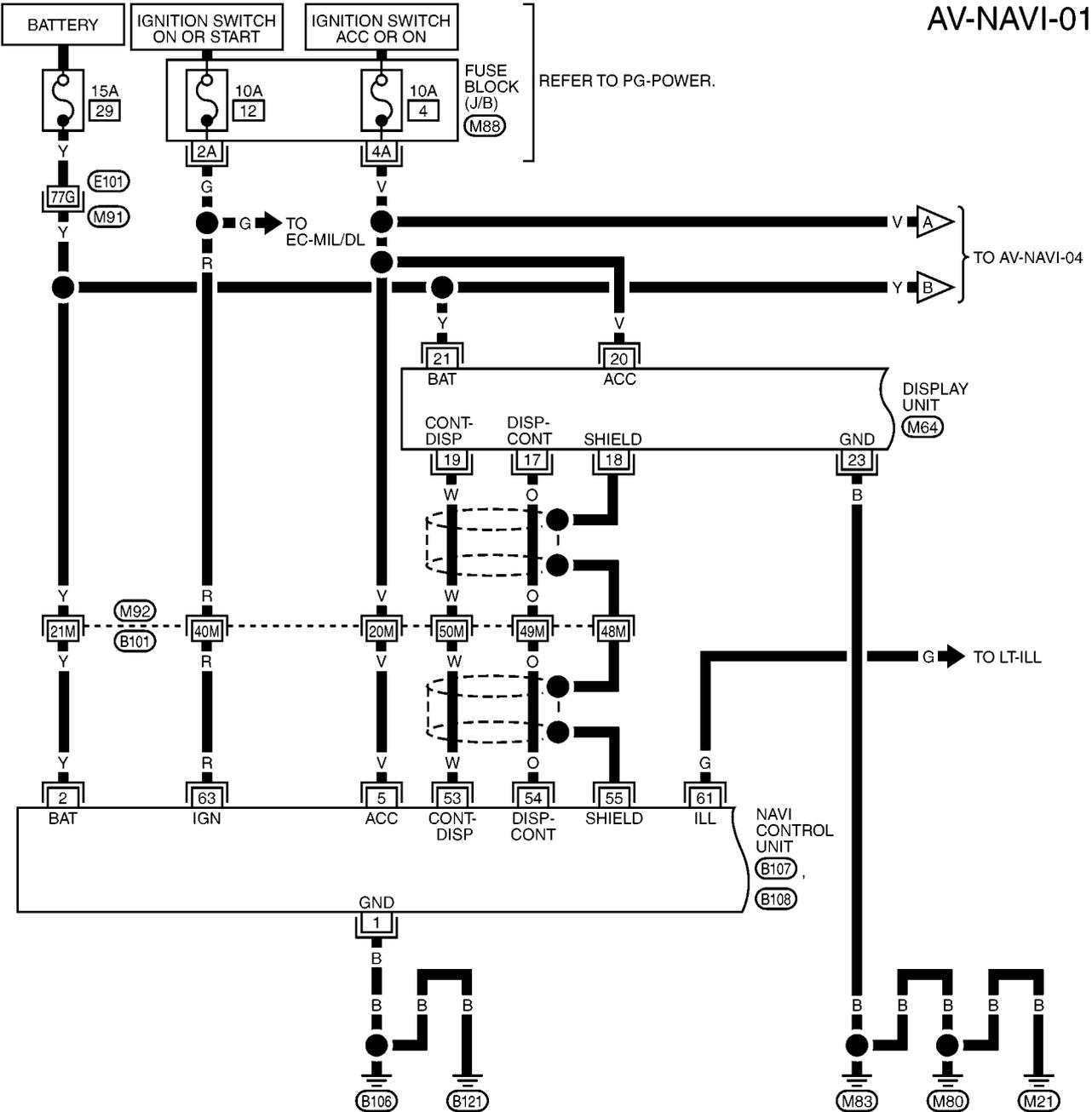
MKWA3606E

SYSTEM DESCRIPTION

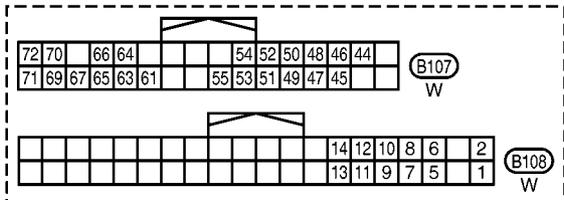
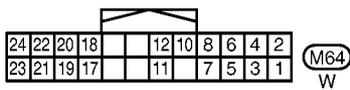
Wiring Diagram — NAVI —

EKS00Q66

AV-NAVI-01



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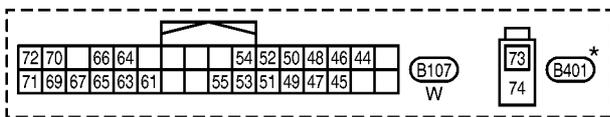
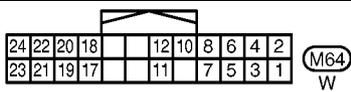
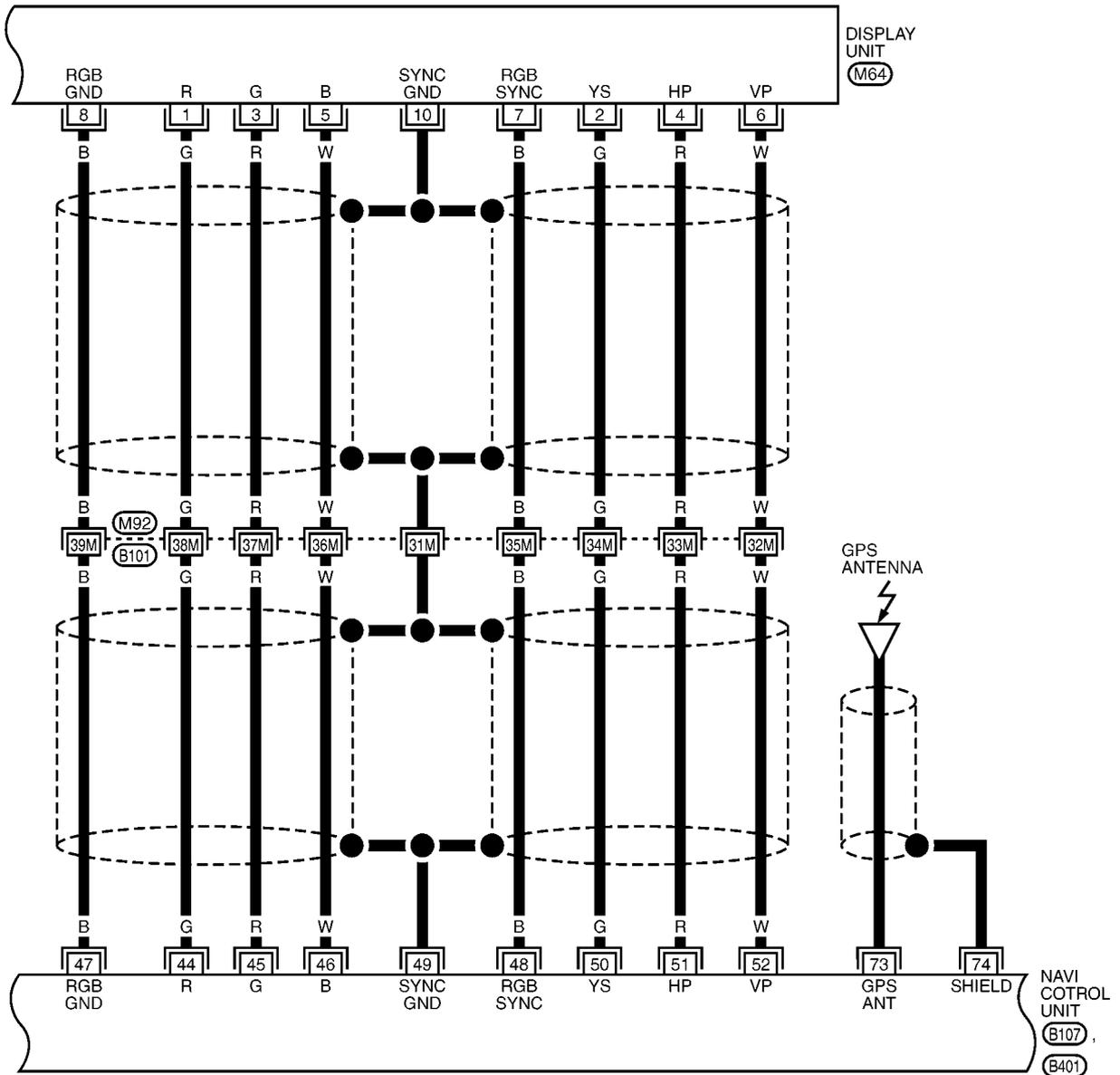


REFER TO THE FOLLOWING.
 (M91), (M92) -SUPER MULTIPLE JUNCTION (SMJ)
 (M88) -FUSE BLOCK-JUNCTION BOX (J/B)

MKWA3832E

SYSTEM DESCRIPTION

AV-NAVI-02

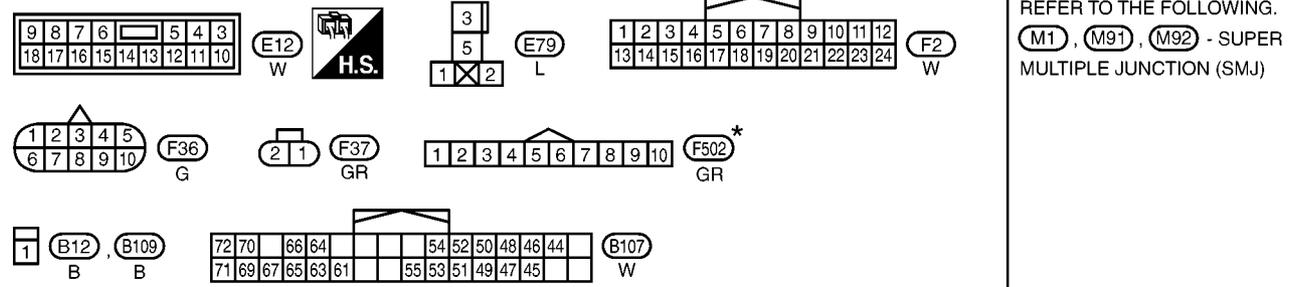
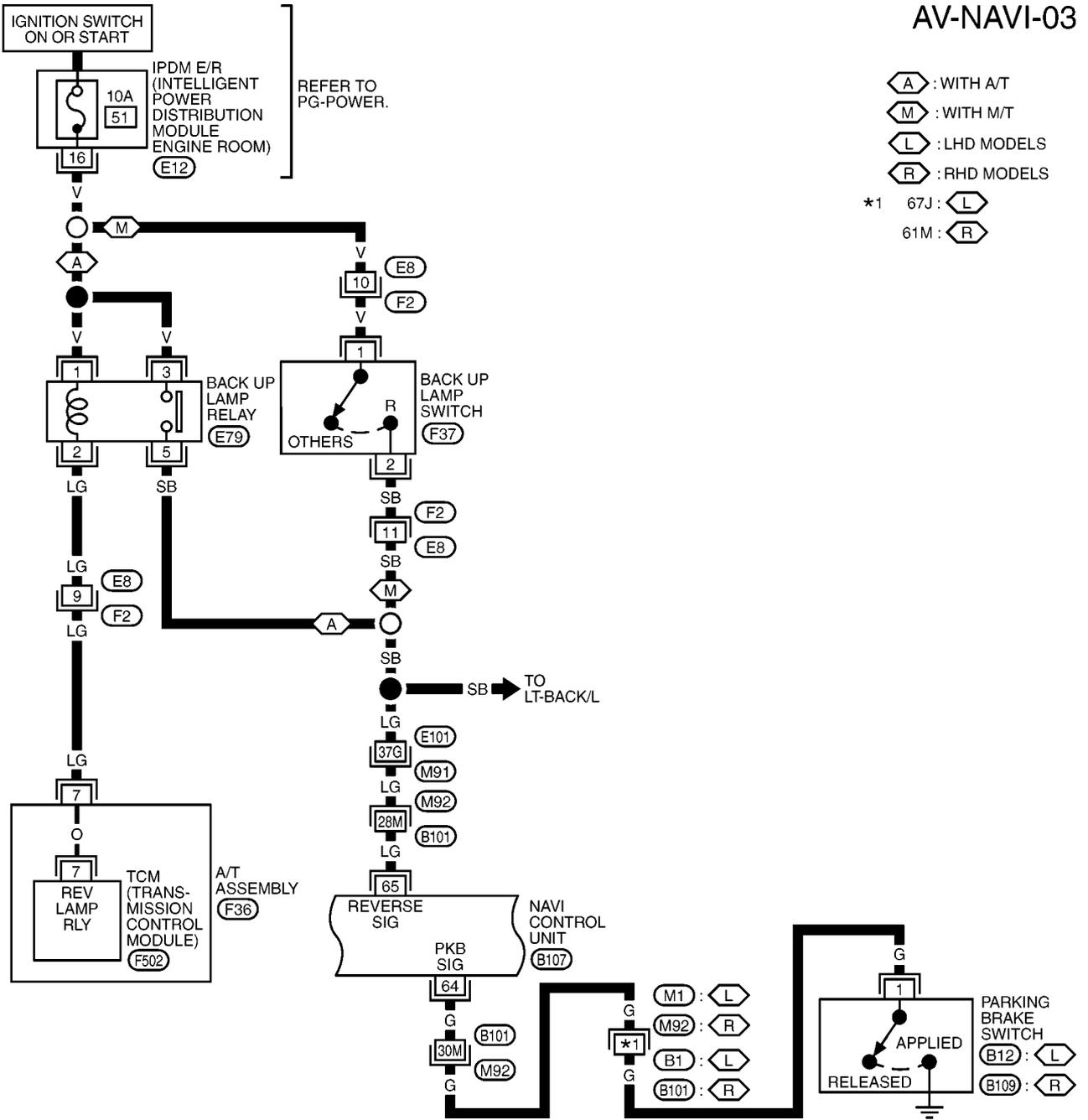


* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

REFER TO THE FOLLOWING.
 (M92) - SUPER MULTIPLE JUNCTION (SMJ)

SYSTEM DESCRIPTION

AV-NAVI-03

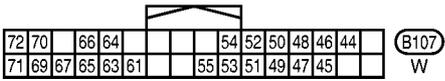
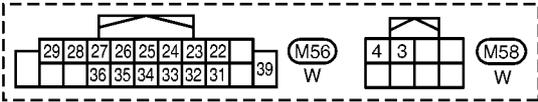
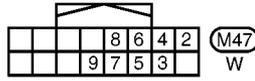
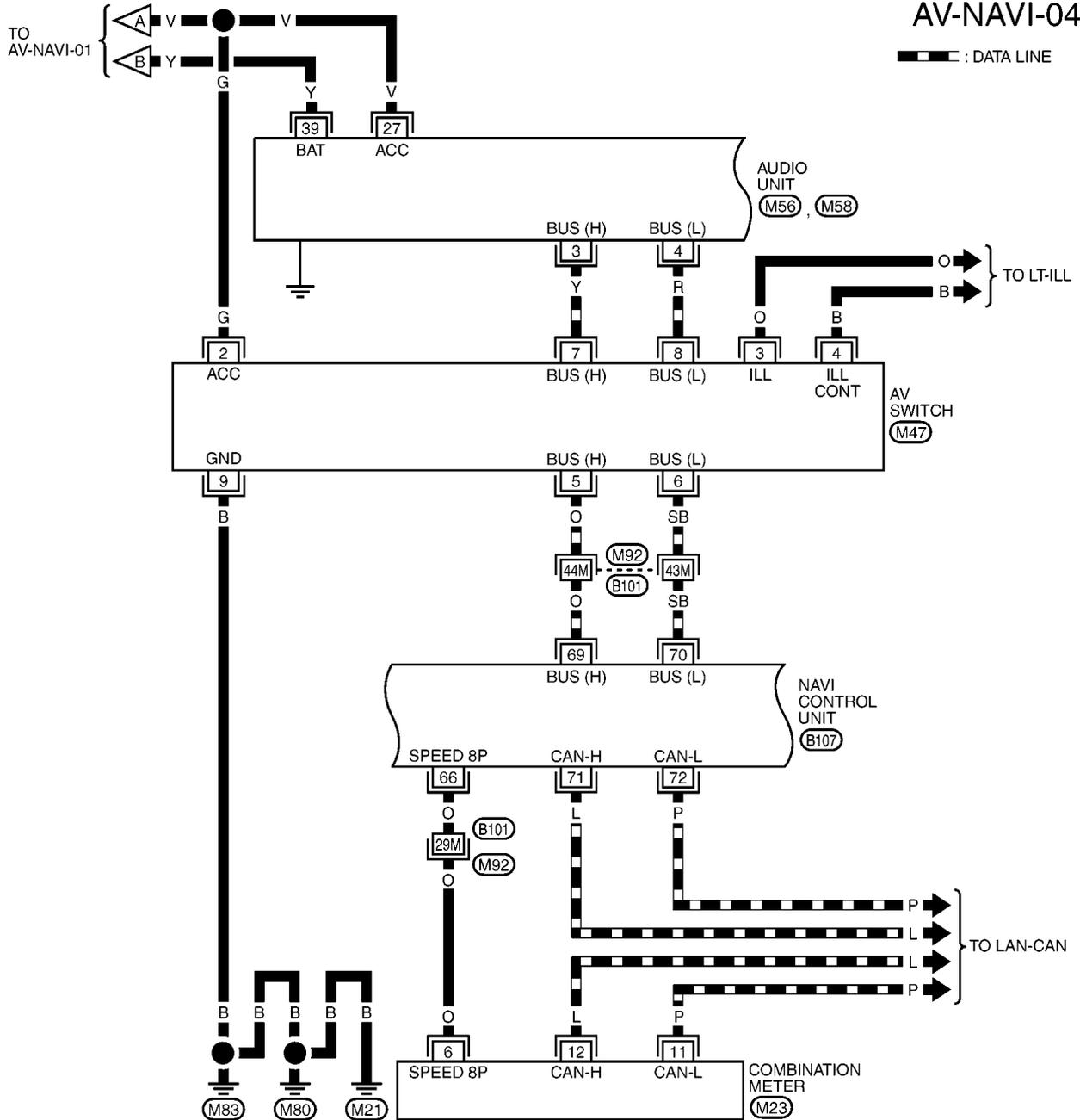


* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

SYSTEM DESCRIPTION

AV-NAVI-04

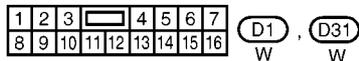
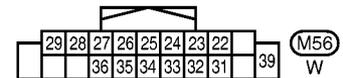
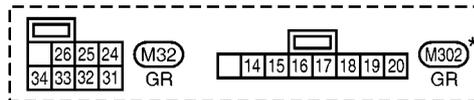
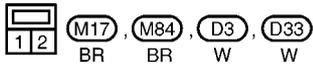
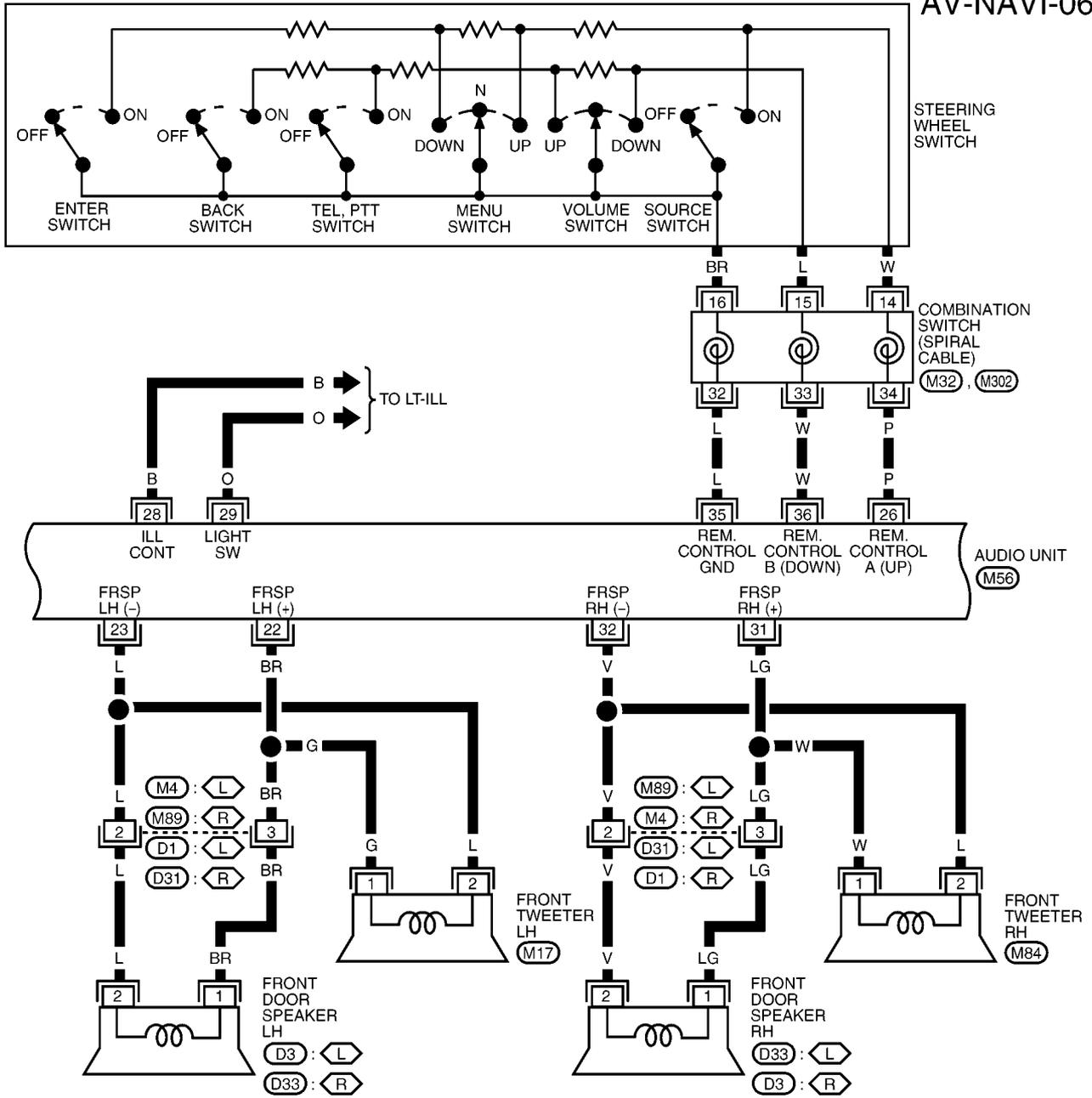
— : DATA LINE



REFER TO THE FOLLOWING.
 (M92) - SUPER MULTIPLE JUNCTION (SMJ)

SYSTEM DESCRIPTION

AV-NAVI-06



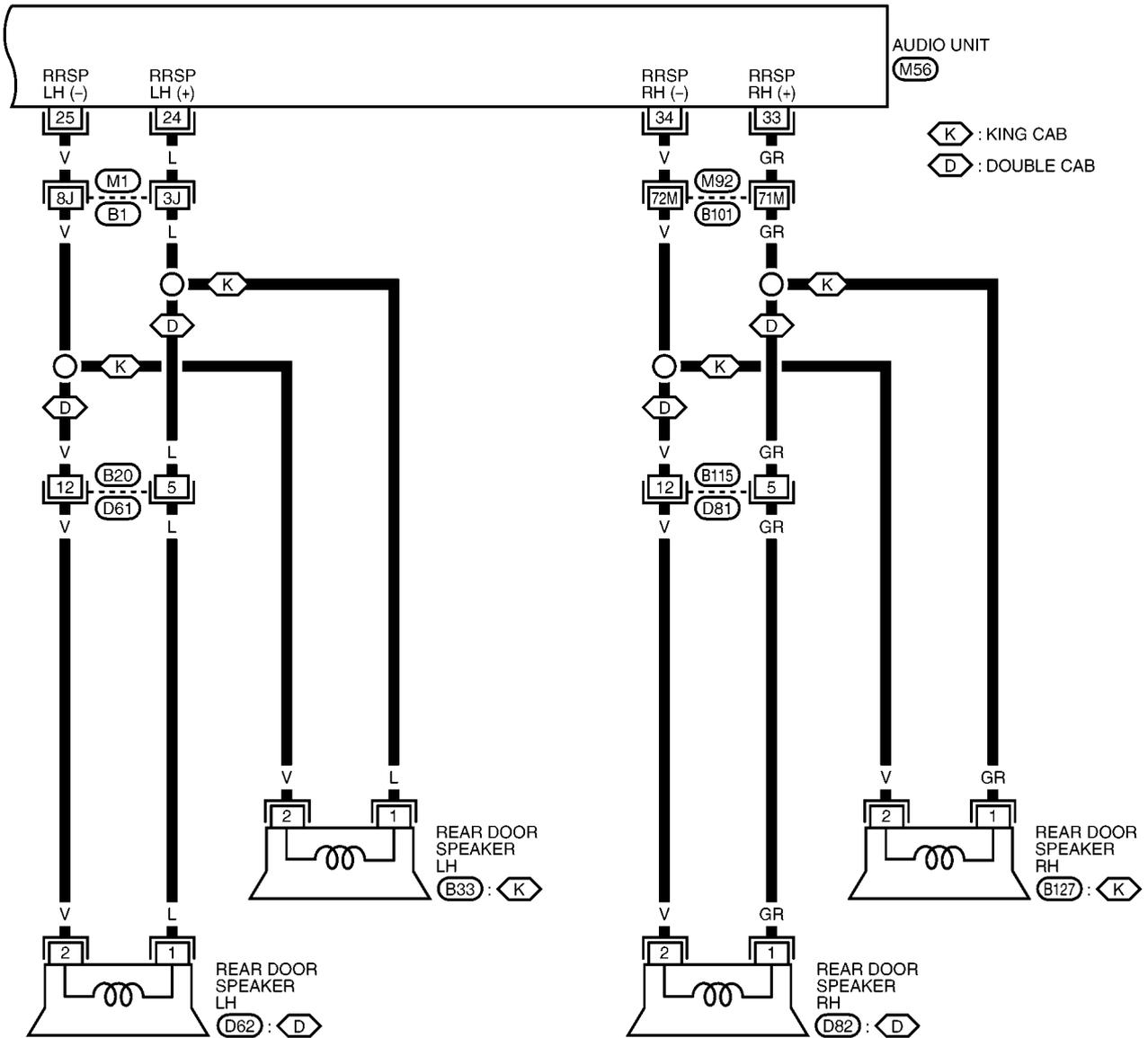
* : THIS CONNECTOR IS NOT SHOWN IN "HARNESS LAYOUT", PG SECTION.

MKWA3612E

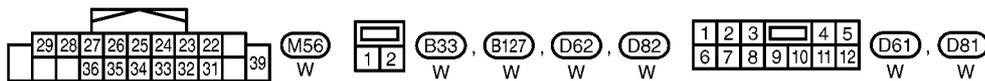
SYSTEM DESCRIPTION

AV-NAVI-07

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AV



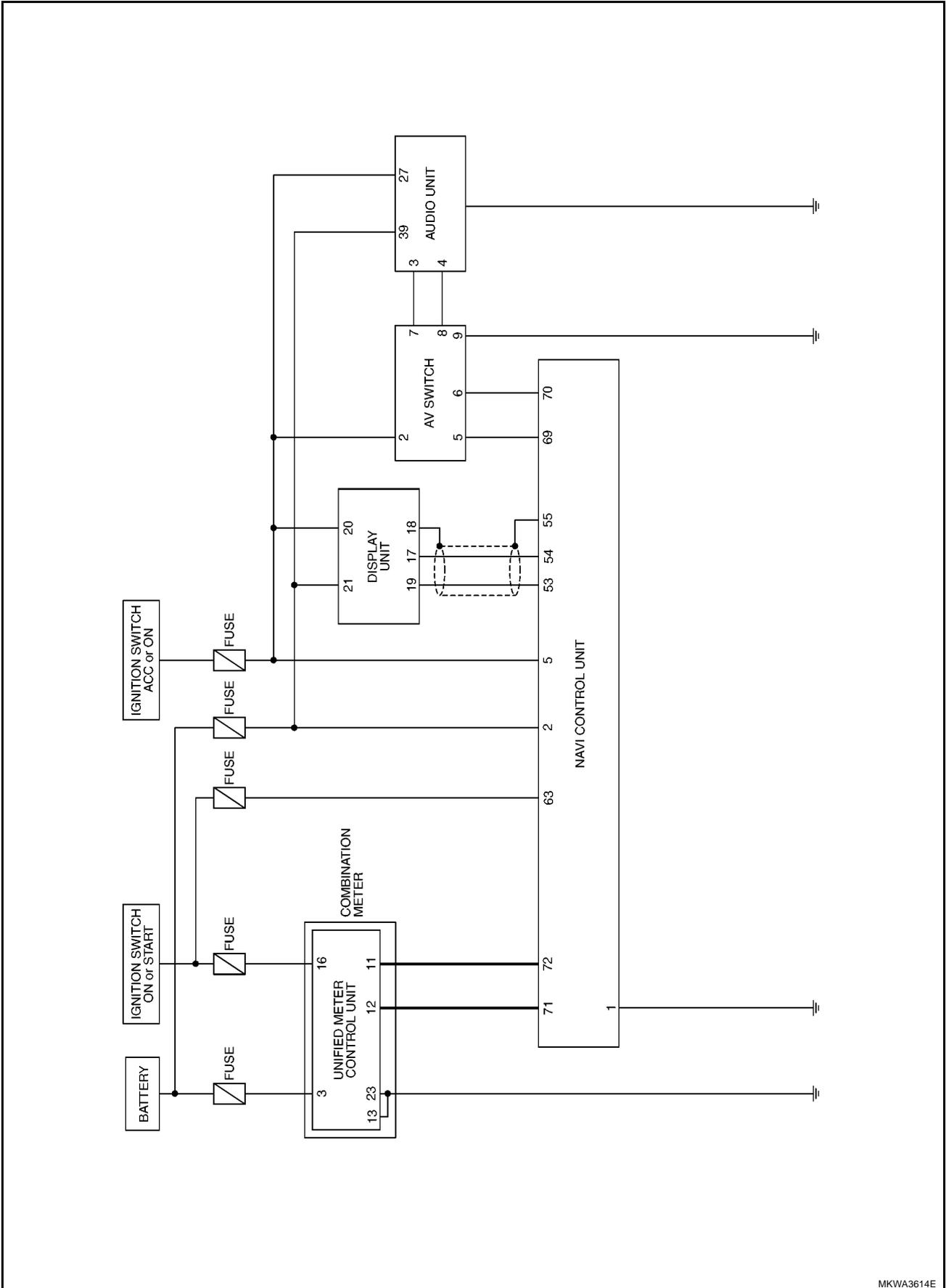
REFER TO THE FOLLOWING.
 (M1), (M92) - SUPER
 MULTIPLE JUNCTION (SMJ)

MKWA3613E

SYSTEM DESCRIPTION

Schematic — NAVI — / COMM

EKS00Q67



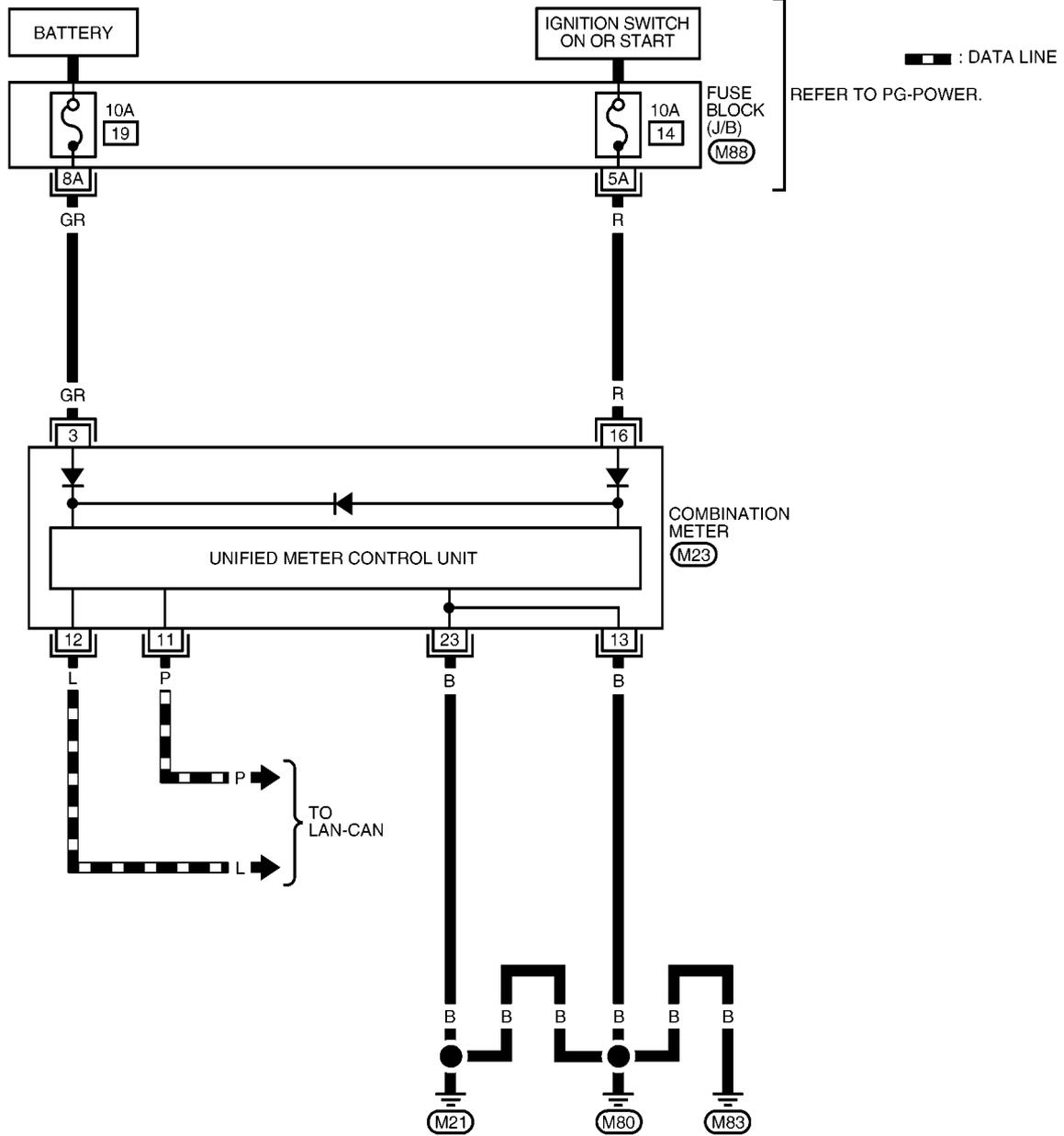
MKWA3614E

SYSTEM DESCRIPTION

Wiring Diagram — NAVI — / COMM

EKS00Q68

AV-COMM-01



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

(M23) W

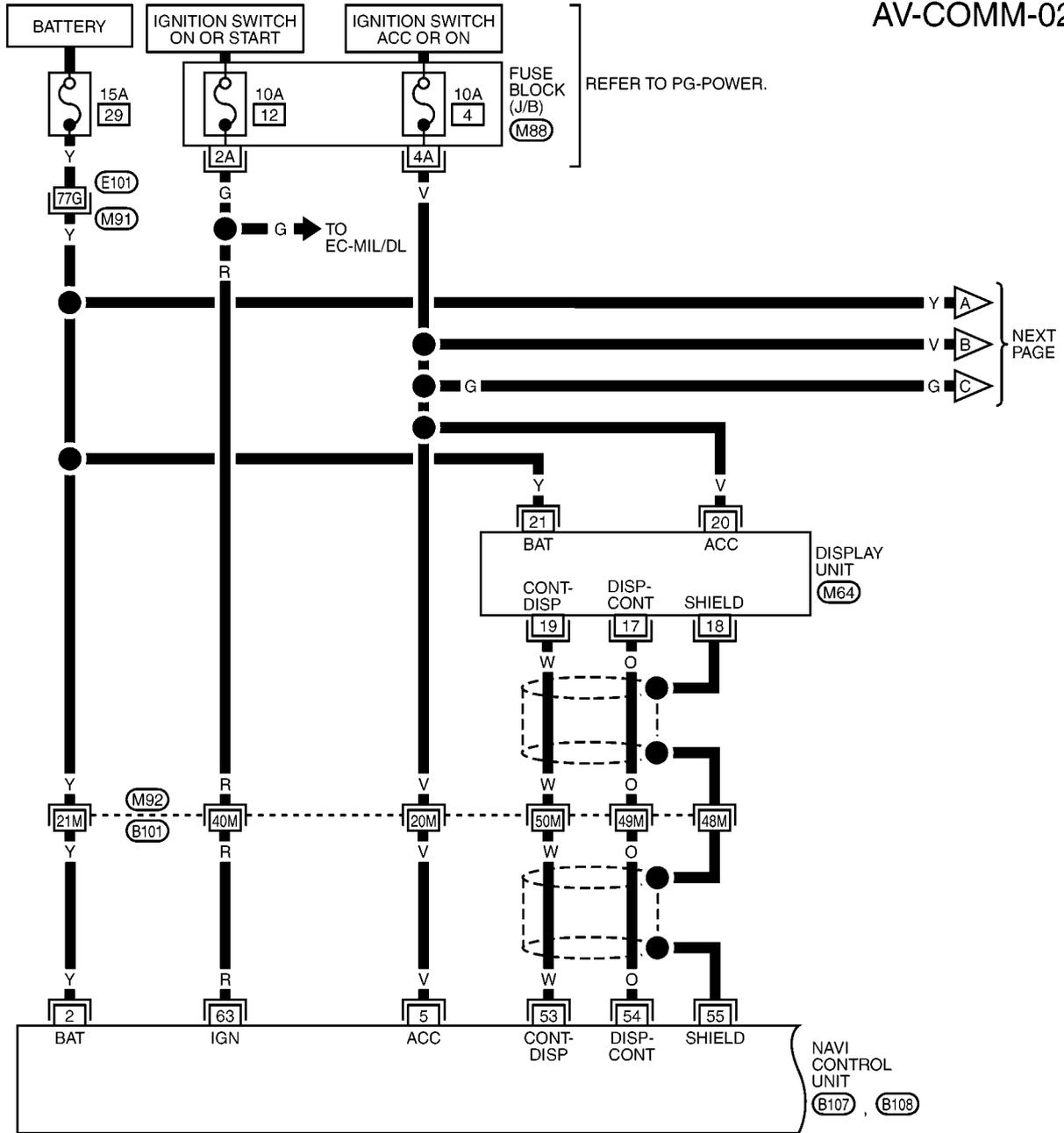
REFER TO THE FOLLOWING.

(M88) - FUSE BLOCK - JUNCTION BOX (J/B)

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SYSTEM DESCRIPTION

AV-COMM-02



24	22	20	18		12	10	8	6	4	2
23	21	19	17		11	7	5	3	1	

(M64)
W

72	70	66	64			54	52	50	48	46	44	
71	69	67	65	63	61		55	53	51	49	47	45

(B107)
W

										14	12	10	8	6	2
										13	11	9	7	5	1

(B108)
W

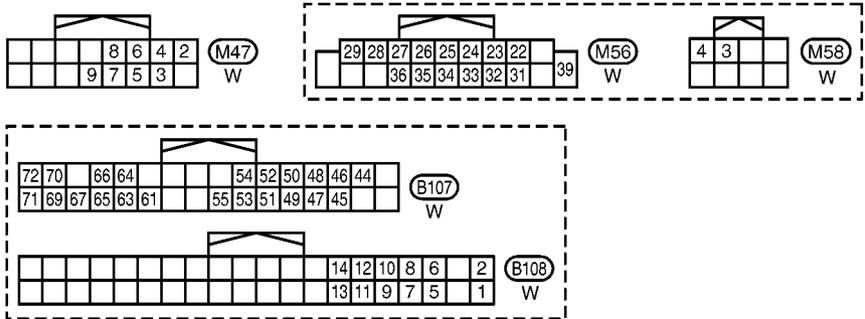
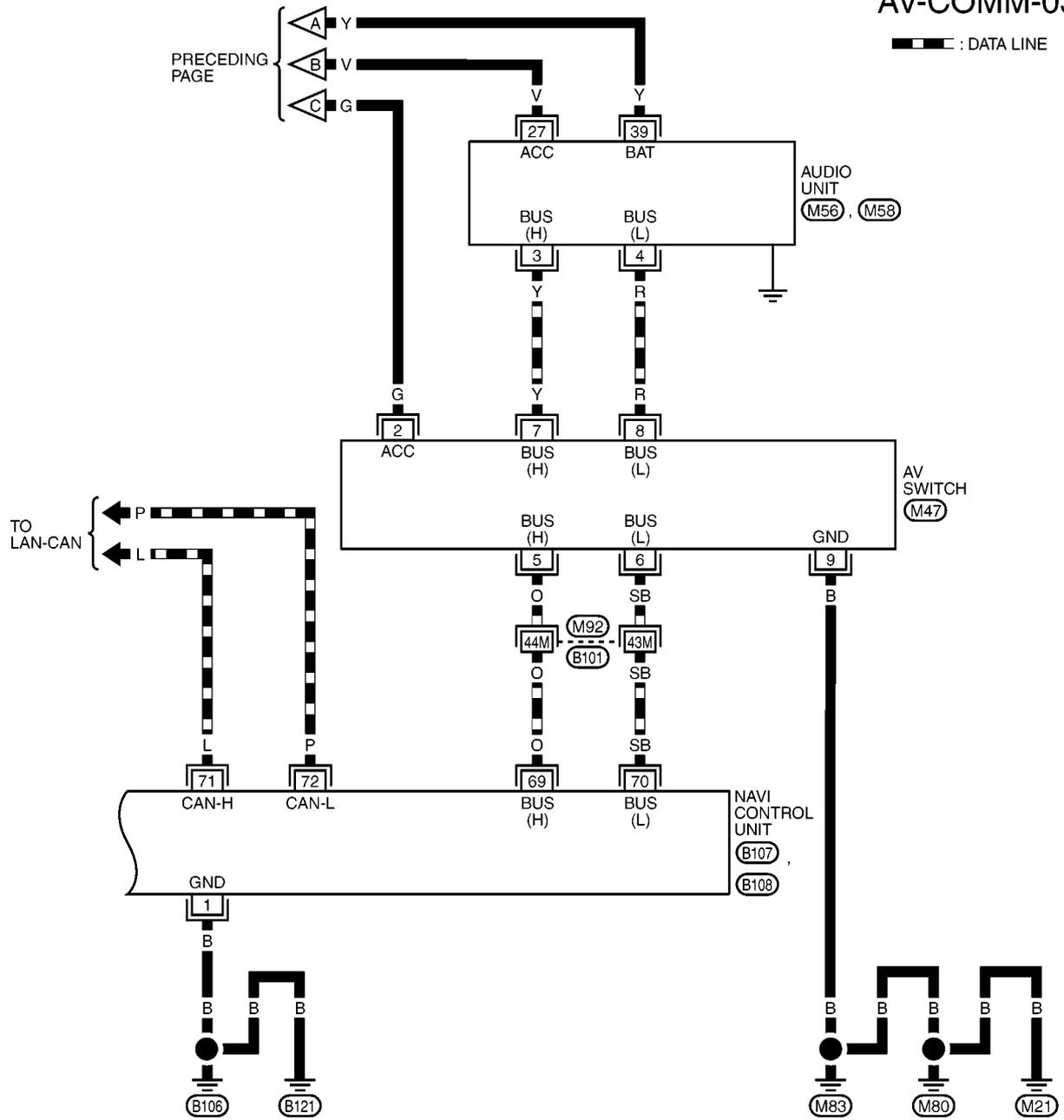
REFER TO THE FOLLOWING.

(M91), (M92) - SUPER MULTIPLE JUNCTION (SMJ)

(M88) - FUSE BLOCK - JUNCTION BOX (J/B)

SYSTEM DESCRIPTION

AV-COMM-03



REFER TO THE FOLLOWING.
 (M92) - SUPER MULTIPLE JUNCTION (SMJ)

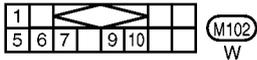
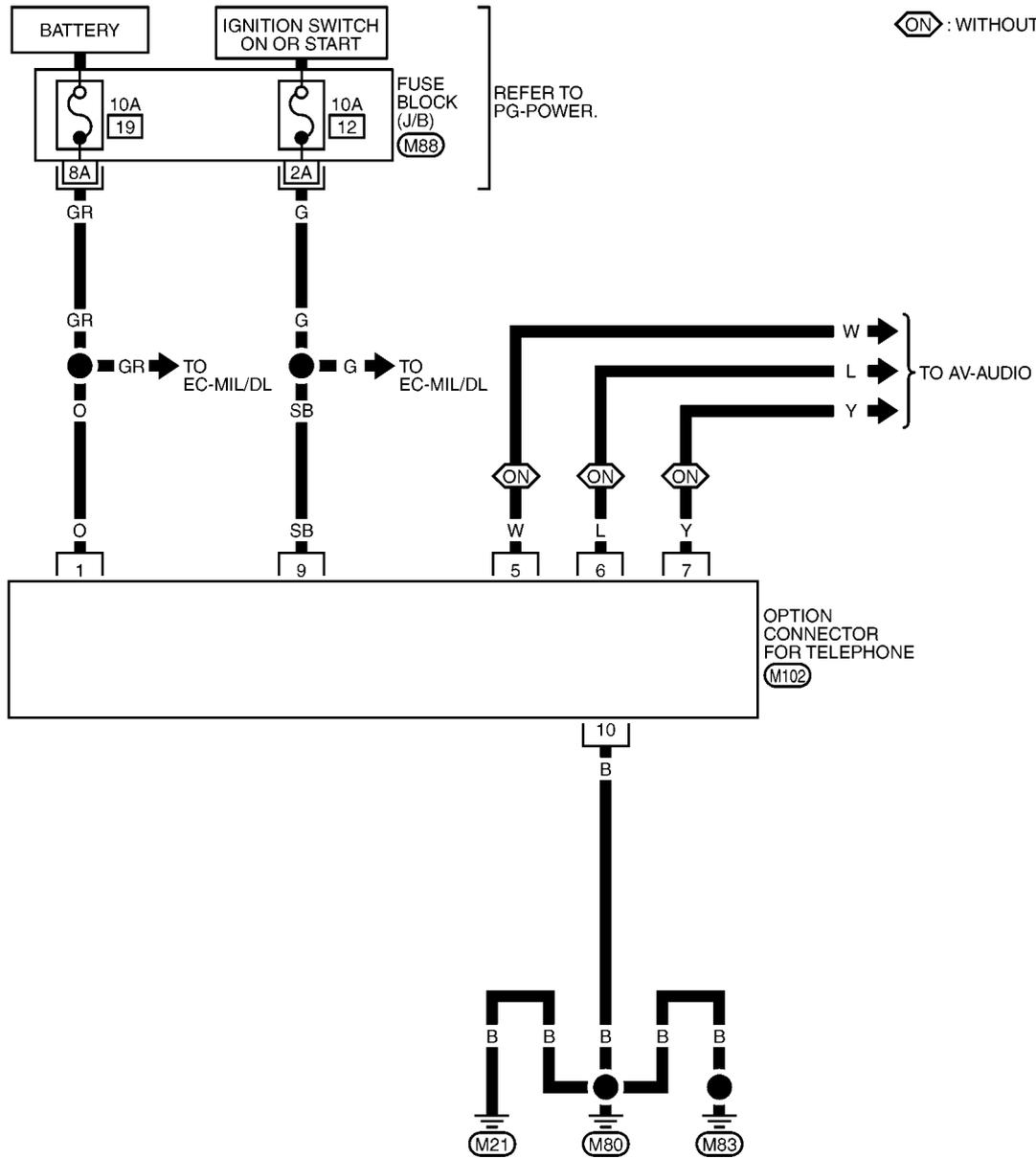
SYSTEM DESCRIPTION

Wiring Diagram — TELEPHONE (PRE WIRE) — / Without NAVI

EKS00Q69

AV-PHONE-01

 : WITHOUT NAVI



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

MKWA2983E

SYSTEM DESCRIPTION

CAN Communication SYSTEM DESCRIPTION

EKS00Q6A

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only. Refer to [LAN-30, "CAN Communication Unit"](#).

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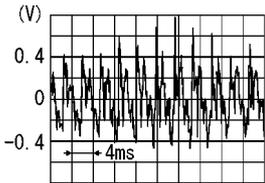
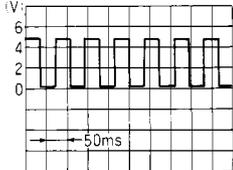
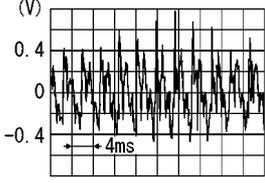
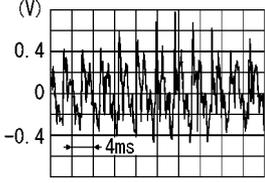
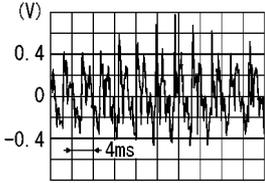
TERMINALS AND REFERENCE VALUE FOR CONTROL UNIT

TERMINALS AND REFERENCE VALUE FOR CONTROL UNIT

PFP:00000

Audio Unit (1CD Player Type)

EKS00Q6B

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	-			Ignition switch	Operation	
2 (O)	Ground	Illumination signal	Input	ON	Lighting switch is ON.	Approx. 12 V
				OFF	Lighting switch is OFF.	Approx. 0 V
3 (Y)	Ground	Battery power supply	Input	ON	-	Battery voltage
4 (Y)	-	TEL mute	-	-	-	-
6 (V)	Ground	ACC power supply	Input	ACC	-	Battery voltage
7 (BR)	5 (L)	Audio signal front LH	Output	ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB1990E</p>
8 (W)	Ground	Vehicle speed signal (2-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH).	 <p style="text-align: right; font-size: small;">ELF1080D</p>
9 (L)	10 (V)	Audio signal rear LH	Output	ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB1990E</p>
12 (SB)	-	Immobilizer	-	-	-	-
13 (LG)	11 (V)	Audio signal front RH	Output	ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB1990E</p>
15 (GR)	16 (V)	Audio signal rear RH	Output	ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB1990E</p>
19 (W)	-	TEL in (-)	-	-	-	-

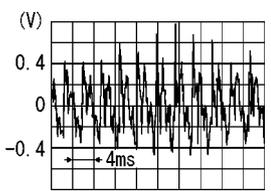
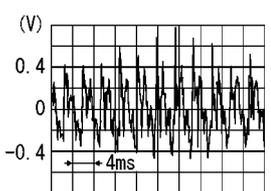
TERMINALS AND REFERENCE VALUE FOR CONTROL UNIT

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	-			Ignition switch	Operation	
20 (P)	22 (L)	Remote control signal A	Input	ON	Keep pushing MODE switch.	Approx. 0 V
					Keep pushing SEEK UP switch.	Approx. 1.7 V
					Keep pushing VOL UP switch.	Approx. 3.3 V
					Except for above.	Approx. 5 V
21 (W)	22 (L)	Remote control signal B	Input	ON	Keep pushing POWER switch.	Approx. 0 V
					Keep pushing SEEK DOWN switch.	Approx. 1.7 V
					Keep pushing VOL DOWN switch.	Approx. 3.3 V
					Except for above.	Approx. 5 V
22 (L)	Ground	Remote control ground	-	ON	-	Approx. 0 V
24 (L)	-	TEL in (+)	-	-	-	-

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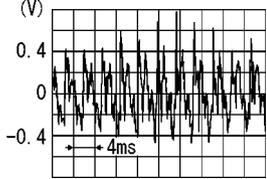
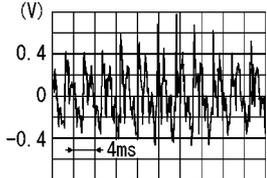
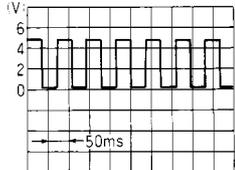
Audio Unit (6CD Player Type) Without NAVI

EKS00Q6C

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	-			Ignition switch	Operation	
2 (BR)	1 (L)	Audio signal front LH	Output	ON	Sound output	
4 (LG)	3 (V)	Audio signal front RH	Output	ON	Sound output	
6 (Y)	Ground	Battery power supply	Input	ON	-	Battery voltage
8 (O)	Ground	Illumination signal	Input	ON	Lighting switch is ON.	Approx. 12 V
					Lighting switch is OFF.	Approx. 0 V
10 (V)	Ground	ACC power supply	Input	ACC	-	Battery voltage

AV

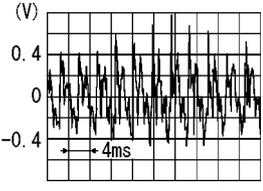
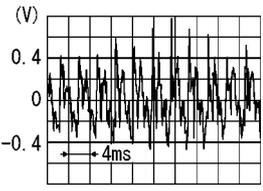
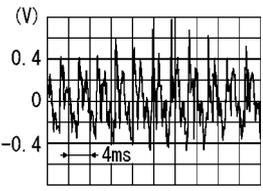
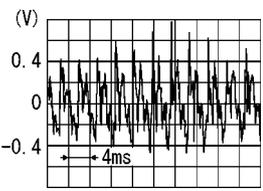
TERMINALS AND REFERENCE VALUE FOR CONTROL UNIT

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	-			Ignition switch	Operation	
14 (L)	13 (V)	Audio signal rear LH	Output	ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB1990E</p>
16 (GR)	15 (V)	Audio signal rear RH	Output	ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB1990E</p>
18 (W)	Ground	Vehicle speed signal (2-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH).	 <p style="text-align: right; font-size: small;">ELF1080D</p>
20 (SB)	-	Immobilizer	-	-	-	-
22 (P)	25 (L)	Remote control signal A	Input	ON	Keep pushing MODE switch.	Approx. 0 V
					Keep pushing SEEK UP switch.	Approx. 1.7 V
					Keep pushing VOL UP switch.	Approx. 3.3 V
					Except for above.	Approx. 5 V
23 (W)	25 (L)	Remote control signal B	Input	ON	Keep pushing POWER switch.	Approx. 0 V
					Keep pushing SEEK DOWN switch.	Approx. 1.7 V
					Keep pushing VOL DOWN switch.	Approx. 3.3 V
					Except for above.	Approx. 5V
25 (L)	Ground	Remote control ground	-	ON	-	Approx. 0 V
26 (W)	-	TEL in (-)	-	-	-	-
27 (L)	-	TEL in (+)	-	-	-	-
28 (Y)	-	TEL mute	-	-	-	-

TERMINALS AND REFERENCE VALUE FOR CONTROL UNIT

Audio Unit (With NAVI)

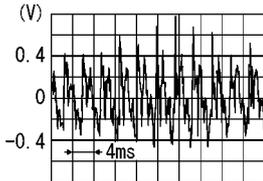
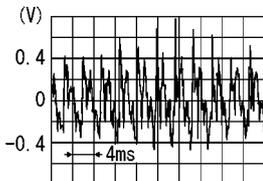
EKS00Q6D

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	-			Ignition switch	Operation	
3 (Y)	-	Communication signal (H)	Input/ output	-	-	-
4 (R)	-	Communication signal (L)	Input/ output	-	-	-
10 (W)	11 (O)	TEL voice signal	Input	ON	TEL voice output	 <p style="text-align: right; font-size: small;">SKIB1990E</p>
12 (O)	13 (W)	Voice guidance signal	Input	ON	Voice guidance output	 <p style="text-align: right; font-size: small;">SKIB1990E</p>
17	Ground	Shield (TEL voice)	-	ON	-	Approx. 0 V
18	Ground	Shield (Guide voice)	-	ON	-	Approx. 0 V
22 (BR)	23 (L)	Audio signal front LH	Output	ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB1990E</p>
24 (L)	25 (V)	Audio signal rear LH	Output	ON	Sound output	 <p style="text-align: right; font-size: small;">SKIB1990E</p>
26 (P)	35 (L)	Remote control signal A	Input	ON	Keep pushing SOURCE switch.	approx. 0 V
					Keep pushing MENU UP switch.	Approx. 1.2 V
					Keep pushing MENU DOWN switch.	Approx. 2.5 V
					Keep pushing ENTER switch.	Approx. 3.7 V
					Except for above.	Approx. 5 V
27 (V)	Ground	ACC power supply	Input	ACC	-	Battery voltage
28 (B)	Ground	Illumination control sig- nal	Input	ON	Illumination control switch is operated by lighting switch in ON position	Changes between approx. 0 V and approx. 12 V

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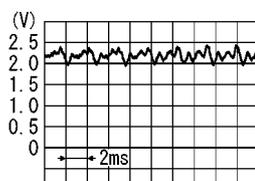
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TERMINALS AND REFERENCE VALUE FOR CONTROL UNIT

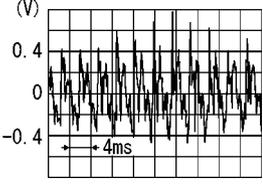
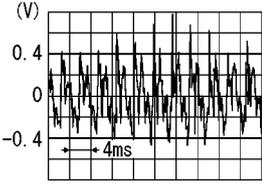
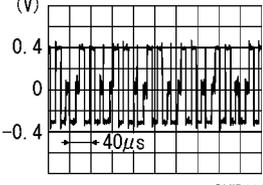
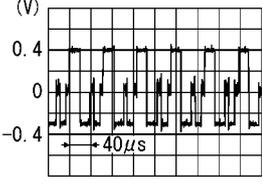
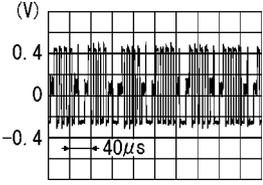
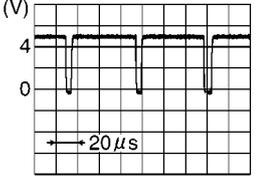
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	-			Ignition switch	Operation	
29 (O)	Ground	Illumination signal	Input	ON	Lighting switch is ON.	Approx. 12 V
					Lighting switch is OFF.	Approx. 0 V
31 (LG)	32 (V)	Audio signal front RH	Output	ON	Sound output	 SKIB1990E
33 (GR)	34 (V)	Audio signal rear RH	Output	ON	Sound output	 SKIB1990E
36 (W)	35 (L)	Remote control signal B	Input	ON	Keep pushing VOL DOWN switch.	Approx. 0 V
					Keep pushing VOL UP switch.	Approx. 1.2 V
					Keep pushing TEL, PTT switch.	Approx. 2.5 V
					Keep pushing BACK switch.	Approx. 3.7 V
					Except for above.	Approx. 5 V
39 (Y)	Ground	Battery power supply	Input	ON	-	Battery voltage

NAVI Control Unit

EKS00Q6E

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	-			Ignition switch	Operation	
1 (B)	Ground	Ground	-	ON	-	Approx. 0 V
2 (Y)	Ground	Battery power supply	Input	ON	-	Battery voltage
5 (V)	Ground	ACC power supply	Input	ACC	-	Battery voltage
6 (B)	Ground	MIC. power supply	Output	ON	-	Approx. 5 V
7	Ground	Shield (MIC.)	-	ON	-	Approx. 0 V
8 (W)	Ground	MIC. signal	Input	ON	Sounds	 PKIB5037J
9	Ground	Shield (TEL voice)	-	ON	-	Approx. 0 V

TERMINALS AND REFERENCE VALUE FOR CONTROL UNIT

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	-			Ignition switch	Operation	
10 (W)	11 (O)	TEL voice signal	Output	ON	TEL voice output	 <small>SKIB1990E</small>
12 (O)	14 (W)	Voice guidance signal	Output	ON	Voice guidance output	 <small>SKIB1990E</small>
13	Ground	Shield (Guide voice)	-	ON	-	Approx. 0 V
44 (G)	47 (B)	RGB signal (R: red)	Output	ON	Start Confirmation/ Adjustment mode, and then display color bar by selecting "Display Color Spectrum Bar" on DISPLAY DIAGNO- SIS screen.	 <small>SKIB2238J</small>
45 (R)	47 (B)	RGB signal (G: green)	Output	ON	Start Confirmation/ Adjustment mode, and then display color bar by selecting "Display Color Spectrum Bar" on DISPLAY DIAGNO- SIS screen.	 <small>SKIB2236J</small>
46 (W)	47 (B)	RGB signal (B: blue)	Output	ON	Start Confirmation/ Adjustment mode, and then display color bar by selecting "Display Color Spectrum Bar" on DISPLAY DIAGNO- SIS screen.	 <small>SKIB2237J</small>
47 (B)	Ground	RGB ground	-	ON	-	Approx. 0 V
48 (B)	Ground	RGB synchronizing sig- nal	Output	ON	-	 <small>SKIB3603E</small>
49	Ground	Shield (Synchronizing)	-	ON	-	Approx. 0 V

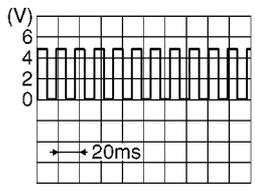
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TERMINALS AND REFERENCE VALUE FOR CONTROL UNIT

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	-			Ignition switch	Operation	
50 (G)	Ground	RGB area (YS) signal	Output	ON	Set the selector lever in R position, and then display the rear view image.	
					Other than the above.	
51 (R)	Ground	Horizontal synchronizing (HP) signal	Input	ON	Set the selector lever in R position, and then display the rear view image.	
52 (W)	Ground	Vertical synchronizing (VP) signal	Input	ON	Set the selector lever in R position, and then display the rear view image.	
53 (W)	Ground	Communication signal (CONT-DISP)	Output	ON	Image quality adjustment	
54 (O)	Ground	Communication signal (DISP-CONT)	Input	ON	Image quality adjustment	
55	Ground	Shield	-	ON	-	Approx. 0 V
61 (G)	Ground	Illumination signal	Input	ON	Lighting switch is ON.	Approx. 12 V
					Lighting switch is OFF.	Approx. 0 V
63 (R)	Ground	Ignition signal	Input	ON	-	Battery voltage
64 (G)	Ground	Parking brake signal	Input	ON	Parking brake ON	Approx. 0 V
					Parking brake OFF	Approx. 12 V

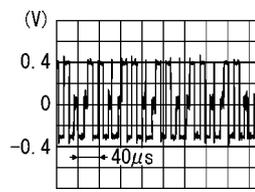
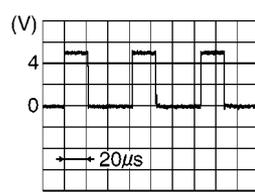
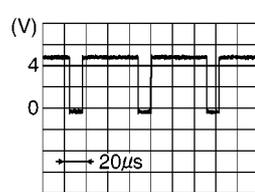
TERMINALS AND REFERENCE VALUE FOR CONTROL UNIT

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	-			Ignition switch	Operation	
65 (LG)	Ground	Reverse signal	Input	ON	Selector lever in R position.	Approx. 12V
					Other than selector lever in R position.	Approx. 0 V
66 (O)	Ground	Vehicle speed signal (8-pulse)	Input	ON	When vehicle speed is approx. 40 km/h (25 MPH).	
69 (O)	-	Communication signal (H)	Input/output	-	-	-
70 (SB)	-	Communication signal (L)	Input/output	-	-	-
71 (L)	-	CAN-H	Input/output	-	-	-
72 (P)	-	CAN-L	Input/output	-	-	-
73	Ground	GPS signal	Input	ON	Connector is not connected.	Approx. 5 V
74	Ground	Shield	-	ON	-	Approx. 0 V

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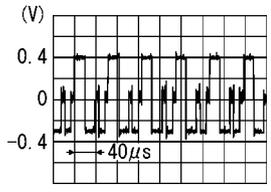
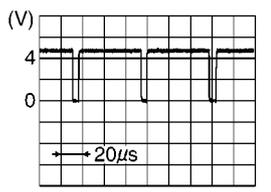
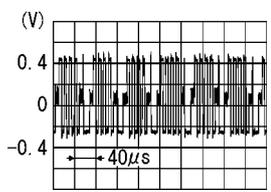
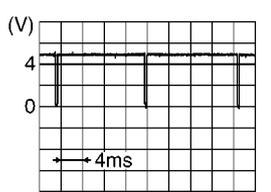
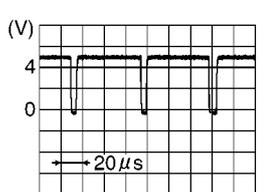
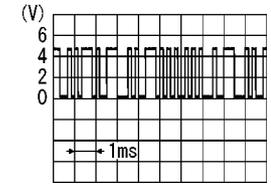
Display Unit

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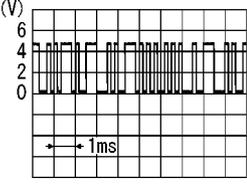
Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	-			Ignition switch	Operation	
1 (G)	8 (B)	RGB signal (R: red)	Input	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting "Display Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	
2 (G)	Ground	RGB area (YS) signal	Input	ON	Set the selector lever in R position, and then display the rear view image.	
					Other than the above.	

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TERMINALS AND REFERENCE VALUE FOR CONTROL UNIT

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	-			Ignition switch	Operation	
3 (R)	8 (B)	RGB signal (G: green)	Input	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting "Display Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	 <small>SKIB2236J</small>
4 (R)	Ground	Horizontal synchronizing (HP) signal	Output	ON	Set the selector lever in R position, and then display the rear view image.	 <small>SKIB3601E</small>
5 (W)	8 (B)	RGB signal (B: blue)	Input	ON	Start Confirmation/Adjustment mode, and then display color bar by selecting "Display Color Spectrum Bar" on DISPLAY DIAGNOSIS screen.	 <small>SKIB2237J</small>
6 (W)	Ground	Vertical synchronizing (VP) signal	Output	ON	Set the selector lever in R position, and then display the rear view image.	 <small>SKIB3598E</small>
7 (B)	Ground	RGB synchronizing signal	Input	ON	—	 <small>SKIB3603E</small>
8 (B)	Ground	RGB ground	—	ON	—	Approx. 0 V
10	Ground	Shield (Synchronizing)	—	ON	—	Approx. 0 V
17 (O)	Ground	Communication signal (DISP-CONT)	Output	ON	Image quality adjustment	 <small>PKIB5039J</small>
18	Ground	Shield	—	ON	—	Approx. 0 V

TERMINALS AND REFERENCE VALUE FOR CONTROL UNIT

Terminal (Wire color)		Item	Signal input/ output	Condition		Reference value
+	-			Ignition switch	Operation	
19 (W)	Ground	Communication signal (CONT-DISP)	Input	ON	Image quality adjustment	
20 (V)	Ground	ACC power supply	Input	ACC	-	Battery voltage
21 (Y)	Ground	Battery power supply	Input	ON	-	Battery voltage
23 (B)	Ground	Ground	-	ON	-	Approx. 0 V

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DIAGNOSIS SYSTEM

DIAGNOSIS SYSTEM

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Navigation System Diagnosis Function

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- There are 2 diagnosis functions (on board diagnosis and diagnosis using CONSULT-II), and it is necessary to use them properly according to the condition. If the on board diagnosis starts, perform diagnosis with on board diagnosis. If the on board diagnosis does not start (the cause being that the system is not started, the switch operation is not activated, etc.), perform diagnosis using CONSULT-II.
- At on board diagnosis, the NAVI control unit diagnosis function starts by switch operation and the NAVI control unit performs the diagnosis for each unit of system.
- At diagnosis using CONSULT-II, the NAVI control unit diagnosis function starts by the communication between CONSULT-II and NAVI control unit, and the NAVI control unit performs the diagnosis for each unit of system.

On Bord Self-Diagnosis Function

EKS00Q6I

DESCRIPTION

- The on board diagnosis function has a self-diagnosis mode for performing trouble diagnosis automatically and a Confirmation/Adjustment mode for operating manually.
- Self-diagnosis mode performs the diagnosis at NAVI control unit, connections between each unit that composes the system, and connections between NAVI control unit and GPS antenna. It displays the results on the display.
- Confirmation/Adjustment mode is used to monitor the vehicle signals requiring operation and judgement by a technician (malfunctions that cannot be automatically judged by the system), the confirmation/adjustment of setting value, the error history of system, and the communication condition of system.

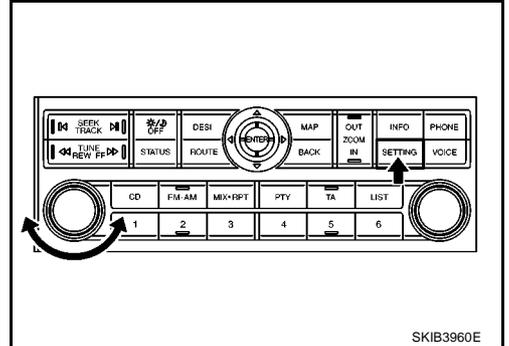
DIAGNOSIS ITEM

Mode		Description	
Self Diagnosis		<ul style="list-style-type: none"> ● NAVI control unit diagnosis (DVD-ROM drive will not be diagnosed when no map DVD-ROM is in it.) ● The connection diagnosis between NAVI control unit and GPS antenna and the connection diagnosis between NAVI control unit and each unit can be performed. 	
Confirmation/Adjustment	Display Diagnosis	The tint can be confirmed by the color spectrum bar display. The shading of color can be confirmed by the gradation bar display.	
	Vehicle Signals	Diagnosis of signals can be performed for vehicle speed, parking brake, lights, ignition (ignition switch), and reverse.	
	Speaker Test	The connection of a speaker can be confirmed by test tone.	
	Navigation	Steering Angle Adjustment	When there is a difference between the actual turning angle and the vehicle mark turning angle, it can be adjusted.
		Speed Calibration	When there is a difference between the current location mark and the actual location, it can be adjusted.
	Error History	The system malfunction and its frequency that occurred in the past are displayed. When the malfunctioning item is selected, the time and place that the selected malfunction last occurred are displayed.	
	Vehicle CAN Diagnosis	The transmitting/receiving of CAN communication can be monitored.	
	AV COMM Diagnosis	The communication condition of each unit that composes the system can be monitored.	
	Handsfree Phone	Each setting of hands-free volume adjustment, voice microphone test, delete hands-free memory can be performed.	
	Bluetooth	Passkey and device name can be confirmed/changed.	
Delete Unit Connection Log	The connection history and error history of unit can be deleted.		

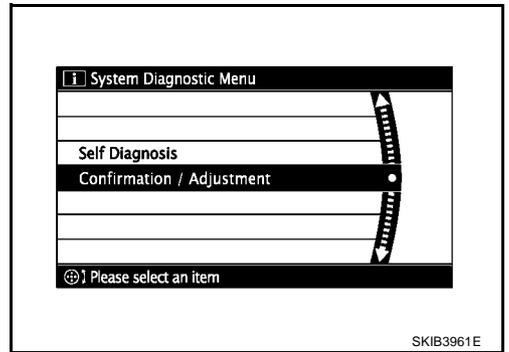
DIAGNOSIS SYSTEM

OPERATION PROCEDURE

1. Start engine.
2. Turn the audio OFF.
3. While pressing the "SETTING" switch, turn volume dial to the left or right by at least 40 clicks. (When diagnosis function is activated, a short beep sounds.)
Press the "BACK" switch and the initial system screen will be shown.



4. The system diagnostic menu is displayed, and then the items of "Self Diagnosis" and "Confirmation/Adjustment" can be selected.



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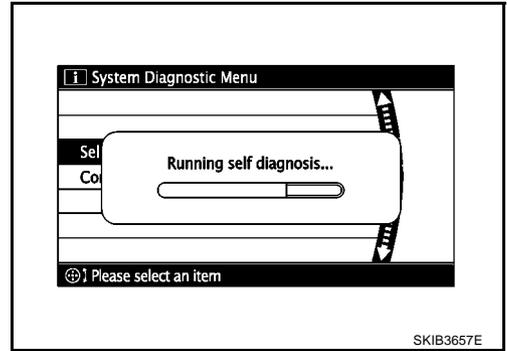
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DIAGNOSIS SYSTEM

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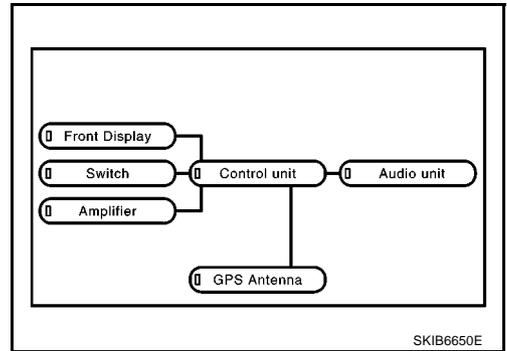
Self Diagnosis Mode

1. Start the diagnosis function, and then select "Self Diagnosis".
 - Self-diagnosis screen is displayed. The system enters in the self-diagnosis mode.
 - The bar graph visible on the center of screen indicates the progress of self-diagnosis.



2. Diagnostic results are displayed when the self-diagnosis is complete. Each unit name and connection lines between each unit will be colored according to the diagnostic results, as follows.

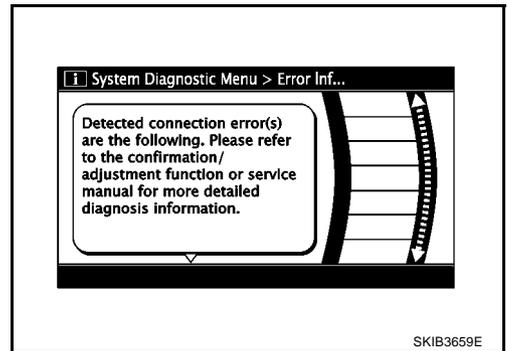
Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
DVD drive undiagnosed	Gray	Green
DVD-ROM and DVD-ROM drive malfunction	Yellow	Green
Unit returned an error *	Red	Green



* : Only control unit (NAVI control unit) is displayed in red.

NOTE:

- Switch: AV switch
 - Control unit: NAVI control unit
 - Amplifier is built in Audio unit.
- If multiple malfunctions occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > yellow > gray.
 - When selecting the screen switch on self-diagnosis screen, the comment of self-diagnosis results is displayed.



DIAGNOSIS SYSTEM

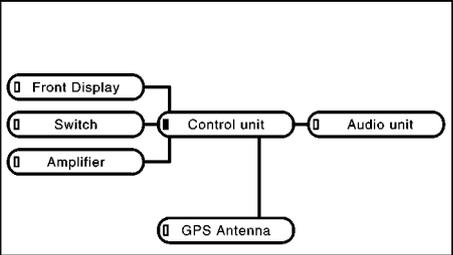
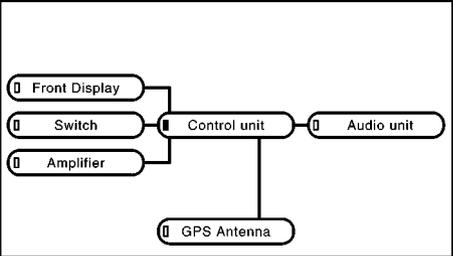
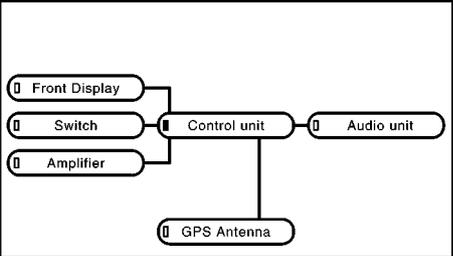
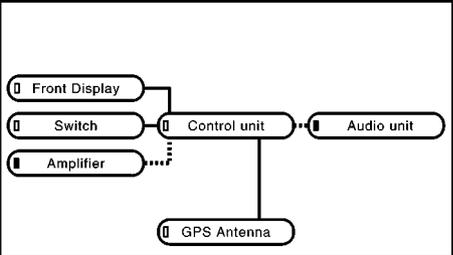
ERROR DETECTION RANGE OF SELF-DIAGNOSIS MODE

- Self-diagnosis mode can perform the connection condition diagnosis of communication circuit between NAVI control unit and each unit and the NAVI control unit diagnosis.
- Since the start condition of diagnosis function is switch operation, if the malfunction is detected in the communication circuit between NAVI control unit and AV switch, on board diagnosis function cannot be started.

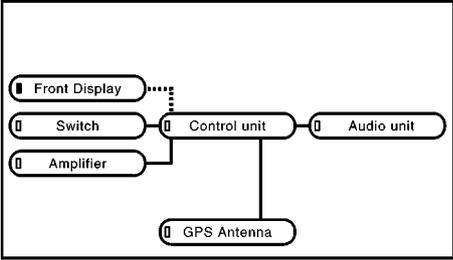
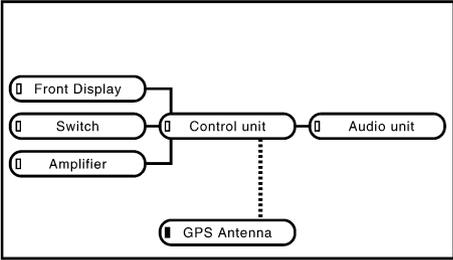
DIAGNOSIS RESULTS

Check the applicable display at the DTC quick reference table, and then repair the malfunctioning parts.

DTC Quick Reference Table

Diagnostic results screen	Description	Possible malfunction location/Action to take
 <p>■ : Red</p> <p style="text-align: right;">SKIB6651E</p>	<p>NAVI control unit malfunction is detected</p>	<p>Replace NAVI control unit</p>
 <p>■ : Yellow</p> <p style="text-align: right;">SKIB6652E</p>	<ul style="list-style-type: none"> • Malfunction is detected on DVD-ROM drive pickup lens in NAVI control unit • There is dirt and damage on the map disc 	<ul style="list-style-type: none"> • Clean the DVD-ROM drive pickup lens in NAVI control unit using the specified cleaning disc • Map disc • NAVI control unit
 <p>■ : Gray</p> <p style="text-align: right;">SKIB6653E</p>	<p>DVD-ROM not inserted is detected</p>	<p>Insert map disc</p>
 <p>■ : Gray : Yellow</p> <p style="text-align: right;">SKIB6654E</p>	<ul style="list-style-type: none"> • Audio unit power supply circuit malfunction is detected • Malfunction is detected on communication circuit between AV switch and audio unit • Malfunction is detected on communication signal between audio unit and NAVI control unit 	<ul style="list-style-type: none"> • Audio unit power supply circuit • Communication circuit between AV switch and audio unit • AV switch • Audio unit • NAVI control unit

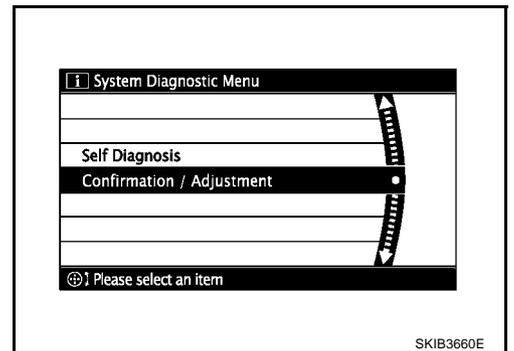
DIAGNOSIS SYSTEM

Diagnostic results screen	Description	Possible malfunction location/Action to take
 <p>■ : Gray : Yellow</p> <p style="text-align: right;">SKIB6655E</p>	<ul style="list-style-type: none"> ● Malfunction is detected on communication circuit between NAVI control unit and display unit ● Malfunction is detected on communication signal between display unit and NAVI control unit 	<ul style="list-style-type: none"> ● Communication circuit between NAVI control unit and display unit ● Display unit ● NAVI control unit
 <p>■ : Gray : Yellow</p> <p style="text-align: right;">SKIB6656E</p>	<p>GPS antenna connection malfunction is detected</p>	<ul style="list-style-type: none"> ● GPS antenna feeder ● GPS antenna ● NAVI control unit

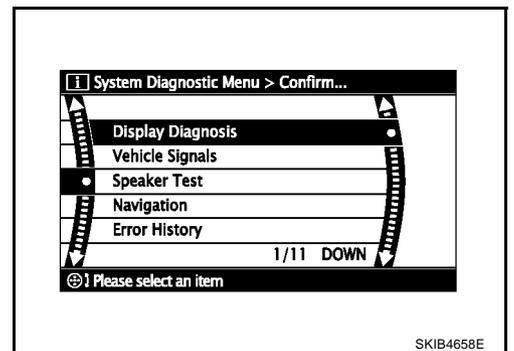
Confirmation/Adjustment Mode

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1. Start the diagnosis function, and then select “Confirmation/Adjustment”.

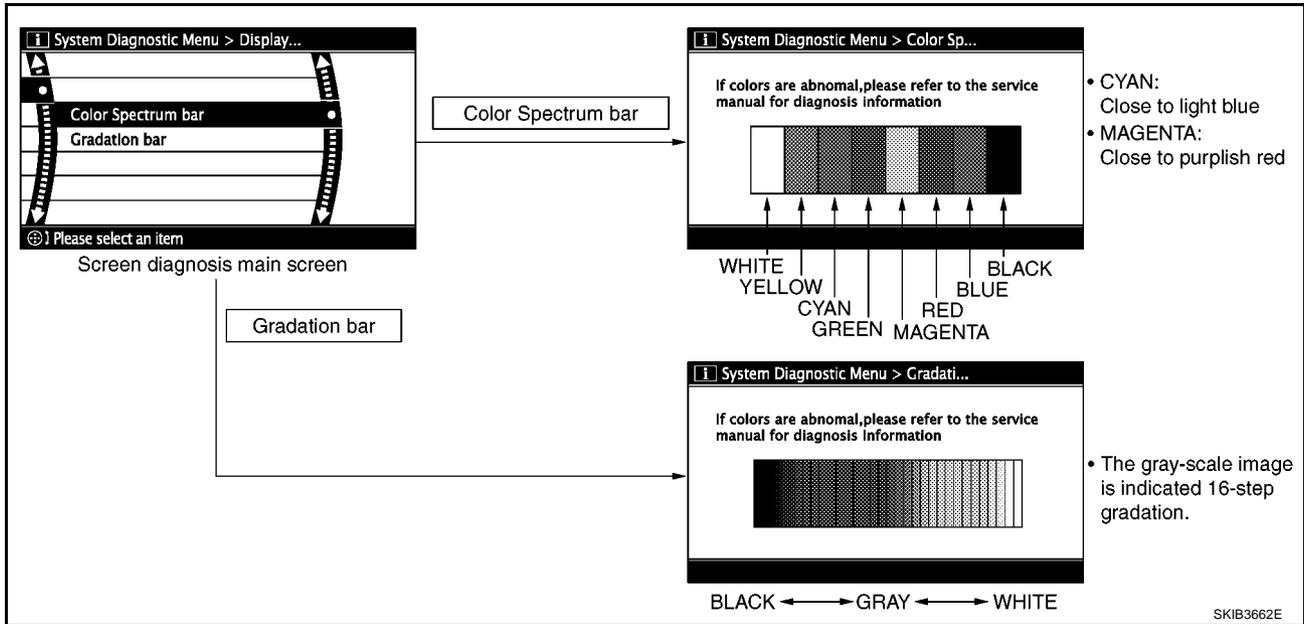


2. Select each screen switch to display the relevant diagnosis screen. Press the “BACK” switch to return to the initial screen of Confirmation/Adjustment.



DIAGNOSIS SYSTEM

SCREEN TROUBLE DIAGNOSIS

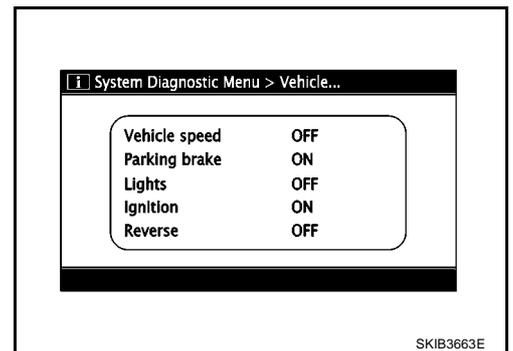


- If RGB signal is malfunctioning, the tint of the color bar display is as follows.

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

VEHICLE SIGNALS

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



Diagnosis item	Display	Vehicle status	Remarks
Vehicle speed	ON	Vehicle speed > 0 km/h	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h	
	–	Ignition switch ACC	
Parking brake	ON	Parking brake is applied.	
	OFF	Parking brake is released.	
Lights	ON	Lighting switch ON	–
	OFF	Lighting switch OFF	
Ignition	ON	Ignition switch ON	–
	OFF	Ignition switch ACC	
Reverse	ON	Selector lever in R position	Changes in indication may be delayed. This is normal.
	OFF	Selector lever in any position other than R	
	–	Ignition switch ACC	

DIAGNOSIS SYSTEM

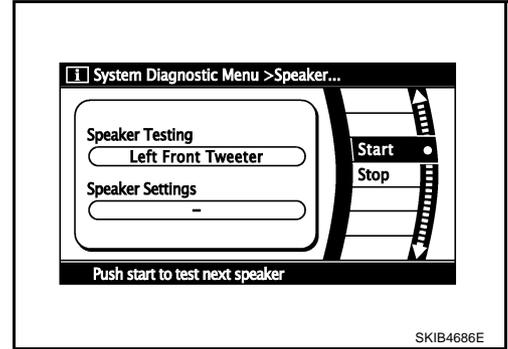
SPEAKER TEST

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

NOTE:

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

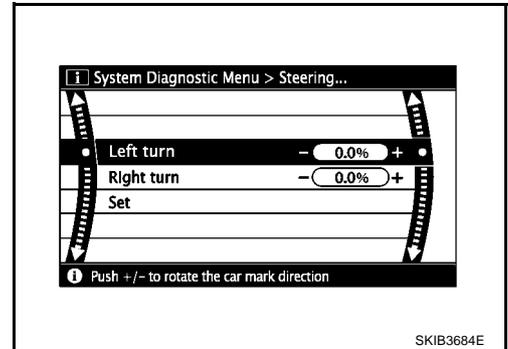
Tweeter	: 3 kHz
Front door speaker	: 300 Hz
Rear door speaker	: 1 kHz



NAVIGATION

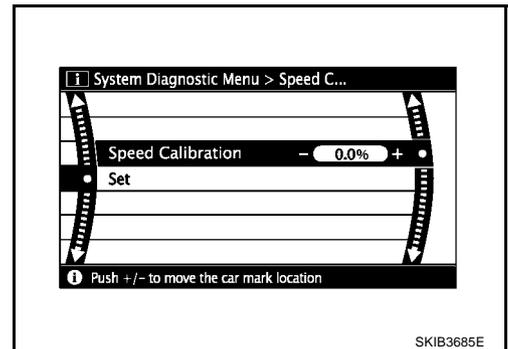
Steering Angle Adjustment

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



Speed Calibration

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



DIAGNOSIS SYSTEM

ERROR HISTORY

The diagnostic results of “Self-diagnosis” determine if any malfunction occurred between selecting “Self-diagnosis” and displaying “Self-diagnostic Results”. However if a malfunction occurred before selecting “Self-diagnosis”, and did not occur again before displaying “Self-diagnostic Results”, the diagnostic results are determined to be normal. For this reason, past malfunctions that could not be determined at the time “Self-diagnosis” was conducted must be diagnosed from the “Error History”. In “Error History”, time, date, and place that the selected error last occurred are displayed. Be careful about the following.

- If there is a malfunction with the GPS antenna circuit board in the NAVI control unit, the correct date and time of occurrence may not be able to be displayed.
- The place of occurrence is a current location mark display position marked when the error occurs. If this mark is not in the correct position, the correct place of occurrence will not be displayed.
- The frequency of occurrence is displayed by 2 types of the count down type and the count up type. Select either type according to the error item.

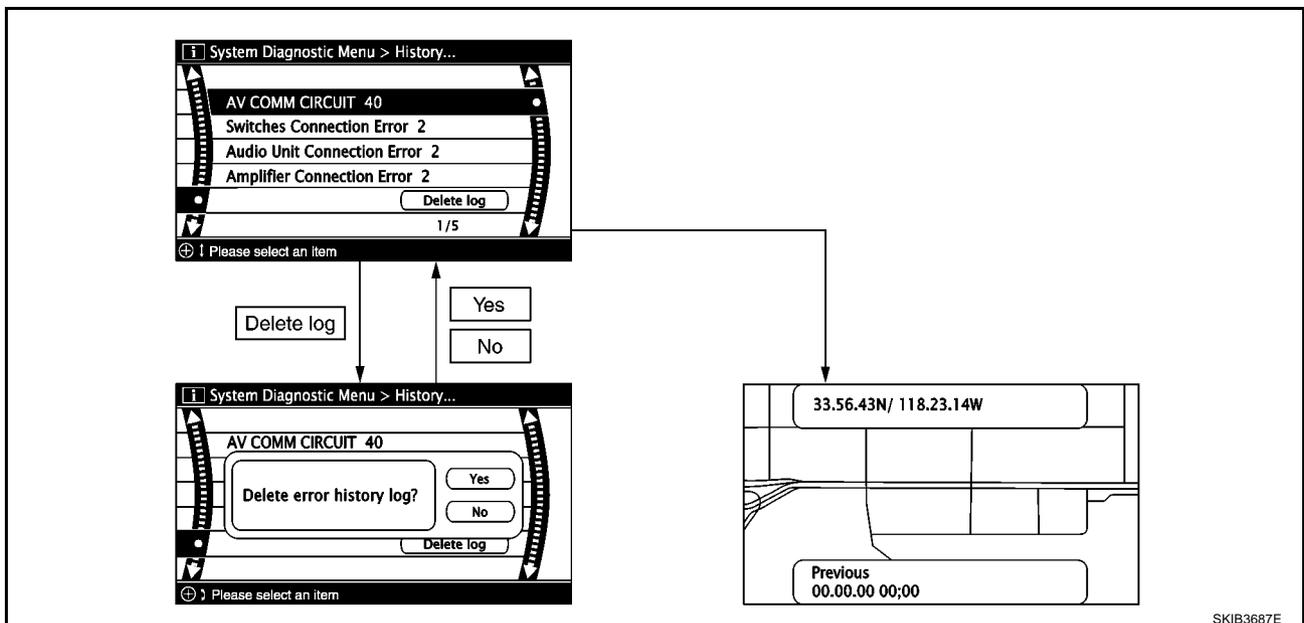
Count Down Type

- When the error is detected, set the counter to 40. If the system is normal when turning the ignition switch ON, it decreases by 1 on the counter.
- The lower limit of the counter is 1. It can be reset to 0 by “Delete log” switch or CONSULT-II.

Count Up Type

- When the ignition switch is turned ON if the error is detected, the counter increases by 1. Even if it is normal when the ignition switch is turned ON next time, the counter is not decreased.
- The upper limit of the counter is 50. 51 or more is displayed as 50. It can be reset to 0 by “Delete log” switch or CONSULT-II.

Display type of occurrence frequency	Error history display item
Count down type	CAN-COMM-CIRCUIT, CONTROL UNIT (CAN), AV COMM CIRCUIT, CONTROL UNIT (AV)
Count up type	Other than the above



SKIB3687E

DIAGNOSIS SYSTEM

Error History Display Item

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

Display Item	Description	Possible malfunction location/Action to take
CAN_COMM_CIRCUIT	CAN communication malfunction is detected	Perform the diagnosis using CONSULT-II, and then repair the malfunctioning parts by diagnostic results. Refer to AV-47, "DIAGNOSIS RESULTS" .
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected	Replace NAVI control unit
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected	Replace NAVI control unit
<ul style="list-style-type: none"> ● CAN_COMM_CIRCUIT (AV) ● Audio Unit Connection Error ● Amplifier Connection Error ● RDS-TMC Error 	<ul style="list-style-type: none"> ● Audio unit power supply and ground circuit malfunction is detected ● Malfunction is detected on communication circuit between AV switch and audio unit ● Malfunction is detected on communication signal between audio unit and NAVI control unit 	<ul style="list-style-type: none"> ● Audio unit power supply and ground circuit ● Communication circuit between AV switch and audio unit ● AV switch ● Audio unit ● NAVI control unit
<ul style="list-style-type: none"> ● CAN_COMM_CIRCUIT (AV) ● Switches Connection Error 	<ul style="list-style-type: none"> ● AV switch power supply and ground circuit malfunction is detected ● Malfunctioning is detected on communication circuit AV switch and NAVI control unit 	<ul style="list-style-type: none"> ● AV switch power supply and ground circuit ● AV switch ● NAVI control unit
Front Display Connection Error	<ul style="list-style-type: none"> ● Display unit power supply and ground circuit malfunction is detected ● Malfunction is detected on communication circuit between Display unit and NAVI control unit ● Malfunction is detected on communication signal between Display unit and NAVI control unit 	<ul style="list-style-type: none"> ● Display unit power supply and ground circuit ● Communication circuit between Display unit and NAVI control unit ● Display unit ● NAVI control unit
GPS Antenna Error	GPS antenna connection malfunction is detected	<ul style="list-style-type: none"> ● GPS antenna connection line condition ● GPS antenna ● GPS antenna feeder ● NAVI control unit
<ul style="list-style-type: none"> ● CAN_COMM_CIRCUIT (AV) ● Switches Connection Error ● Audio Unit Connection Error ● Amplifier Connection Error ● RDS-TMC Error 	<ul style="list-style-type: none"> ● Malfunction is detected on communication circuit between NAVI control unit and AV switch ● Malfunction is detected on communication signal between NAVI control unit and AV switch 	<ul style="list-style-type: none"> ● Communication circuit between NAVI control unit and AV switch ● NAVI control unit ● AV switch
FLASH-ROM Error Of Control Unit	NAVI control unit malfunction is detected	Replace NAVI control unit
Connection Of Gyro		
GPS Communication Error	GPS malfunction is detected	If the symptom such as the GPS receiving malfunction occurs, intermittent malfunction caused by strong radio interference may be detected. If the malfunction always occurs, replace NAVI control unit.
GPS ROM Error		
GPS RAM Error		
GPS RTC Error		

DIAGNOSIS SYSTEM

Display Item	Description	Possible malfunction location/Action to take
DVD-ROM Communication Error	<ul style="list-style-type: none"> Malfunction is detected on DVD-ROM drive pickup lens in NAVI control unit There is dirt and damage on the map disc 	<ul style="list-style-type: none"> Clean the DVD-ROM drive pickup lens in NAVI control unit using the specified cleaning disc Map disc NAVI control unit
DVD-ROM Read Error		
DVD-ROM Disc Error		
DVD-ROM Mechanism not Detected		
DVD-ROM Mechanism Error		
DVD-ROM Focus Error		
DVD-ROM TOC Error		
DVD-ROM Seek Error		
DVD-ROM Error Correction Error		
DVD-ROM Data Transfer Error		
DVD-ROM Data Error		
DVD-ROM Time-out		
DVD-ROM Loading / Eject Error		
CAN Controller Memory Error	NAVI control unit malfunction is detected	Replace NAVI control unit
Bluetooth Module Connection Error		

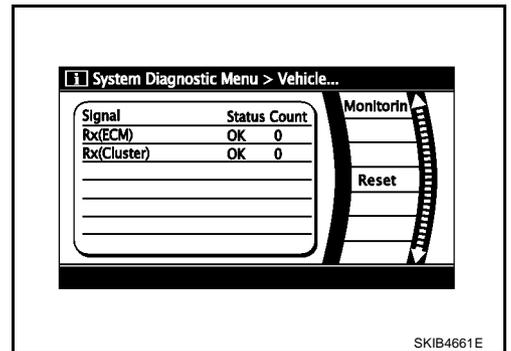
VEHICLE CAN DIAGNOSIS

- CAN communication status and error counter is displayed.
- Error counter displays 0 if any malfunction is not detected in the past. If the malfunction is detected, it displays 40. When turning the ignition switch ON, if it is normal, it displays 39. The lower limit of the counter is 1.
- If it resets, the error counter displays 0.

Signal	Status (Current)	Count. (Past)
Rx (ECM)	OK / ???	0 - 40
Rx (Cluster)	OK / ???	0 - 40

NOTE:

“???” indicates UNKWN.



SKIB4661E

DIAGNOSIS SYSTEM

AV COMM DIAGNOSIS

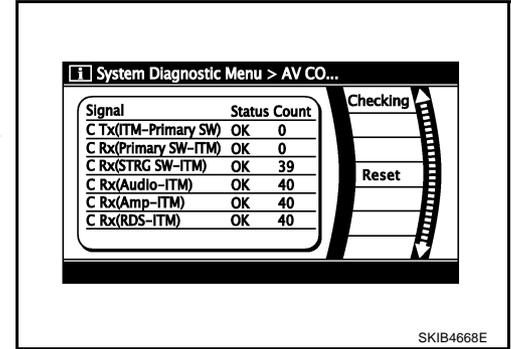
- Displays the communication condition between NAVI control unit (master unit) and each unit.
- Error counter displays 0 if any malfunction is not detected in the past. If the malfunction is detected, it displays 40. When turning the ignition switch ON, if it is normal, it displays 39. The lower limit of the counter is 1.
- If it resets, the error counter is deleted.

Signal	Status (Current)	Count. (Past)
C Tx (ITM-Primary SW)	OK / ???	0 - 40
C Rx (Primary SW-ITM)	OK / ???	0 - 40
C Rx (STRG SW-ITM)	OK / ???	0 - 40
C Rx (Audio-ITM)	OK / ???	0 - 40
C Rx (Amp-ITM)	OK / ???	0 - 40
C Rx (RDS-ITM)	OK / ???	0 - 40

ITM: NAVI control unit

NOTE:

“???” indicates UNKWN.

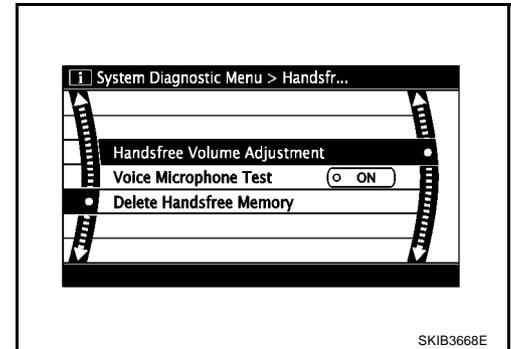


SKIB4668E

HANDSFREE PHONE

Handsfree Volume Adjustment

The received volume adjustment of hands-free phone can be adjusted to Low, Medium, and High settings.



SKIB3668E

Voice Microphone Test

When this function is turned ON, the voice that is input to microphone is output to front speaker via TEL voice signal line. The microphone and TEL voice signal line can be checked.

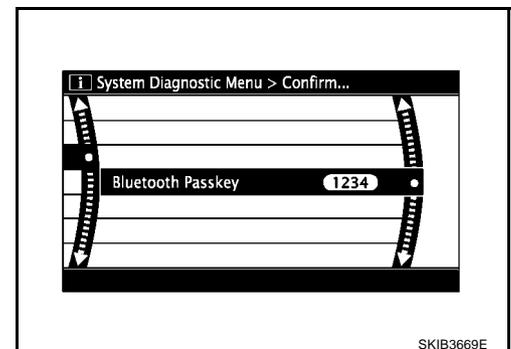
Delete Handsfree Memory

Erase the memory related to the hands-free phone.

BLUETOOTH

Confirm/Change Passkey

- The passkey of Bluetooth can be confirmed and changed.
- The passkey can be changed by four digits within 0 to 9.

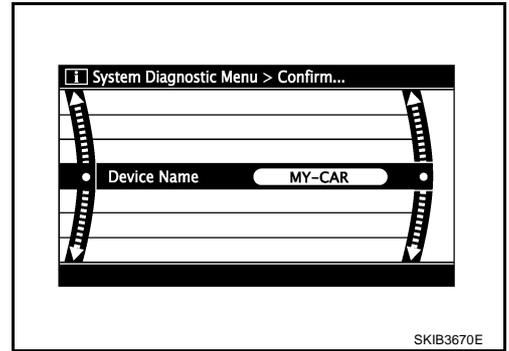


SKIB3669E

DIAGNOSIS SYSTEM

Confirm/Change Device Name

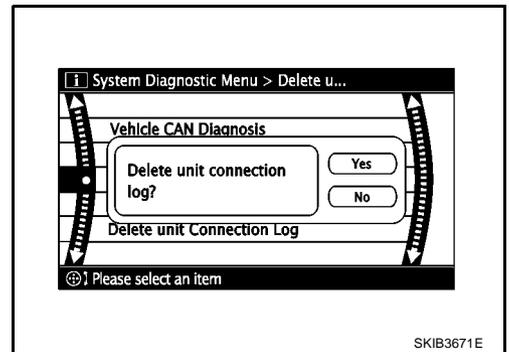
- The device name of Bluetooth can be confirmed and changed.
- The device name can be changed by sixteen digits within A to Z (small character can be used) and - (hyphen).



A
B
C
D

DELETE UNIT CONNECTION LOG

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



E
F
G
H

AV

L
M

DIAGNOSIS SYSTEM

EKS00Q6L

CONSULT-II Functions CONSULT-II FUNCTIONS

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

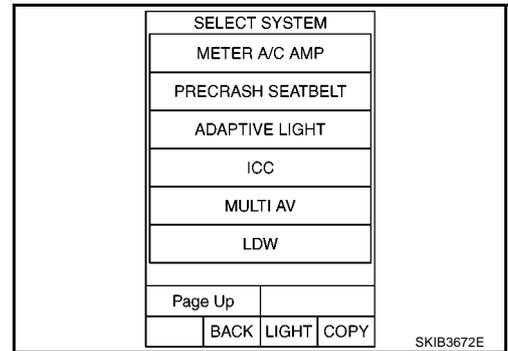
Diagnosis mode	Description	Reference
SELF DIAG RESULTS	Performs the connection diagnosis of communication circuit between NAVI control unit and navigation system and displays the current and past malfunctions collectively.	AV-56
DATA MONITOR	The diagnosis of vehicle signal that is input to the NAVI control unit can be performed.	AV-58
CAN DIAG SUPPORT MNTR	The transmitting/receiving of CAN communication can be monitored.	LAN-15
AV COMM MONITOR	The transmitting/receiving of navigation system can be monitored.	AV-59
ECU PART NUMBER	The part number of NAVI control unit can be checked.	AV-60

CONSULT-II BASIC OPERATION PROCEDURE

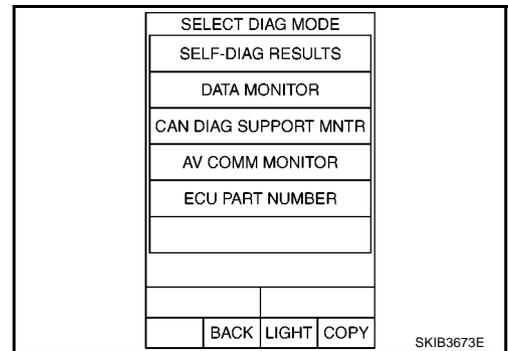
CAUTION:

If CONSULT-II is used with no connection of CONSULT-II CONVERTER, malfunctions might be detected in self-diagnosis depending on control unit which carry out CAN communication.

- Select "MULTI AV" on "SELECT SYSTEM" screen. If "MULTI AV" is not indicated, check the following items.
 - NAVI control unit power supply and ground circuit.
 - CONSULT-II data link connector (DLC) circuit
Refer to [GI-50, "CONSULT-II Data Link Connector \(DLC\) Circuit"](#).



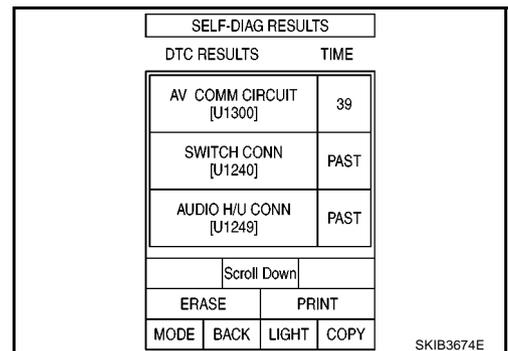
- Select diagnosis item on "SELECT DIAG MODE" screen.



SELF-DIAG RESULTS

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

- In CONSULT-II self-diagnosis, self-diagnostic results and error history are displayed collectively.
- The current malfunction indicates "CRNT". The past malfunction indicates "PAST".
- If DTC [U1000], [U1300] are detected, "0" is displayed at TIME. If it is normal the next time ignition switch is ON, add 1 to the TIME.



DIAGNOSIS SYSTEM

Self-Diagnostic Results Display Item

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

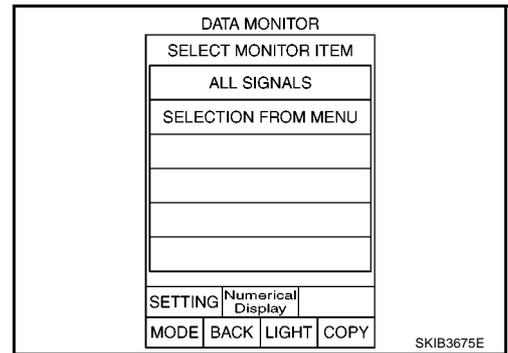
Display Item	Description	Possible malfunction location/Action to take
CAN_COMM_CIRCUIT [U1000]	CAN communication malfunction is detected	Print out the self-diagnostic results and GO TO LAN-3, "Precautions When Using CONSULT-II" .
CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected	Replace NAVI control unit
CONTROL UNIT (AV) [U1310]	AV communication circuit initial diagnosis malfunction is detected	Replace NAVI control unit
<ul style="list-style-type: none"> ● AV COMM CIRCUIT [U1300] ● SWITCH CONN [U1240] ● AUDIO H/U CONN [U1249] ● AMP CONN [U124E] ● RDS CONN [U124F] 	<ul style="list-style-type: none"> ● Malfunction is detected on communication circuit between AV switch and NAVI control unit ● Malfunction is detected on communication signal between AV switch and NAVI control unit 	<ul style="list-style-type: none"> ● Communication circuit between AV switch and NAVI control unit ● AV switch ● NAVI control unit
<ul style="list-style-type: none"> ● AV COMM CIRCUIT [U1300] ● AUDIO H/U CONN [U1249] ● AMP CONN [U124E] ● RDS CONN [U124F] 	<ul style="list-style-type: none"> ● Audio unit power supply and ground circuit malfunction is detected ● Malfunction is detected on communication circuit between AV switch and audio unit ● Malfunction is detected on communication signal between AV switch and NAVI control unit 	<ul style="list-style-type: none"> ● Audio unit power supply and ground circuit ● Communication circuit between AV switch and audio unit ● Audio unit ● AV switch ● NAVI control unit
FRONT DISP CONN [U1243]	<ul style="list-style-type: none"> ● Display unit power supply and ground circuit malfunction is detected ● Malfunction is detected on communication circuit between display unit and NAVI control unit ● Malfunction is detected on communication signal between display unit and NAVI control unit 	<ul style="list-style-type: none"> ● Display unit power supply and ground circuit ● Communication circuit between display unit and NAVI control unit ● Display unit ● NAVI control unit
GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected	<ul style="list-style-type: none"> ● GPS antenna connection line condition ● GPS antenna ● NAVI control unit
<ul style="list-style-type: none"> ● AV COMM CIRCUIT [U1300] ● SWITCH CONN [U1240] 	<ul style="list-style-type: none"> ● AV switch power supply and ground circuit malfunction is detected ● Malfunction is detected on communication signal between AV switch and NAVI control unit 	<ul style="list-style-type: none"> ● AV switch power supply and ground circuit ● AV switch ● NAVI control unit
Control Unit FLASH-ROM [U1200]	NAVI control unit malfunction is detected	Replace NAVI control unit
GYRO NO CONN [U1201]		
GPS COMM [U1204]	GPS malfunction is detected	If the symptom such as the GPS receiving malfunction occurs, intermittent malfunction caused by strong radio interference may be detected. If the malfunction always occurs, replace NAVI control unit.
GPS ROM [U1205]		
GPS RAM [U1206]		
GPS RTC [U1207]		

DIAGNOSIS SYSTEM

Display Item	Description	Possible malfunction location/Action to take
DVD-ROM COMM [U1208]	<ul style="list-style-type: none"> Malfunction is detected on DVD-ROM drive pickup lens in NAVI control unit There is dirt and damage on the map disc 	<ul style="list-style-type: none"> Map disc NAVI control unit
DVD-ROM READ [U1209]		
DVD-ROM DISC [U120A]		
DVD-ROM MECHA DETECT [U120C]		
DVD-ROM DRIVE MECHA [U120D]		
DVD-ROM FOCUS [U120E]		
DVD-ROM TOC [U120F]		
DVD-ROM SEEK [U1210]		
DVD-ROM ERR CORRECTION [U1211]		
DVD-ROM DATA FORWARD [U1212]		
DVD-ROM DATA [U1213]		
DVD-ROM TIMEOUT [U1214]		
DVD-ROM LOAD [U1215]		
CAN CONT [U1216]	NAVI control unit malfunction is detected	Replace NAVI control unit
BLUETOOTH CONN [U1217]		

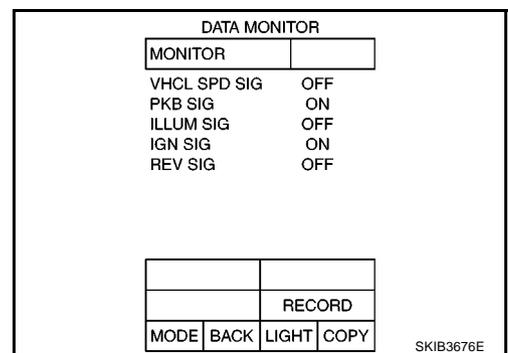
DATA MONITOR

When "DATA MONITOR" is selected, "ALL SIGNALS" and "SELECTION FROM MENU" are displayed.



All Signals

- When "ALL SIGNALS" is selected and "START" is touched, the following vehicle signal condition that is input to NAVI control unit is displayed.
- For each signal, actual signal can be compared with the condition recognized on the system.



Display Item	Display	Vehicle status	Remarks
VHCL SPD SIG	ON	When vehicle speed is 0 km/h (0 MPH) or more	Changes in indication may be delayed. This is normal.
	OFF	When vehicle speed is 0 km/h (0 MPH)	
PKB SIG	ON	Parking brake is applied.	
	OFF	Parking brake is released.	

DIAGNOSIS SYSTEM

Display Item	Display	Vehicle status	Remarks
ILLUM SIG	ON	Lighting switch ON	—
	OFF	Lighting switch OFF	
IGN SIG	ON	Ignition switch ON	—
	OFF	Ignition switch ACC	
REV SIG	ON	Selector lever in R position	Changes in indication may be delayed. This is normal.
	OFF	Selector lever in any position other than R	

Selection From Menu

When “SELECTION FROM MENU” is selected, the vehicle signal display can be selected. After that, the selected vehicle signal condition is displayed when “START” is touched.

Item to be selected	Description
VHCL SPD SIG	As well as selecting “ALL SIGNALS”
PKB SIG	
ILLUM SIG	
IGN SIG	
REV SIG	

DATA MONITOR			
SELECT MONITOR ITEM			
VHCL SPD SIG			
PKB SIG			
ILLUM SIG			
IGN SIG			
REV SIG			
		Page Down	
SETTING	Numerical Display		
MODE	BACK	LIGHT	COPY

SKIB4681E

AV COMM MONITOR

When “AV COMM MONITOR” is selected, “AV&NAVI C/U” and “AUDIO” are displayed.

AV&NAVI C/U

- When “AV&NAVI C/U” is selected, the communication condition from NAVI control unit to each unit and malfunction counter are displayed.
- Error counter displays OK if any malfunction is not detected in the past. If the malfunction is detected, it displays 0. When turning the ignition switch ON, if it is normal, it displays 1. The upper limit of the counter is 39.

Items	Display (PRESENT)	Malfunction counter (PAST)
TRANSMIT DIAG	OK / UNKWN	OK / 0 - 39
PANEL SWITCH	OK / UNKWN	OK / 0 - 39
SW SECONDARY	—	—
RR CONTROL SW	—	—
STEERING SW	OK / UNKWN	OK / 0 - 39
AUDIO	OK / UNKWN	OK / 0 - 39
SPEAKER AMP	OK / UNKWN	OK / 0 - 39
SIDE CAMERA	—	—
REAR CAMERA	—	—
TV TUNER	—	—
DVD PLAYER	—	—
VIDEO DIST	—	—
ETC	—	—
FM MULTI	OK / UNKWN	OK / 0 - 39
REMOTE CONT	—	—

AV COMM MONITOR			
AV&NAVI C/U			
	PRSENT	PAST	
TRANSMIT DIAG	OK	OK	
PANEL SWITCH	OK	OK	
SW SECONDARY	-	-	
RR CONTROL SW	-	-	
STEERING SW	OK	OK	
AUDIO	OK	OK	
SPEAKER AMP	OK	OK	
SIDE CAMERA	-	-	
REAR CAMERA	-	-	
PRINT			Scroll Down
MODE	BACK	LIGHT	COPY

SKIB4684E

DIAGNOSIS SYSTEM

AUDIO

- When "AUDIO" is selected, the communication condition from audio unit to each unit and malfunction counter are displayed.
- Error counter displays OK if any malfunction is not detected in the past. If the malfunction is detected, it displays 0. When turning the ignition switch ON, if it is normal, it displays 1. The upper limit of the counter is 39.

Items	Display (PRESENT)	Malfunction counter (PAST)
TRANSMIT DG	OK / UNKWN	OK / 0 - 39
SPEAKER AMP	—	—
TV TUNER	—	—
DVD PLAYER	—	—
MD DECK	—	—
CD CHANGER	—	—
MD CHANGER	—	—

AV COMM MONITOR			
AUDIO			
	PRSENT	PAST	
TRANSMIT DG	OK	OK	
SPEAKER AMP	-	-	
TV TUNER	-	-	
DVD PLAYER	-	-	
MD DECK	-	-	
CD CHANGER	-	-	
MD CHANGER	-	-	
PRINT			
MODE	BACK	LIGHT	COPY

SKIB4685E

ECU PART NUMBER

The part number of NAVI control unit is displayed.

ECU PART NUMBER			
25915-EH010			
MODE	BACK	LIGHT	COPY

SKIB3680E

TROUBLE DIAGNOSIS

TROUBLE DIAGNOSIS

PF0:00004

Navigation System

EKS00Q60

Symptoms	Check items	Possible malfunction location/Action to take
AV switch cannot be operated	All switches cannot be operated	Perform the self-diagnosis using CONSULT-II Refer to AV-56, "SELF-DIAG RESULTS" .
	Only specified switch cannot be operated	<ul style="list-style-type: none"> ● Perform the self-diagnosis using CONSULT-II Refer to AV-56, "SELF-DIAG RESULTS" . – No malfunction AV switch – Malfunction is detected Refer to AV-57, "Self-Diagnostic Results Display Item" .
Map screen is not displayed (RGB image other than map is normal)	–	Perform the on board self-diagnosis Refer to AV-47, "DIAGNOSIS RESULTS" .
Fuel economy information display is malfunctioning	–	Perform the self-diagnosis using CONSULT-II Refer to AV-56, "SELF-DIAG RESULTS" .
Voice guidance is not heard.	–	<ul style="list-style-type: none"> ● Voice guidance signal circuit ● Audio unit ● NAVI control unit
Traffic information (RDS-TMC) is not received	Radio broadcasts are received	<ul style="list-style-type: none"> ● Communication signal circuit ● Audio unit ● NAVI control unit
	Radio broadcasts are not received	<ul style="list-style-type: none"> ● Window antenna or rod antenna ● Antenna feeder ● Antenna amp. ON signal circuit ● Audio unit ● NAVI control unit

RGB Image

EKS00Q6P

Symptoms	Check items	Possible malfunction location/Action to take
Color of RGB image is not proper.	Light blue (Cyan) tint	<ul style="list-style-type: none"> ● RGB signal (R: red) circuit ● Display unit ● NAVI control unit
	Purple (Magenta) tint and image is rolling	<ul style="list-style-type: none"> ● RGB signal (G: green) circuit ● Display unit ● NAVI control unit
	Screen looks yellowish	<ul style="list-style-type: none"> ● RGB signal (B: blue) circuit ● Display unit ● NAVI control unit
RGB image is not displayed (Nothing is displayed on the screen)	<ul style="list-style-type: none"> ● AV switch cannot be operated when it is pressed ● Backlight of display is turned on 	Perform the self-diagnosis using CONSULT-II Refer to AV-56, "SELF-DIAG RESULTS" .
	<ul style="list-style-type: none"> ● "MULTI AV" is not displayed on "SELECT SYSTEM" screen of CONSULT-II. 	<ul style="list-style-type: none"> ● NAVI control unit power supply and ground circuit ● NAVI control unit
	Backlight of display is not turned on	<ul style="list-style-type: none"> ● Display unit power supply and ground circuit ● Display unit

TROUBLE DIAGNOSIS

Voice Activated Control System

EKS00Q6Q

Symptoms	Check items	Probable malfunction location
The voice cannot be controlled even if the voice control screen is displayed	Voice sounds at "Speaker Test" and "Voice Microphone Test" of Confirmation/Adjustment mode	NAVI control unit
	Voice does not sound at "Speaker Test" and "Voice Microphone Test" of Confirmation/Adjustment mode	<ul style="list-style-type: none"> ● MIC. power supply circuit ● Shield (MIC.) circuit ● MIC. signal circuit ● Microphone ● NAVI control unit
The voice cannot be controlled (Voice control screen is not displayed)	TEL operation screen is displayed by pressing and holding "TEL/PPT" switch of steering wheel switch	NAVI control unit
	<ul style="list-style-type: none"> ● TEL operation screen is not displayed by pressing and holding "TEL/PPT" switch of steering wheel switch ● Other steering wheel switches are normal 	Steering wheel switch
	"BACK", "VOL UP", "VOL DOWN", and "TEL/PPT" switches of steering wheel switch are not operated	<ul style="list-style-type: none"> ● Remote control signal B circuit ● Steering wheel switch ● Audio unit
	All steering wheel switches are not operated	<ul style="list-style-type: none"> ● Remote control signal ground circuit ● Steering wheel switch ● Audio unit

TROUBLE DIAGNOSIS

Steering Wheel Switch

EKS00Q6R

Without NAVI

Symptoms	Probable malfunction location
All steering wheel switches are not operated	<ul style="list-style-type: none"> ● Remote control signal ground circuit ● Steering wheel switch ● Audio unit
Only specified switch cannot be operated	Steering wheel switch
“MODE”, “SEEK UP”, and “VOL UP” switches are not operated	<ul style="list-style-type: none"> ● Remote control signal A circuit ● Steering wheel switch ● Audio unit
“SEEK DOWN”, and “VOL DOWN” switches are not operated	<ul style="list-style-type: none"> ● Remote control signal B circuit ● Steering wheel switch ● Audio unit

With NAVI

Symptoms	Probable malfunction location
All steering wheel switches are not operated	<ul style="list-style-type: none"> ● Remote control signal ground circuit ● Steering wheel switch ● Audio unit
Only specified switch cannot be operated	Steering wheel switch
“ENTER”, “MENU UP”, “MENU DOWN”, and “SOURCE” switches are not operated	<ul style="list-style-type: none"> ● Remote control signal A circuit ● Steering wheel switch ● Audio unit
“BACK”, “TEL /PPT”, “VOL UP”, and “VOL DOWN” switches are not operated	<ul style="list-style-type: none"> ● Remote control signal B circuit ● Steering wheel switch ● Audio unit

Component Parts Inspection

EKS00Q6S

STEERING WHEEL SWITCH UNIT INSPECTION

- Check continuity between combination switch harness connector M302 terminal 15 and terminal 16.
- Check continuity between combination switch harness connector M302 terminal 14 and terminal 16.

TROUBLE DIAGNOSIS

Standard

Without NAVI

15 – 16

VOL DOWN switch ON : Approx. 652Ω

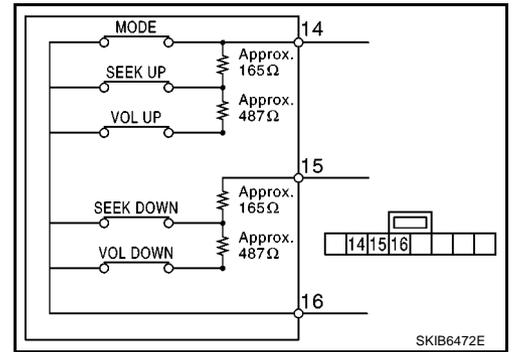
SEEK DOWN switch ON : Approx. 165Ω

14 – 16

VOL UP switch ON : Approx. 652Ω

SEEK UP switch ON : Approx. 165Ω

MODE switch ON : Approx. 0Ω



With NAVI

15 – 16

BACK switch ON : Approx. 1,010Ω

TEL/PTT switch ON : Approx. 330Ω

VOL UP switch ON : Approx. 110Ω

VOL DOWN switch ON : Approx. 0Ω

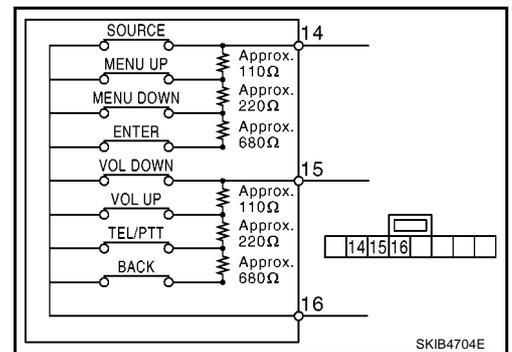
14 – 16

ENTER switch ON : Approx. 1,010Ω

MENU DOWN switch ON : Approx. 330Ω

MENU UP switch ON : Approx. 110Ω

SOURCE switch ON : Approx. 0Ω



TROUBLE DIAGNOSIS

Example of Symptoms Not Malfunction

EKS00Q6T

BASIC OPERATION

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The display is turned off.	Press and hold  to turn on the display.
No voice guidance is available. The volume is too high or too low.	The volume is not set correctly, or it is turned off.	Adjust the volume of voice guidance.
	Volume guidance is not provided for narrow streets (roads displayed in gray).	This is not a malfunction.
No map is displayed on the screen.	The map DVD-ROM is not inserted, or it is inserted upside down.	Insert the map DVD-ROM correctly.
	A screen other than map screen is displayed.	Press "MAP".
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the navigation system.

NOTE:

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

VEHICLE ICON

Symptom	Possible cause	Possible solution
Names of roads and locations differ between Plan view and Bird-view™.	This is because the quantity of the displayed information is reduced so that the screen does not become too crowded. There is also a chance that names of the roads or locations may be displayed multiple times, and the names appearing on the a screen may be different because of a processing procedure.	This is not a malfunction.
The vehicle icon is not displayed in the correct position.	The vehicle was transported after the ignition switch was turned off, for example, by a ferry or car transporter.	Drive the vehicle for a while on a road where GPS can be received.
	The position and direction of the vehicle may be incorrect depending on the driving environments and the levels of positioning accuracy of the navigation system.	This is not a malfunction. Drive the vehicle for a while to automatically correct the position and direction of the vehicle icon.
When the vehicle is travelling on a new road, the vehicle icon is located on another road nearby.	Because the new road is not stored in the map data, the system automatically places the vehicle icon on the nearest road available.	Updated road information will be included in the next version of the map DVD-ROM.
The screen does not switch to the night screen even after turning on the headlights.	The daytime screen was set the last time the headlights were turned on.	Set the screen to the night screen mode using when turning on the headlights.
The map does not scroll even when the vehicle is moving.	The current location map screen is not displayed.	Press "MAP".
The vehicle icon is not displayed.	The current location map screen is not displayed.	Press "MAP".
The GPS indicator on the screen remains gray.	GPS signals cannot be received depending on the vehicle location, such as in a parking garage, on a road that has numerous tall buildings, etc.	Drive on an open, straight road for a while.
	GPS signals cannot be received because objects are placed on the rear parcel shelf.	Remove the objects from the rear parcel shelf.
	A sufficient amount of GPS satellites are not available.	Wait for the satellites to move locations available for navigation system.

TROUBLE DIAGNOSIS

Symptom	Possible cause	Possible solution
The location of vehicle icon is misaligned from the actual position.	When using tire chains or replacing the tires, speed calculations based on the speed sensor may be incorrect.	Drive the vehicle for a while [at approximately 30 km/h (19 MPH) for about 30 minutes] to automatically correct the vehicle icon position. If this does not correct the vehicle icon position, contact an NISSAN dealer.
	The map data has mistake or is incomplete (the vehicle icon position is always misaligned in the same area).	Updated road information will be included in the next version of the map DVD-ROM.

MAP DVD-ROM

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

ROUTE CALCULATION AND VISUAL GUIDANCE

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

TROUBLE DIAGNOSIS

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

VOICE GUIDANCE

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

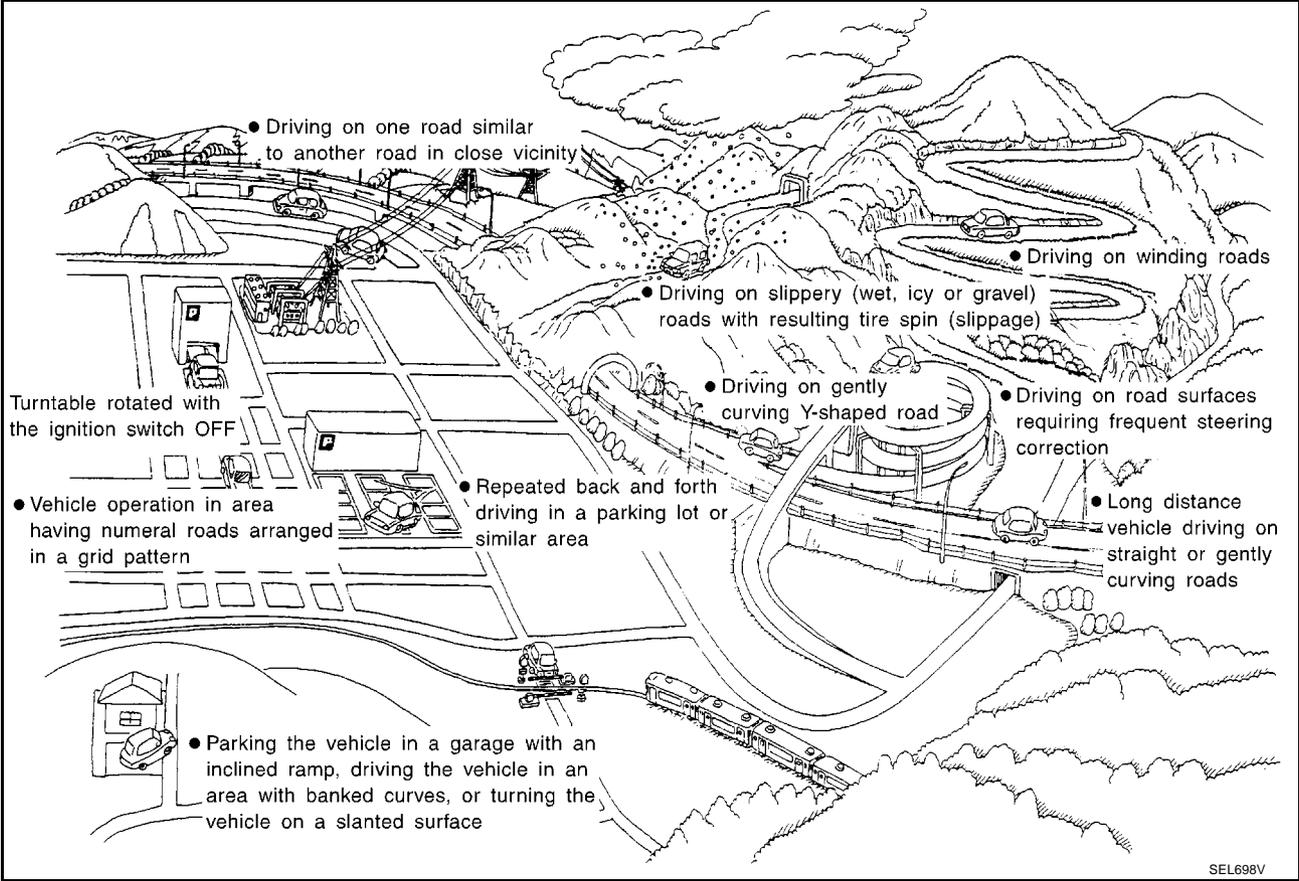
VOICE RECOGNITION

Symptom	Possible cause	Possible solution
The system does not recognize the command. The system recognizes the command incorrectly.	The interior of the vehicle is too noisy.	Close the windows or have other occupants be quiet.
	The volume of the voice is too low.	Speak louder.
	Pronunciation is unclear.	Speak clearly.
	Voice recognition mode is not yet ready to speak.	Push the release "PPT" on the steering switch, and speak a command after the tone sounds.
	5 seconds or more have passed after pushed and released "PTT" on the steering switch.	Make sure to speak a command within 5 seconds after push and release "PTT" on the steering switch.
	Only a limited range of voice commands is usable for each screen.	Use a correct voice command appropriate for the current screen.

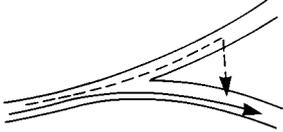
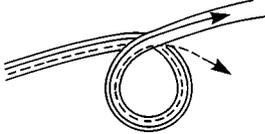
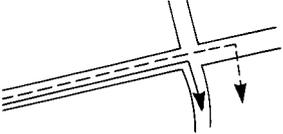
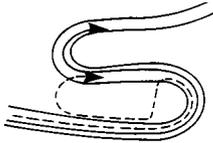
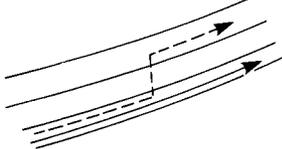
TROUBLE DIAGNOSIS

EXAMPLES OF CURRENT LOCATION MARK DISPLACEMENT

It calculates vehicle travel by reading travel distance and turn angle. Therefore, if the vehicle is driven in the following manner, a mistake will occur in the current location display. If correct location has not been restored after driving the vehicle normally, perform location correction.

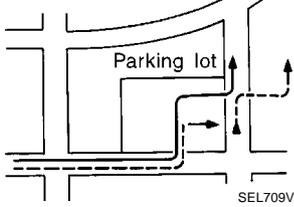
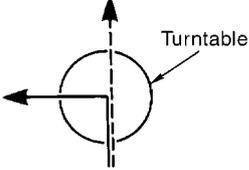
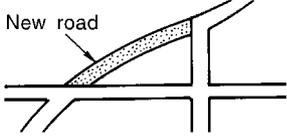
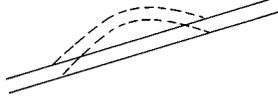


TROUBLE DIAGNOSIS

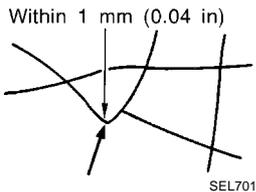
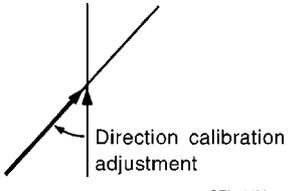
	Cause (condition)	Driving condition	Remarks (correction, etc.)
Road pattern	<p>Y-intersections</p>  <p style="text-align: center; font-size: small;">ELK0192D</p>	<p>At a Y intersection or similar gradual division of roads, errors in the direction of travel deduced by the sensor may result in the current location mark appearing on the wrong road.</p>	<p>If after traveling about 10 km (6 MPH) the correct location has not been restored, perform location correction and, if necessary, direction correction.</p>
	<p>Spiral roads</p>  <p style="text-align: center; font-size: small;">ELK0193D</p>	<p>When driving on a large, continuous spiral road (such as loop bridge), turning angle errors accumulate and vehicle mark may deviate from the correct location.</p>	
	<p>Straight roads</p>  <p style="text-align: center; font-size: small;">ELK0194D</p>	<p>When driving on a long, straight, slowly curving road 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 turns at a corner.</p>	
	<p>Switchback turns</p>  <p style="text-align: center; font-size: small;">ELK0195D</p>	<p>When driving on a zigzag road, the map may be matched to other roads in a similar direction nearby at every turn, and the vehicle mark may deviate from the correct location.</p>	
	<p>Grid pattern roads</p>  <p style="text-align: center; font-size: small;">ELK0196D</p>	<p>When driving in a location where roads are laid out in a grid pattern, where many roads are running in the similar direction nearby, the map may be matched to them by mistake and the vehicle mark may deviate from the correct location.</p>	
	<p>Parallel roads</p>  <p style="text-align: center; font-size: small;">ELK0197D</p>	<p>When two roads are running in parallel (such as highway and side-way), the map may be matched to the other road by mistake and the vehicle mark may deviate from the correct location.</p>	

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TROUBLE DIAGNOSIS

	Cause (condition)	Driving condition	Remarks (correction, etc.)
Place	<p>In a parking lot</p>  <p style="text-align: right; font-size: small;">SEL709V</p>	<p>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.</p> <p>When driving in circle or turning the steering wheel repeatedly, direction errors accumulate, and the vehicle mark may deviate from the correct location.</p>	<p>If after traveling about 10 km (6 MPH) the correct location has not been restored, perform location correction and, if necessary, direction correction.</p>
	<p>Turntable</p>  <p style="text-align: right; font-size: small;">SEL710V</p>	<p>When the ignition switch is OFF, the navigation system cannot receive the signal from the gyroscope (angular speed sensor). Therefore, the displayed direction may be incorrect and the correct road may not be easily returned to after rotating the vehicle on a turntable with the ignition OFF.</p>	
	<p>Slippery roads</p>	<p>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.</p>	
	<p>Slopes</p>	<p>When parking in sloped garages, when traveling 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.</p>	
Map data	<p>Roads not displayed on the map screen</p>  <p style="text-align: right; font-size: small;">SEL699V</p>	<p>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.</p>	
	<p>Different road pattern (Changed due to repair)</p>  <p style="text-align: right; font-size: small;">ELK0201D</p>	<p>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.</p>	

TROUBLE DIAGNOSIS

	Cause (condition)	Driving condition	Remarks (correction, etc.)
Vehicle	Use of tire chains.	The vehicle mark may deviate from the correct road.	Drive the vehicle for a while. If distance still deviates, adjust it with the distance adjustment function. (If tire chains are removed, recover the original value.)
	Use of tires other than the specified size		Replace all tires with the specified size tire.
	Malfunctioning air pressure of tire		Adjust all tires to the specified air pressure.
	Replace tire		Drive the vehicle for a while. If the distance is still not in the correct location, it adjusts with the distance adjustment function.
Driving manner	Just after the engine is started	If vehicle is driven off just after the engine is started when gyroscope (angular speed sensor) correction is not completed, the vehicle can be shown in the incorrect direction and may deviate 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 orientation.
	Abusive driving	Spinning the wheels or engaging in other kinds of abusive driving may result in the system being unable to perform correct detection, and may cause the vehicle mark to deviate from the correct road.	If after traveling about 10 km (6 MPH) the correct location has not been restored, perform location correction and, if necessary, direction correction.
Position correction method	Position correction accuracy Within 1 mm (0.04 in)  <small>SEL701V</small>	If accuracy of location settings is poor, accuracy may be reduced when correct road cannot be found, particularly in places where there are many roads.	From the roads displayed on the screen, input a position within an accuracy of 1 mm (0.04 in). CAUTION: When correcting, use the most detailed map possible.
	Direction when location is corrected  <small>SEL702V</small>	If accuracy of location settings during correction is poor, accuracy may be reduced afterwards.	Perform direction correction.

THE CURRENT POSITION MARK SHOWS A POSITION THAT IS COMPLETELY INCORRECT.

In the following cases, the current location mark may be displayed in a location that is completely incorrect. If so, perform position/direction correction.

- When location correction has not been done
 - If GPS satellite reception is poor and the current location mark slips out of place, it may shift to a completely unexpected location and not return unless location correction is performed. The position will be corrected if a GPS signal can be received.
- When vehicle has traveled by ferry, or when vehicle has been towed.

TROUBLE DIAGNOSIS

- Because calculation of the current location cannot be done when traveling 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.

THE CURRENT POSITION 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 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 incorrect road or to a location which is not on a road.
- When GPS location correction has been done
 - If current location and the current location mark are different when 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.

THE CURRENT LOCATION MARK IS IN A RIVER OR THE 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.

CURRENT LOCATION MARK ROTATES WITHOUT OPERATION

If the ignition switch is turned ON with the turntable rotating, the rotating condition is recorded as the stop condition. Therefore, the current location mark might rotate when actually stopping.

WHEN DRIVING ON THE SAME ROAD, SOMETIMES THE CURRENT LOCATION MARK IS IN THE CORRECT PLACE AND SOMETIMES IT IS IN THE INCORRECT PLACE.

The conditions of the GPS antenna (GPS data) and gyroscope (angular speed sensor) change gradually. Depending on the road traveled and operation of the steering wheel, the location detection results will be different. Therefore, even on a road on which the location has never been incorrect, 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 of the way map matching operates, when there are many roads running in similar directions in the surrounding area a matching determination may be impossible. The location will remain uncorrected until some special feature is found.

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

- GPS accuracy has a malfunction range of about 10 m. 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 that is determined to have higher accuracy is used.
- Position correction by GPS is not available while the vehicle is stopped.

THE NAME OF THE CURRENT PLACE IS NOT DISPLAYED.

The current place name might not be displayed when there is no name of place information in the map screen.

THE DISPLAY IS DIFFERENT BETWEEN BIRDVIEW[®] AND (FLAT) MAP DISPLAY.

The following is different at birdview[®].

- The current place name displays names that 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 trimming of the character data is done to prevent the display from 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.

REMOVAL AND INSTALLATION

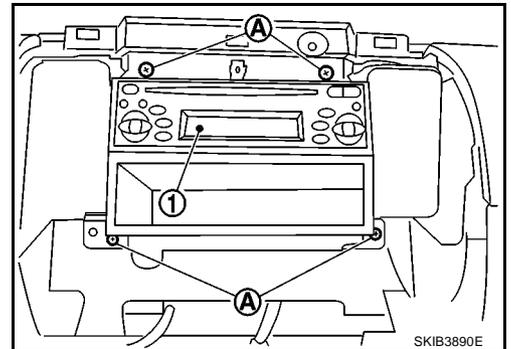
REMOVAL AND INSTALLATION

PFP:00000

Audio Unit (1CD Player Type) REMOVAL

EKS00Q6U

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



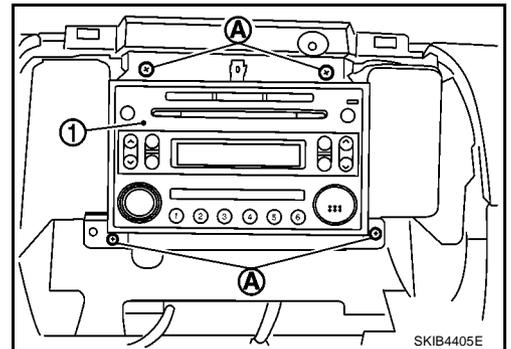
INSTALLATION

Installation is the reverse order of removal.

Audio Unit (6CD Player Type) Without NAVI REMOVAL

EKS00Q6V

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



INSTALLATION

Installation is the reverse order of removal.

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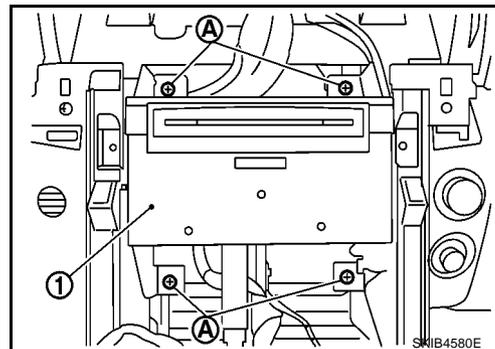
REMOVAL AND INSTALLATION

Audio Unit (6CD Player Type) With NAVI

EKS00Q6W

REMOVAL

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



INSTALLATION

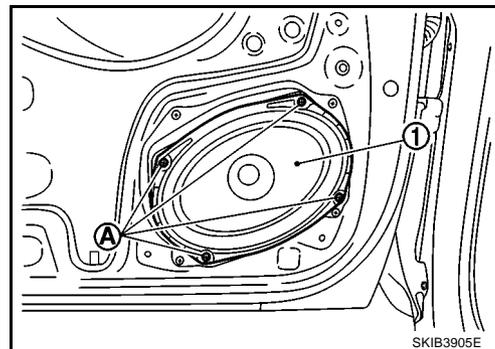
Installation is the reverse order of removal.

Front Door Speaker

REMOVAL

EKS00Q6X

1. Remove door finisher (front) . Refer to [EI-30, "DOOR FINISHER"](#) .
2. Remove screws (A) and remove speaker (1).



INSTALLATION

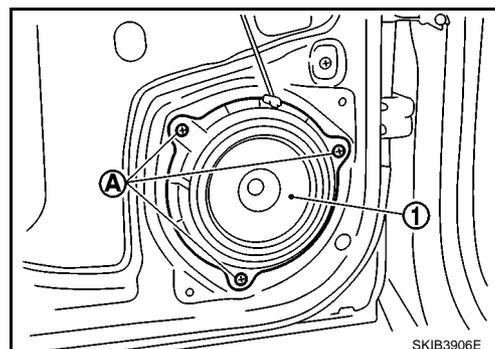
Installation is the reverse order of removal.

Rear Door Speaker

REMOVAL

EKS00Q6Y

1. Remove door finisher (rear) . Refer to [EI-30, "DOOR FINISHER"](#) .
2. Remove screws (A) and remove speaker (1).



INSTALLATION

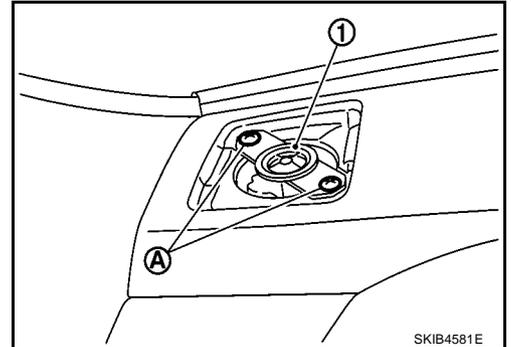
Installation is the reverse order of removal.

REMOVAL AND INSTALLATION

Tweeter REMOVAL

EKS00Q6Z

1. Remove speaker grille.
2. Remove screws (A) and remove tweeter (1).



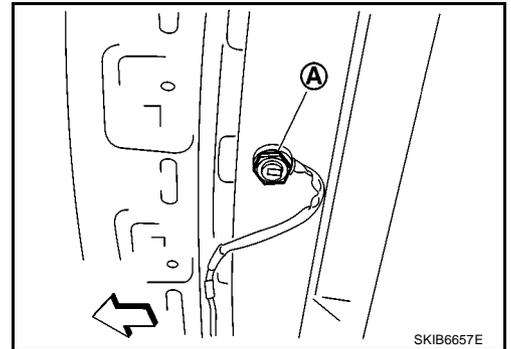
INSTALLATION

Installation is the reverse order of removal.

Roof Antenna REMOVAL

EKS00Q70

- ⇐: Vehicle front
1. Remove headlining. Refer to [EI-40, "HEADLINING"](#).
 2. Remove nut (A) and antenna base.



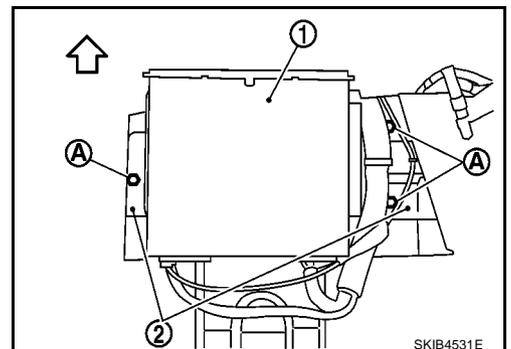
INSTALLATION

Installation is the reverse order of removal.

NAVI Control Unit REMOVAL

EKS00Q71

- ⇐: Vehicle front
1. Slide front seat RH fully forward.
 2. Disconnect connectors.
 3. Remove screws (A) and remove NAVI control unit (1).
 4. Remove screws and brackets (2) from NAVI control unit (1).



INSTALLATION

Installation is the reverse order of removal.

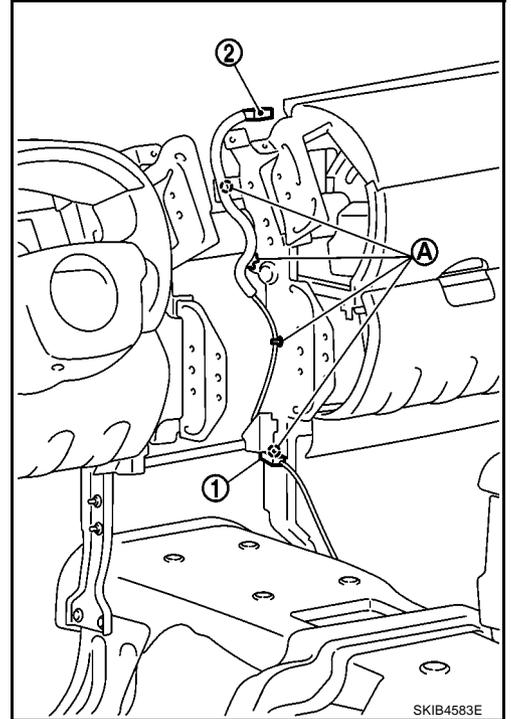
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REMOVAL AND INSTALLATION

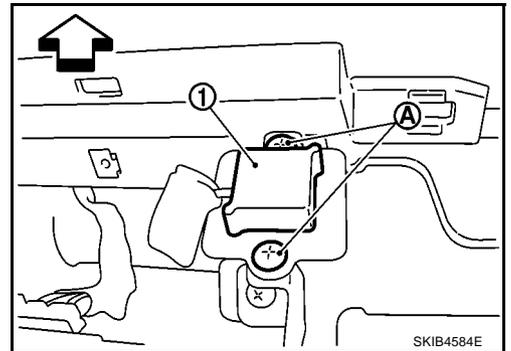
EKS00Q72

GPS Antenna REMOVAL

- ↶ : Vehicle front
 - (2) : GPS antenna
1. Remove display unit. Refer to [AV-77, "Display Unit"](#) .
 2. Remove audio unit. Refer to [AV-74, "Audio Unit \(6CD Player Type\) With NAVI"](#) .
 3. Disconnect connector (1) and remove clips (A).



4. Remove screws (A) and remove GPS antenna (1).



INSTALLATION

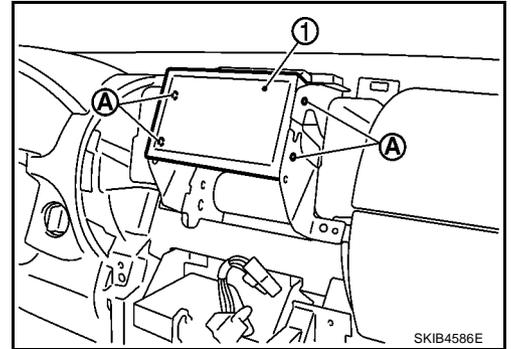
Installation is the reverse order of removal.

REMOVAL AND INSTALLATION

Display Unit REMOVAL

EKS00Q73

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



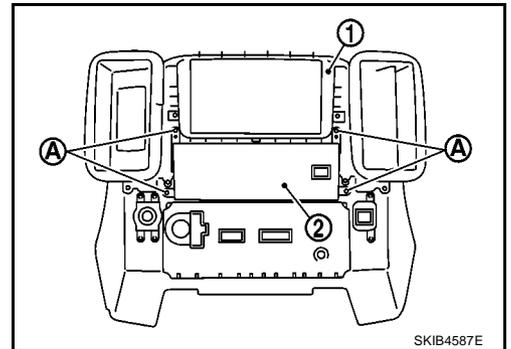
INSTALLATION

Installation is the reverse order of removal.

AV Switch REMOVAL

EKS00Q74

1. Remove cluster lid C (1). Refer to [IP-10, "INSTRUMENT PANEL ASSEMBLY"](#) .
2. Remove screws (A).
3. Remove AV switch (2) from cluster lid C (1).



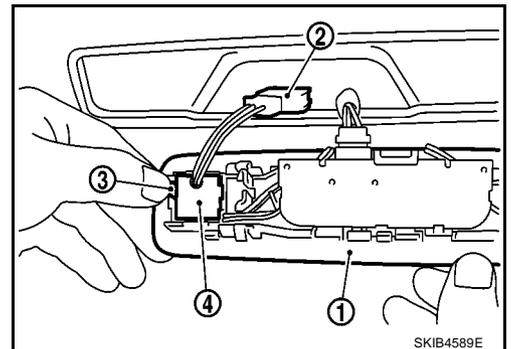
INSTALLATION

Installation is the reverse order of removal.

Microphone REMOVAL

EKS00Q75

1. Remove roof console (1). Refer to [EI-40, "HEADLINING"](#) .
2. Disconnect connector (2).
3. Raise tab (3) and remove microphone (4).



INSTALLATION

Installation is the reverse order of removal.

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REMOVAL AND INSTALLATION
