SECTION AV
AUDIO, VISUAL & NAVIGATION SYSTEM

CONTENTS

TELEMATICS SYSTEM

PRECAUTION

PRECAUTIONS

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

INFOID:0000000009009802

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 AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 “SRS AIR BAG”.**
- **Never 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.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

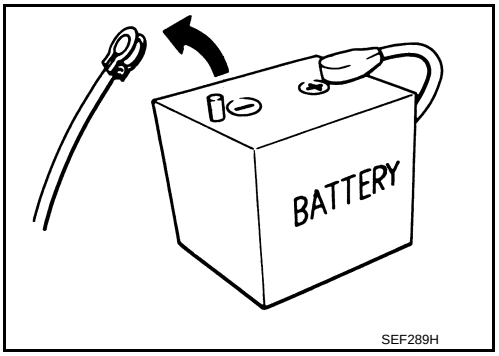
Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precautions for Removing of Battery Terminal

INFOID:0000000009898524

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.



- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

Cautions in Removing Battery Terminal and AV Control Unit (Models with AV Control Unit)

INFOID:0000000009009803

CAUTION:

Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF.

NOTE:

After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Therefore, data corruption may occur if battery voltage is cut off within 30 seconds.

Precaution for Trouble Diagnosis

INFOID:0000000009009804

AV COMMUNICATION SYSTEM

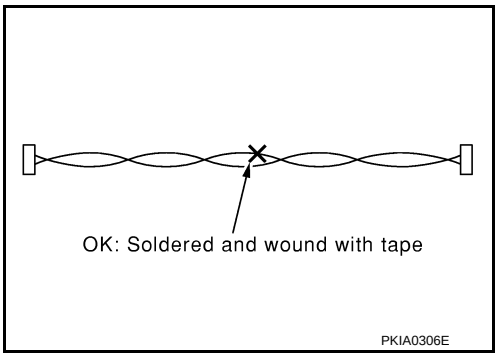
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

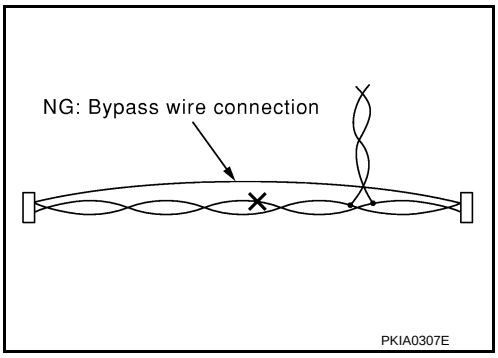
INFOID:0000000009009805

AV COMMUNICATION SYSTEM

- Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]



- Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)

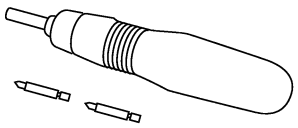


PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000009009806

Tool		Description
Power tool	 PBIC0191E	Loosening screws

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

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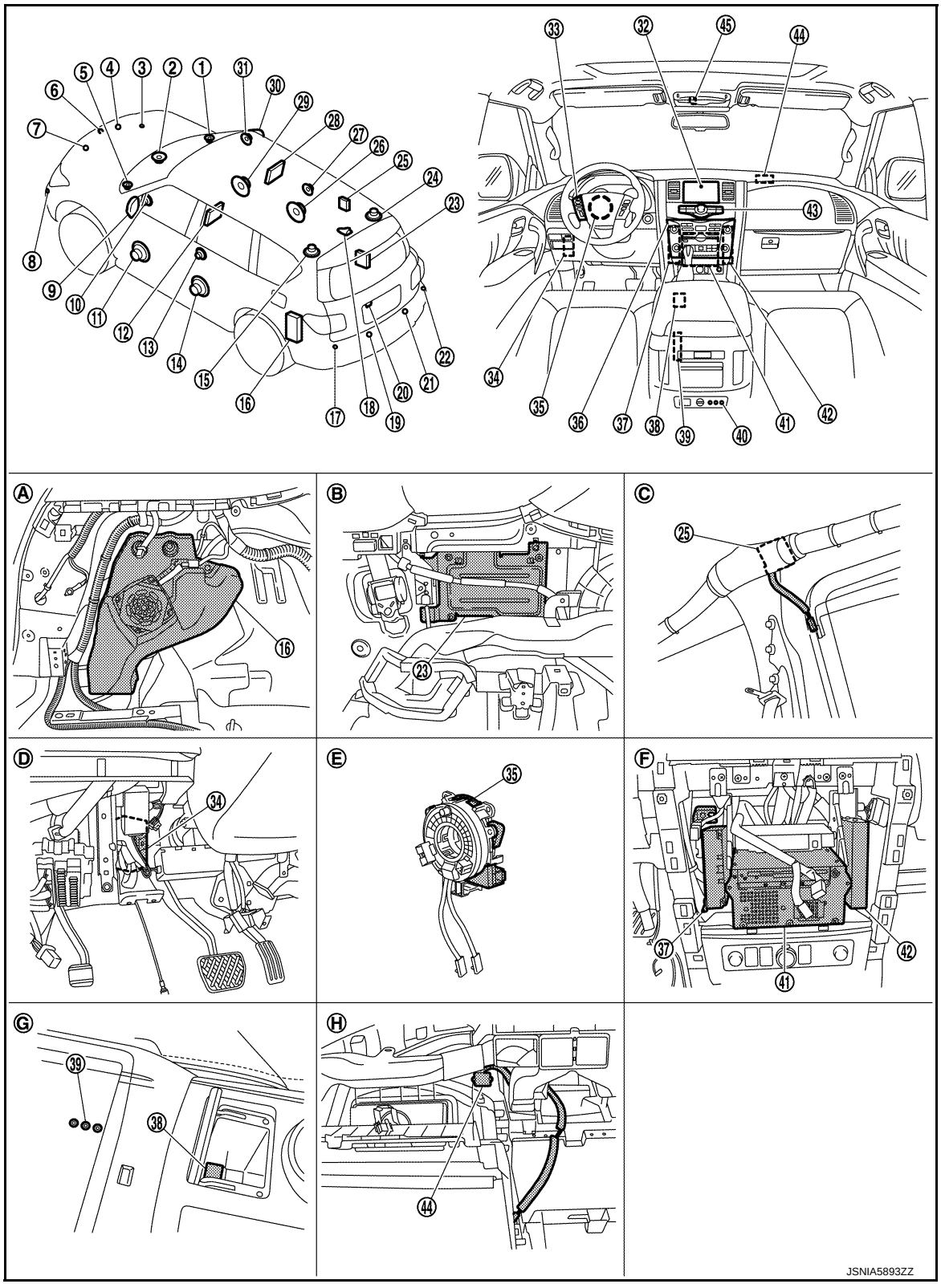

1. Squawker RH
2. Center speaker
3. Corner sensor front RH
4. Center sensor front RH
5. Squawker LH
6. Front camera
7. Center sensor front LH
8. Corner sensor front LH
9. Side camera LH
10. Front door tweeter LH
11. Front door speaker LH
12. Headrest display unit LH
13. Rear door tweeter LH
14. Rear door speaker LH
15. Roof speaker LH
16. Woofer
17. Corner sensor rear LH
18. Satellite radio antenna
19. Center sensor rear LH
20. Rear camera
21. Center sensor rear RH
22. Corner sensor rear RH
23. BOSE amp.
24. Roof speaker RH
25. Antenna amp.
26. Rear door speaker RH
27. Rear door tweeter RH
28. Headrest display unit RH
29. Front door speaker RH
30. Side camera RH
31. Front door tweeter RH
32. Front display unit
33. Steering switch
34. Sonar control unit
35. Steering angle sensor
36. Preset switch
37. Around view monitor control unit
38. USB connector
39. Front auxiliary input jacks
40. Rear auxiliary input jacks
41. AV control unit
42. Video distributor
43. Multifunction switch
44. GPS antenna
45. Microphone

A. Luggage side lower finisher LH removed condition
B. Luggage side lower finisher RH removed condition
C. Headlining assembly removed condition
D. Instrument lower panel LH removed condition
E. Spiral cable part
F. Cluster lid C removed condition
G. Within center console
H. Instrument panel rear side

Component Description

INFOID:0000000009009808

Part name	Description
AV control unit	• Integrates hard disk drive (HDD) allowing map data and music data to be stored. (Models with music box) • Integrates hard disk drive (HDD) allowing map data to be stored. (Models without music box) • It is the master unit of the MULTI AV system, and it is connected to each control unit by communication. It operates each system according to communication signals from the AV control unit. • The AV control unit includes the audio, hands-free phone, navigation, USB connection, DVD play and vehicle information functions. • The AV control unit includes the audio, hands-free phone, navigation, USB connection, DVD play and vehicle information functions. • It is connected to ECM and combination meter via CAN communication to obtain necessary information for the vehicle information function. • It inputs the dimmer signal that are required for the front display dimming control. • It inputs the signals for driving status recognition (vehicle speed, reverse and parking brake). • The RGB digital image signal and composite image signal are output to front display unit. • Switches image and sound output to video distributor, inputting image switch signal from headrest display unit via AV communication. • It is receives an intelligent key identification signal necessary for the intelligent key-interlocking function from BCM via a hard wire. • Amp. ON signal and mode change signal transmitted to BOSE amp (13 speakers models). • Update of map data is performed with the DVD-ROM.
Front display unit	• Front display image is controlled by the serial communication from AV control unit. • RGB digital image signal is input from AV control unit. • Composite image signal is input from AV control unit. • Camera image signal is input from around view monitor control unit. • Touch panel function can be operated for each system by touching a display directly.

Part name	Description
Headrest display unit	• Composite image signal [USB (video data), DVD and auxiliary input images] is input from the video distributor. • It receives the DVD/AUX/USB sound signal from the video distributor, and then transmits it to the headphones. • Outputs image switch signal to video distributor via hard wire, according to rear seat remote controller operation. • Outputs image switch signal to AV control unit via AV communication, according to rear seat remote controller operation.
Video distributor	• It receives the image signal and sound signal from the AV control unit and then transmits it to the headrest display unit. • It receives the image signal and sound signal from the auxiliary input jacks and then transmits it to the headrest display unit. • Switches image and sound output to headrest display unit, inputting image switch signal from headrest display unit via hard wire.
Front auxiliary input jacks	Image signal and sound signal of auxiliary input is transmitted to AV control unit.
Rear auxiliary input jacks (Mobile entertainment system)	Image signal and sound signal of auxiliary input is transmitted to video distributor.
BOSE amp.	• Receives sound signal from AV control unit, and outputs sound signal to each speaker. • Includes BOSE® Centerpoint® 2 function (15 speakers models).
Front door speaker	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
Rear door speaker	• Outputs sound signal from BOSE amp. • Outputs high, mid and low range sounds.
Squawker	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
Front door tweeter*1	• Outputs sound signal from BOSE amp. • Outputs high range sounds.
Rear door tweeter	• Outputs sound signal from BOSE amp. • Outputs high range sounds.
Roof speaker	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
Center speaker	• Outputs sound signal from BOSE amp. • Outputs high and mid range sounds.
Woofer	• Outputs sound signal from BOSE amp. • Outputs low range sounds.
Multifunction switch	• Operation panel is equipped with the centralized switch where audio, auxiliary input and navigation, etc. operations are integrated. • Connected with preset switch via hardwire and operation signal is transmitted to AV control unit via AV communication.
Preset switch	• Operation panel is equipped with the centralized switch where audio and air conditioner, etc. operations are integrated. • Connected with multifunction switch via hardwire, and operation signal is transmitted to AV control unit via AV communication. • The disk ejection operating signal is performed by hardwire.
Steering switch	• Operations for audio, hands-free phone and navigation, etc. are possible. • Steering switch signal (operation signal) is output to AV control unit.
Around view monitor control unit	• It supplies power to front camera, rear camera, and side camera. And then it superimposes the images from each camera and outputs them to front display unit. • Superimpose the guiding line, predicted course line and sonar indicator to the camera image that outputs to front display unit. • It performs the reception/transmission of communication signal with each camera. • It transmits the sonar operation signal from sonar control unit and receives the sonar information from sonar control unit via CAN communication. • It transmits the information received/transmitted with sonar control unit via AV communication to AV control unit.

Part name	Description
Front camera	• It inputs the power supply from around view monitor control unit and outputs the image of the vehicle front to around view monitor control unit. • It performs the reception/transmission of the communication signal with around view monitor control unit.
Rear camera	• It inputs the power supply from around view monitor control unit and outputs the image of the vehicle rear to around view monitor control unit. • It performs the reception/transmission of the communication signal with around view monitor control unit.
Side camera LH	• It inputs the power supply from around view monitor control unit and outputs the image of the vehicle LH to around view monitor control unit. • It performs the reception/transmission of the communication signal with around view monitor control unit.
Side camera RH	• It inputs the power supply from around view monitor control unit and outputs the image of the vehicle RH to around view monitor control unit. • It performs the reception/transmission of the communication signal with around view monitor control unit.
Sonar control unit	• It is connected with around view monitor control unit via CAN communication and receives the sonar operation signal from around view monitor control unit. • It transmits the sonar detection status to around view monitor control unit via CAN communication. • It judges the warning level according to the signal from corner/center sensor.
Corner sensor	The obstacle distance is detected. The signal is transmitted to sonar control unit.
Center sensor	
Steering angle sensor	It is connected to the AV control unit and transmits the steering angle sensor signal via CAN communication.
Microphone	• Used for hands-free phone operation. • Microphone signal is transmitted to AV control unit. • Power (Microphone VCC) is supplied from AV control unit.
GPS antenna	GPS signal is received and transmitted to AV control unit.
Satellite radio antenna	Receives the satellite radio waves and outputs it to AV control unit.
Antenna amp.	• Radio signal received by glass antenna (main) is amplified and transmitted to AV control unit. • Power (antenna amp. ON signal) is supplied from AV control unit.
USB connector	Image signal*2 and sound signal of USB input is transmitted to AV control unit.

*1: 15 speakers models.

*2: Image signals cannot be received from iPod®.

SYSTEM
MULTI AV SYSTEM
MULTI AV SYSTEM : System Diagram

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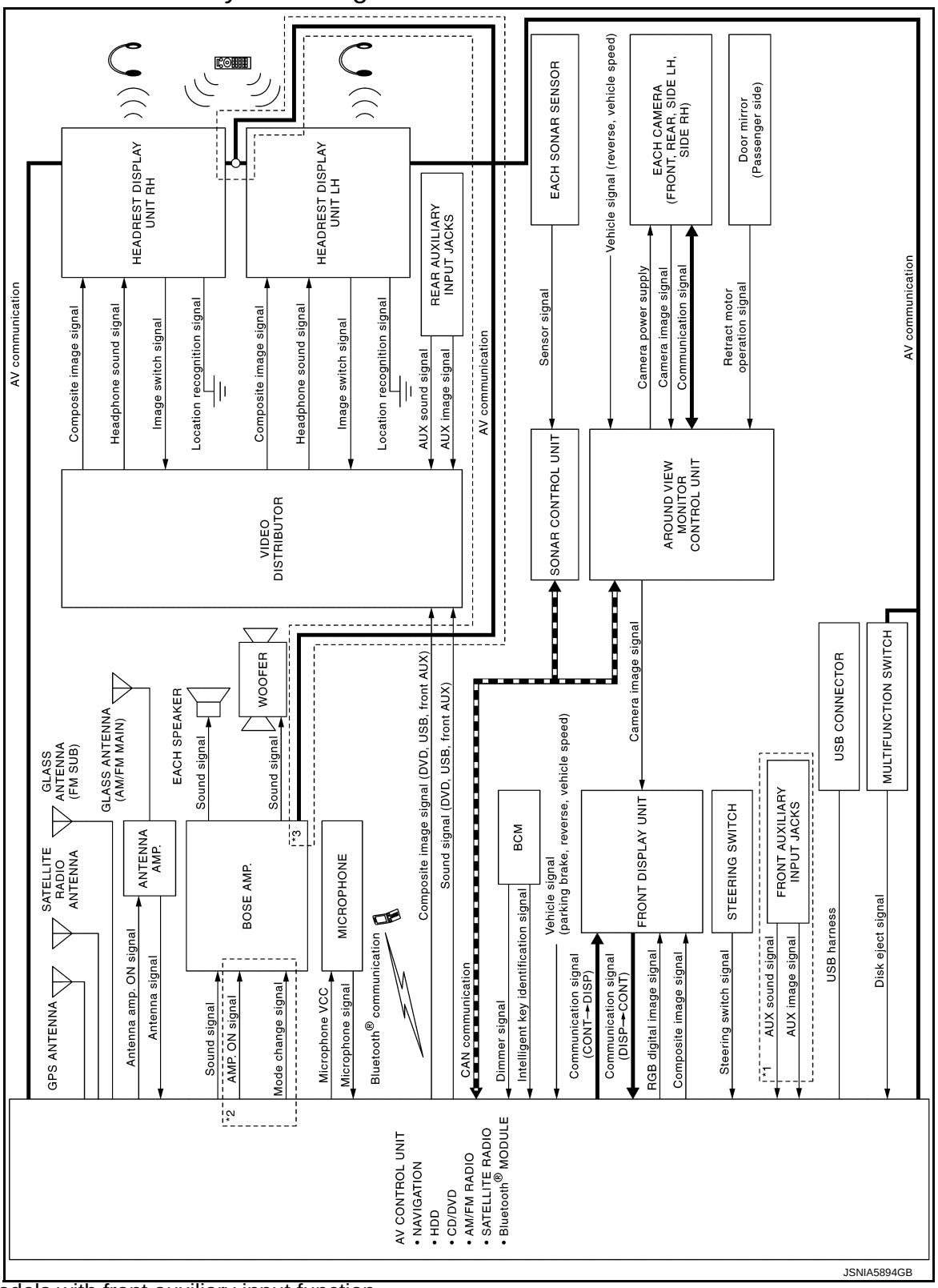


- *1: Models with front auxiliary input function.
- *2: Models with 13 speakers.
- *3: Models with 15 speakers.

NOTE:

The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

MULTI AV SYSTEM : System Description

INFOID:0000000009009810

Multi AV system means that the following systems are integrated.

FUNCTION NAME
Navigation system function
Audio function
DVD play function
Front auxiliary input function
USB connection function
Mobile entertainment system
Hands-free phone function
Touch panel function
Around view monitor function
Camera assistance sonar system
Vehicle information function
Intelligent key interlocking function
Auto Light adjustment system

COMMUNICATION SIGNAL

- AV control unit function by transmitting/receiving data one by one with each unit (slave unit) that configures them completely as a master unit by connecting between units that configure MULTI AV system with two AV communication lines (H, L).
- Two AV communication lines (H, L) adopt a twisted pair line that is resistant to noise.
- AV control unit is connected by CAN communication, and it receives data signal from ECM and combination meter It computes and displays fuel economy information value with the obtained information. Transmitting/receiving of data signal is performed by BCM. Also, it transmits the required signal of vehicle setting and receives the response signal.
- AV control unit is connected with front display unit and serial communication, and it transmits the required signal of display and display control and receives the response signal from front display unit.

NAVIGATION SYSTEM FUNCTION

Description

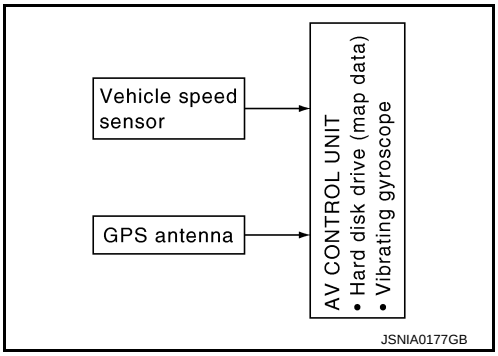
- The AV control unit controls navigation function while GPS tuner has built-in map data, GYRO (angle speed sensor), on the HDD (Hard Disk Drive).
- The AV control unit inputs operation signal with communication signal, through display (touch panel) and multifunction switch and steering switch.
- Guide sound is output to front speaker through BOSE amp. from AV control unit when operating navigation system.
- A vehicle position is calculated with the GYRO (angle speed sensor), vehicle sensor, signal from GPS satellite and map data stored on HDD (Hard Disk Drive), and transmits the map image signal (RGB image, RGB area, RGB image synchronizing) to the display.

Position Detection Principle

The navigation system periodically calculates the current vehicle position according to the following three types of signals.

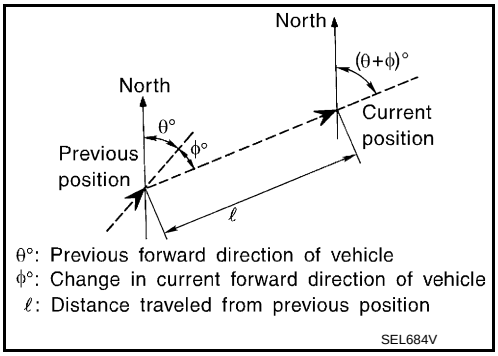
- Travel distance of the vehicle as determined by the vehicle speed sensor
- Vehicle turning angle determined by the gyroscope (angular speed sensor)
- The travel direction of the vehicle determined by the GPS antenna (GPS information)

The current position of the vehicle is then identified by comparing the calculated vehicle position with map data, which is stored in the HDD (Hard Disk Drive) (map-matching), and indicated on the screen with a current location mark. More accurate data is used by comparing position detection results from GPS to the map-matching.



The current position is calculated by detecting the travel distance from the previous calculation point, and its direction change.

- Travel distance
  The travel distance is generated from the vehicle speed sensor input signal. The automatic distance correction function is adopted for preventing a miss-detection of the travel distance because of tire wear etc.
- Travel direction
  The gyroscope (angular velocity sensor) and GPS antenna (GPS information) generate the change of the travel direction. Both have advantages and disadvantages as per the following descriptions.

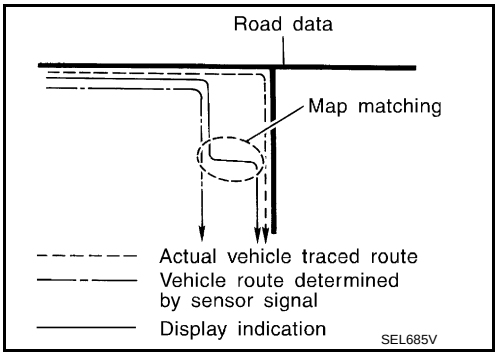


Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	The turning angle is precisely detected.	Errors are accumulated when driving a long distance without stopping.
GPS antenna (GPS information)	The travel direction (North/South/East/West) is detected.	The travel direction is not precisely detected when driving slowly.

Input signals are prioritized in each situation. However, this order of priority may change in accordance with more detailed travel conditions so that the travel direction is detected more accurately.

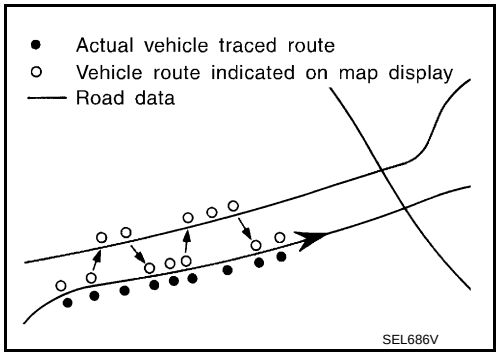
Map-matching

Map-matching repositions the vehicle on the road map when a new location is judged to be more accurate. This is done by comparing the current vehicle position (calculated by the normal position detection method) from the map data stored in the HDD (Hard Disk Drive).

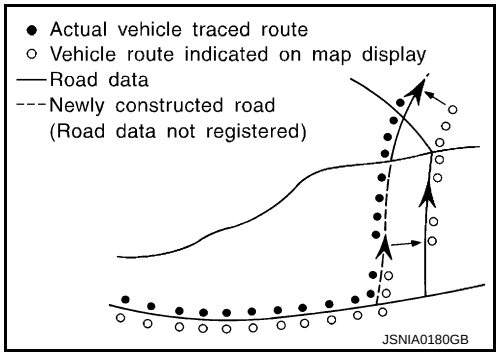


There is a possibility that the vehicle position may not be corrected in the following case, and when vehicle is driven over a certain distance or time in which GPS information is hard to receive. Correct manually the current location mark on the screen.

- In map-matching, several alternative routes are prepared and prioritized in addition to the road judged as currently driving on.
  Therefore, due to errors in the distance and/or direction, an incorrect road may be prioritized, and the current location mark may be repositioned to the incorrect road.
  If two roads are running in parallel, they are of the same priority. Therefore, the current location mark may appear on either of them alternately, depending on maneuvering of the steering wheel and configuration of the road, etc.

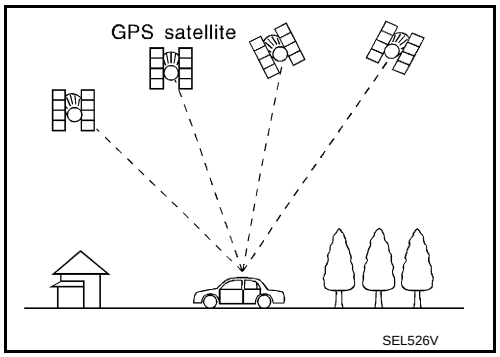


- Map-matching does not function correctly when road on which the vehicle is driving is new, etc. and not recorded in the map data. Also, map-matching does not function correctly when road pattern stored in the map data and the actual road pattern are different due to repair, etc.
  Therefore, the map-matching function judges other road as a currently driving road if the road is not in the map, and displays the current location mark on it. Later, the current location mark may be repositioned to the road if the correct road is detected.
- Effective range for comparing the vehicle position and travel direction calculated by the distance and direction with the road data is limited. Therefore, correction by map-matching is not possible when there is an excessive gap between current vehicle position and the position on the map.



GPS (Global Positioning System)

GPS (Global Positioning System) is developed for and is controlled by the US Department of Defense. The system utilizes GPS satellites (NAVSTAR), transmitting out radio waves while flying on an orbit around the earth at an altitude of approximately 21,000 km (13,049 mile).
The receiver calculates the travel position in three dimensions (latitude/longitude/altitude) according to the time lag of the radio waves that four or more GPS satellites transmit (three-dimensional positioning). The GPS receiver calculates the travel position in two dimensions (latitude/longitude) with the previous altitude data if the GPS receiver receives only three radio waves (two-dimensional positioning). GPS position correction is not performed while stopping the vehicle.



Accuracy of the GPS will deteriorate under the following conditions:
- In two-dimensional positioning, GPS accuracy will deteriorate when altitude of the vehicle position changes.
- The position of GPS satellite affects GPS detection precision. The position detection may not be precisely performed.
- The position detection is not performed if GPS receiver does not receive radio waves from GPS satellites. (Inside a tunnel, parking in a building, under an elevated highway etc.) GPS receiver may not receive radio waves from GPS satellites if any object is placed on the GPS antenna.

NOTE:
- The detection result has an error of approximately 10 m (32.81 ft) even with a high-precision three dimensional positioning.
- There may be cases when the accuracy is lowered and radio waves are stopped intentionally because the GPS satellite signal is controlled by the US trace control center.

AUDIO FUNCTION

The audio system is equipped with the following functions. Each function is operated with multifunction switch, preset switch, touch panel, steering switch or audio recognition. Operation status of audio is indicated at display.

Description

- The audio function is adoption of the following system, and it is equipped with the following functions.

FUNCTION	SYSTEM	
	15 speakers models	13 speakers models
AM/FM radio	X	X
Satellite radio	X	X
CD/DVD	X	X
Bluetooth® audio	X	X
Music Box (Hard Disk Drive)*	X	X
BOSE® Centerpoint® 2	X	—
Speed sensitive volume	X	X
Driver's Audio Stage	—	X

X: Applicable

*:For Mexico

- 15 speakers models is adoption of BOSE® Centerpoint® 2 enables sound effects with a sense of realism even to playback sound of two-channel audio.
- The table below shows speakers mounted to each system.

SPEAKER	SYSTEM	
	15 speakers models	13 speakers models
Front door speaker	X	X
Front door tweeter	X	—
Rear door speaker	X	X
Rear door tweeter	X	X
Woofer	X	X
Center speaker	X	X
Squawker	X	X
Roof speaker	X	X

X: Applicable

Operating Signal

Audio system operation can be performed with multifunction switch, preset switch, steering switch, touch panel function or voice recognition function.

- Operating signal is transmitted to AV control unit with AV communication when it is operated by multifunction switch or preset switch. The disk ejection operating signal is performed by hardwire.
- Operating signal is transmitted to AV control unit with steering switch signal when it is operated by steering switch.

Screen Display

Switching of display is performed with serial communication between front display unit and AV control unit.

AM/FM Radio Mode

- AM/FM radio tuner is built into AV control unit.
- AM/FM radio wave is received by radio antenna, next it is amplified by antenna amp., and finally it is input to AV control unit.
- FM radio wave is received by FM sub antenna, and it is transmitted to the AV control unit directly.
- Audio signal is input to BOSE amp. and BOSE amp. outputs to each speaker.

Satellite Radio Mode

- Satellite radio tuner is built into AV control unit.
- Sound signal (satellite radio) is received by satellite radio antenna and transmitted to AV control unit. AV control unit outputs sound signal to BOSE amp. The signal is also outputted from BOSE amp. to each speaker.

CD Mode

- CD function is built into AV control unit.

- AV control unit outputs audio signal to BOSE amp., and BOSE amp. outputs to each speaker when CD is inserted to AV control unit.

Bluetooth® Audio Mode

- Bluetooth® audio function is built into AV control unit.
- Bluetooth® audio can play music data in the portable audio by means of Bluetooth® communications between the portable audio and the AV control unit.
- AV control unit outputs audio signal to BOSE amp., and BOSE amp. outputs to each speaker.

Music Box Mode (For Mexico)

- Music CD data is stored on HDD that is built into AV control unit, and it can be played.
- AV control unit outputs music (sound signal) that is stored on HDD to BOSE amp., and BOSE amp. outputs to each speaker.

Speed Sensitive Volume

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

Driver's Audio Stage

- Driver's Audio Stage controls the speaker's output characteristic by BOSE amp. so that the driver's seat is to be the center of sounds.
- ON/OFF signals of Driver's Audio Stage are transmitted from AV control unit to BOSE amp. using mode change signal.

BOSE® Centerpoint® 2 (BOSE® Studio Surround® Sound System)

- BOSE® Centerpoint® 2 provides a surround-sound effect, based on a stereo sound source, such as CD or MP3.
- The BOSE amp. receives a BOSE® Centerpoint® 2 ON signal during a stereophonic sound playback and divides the sound among five channels to add a sense of simulated surround playback sound.

DVD PLAY FUNCTION

- DVD is played by inserting DVD into the AV control unit.
- DVD image signals are transmitted to the front display unit (except for mexico), and DVD sound signals are transmitted to each speaker via BOSE amp.
- DVD image signals and sound signals are transmitted to the headrest display unit via the video distributor. The headrest display unit transmits the sound signals to the headphone via infrared communication.

USB CONNECTION FUNCTION

- Connecting iPod® or USB memory allows the driver to play iPod® music files or USB memory-stored music files, video data, and image viewer data.
- Sound signals of music files stored in iPod® or USB memory are transmitted from the USB connector to the AV control unit. The AV control unit transmits the sound signals to the BOSE amp. and video distributor.
- Sound signals transmitted from the BOSE amp. to each speaker, and sound signals transmitted from the video distributor to headphone via headrest display unit
- Video signals and image viewer file signals are transmitted from the USB connector to the AV control unit. The data and files are displayed on the front display unit screen.
- Video signals are transmitted from the USB connector to the AV control unit. The data and files are displayed on the headrest display unit screen.
- iPod® is recharged when connected to USB connector.
- Only files that meet the following conditions will be played.

	Music file	Video file	Image viewer file
File format	“MP3”, “WMA”, “AAC”, “M4A”	“DivX”, “MPEG4 (ASF)”	“JPEG”
File extension	“.mp3”, “.wma”, “.aac”, “.m4a”	“.divx”, “.afs”, “.avi”	“.jpg”, “.jpeg”
Maximum file size	2 GB	2 GB	2 MB

NOTE:

- iPod® is a trademark of Apple inc., registered in the U.S. and other countries.
- Image signals cannot be received from iPod®.
- Use the enclosed USB harness when connecting iPod® to USB connector.
- If a video-sound codec combination is not satisfied, its video file may not be played.

- Signals cannot be transmitted to video distributor under the following conditions:
- Only sound signal or only image viewer data is stored in iPod®
- Only sound signal or only image viewer data is stored in USB memory

FRONT AUXILIARY INPUT FUNCTION

- Image and sound can be output from an external device by connecting a device with front auxiliary input jacks.
- AUX image signals are transmitted to each unit as follows:
- To the front display unit via AV control unit.
- To the headrest display unit via AV control unit and video distributor.
- AUX sound signals are transmitted to each unit as follows:
- To each speaker via AV control unit and BOSE amp.
- To the video distributor via AV control unit, and headphone sound signals are transmitted to infrared communication between headrest display unit and headphone.

MOBILE ENTERTAINMENT SYSTEM

- Image and sound (DVD, USB memory-stored video data and front auxiliary input) played by AV control unit can be enjoyed in rear seat using headrest display unit and headphone.
- Image and sound of external device connected to rear auxiliary input jacks for rear seat can be enjoyed in rear seat using headrest display unit and headphone. Also, image and sound from rear auxiliary input jacks can be selected and played individually on each side as well as on both sides.
- Headrest display unit has the self-diagnosis function. Refer to AV-61, "On Board Diagnosis Function".

NOTE:
Image signal and sound signal from rear auxiliary input jacks is not transmitted to front display unit and each speaker.

Operating Signal

- The mobile entertainment system can be controlled by one of the rear seat remote controller.
- It receives the operation signal of the rear seat remote controller by the remote control receiver built into headrest display unit, and then transmits it to the AV control unit and the video distributor.

Headphone Sound

- Sound signal output from AV control unit or rear auxiliary input jacks are transmitted to headrest display unit via video distributor.
- Headphone sound signals are transmitted to infrared communication between headrest display unit and headphone.

Screen headrest display

- Image signal output from AV control unit or rear auxiliary input jacks are transmitted to headrest display unit via video distributor.
- Image switch signal is input from headrest display unit to AV control unit or from headrest display unit to video distributor, according to rear seat remote controller operation.
- When image switch signal is transmitted from headrest display unit to AV control unit via AV communication, image played by AV control unit (DVD, USB memory-stored video data, and front auxiliary input) switches.
- When image switch signal is input from headrest display unit to video distributor via hard wire, image output from AV control unit and image output from rear auxiliary input jacks switch.

HANDS-FREE PHONE FUNCTION

- AV control unit includes hands-free phone function.
- Hands-free communication can be operated by connecting using Bluetooth® communication with cellular phone.
- Operation is performed by steering switch, and operating condition is indicated on display.
- Guide sound that is heard during operation is input from AV control unit to BOSE amp., and is output from front speaker and center speaker.

When A Call Is Originated

Spoken voice sound output from the microphone (microphone signal) is input to AV control unit. AV control unit outputs to cellular phone with Bluetooth® communication as a TEL voice signal. Voice sound is then heard at the other party.

When Receiving A Call

Voice sound is input to own cellular phone from the other party. TEL voice signal is output to door speaker, and the signal is input to BOSE amp. via AV control unit by establishing Bluetooth® communication from cellular phone.

TOUCH PANEL SYSTEM

Each operation of multi AV system can be performed by directly touching a front display.

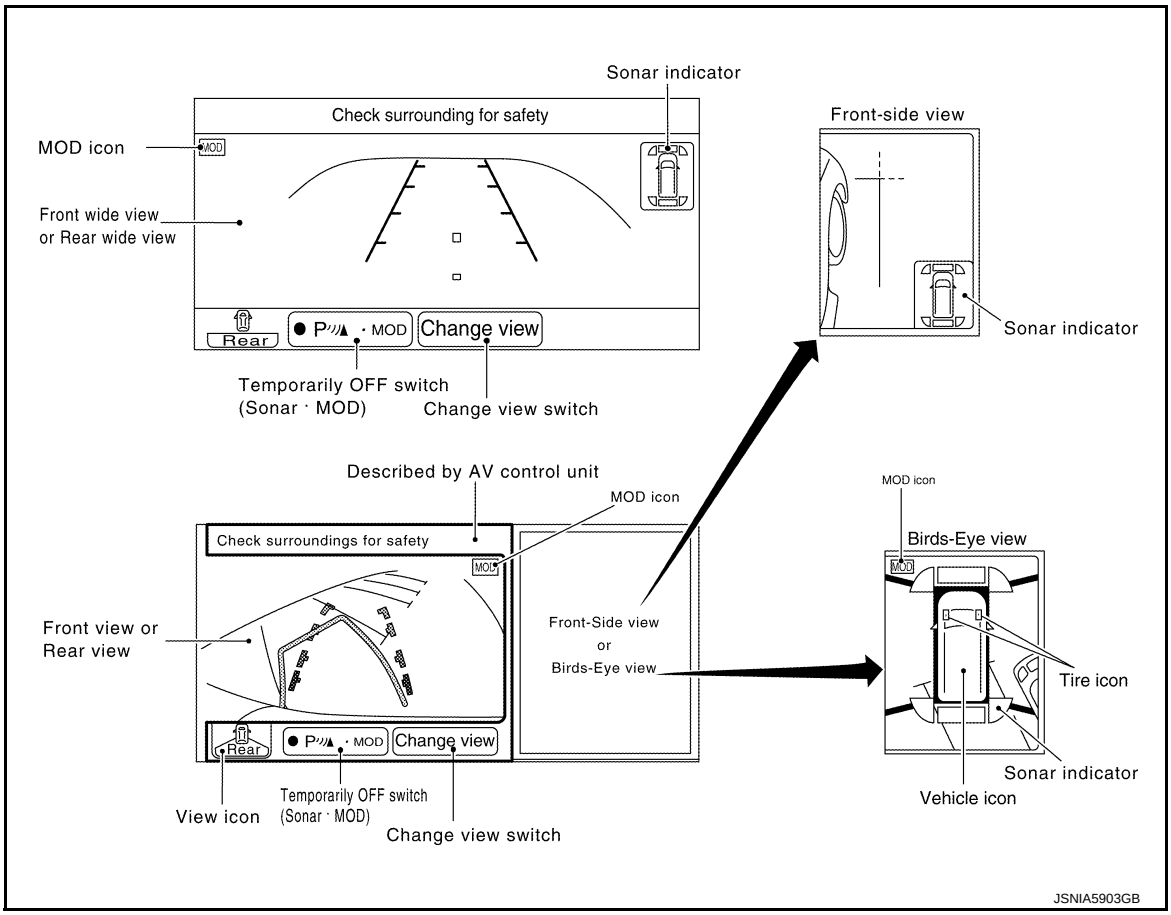
AROUND VIEW MONITOR FUNCTION

- This system is equipped with wide-angle high-resolution cameras on the front and rear of the vehicle and on both right and left door mirrors. The images from front view, rear view, front-side view RH side, and Birds-Eye view that shows the view from the top of the vehicle are displayed to monitor the vehicle surroundings.
- Around view monitor control unit cuts out and expands the image received from each camera to create each view.
- The sonar indicator is displayed on display (superimposed on the camera image) in combination with the camera assistance sonar system to warm of the approach of an obstacle.
- Camera image is displayed on the display when an obstacle is detected by sonar system.
- In front view and rear view, the vehicle width, distance lines and predictive course lines are superimposed and displayed. In front-side view, the vehicle distance guiding line and vehicle width guiding line are displayed.
- The Birds-Eye view converts the images from 4 cameras into the overhead view and displays the status of the vehicle on display. The vehicle icon and sonar indicator that are displayed on the Birds-Eye view display are rendered by around view monitor control unit.
- Moving Object Detection (MOD) is adopted that detects moving objects according to camera image and notifies the detection result to the driver.
- Tire icon is adopted for Birds-Eye view image.
- Front/rear wide view function is adopted. Visibility for the left and right that contains invisible area is improved.

Around View Monitor Screen

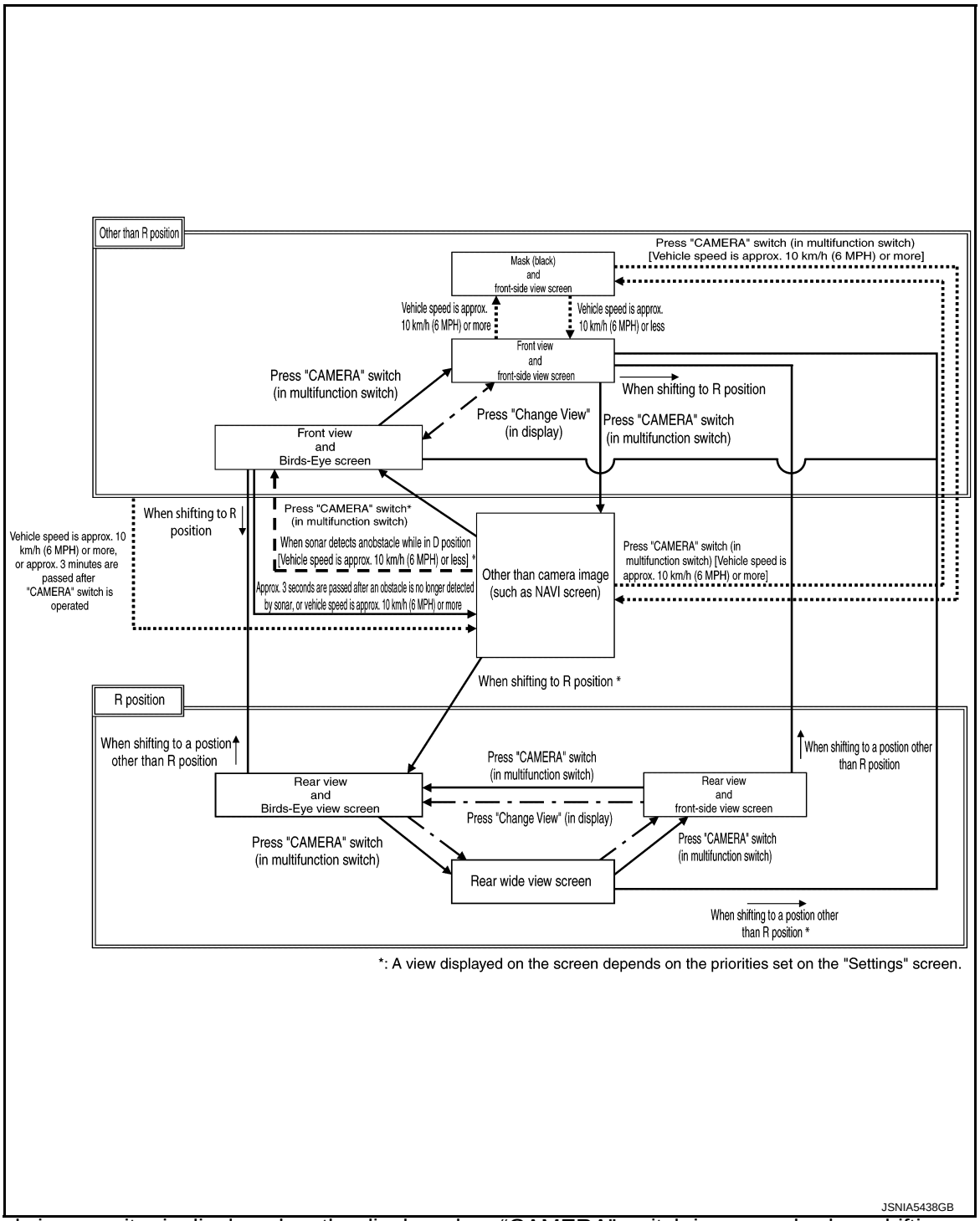
- Around view monitor combines and displays the travel direction view and “Birds-Eye view”, “Front-Side view” and then it displays the sonar indicator on the “Birds-Eye view”, “Front-Side view”, “Rear wide view”.
- AV control unit renders the “Change View” switch, view icon, warning message on display.

Screen constitution



Operation Description

Around view monitor screen transition



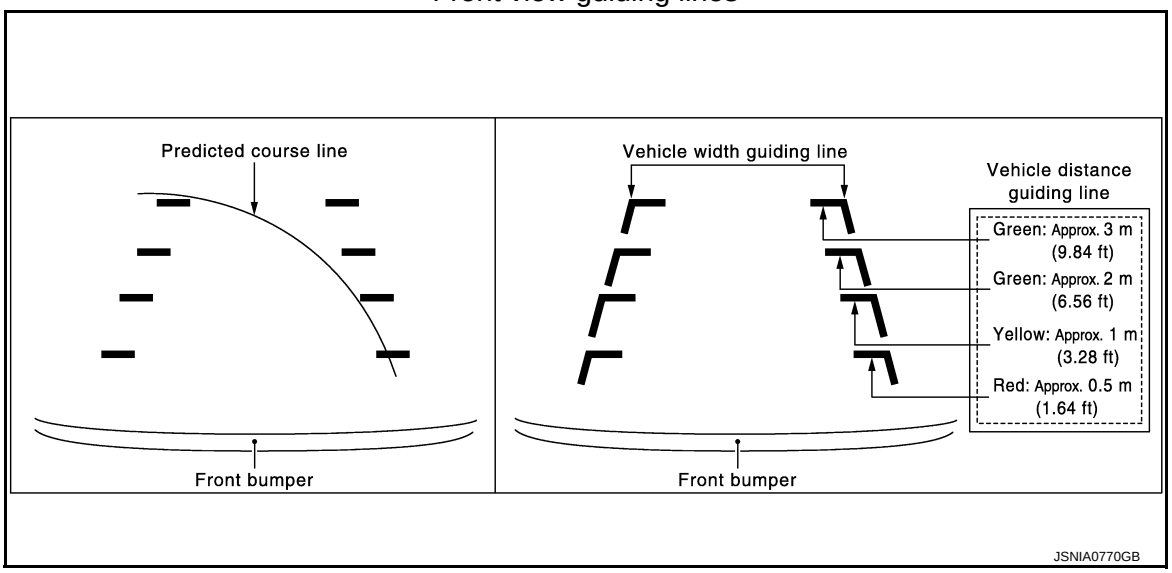
*: A view displayed on the screen depends on the priorities set on the "Settings" screen.

- Around view monitor is displayed on the display when “CAMERA” switch is pressed, when shifting position is reverse, or when an obstacle is detected by sonar system.
- Birds-Eye view, Front-side view, and front/rear wide view can be switched by “Change View” switch (touch switch) or “CAMERA” switch, while around view monitor is displayed.
- Priority of view to be displayed can be set by “Settings” screen.
- While shift position is other than reverse, around view monitor is cancelled when approximately 3 minutes are passed after “CAMERA” switch is pressed, or when vehicle speed is approximately 10 km/h (6 MPH) or more. The screen returns to the screen before displaying around view monitor.
- Setting of Moving Object Detection (MOD) and sonar can be switched ON/OFF by temporary OFF switch of front display. (Temporary OFF)
- In temporary OFF, around view monitor is cancelled. Temporary OFF is cancelled when around view monitor is displayed once again. Sonar and MOD are switched to operation-ready status

- In permanent OFF, MOD and sonar are not operative until MOD and sonar are switched to ON by “Settings” screen.
- In Birds-Eye view, an enhanced boundary is displayed on the image indicating the invisible area and clearly indicating the boundary of the 4 cameras. The invisible area is displayed in yellow when Birds-Eye view is displayed after the ignition switch is turned ON.
- In D position, front sonar can detect an obstacle while camera image is not displayed on front display. Screen is switched to camera image when an obstacle is detected.
- If information of camera and information written to around view monitor control unit are not the same, error indicator of applicable camera position is displayed when Birds-Eye view is displayed.
- When “CAMERA” switch of multifunction switch is pressed, it receives camera switch signal from AV control unit via AV communication.
- When around view monitor control unit receives camera switch signal, around view monitor control unit reads the image signal from each camera.
- When around view monitor control unit receives reverse signal, while shift position is R position, around view monitor control unit reads image signal from each camera.
- When around view monitor control unit reads image signal from each camera, it cuts out the required screen for each view, superimposes camera image, vehicle icon, guiding lines, predicted course line, “MOD” icon, and sonar indicator, and then outputs them to front display.

FRONT VIEW
- The front view image is from the front camera.
- When the selector lever is in any position other than the reverse position, the front view is displayed by pressing the “CAMERA” switch. It improves the visibility of obstacles in front of the vehicle and helps driving by the images displayed from Birds-Eye view and Front-Side view.
- Display the vehicle width guiding line and vehicle distance guiding line in front view and display the predictive course line according to the steering angle.
- If the steering angle is within approximately 90 degrees, the predictive course lines on the left/right side are displayed. If the steering angle is exceeding approximately 90 degrees, only the predictive course line on the outside (in the opposite side of steering direction) is displayed.
- AV control unit is connected to the steering angle sensor and receives the steering angle signal via CAN communication. AV control unit is transmits steering angle signal to around view monitor control unit via AV communication.
- Around view monitor control unit controls the direction and distance of the predictive course line according to the sensor signal from steering angle sensor.

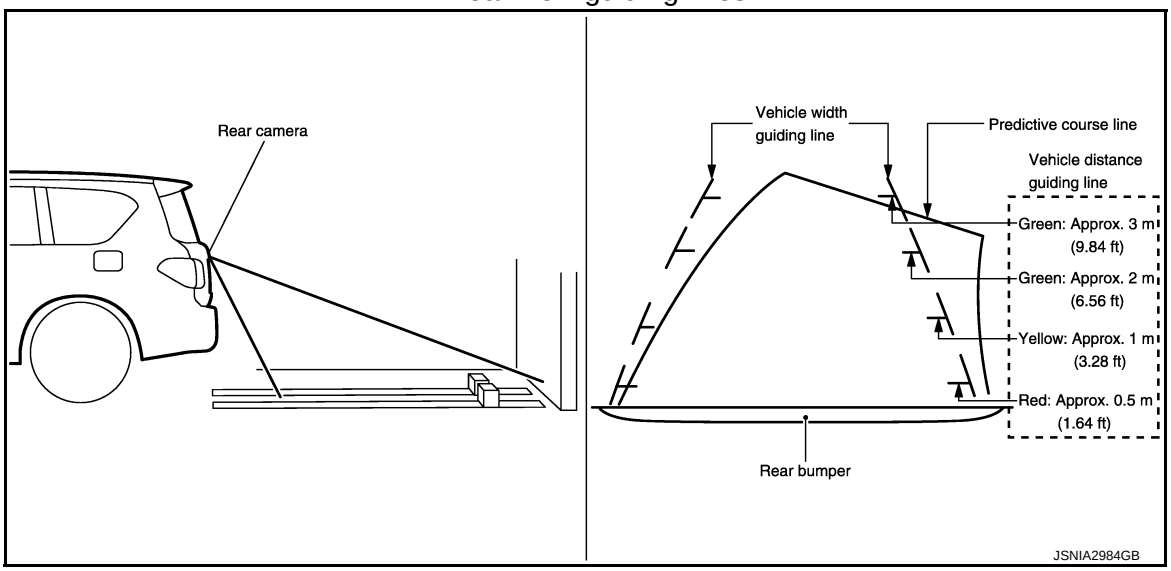
Front view guiding lines



REAR VIEW
- The rear view image is from the rear camera.
- When the selector lever is in the reverse position, the rear view is displayed. Backing and parking are improved by the images from Birds-Eye view and Front-Side view. The rear wide view function allows the display of an image with a 180° horizontal angle.
- Display the vehicle width guiding line and vehicle distance guiding line in Rear view and display the predictive course line according to the steering angle (except when using the rear wide view function).

- The predictive course line is not displayed at the steering neutral position.
- AV control unit is connected to the steering angle sensor and receives the steering angle signal via CAN communication. AV control unit is transmits steering angle signal to around view monitor control unit via AV communication.
- Around view monitor control unit controls the direction and distance of predictive course line according to the sensor signal from steering angle sensor.

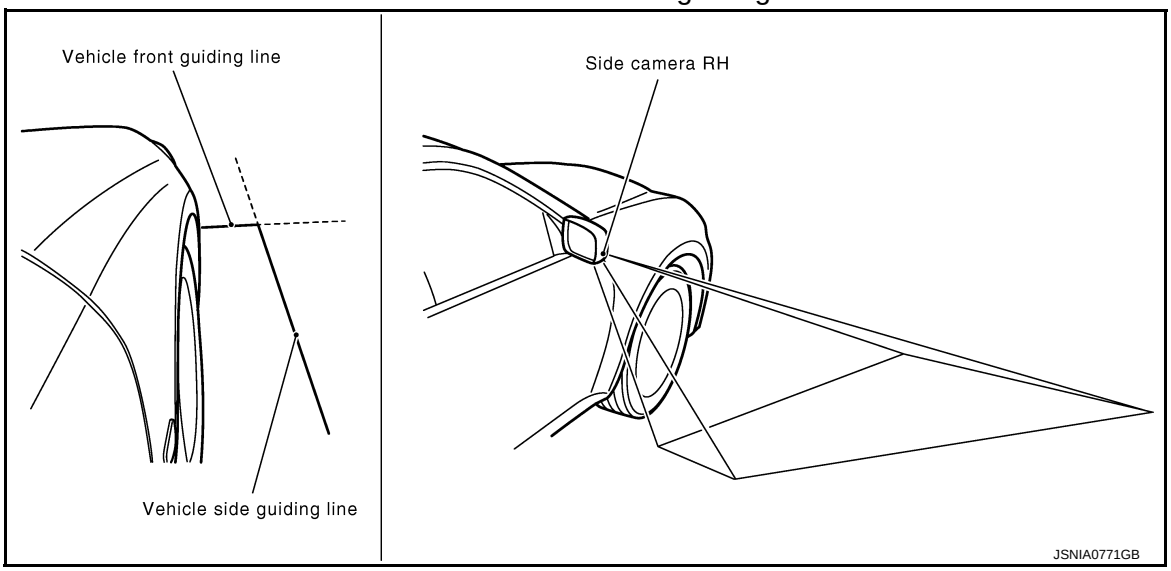
Rear view guiding lines



FRONT-SIDE VIEW

- The front-side view image is from the side camera RH.
- In Front-Side view, display the vehicle distance guiding line and vehicle width guiding line.

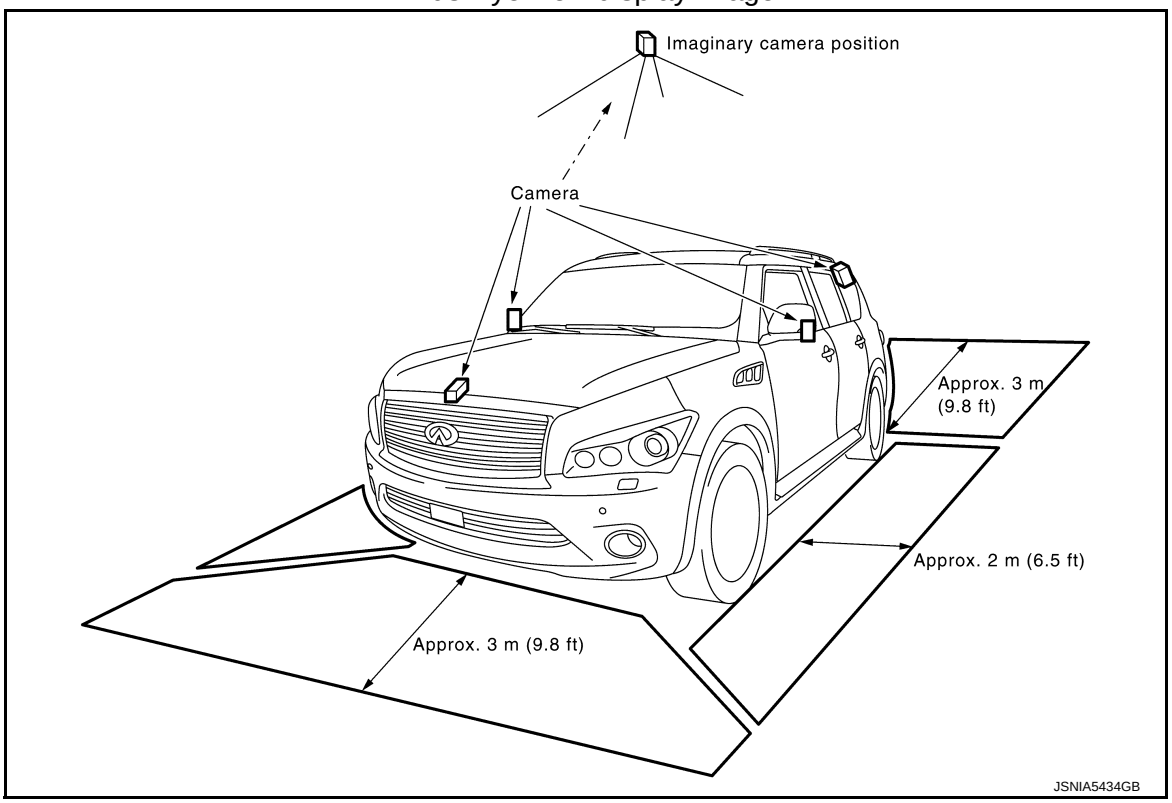
Front-side view area and guiding line



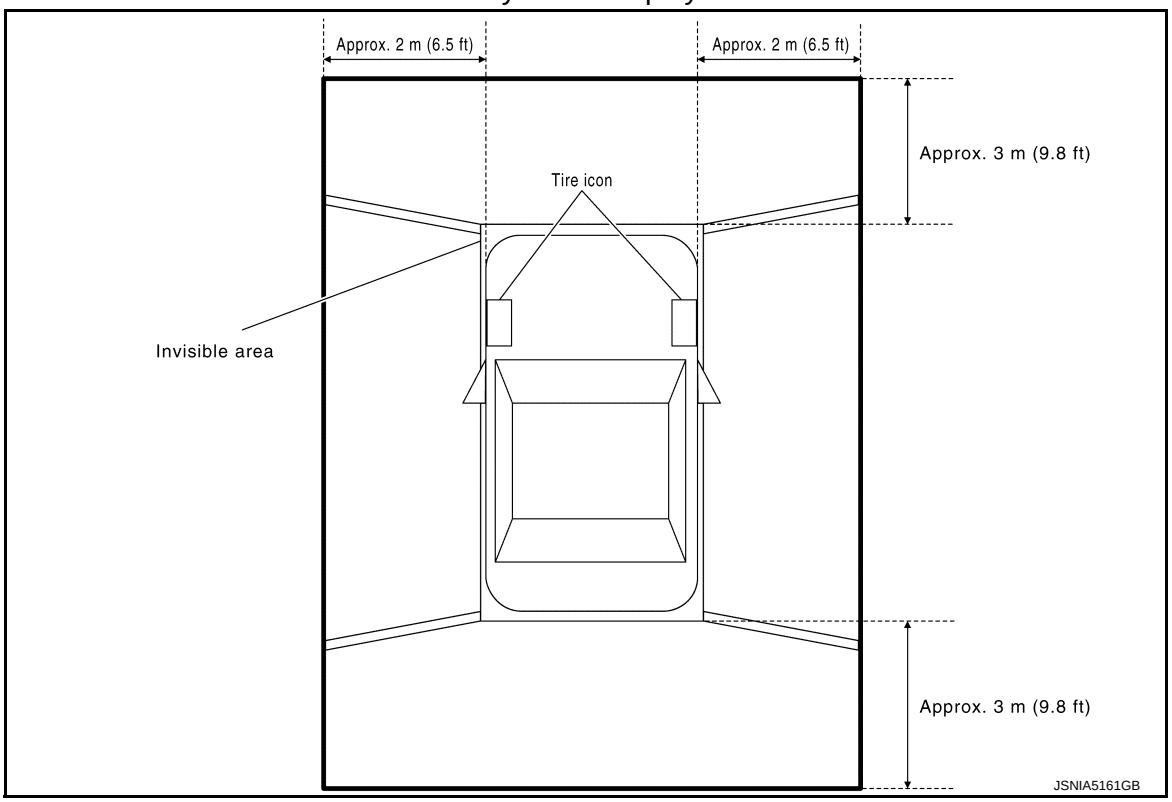
BIRDS-EYE VIEW

- The image from the 4 cameras is cut out and converted into the overhead view, and the surroundings of the vehicle is displayed in Birds-Eye view.
- In Birds-Eye view, the invisible area is displayed on the image to specify the boundary of the 4 cameras.
- The invisible area is displayed in yellow in the Birds-Eye view after turning the ignition switch ON as an information for the user. (OFF setting can be performed)

Birds-Eye view display image



Birds-Eye view display area



Moving Object Detection (MOD)

- Moving Object Detection (MOD) is a function that notifies the driver of the presence of moving objects in the area around the vehicle. MOD detects moving objects from camera image, illuminates frame of view in yellow whenever “MOD” icon is displayed in blue, and sounds buzzer in sonar control unit.
- MOD detects moving objects while camera image is displayed on front display.
- Around view monitor control unit performs the following process when moving objects are detected.
- Superimposes yellow frame line on camera image signal and outputs them to front display.

- Transmits MOD beep sound output request signal to sonar control unit via CAN communication so that buzzer in sonar control unit sounds.

• Around view monitor control unit detects moving objects from camera image according to an image recognition method called optical flow.
• MOD does not detect a background as a moving object when the vehicle moves (when whole screen moves), but detects a moving object when an actual moving object is displayed on screen.
• MOD can be set to temporary OFF or permanent OFF by the following operation.

- temporary off: MOD is switched to off with a switch on the front display (touch switch) while camera image is displayed on front display.
- permanent off: MOD is switched to off by “Settings”.

• Color of “MOD” icon indicates whether or not MOD is operative. “MOD” icon is displayed as shown in the following table. when MOD is operative, “MOD” icon is displayed in blue. when MOD is not operative, “MOD” icon is displayed in gray. MOD icon is not displayed when MOD is off (permanent off) by “Settings”, or when MOD is off (temporary off) by switch of front display (touch switch).

View		Shift position		
		P or N position	D position	R position
		“MOD” icon display		
Birds-Eye view and rear view	Birds-Eye view	Blue	—	Gray
	Rear view	Gray		Blue
Birds-Eye view and front view	Birds-Eye view	Blue	Gray	—
	Front view	Gray	Blue	
Side view and rear view	Side view	×	—	×
	Rear view	Gray		Blue
Side view and front view	Side view	×	×	—
	Front view	Gray	Blue	
Rear wide view		Gray	—	Blue

×: icon is not displayed.
—: view is not displayed in each shift position (D position and R position).

• MOD illuminates frame of view in yellow and sounds buzzer, when any of the conditions in the following table are satisfied.

Operation Condition		View where MOD is operative
Shift position	Vehicle speed	
P or N position	0 km/h	Birds-Eye view
D position	0 km/h (0 MPH) or more - less than 8 km/h (5 MPH)	Front view
R position	0 km/h (0 MPH) or more - less than 8 km/h (5 MPH)	• Rear view • Rear wide view

• MOD does not operate or stops operation when any of the conditions in the following table are satisfied.

Operation stop condition	Note
Door open	• MOD does not stop operation for front view. • Operation stops for rear view and rear wide view while back door is open. • Operation stops for Birds-Eye view when any door is open.
Door mirror expanding/retracting	Expanding/retracting status of door mirror is judged according to operation signal of door mirror motor transmitted from door mirror LH to around view monitor control unit.

Tire icon
• Tire icon is adopted for Birds-Eye view screen.
• Tire icon is a function that notifies the steered direction of front tire to the driver and assists the driving.

- In tire icon, around view monitor control unit superimposes steering angle information to camera image and outputs camera image signal to front display.
- Around view monitor control unit judges steering angle according to steering signal received from steering angle sensor via CAN communication.

Camera Image Operation Principle

- If the information writing to around view monitor control unit and the information from the camera are not matched, the applicable camera position is indicated as an error on the Birds-Eye view display. (Calibration operation is necessary when replacing each camera or when replacing around view monitor control unit.)
- Around view monitor control unit receives the camera switch signal from AV control unit via AV communication by pressing the “CAMERA” switch of multifunction switch.
- Around view monitor control unit that receives the camera switch signal supplies the power to each camera and inputs the camera image from each camera.
- When the selector lever is in the reverse position, around view monitor control unit receives the reverse signal, supplies the power to each camera, and inputs the camera image from each camera.
- Around view monitor control unit that receives the camera image signal from each camera cuts out the required screen for each view, superimposes the camera image, vehicle icon, guiding lines, sonar indicator, “MOD” icon, and outputs them to the display unit.

CAMERA ASSISTANCE SONAR FUNCTION

- Corner/center sensors are installed on front bumper and rear bumper. When an obstacle is detected while around view monitor is displayed, a sonar indicator display and buzzer sound notify the driver of the proximity of an obstacle. When an obstacle is detected while around view monitor is not displayed, around view monitor screen is displayed automatically, and then notification is similarly as per the display and buzzer sound.
- The warning buzzer output frequency changes among 4 levels (for rear center) or 3 levels (for front center and corner) according to the detection distance.

System Operation Description

- Sonar control unit receives shift position signal from TCM and vehicle speed signal from ABS actuator control unit via CAN communication, and controls ON/OFF of sonar system.
- Sonar control unit transmits detection signal and detection distance signal to around view monitor via CAN communication, according to signal from corner/center sensor depending on conditions as shown in the following table. Around view monitor displays the applicable sonar indicator.

Sonar system operation condition			Sonar operation	
Shift position	Vehicle speed	Obstacle	Sonar indicator	Buzzer
R position	Less than 10 km/h (6 MPH)	Yes	Detection status is displayed	Yes
D position	Less than 10 km/h (6 MPH)	Yes	Detection status is displayed	Yes
P or N position	Less than 10 km/h (6 MPH)	Yes	Detection status is displayed*	None
—	10 km/h (6 MPH) or more	Yes	Not displayed	None

*: Only when camera image is displayed.

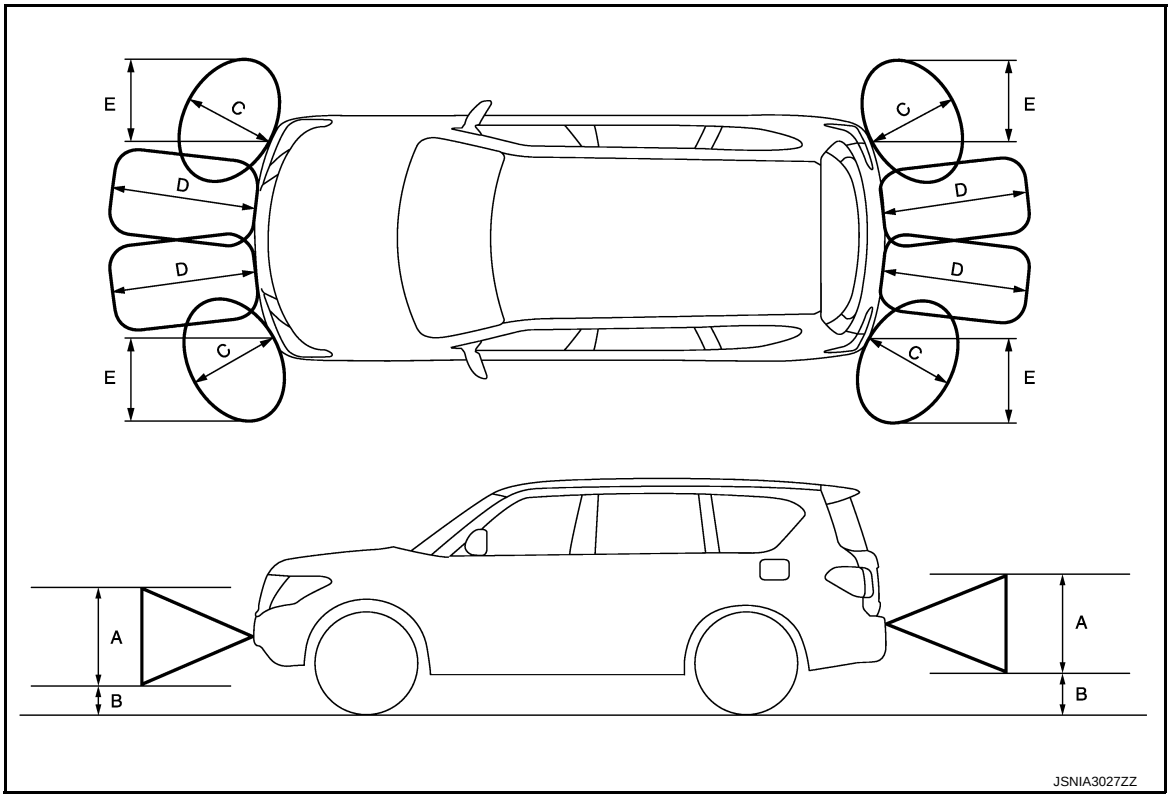
- When sonar is OFF in “Settings”, sonar OFF display is displayed. Sonar OFF display is a function that displays frame in orange on the 4 corners of vehicle icon on Birds-Eye view to notify user of sonar OFF status. When sonar is switched to OFF by “Settings”, sonar OFF display is only displayed for rear side of vehicle icon
- Sonar control unit is equipped with diagnosis function. Corner/center sensor malfunction and sensor harness open circuit can be detected. Malfunction status is transmitted to around view monitor control unit. Sonar OFF status is displayed and notified to the user.

Obstacle Detection Distance

- Sonar control unit switches output of sonar indicator in 3 stages according to obstacle detection distance from corner/center sensor.
- Sonar control unit switches output of sonar buzzer in 4 stages (for rear center) or 3 stages (for front center and corner) according to obstacle detection distance from corner/center sensor.
- Sonar control unit can change setting of obstacle detection distance in 4 stages.

• Sonar control unit can change setting of buzzer volume in 3 stages.

Obstacle detection image



A. Approx. 50 cm (19.69 in) B. Approx. 15 cm (5.91 in) C. Approx. 60 cm (23.62 in)
D. Approx. 100 cm (39.37 in) E. Approx. 60 cm (23.62 in)

Detection distance (front center and corner sensor)

Warning item	FARTHER	FAR	NORMAL (Default)	NEAR
Second stage warning	70 – 80 cm (27.56 – 31.5 in)	60 – 70 cm (23.62 – 27.56 in)	50 – 60 cm (19.69 – 23.62 in)	40 – 50 cm (15.75 – 19.69 in)
Third stage warning	50 – 70 cm (19.69 – 27.56 in)	40 – 60 cm (15.75 – 23.62 in)	30 – 50 cm (11.81 – 19.69 in)	30 – 40 cm (11.81 – 15.75 in)
Fourth stage warning	Less than 50 cm (19.69 in)	Less than 40 cm (15.75 in)	Less than 30 cm (11.81 in)	Less than 30 cm (11.81 in)

The default of this model is “NORMAL”.

Detection distance (rear center sensor)

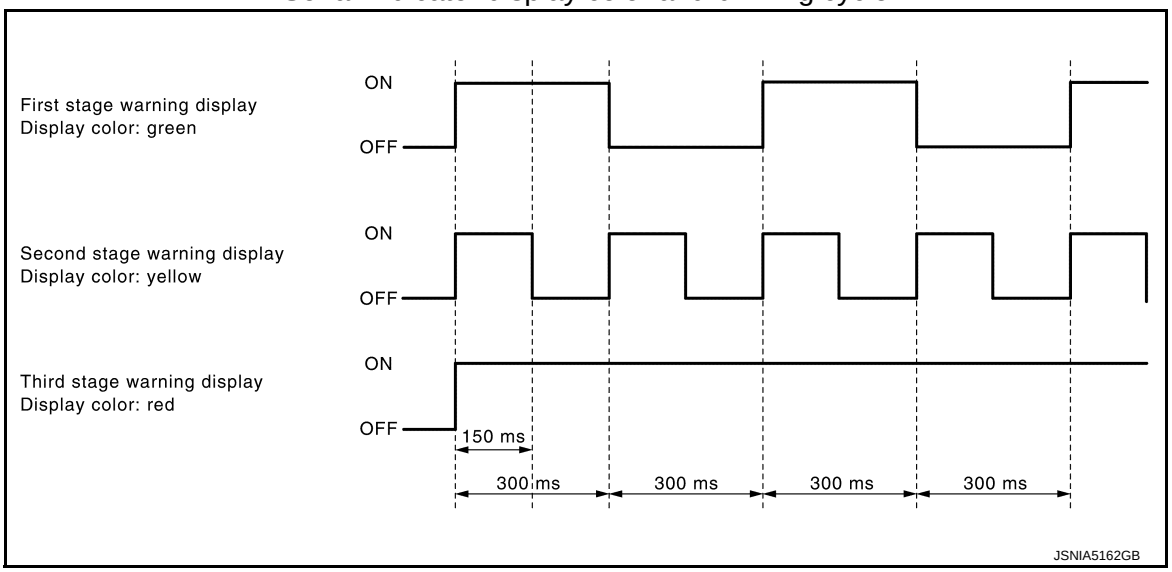
Warning item	FARTHER	FAR	NORMAL (Default)	NEAR
First stage warning	80 – 120 cm (31.5 – 47.24 in)	70 – 110 cm (27.56 – 43.31 in)	60 – 100 cm (23.62 – 39.37 in)	50 – 90 cm (19.69 – 35.43 in)
Second stage warning	70 – 80 cm (27.56 – 31.5 in)	60 – 70 cm (23.62 – 27.56 in)	50 – 60 cm (19.69 – 23.62 in)	40 – 50 cm (15.75 – 19.69 in)
Third stage warning	50 – 70 cm (19.69 – 27.56 in)	40 – 60 cm (15.75 – 23.62 in)	30 – 50 cm (11.81 – 19.69 in)	30 – 40 cm (11.81 – 15.75 in)
Fourth stage warning	Less than 50 cm (19.69 in)	Less than 40 cm (15.75 in)	Less than 30 cm (11.81 in)	Less than 30 cm (11.81 in)

The default of this model is “NORMAL”.

Sonar Indicator Display

• When around view monitor control unit receives detection signal and detection distance signal from sonar control unit, the around view monitor control unit displays the sonar indicator on front display.
• Around view monitor control unit changes display color and indicator blinking cycle according to detection distance.

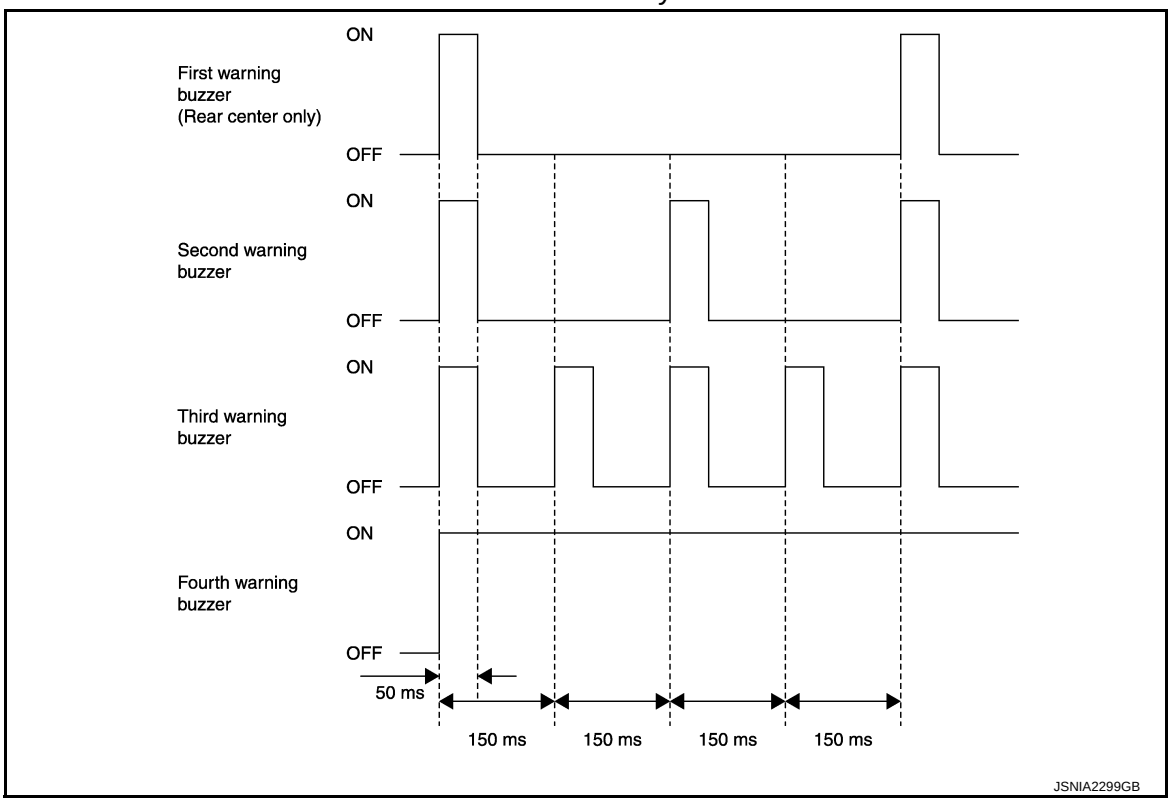
Sonar indicator display color and blinking cycle



Sonar Buzzer Operation

- Sonar control unit receives detection signal from corner/center sensor and sounds buzzer.
- Sonar tone depends on detection position. (Front is approximately 1,600 Hz and rear is approximately 2,500 Hz.)
- Sonar buzzer cycle is changed in 4 stages according to the detection distance.

Sonar buzzer cycle



VEHICLE INFORMATION FUNCTION

- Status of audio, climate control system, fuel economy, maintenance and navigation are displayed.
- AV control unit displays the fuel consumption status while receiving data signal through CAN communication from ECM and combination meter.
- AV control unit is connected to BCM via CAN communication transmitting/receiving for the vehicle settings function.

INTELLIGENT KEY INTERLOCKING FUNCTION

The AV control unit recognizes a door-unlocked state of intelligent key according to an intelligent key recognition signal transmitted from BCM and saves two different types of audio settings and navigation settings.

Settings saved in the AV control unit
- Map display
- Route guidance
- Locator
- Route search
- Sound quality
- Radio preset
- Language

AUTO LIGHT ADJUSTMENT SYSTEM

When the light switch is in the 1st or 2nd position, the dimming of the display is judged according to a dimming signal transmitted from BCM to the AV control unit. Display illuminance is independent of vehicle exterior illuminance detected by the auto light detecting sensor even when the light switch is in 1st or 2nd position.

MULTI AV SYSTEM : Fail-Safe (AV Control Unit)

INFOID:0000000009009811

When the ambiance temperature becomes extremely low or extremely high, AV control unit displays the message and limits the AV control unit function.

FAIL-SAFE CONDITIONS

When the ambiance temperature is –20°C (–4°F) or lower, or when it is 70°C (158°F) or higher

Display

The messages displayed on fail-safe conditions are as shown below:

Fail-safe mode	Display (display of the fail-safe condition)
When HDD temperature is low	HDD system is experiencing problems due to extreme low temperature. Normal operation will resume when temperature rises.
When HDD temperature is high	HDD system is experiencing problems due to extreme high temperature. Normal operation will resume when temperature drops.

DESCRIPTION OF CONTROLS

Function		When Fail-safe Function is activated
Air conditioner	Operation	Only multifunction switch (preset switch) can be operated.
	Display	• LED of multifunction switch (preset switch) illuminates. • Aimed temperature, blow angle, and flow rate are displayed in simplified mode.
Audio	Operation	Only ON/OFF and volume control operations by multifunction switch (preset switch) are possible.
	Display	No display (“Fail-safe mode” is displayed)
Camera	Operation	Image tone cannot be controlled.
	Display	Cannot be superimposed. (warning display, tone control display)
Hands-free phone	Operation	Cannot be operated.
Navigation	Operation	Cannot be operated.
Self diagnosis		The display in simplified mode of fail-safe condition
CONSULT diagnosis		Cannot be operated.

Ability Operation Mode

There is an ability operation mode for Fail-safes due to low or high ambiance temperature.
If HDD data can be read, fail-safe is shown, then normal displays are displayed only for functions which can be operated.

RELEASE CONDITIONS OF FAIL-SAFE

Fail-safe is released on following conditions and normal mode is restored.

When The Temperature of HDD Is Low or High

If the ambient temperature becomes out of fail-safe condition range, normal mode is restored.

MULTI AV SYSTEM : Fail-Safe (Around View Monitor Control Unit)

INFOID:0000000009009812

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U0428 ST ANGLE SENSOR CALIBRATION	Neutral position adjustment of steering angle sensor is not complete.	• Predicted course line is not displayed. • MOD (Moving Object Detection) function is stopped. • Front tire angle display is stopped. • Using “SETTING” menu display, switch each indicator of predicted course line display and MOD switch to “OFF” (turn OFF) so that switch operation cannot be performed.
U1000 CAN COMM CIRCUIT	When around view monitor control unit cannot transmit/receive CAN communication signal continuously for 2 seconds or more.	The following functions are stopped • When communication of steering angle sensor signal is not normal - Predicted course line is not displayed. - MOD (Moving Object Detection) function is stopped. - Front tire angle display is stopped. - Using “SETTING” menu display, switch each indicator of predicted course line display and MOD switch to “OFF” (turn OFF) so that switch operation cannot be performed. • When communication of vehicle signal, wheel speed sensor signal, and shift signal is not normal - Predicted course line is not displayed. - MOD (Moving Object Detection) function is stopped. - Using “SETTING” menu display, switch each indicator of predicted course line display and MOD switch to “OFF” (turn OFF) so that switch operation cannot be performed • When communication of sonar signal is not normal - Predicted course line is not displayed.

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U111A REAR CAMERA IMAGE SIGNAL	No-signal status of rear camera image signal is continued for 500 ms or more while ignition switch is ON. **NOTE:** Current malfunction is displayed only and is not saved.	Camera image is not displayed (Gray screen display).
U111B SIDE CAMERA RH IMAGE SIGNAL	No-signal status of side camera RH image signal is continued for 500 ms or more while ignition switch is ON. **NOTE:** Current malfunction is displayed only and is not saved.	
U111C FRONT CAMERA IMAGE SIGNAL	No-signal status of rear camera image signal is continued for 500 ms or more while ignition switch is ON. **NOTE:** Current malfunction is displayed only and is not saved.	
U111D SIDE CAMERA LH IMAGE SIGNAL	No-signal status of side camera LH image signal is continued for 500 ms or more while ignition switch is ON. **NOTE:** Current malfunction is displayed only and is not saved.	
U1232 ST ANGLE SEN CALIB	Neutral position adjustment of steering angle sensor is performed. NG signal from steering angle sensor is received.	• Predicted course line is not displayed. • MOD (Moving Object Detection) function is stopped. • Tire icon is stopped. • Using “SETTING” menu display, switch each indicator of predicted course line display and MOD switch to “OFF” (turn OFF) so that switch operation cannot be performed.
U1302 CAMERA POWER VOLT	Camera power supply voltage does not satisfy the following conditions for 2 seconds or more when ignition switch is turned ON. • When supplemental lighting power supply output is ON: 5.9 – 6.5 V. • When OFF: 0 V by camera power supply measurement.	Camera power output is stopped.
U1304 CAMERA IMAGE CALIB	• When camera calibration is incomplete. • When camera information in around view control unit and information read from camera are not the same. **NOTE:** Current malfunction is displayed only and is not saved.	Unmatched icon ☒ display (red) is displayed (applicable for unmatched camera only).
U1305 CONFIG UNFINISH	The vehicle setting of around view monitor control unit is incomplete. **NOTE:** Current malfunction is displayed only and is not saved.	Operation is according to the vehicle setting value as default value.

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
Other	When around view monitor control unit is not normal.	Switch to camera screen is not allowed.
	When communication between around view monitor control unit and each camera is not normal.	On applicable camera screen " ⚠ " marking (Red) is displayed.
	When communication line between around view monitor control unit and each camera image line are affected by electromagnetic noises.	On applicable camera image screen, ☒ display (Blue) is displayed.

DIAGNOSIS SYSTEM (AV CONTROL UNIT)

Description

INFOID:0000000009009813

- The AV control unit diagnosis function starts up with multifunction switch operation and the AV control unit performs a diagnosis for each unit in the system during the on board diagnosis.
- Perform a CONSULT diagnosis if the on board diagnosis does not start, e.g., the screen does not display anything, the multifunction switch does not function, etc.

On Board Diagnosis Function

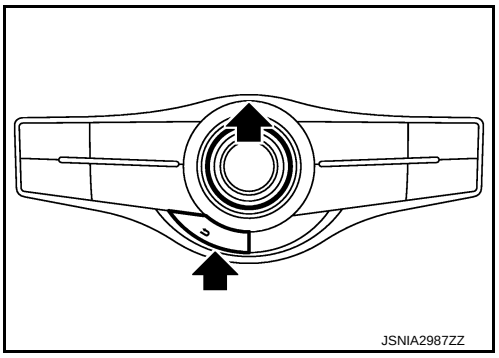
INFOID:0000000009009814

MULTIFUNCTION SWITCH AND PRESET SWITCH SELF-DIAGNOSIS FUNCTION

The ON/OFF operation (continuity) of each switch in the multifunction switch and preset switch can be checked.

Self-diagnosis Mode

- Press the “BACK” switch and the “UP” switch of the 8-direction switches within 10 seconds after turning the ignition switch from OFF to ACC and hold them for 3 seconds or more. Then the buzzer sounds, all indicators of the preset switch illuminate, and the self-diagnosis mode starts.
- The continuity of each switch at the ON position can be checked by pressing the switch. The buzzer sounds if the switch is normal.
  NOTE:
  The hazard switch and disk eject switch cannot be checked.



Finishing Self-diagnosis Mode

Self-diagnosis mode is canceled when turning the ignition switch OFF.

ON BOARD DIAGNOSIS

Description

- The trouble diagnosis function has a self-diagnosis mode for conducting trouble diagnosis automatically and a confirmation/adjustment mode for operating manually.
- The self-diagnosis mode performs diagnoses on the AV control unit, connections between system components as well as connections between AV control unit and GPS antenna. Then it displays the diagnosis results on the display.
- The confirmation/adjustment mode allows the technician to check, modify or adjust the vehicle signals and set values, as well as to monitor the system error records and system communication status. The checking, modifying or adjusting generally require human intervention and judgment (the system cannot make judgment automatically).

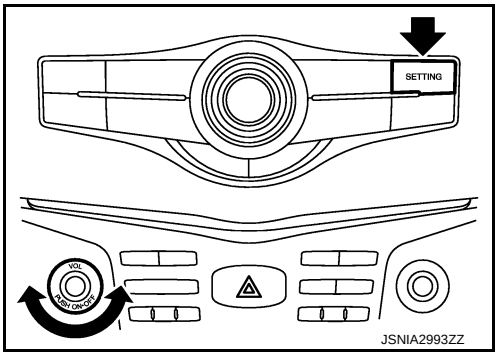
On Board Diagnosis Item

Mode	Description
Self Diagnosis	• AV control unit diagnosis. • Diagnoses the connections across system components, between AV control unit and GPS antenna.

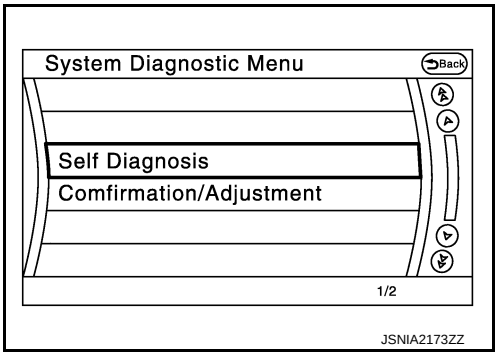
Mode			Description
Confirmation/ Adjustment	Display Diagnosis		The following check functions are available: color tone check by color bar display and white display, light and shade check by gray scale display and touch panel calibration response check.
	Vehicle Signals		Diagnosis of signals can be performed for vehicle speed, parking brake, lights, ignition, reverse, side view switch and room lamp.
	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 the frequency when occurring in the past are displayed. When the malfunctioning item is selected, the time and place that the selected malfunction last occurred are displayed.
	Synchronizer FES Clock		–
	Vehicle CAN Diagnosis		The transmitting/receiving of CAN communication can be monitored.
	AV COMM Diagnosis		The communication condition of each unit of Multi AV system can be monitored.
	Handsfree Phone		The received volume adjustment of hands-free phone, microphone speaker check, and erase memory can be performed.
	XM	XM NaviTrffic	Change Channel • Any necessary channels required to receive traffic information from the satellite radio system can be set. Change Application ID • Any application ID'-s required to receive traffic information from the satellite radio system can be set.
		XM NavWeather	
		XM CGS	
		Diag	
	Delete Unit Connection Log		Erase the connection history of unit and error history.
	Initialize Settings		Initializes the AV control unit memory.
	Version Information		Version information of the AV control unit is displayed.

METHOD OF STARTING

1. Start the engine.
2. Turn the audio system OFF.
3. While pressing the “SETTING” button, turn the volume control dial clockwise or counterclockwise for 40 clicks or more. (When the self-diagnosis mode is started, the trouble diagnosis initial screen is displayed.)
   • Shifting from current screen to previous screen is performed by pressing “BACK” button.



4. Items of “Self Diagnosis” and “Confirmation/Adjustment” can be selected on the trouble diagnosis initial screen.



SELF-DIAGNOSIS MODE

1. Start the self-diagnosis function and select “Self Diagnosis”.
- Self-diagnosis subdivision screen is displayed, and the self-diagnosis mode starts.
- The bar graph visible on the center of the self-diagnosis subdivision screen indicates progress of the trouble diagnosis.

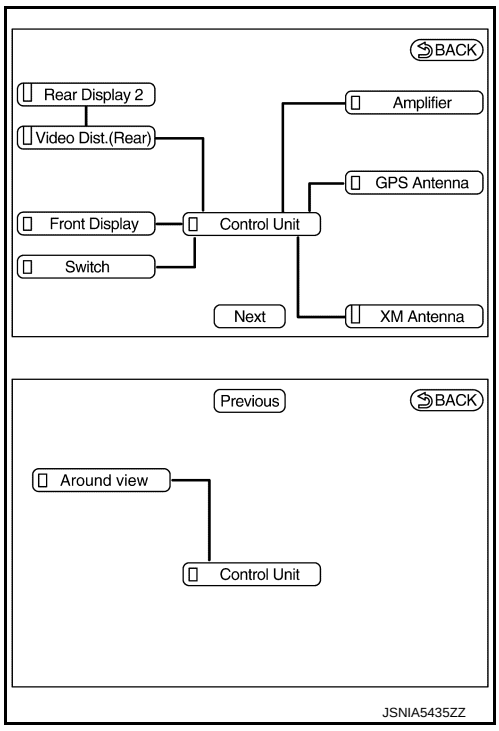
2. Diagnosis results are displayed after the self-diagnosis is completed. The unit names and the connection lines are color-coded according to the diagnostic results.

Diagnosis results	Unit	Connection line
Normal	Green	Green
Connection malfunction	Gray	Yellow
Unit malfunction Note	Red	Green

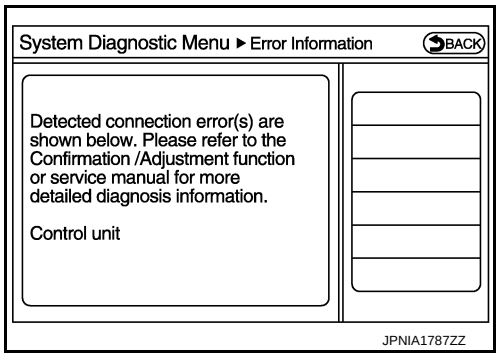
NOTE:

Control unit (AV control unit) is displayed in red.

- Replace AV control unit if “Self-Diagnosis did not run because of a control unit malfunction” is indicated. The symptom is AV control unit internal error. Refer to AV-282, "Removal and Installation".
- If multiple errors occur at the same time for a single unit, the screen switch colors are determined according to the following order of priority: red > gray.



- The comments of the self-diagnosis results can be viewed with a component in the diagnosis result screen.



Detection Range of Self-diagnosis Mode

- The self-diagnosis mode allows the technician to diagnose the connection in the communication line between AV control unit and each unit and the internal operation of the AV control unit.
- Because the start condition of diagnosis function is a switch operation, the on board diagnosis function cannot be started up if any malfunction is detected in the communication circuit between AV control unit and multifunction switch.

SELF-DIAGNOSIS RESULTS

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

Only Unit Part Is Displayed In Red.

Screen switch	Description	Possible malfunction location / Action to take
Control Unit	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. When detecting no malfunction in those components, replace AV control unit.
Amplifier	When either one of the following items are detected: • sound signal circuits between BOSE amp. and each speaker are malfunctioning. • BOSE amp. malfunction is detected.	• Malfunctioning speaker circuits • Replace BOSE amp. Refer to AV-294, "Removal and Installation".

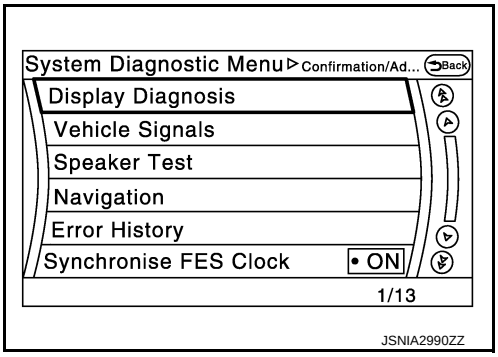
A Connecting Cable Between Units Is Displayed In Yellow.

Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control unit ⇔ Front Display	Serial communication circuits between AV control unit and front display unit are malfunctioning.	Serial communication circuits between AV control unit and front display unit.
Control unit ⇔ GPS Antenna	GPS antenna connection malfunctions detected.	Check the connection of the GPS antenna connector.
Control unit ⇔ XM Antenna	Satellite radio antenna connection malfunction is detected.	Satellite radio antenna disconnection
Control unit ⇔ Amplifier	When either one of the following items are detected: • BOSE amp. power supply and ground circuits are malfunctioning. • AV communication circuits between headrest display unit LH and BOSE amp. are malfunctioning.	• BOSE amp. power supply and ground circuits. Refer to AV-235, "BOSE AMP. : Diagnosis Procedure". • AV communication circuits between headrest display unit LH and BOSE amp.
Control unit ⇔ Around view	When either one of the following items are detected: • around view monitor control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and around view monitor control unit are malfunctioning.	• Around view monitor control unit power supply and ground circuits. • AV communication circuits between AV control unit and around view monitor control unit.

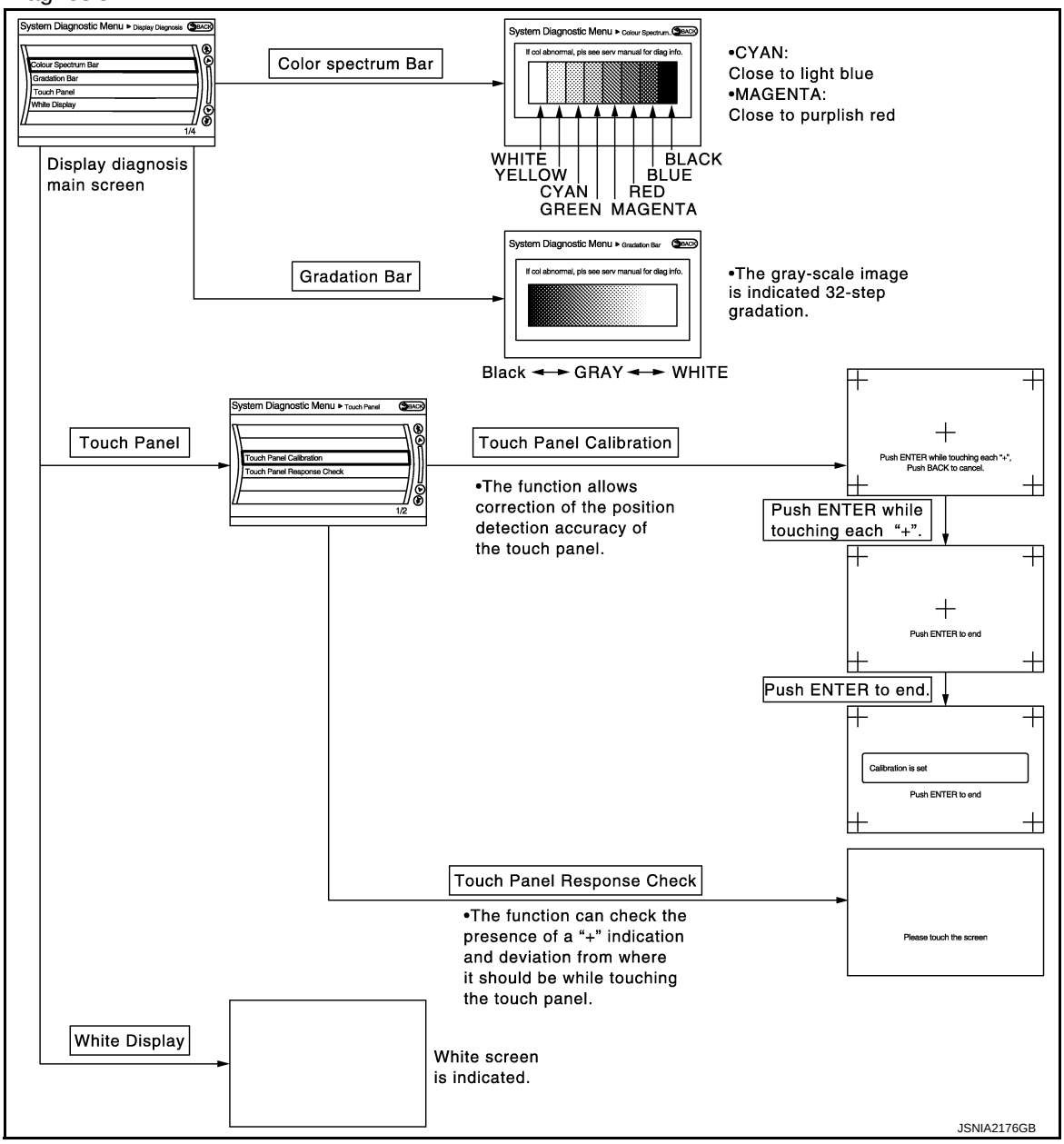
Area with yellow connection lines	Description	Possible malfunction location / Action to take
Control unit ⇔ Video Dist.(Rear) Video Dist.(Rear) ⇔ Rear display 2	When either one of the following items are detected: • video distributor power supply and ground circuits are malfunctioning. • headrest display unit LH power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and headrest display unit LH are malfunctioning. • location recognition signal circuit between headrest display unit LH and ground is malfunctioning.	• Video distributor power supply and ground circuits. • Headrest display unit LH power supply and ground circuits. • AV communication circuits between AV control unit and headrest display unit LH. • Location recognition signal circuit between headrest display unit LH and ground.
Video Dist.(Rear) ⇔ Rear display 2	When either one of the following items are detected: • headrest display unit RH power supply and ground circuits are malfunctioning. • AV communication circuits between headrest display unit LH and headrest display unit RH are malfunctioning. • location recognition signal circuit between headrest display unit RH and ground is malfunctioning.	• Headrest display unit RH power supply and ground circuits. • AV communication circuits between headrest display unit LH and headrest display unit RH. • Location recognition signal circuit between headrest display unit RH and ground.

CONFIRMATION/ADJUSTMENT MODE

1. Start the diagnosis function and select “Confirmation/Adjustment”. The confirmation/adjustment mode indicates where each item can be checked or adjusted.
2. Select each switch on the “Confirmation/Adjustment Mode” screen to display the relevant trouble diagnosis screen. Press the “Back” switch to return to the initial Confirmation/Adjustment Mode screen.

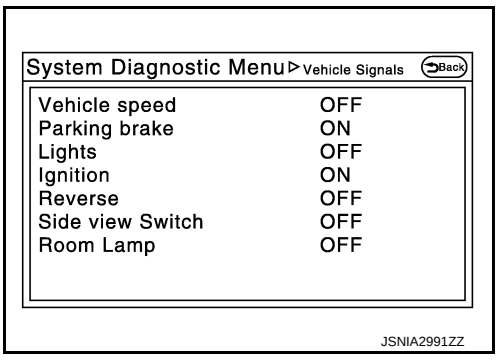


Display Diagnosis



Vehicle Signals

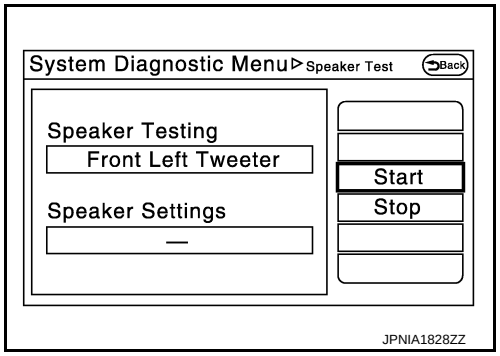
A comparison check can be made of each actual vehicle signal and the signals recognized by the system.



Diagnosis item	Display	Vehicle status	Remarks
Vehicle speed	ON	Vehicle speed >= 8 km/h (5 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed < 8 km/h (5 MPH)	
Parking brake	ON	Parking brake is applied.	
	OFF	Parking brake is released.	
Lights	ON	Block the light from the auto light optical sensor when the lighting switch is 1st or 2nd.	—
	OFF	Either of the following conditions. • Lighting switch is OFF • Expose the auto light optical sensor to light when the lighting switch is 1st or 2nd.	
Ignition	ON	Ignition switch is ON.	—
	OFF	Ignition switch is in ACC position.	
Reverse	ON	Selector lever is in “R” position.	Changes in indication may be delayed. This is normal.
	OFF	Selector lever is in other than “R” position.	
Side view Switch	OFF	—	This item is displayed, but cannot be monitored.
Room Lamp	OFF	—	This item is displayed, but cannot be monitored.

Speaker Test

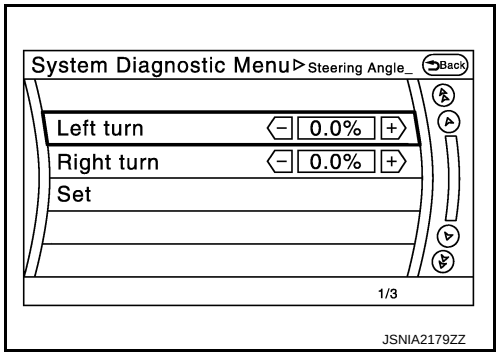
Select “SPEAKER DIAGNOSIS” to display the Speaker Diagnosis screen. Press “Start” to generate a test tone in a speaker. Press “Start” to generate a test tone in the next speaker. Press “Stop” to stop the test tones.



Navigation

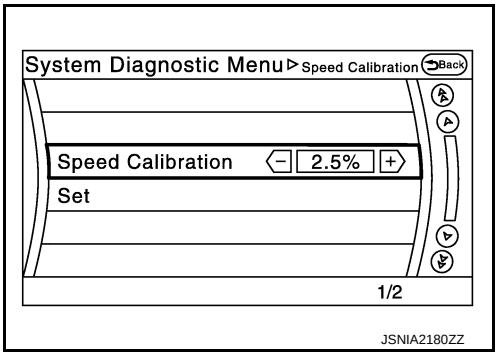
STEERING ANGLE ADJUSTMENT

The steering angle output value detected with the gyroscope is adjusted.



SPEED CALIBRATION

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



Error History

The self-diagnosis results are judged depending on whether any error occurs from when “Self-diagnosis” is selected until the self-diagnosis results are displayed.

However, the diagnosis results are judged normal if an error has occurred before the ignition switch is turned ON and then no error has occurred until the self-diagnosis start. Check the “Error Record” to detect any error that may have occurred before the self-diagnosis start because of this situation.

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

- If there is a malfunction with the GPS antenna circuit board in the AV control unit, the correct date and time of occurrence may not be able to be displayed.
- Place of the error occurrence is represented by the position of the current location mark at the time an error occurred. If current location mark has deviated from the correct position, then the place of the error occurrence cannot be located correctly.
- The frequency of occurrence is displayed in a count up manner. The actual count up method differs depending on the error item.

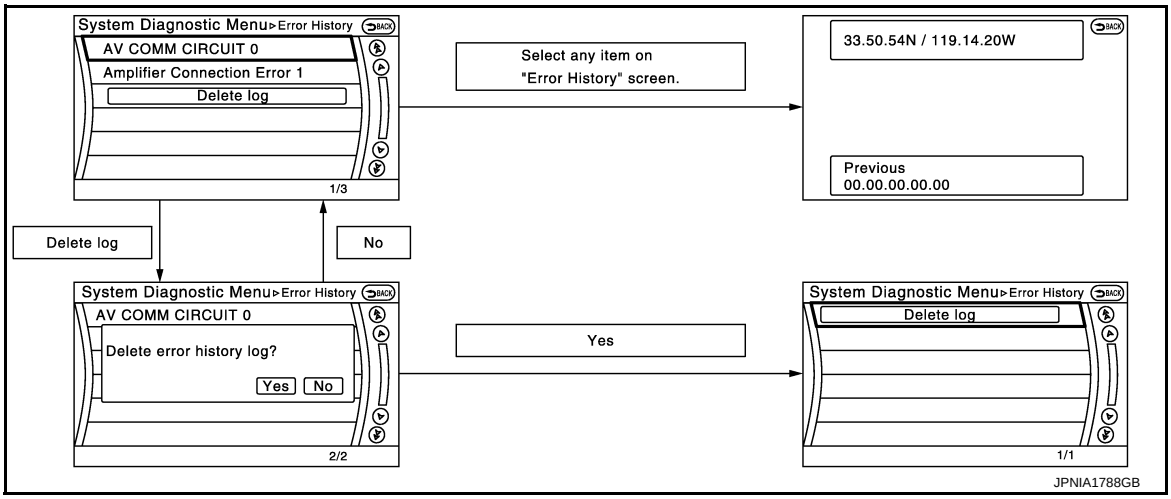
Count up method A

- The counter resets to 0 if an error occurs when ignition switch is turned ON. The counter increases by 1 if the condition is normal at a next ignition ON cycle.
- The counter upper limit is 39. Any counts exceeding 39 are ignored.“ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT.

Count up method B

- The counter increases by 1 if an error occurs when ignition switch is ON. The counter will not decrease even if the condition is normal at the next ignition ON cycle.
- The counter upper limit is 50. Any counts exceeding 50 are ignored. “ The counter can be reset (no error record display) with the “Delete log” switch or CONSULT.

Display type of occurrence frequency	Error history display item
Count up method A	CAN communication line, control unit (CAN), AV communication line, control unit (AV)
Count up method B	Other than the above



Error 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

Error item	Description	Possible malfunction factor/Action to take
CAN COMM CIRCUIT	CAN communication malfunction is detected.	Perform diagnosis with CONSULT, and then repair the malfunctioning parts according to the diagnosis results. Refer to AV-51, "CONSULT Function".
CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".
CONTROL UNIT (AV)	AV communication circuit initial diagnosis malfunction is detected.	
FLASH-ROM Error Of Control Unit	AV control unit malfunction is detected.	
Connection Of Gyro		
Connection of G Sensor		
CAN Controller Memory Error		
Bluetooth Module Connection Error		
Sub CPU Connection Error		
Audio connection error		
DSP Connection Error	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".
DSP Communication Error		
HDD Connection Error	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".
HDD Read Error		
HDD Write Error		
HDD Communication Error		
HDD Access Error		
GPS Communication Error	GPS malfunction is detected.	• An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".
GPS ROM Error		
GPS RAM Error		
GPS RTC Error		
Unfinished configuration	The writing of configuration data is incomplete.	Write configuration data with CONSULT.
USB Controller Communication Error	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.
DVD Mechanism Communication Error	AV control unit malfunction is detected.	• If DVD can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".
Steer. Angle Sensor Calibration	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor. Refer to AV-51, "CONSULT Function".
Amplifier Temperature Error	BOSE amp. malfunction is detected.	Replace the BOSE amp. Refer to AV-294, "Removal and Installation".

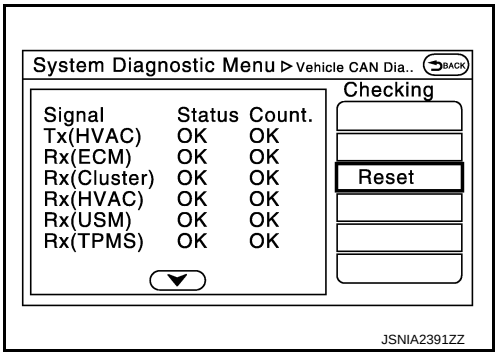
Error item	Description	Possible malfunction factor/Action to take
Front Display Connection Error	When either one of the following items are detected: • front display unit power supply and ground circuits are malfunctioning. • Serial communication circuits between AV control unit and front display unit are malfunctioning.	• Front display unit power supply and ground circuits. • Serial communication circuits between AV control unit and front display unit.
• AV COMM CIRCUIT • 2nd Display Connection Error	When either one of the following items are detected: • video distributor power supply and ground circuits are malfunctioning. • headrest display unit LH power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and headrest display unit LH are malfunctioning. • location recognition signal circuit between headrest display unit LH and ground is malfunctioning.	• Video distributor power supply and ground circuits. • Headrest display unit LH power supply and ground circuits. • AV communication circuits between AV control unit and headrest display unit LH. • Location recognition signal circuit between headrest display unit LH and ground.
3rd Display Connection Error	When either one of the following items are detected: • headrest display unit RH power supply and ground circuits are malfunctioning. • AV communication circuits between headrest display unit LH and headrest display unit RH are malfunctioning. • location recognition signal circuit between headrest display unit RH and ground is malfunctioning.	• Headrest display unit RH power supply and ground circuits. • AV communication circuits between headrest display unit LH and headrest display unit RH. • Location recognition signal circuit between headrest display unit RH and ground.
AM/FM antenna amplifier short to ground	Radio antenna amp. ON signal circuit malfunction is detected.	Radio antenna amp. ON signal circuit between AV control unit and antenna amp.
AM/FM antenna amplifier open		
Ext_Amp_ON output terminal short to ground	BOSE amp. ON signal circuit malfunction is detected.	BOSE amp. ON signal circuit between AV control unit and BOSE amp.
Ext_Amp_ON output terminal :open		
GPS Antenna Error	GPS antenna connection malfunction is detected.	Check the connection of the GPS antenna connector.
XM Antenna Connection Error	Satellite radio antenna connection malfunction is detected.	Satellite radio antenna disconnection.
USB electric current Error	Detection of overcurrent in USB connector.	Check USB harness between the AV control unit and USB connector.
FL-DOOR WOOFER OUT: open	When either one of the following items are detected: • sound signal circuits between BOSE amp. and front door speaker LH are malfunctioning. • sound signal circuits between BOSE amp. and front door tweeter LH are malfunctioning.	• Sound signal circuits between BOSE amp. and front door speaker LH. • Sound signal circuits between BOSE amp. and front door tweeter LH.
FL-DOOR WOOFER OUT: short		
FL-DOOR WOOFER OUT: short to ground		
FL-DOOR WOOFER OUT: short to battery		
FL-DOOR TWEETER OUT: open		
FL-DOOR TWEETER OUT: short		
FL-DOOR TWEETER OUT: short to ground		
FL-DOOR TWEETER OUT: short to battery		

Error item	Description	Possible malfunction factor/Action to take
FR-DOOR WOOFER OUT: open FR-DOOR WOOFER OUT: short FR-DOOR WOOFER OUT: short to ground FR-DOOR WOOFER OUT: short to battery FR-DOOR TWEETER OUT: open FR-DOOR TWEETER OUT: short FR-DOOR TWEETER OUT: short to ground FR-DOOR TWEETER OUT: short to battery	When either one of the following items are detected: • sound signal circuits between BOSE amp. and front door speaker RH are malfunctioning. • sound signal circuits between BOSE amp. and front door tweeter RH are malfunctioning.	• Sound signal circuits between BOSE amp. and front door speaker RH. • Sound signal circuits between BOSE amp. and front door tweeter RH.
FL-INST TWEETER OUT: open FL-INST TWEETER OUT: short FL-INST TWEETER OUT: short to ground FL-INST TWEETER OUT: short to battery	Sound signal circuits between BOSE amp. and squawker LH are malfunctioning.	Sound signal circuits between BOSE amp. and squawker LH.
FC-INST SQUAWKER OUT: open FC-INST SQUAWKER OUT: short FC-INST SQUAWKER OUT: short to ground FC-INST SQUAWKER OUT: short to battery	Malfunction is detected sound signal circuits between BOSE amp. and center speaker.	Sound signal circuits between BOSE amp. and center speaker.
FR-INST TWEETER OUT: open FR-INST TWEETER OUT: short FR-INST TWEETER OUT: short to ground FR-INST TWEETER OUT: short to battery	Sound signal circuits between BOSE amp. and squawker RH are malfunctioning.	Sound signal circuits between BOSE amp. and squawker RH.
2L-DOOR SPEAKER OUT: open 2L-DOOR SPEAKER OUT: short 2L-DOOR SPEAKER OUT: short to ground 2L-DOOR SPEAKER OUT: short to battery 2L-DOOR TWEETER OUT: open 2L-DOOR TWEETER OUT: short 2L-DOOR TWEETER OUT: short to ground 2L-DOOR TWEETER OUT: short to battery	When either one of the following items are detected: • sound signal circuits between BOSE amp. and rear door speaker LH are malfunctioning. • sound signal circuits between BOSE amp. and rear door tweeter LH are malfunctioning.	• Sound signal circuits between BOSE amp. and rear door speaker LH. • Sound signal circuits between BOSE amp. and rear door tweeter LH.
2R-DOOR SPEAKER OUT: open 2R-DOOR SPEAKER OUT: short 2R-DOOR SPEAKER OUT: short to ground 2R-DOOR SPEAKER OUT: short to battery 2R-DOOR TWEETER OUT: open 2R-DOOR TWEETER OUT: short 2R-DOOR TWEETER OUT: short to ground 2R-DOOR TWEETER OUT: short to battery	When either one of the following items are detected: • sound signal circuits between BOSE amp. and rear door speaker RH are malfunctioning. • sound signal circuits between BOSE amp. and rear door tweeter RH are malfunctioning.	• Sound signal circuits between BOSE amp. and rear door speaker RH. • Sound signal circuits between BOSE amp. and rear door tweeter RH.

Error item	Description	Possible malfunction factor/Action to take
RL-LUGGAGE WOOFER OUT: open	Sound signal circuits between BOSE amp. and woofer are malfunctioning.	Sound signal circuits between BOSE amp. and woofer.
RL-LUGGAGE WOOFER OUT: short		
RL-LUGGAGE WOOFER OUT: short to ground		
RL-LUGGAGE WOOFER OUT: short to battery		
RL-ROOF SQUAWKER OUT:: open	Sound signal circuits between BOSE amp. and roof speaker LH malfunctioning.	Sound signal circuits between BOSE amp. and roof speaker LH.
RL-ROOF SQUAWKER OUT: short		
RL-ROOF SQUAWKER OUT: short to ground		
RL-ROOF SQUAWKER OUT: short to battery		
RR-ROOF SQUAWKER OUT:: open	Sound signal circuits between BOSE amp. and roof speaker RH malfunctioning.	Sound signal circuits between BOSE amp. and roof speaker RH.
RR-ROOF SQUAWKER OUT: short		
RR-ROOF SQUAWKER OUT: short to ground		
RR-ROOF SQUAWKER OUT: short to battery		
• AV COMM CIRCUIT • Switches Connection Error	When either one of the following items are detected: • multifunction switch power supply and ground circuits were malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT • Amplifier Connection Error	When either one of the following items are detected: • BOSE amp. power supply and ground circuits are malfunctioning. • AV communication circuits between headrest display unit LH and BOSE amp. are malfunctioning.	• BOSE amp. power supply and ground circuits. Refer to AV-235, "BOSE AMP. : Diagnosis Procedure". • AV communication circuits between headrest display unit LH and BOSE amp.
• AV COMM CIRCUIT • AVM Connection Error	When either one of the following items are detected: • around view monitor control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and around view monitor control unit are malfunctioning.	• Around view monitor control unit power supply and ground circuits. • AV communication circuits between AV control unit and around view monitor control unit.
• AV COMM CIRCUIT • Sonar Connection Error	When either one of the following items are detected: • sonar control unit power supply and ground circuits are malfunctioning. • CAN communication circuits between AV control unit and sonar control unit are malfunctioning.	• Sonar control unit power supply and ground circuits. • CAN communication circuits between AV control unit and sonar control unit.
• AV COMM CIRCUIT • Switches Connection Error • AVM Connection Error • 2nd Display Connection Error	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.
• AV COMM CIRCUIT • Switches Connection Error • Amplifier Connection Error • AVM Connection Error • 2nd Display Connection Error		

Vehicle CAN Diagnosis

- CAN communication status and error counter is displayed.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if “Reset” is pressed.

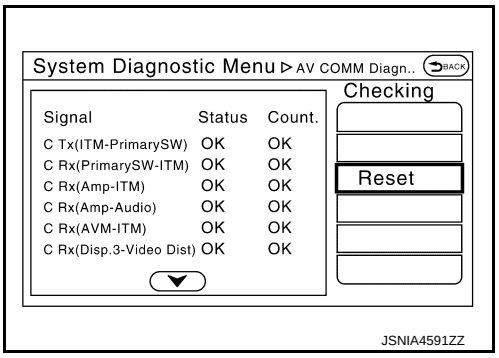


Items	Display (Current)	Malfunction counter (Past)
Tx(HVAC)	OK / ???	OK / 0 – 39
Rx(ECM)	OK / ???	OK / 0 – 39
Rx(Cluster)	OK / ???	OK / 0 – 39
Rx(HVAC)	OK / ???	OK / 0 – 39
Rx(USM)	OK / ???	OK / 0 – 39
Rx(TPMS)	OK / ???	OK / 0 – 39
Rx(STRG)	OK / ???	OK / 0 – 39
Rx(ACC)	OK / ???	OK / 0 – 39
RX(VDC)	OK / ???	OK / 0 – 39

NOTE:
“???” indicates UNKWN.

AV COMM Diagnosis

- Displays the communication status between AV control unit (master unit) and each unit.
- The error counter displays “OK” if any malfunction was not detected in the past and displays “0” if a malfunction is detected. It increases by 1 if the condition is normal at the next ignition switch ON cycle. The upper limit of the counter is 39.
- The error counter is erased if “Reset” is pressed.

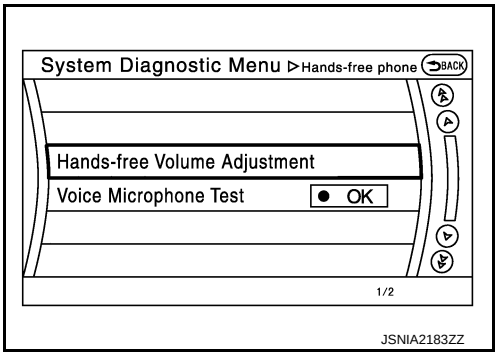


Items	Status (Current)	Counter (Past)
C Tx(ITM–PrimarySW)	OK / ???	OK / 0 – 39
C Rx(PrimarySW–ITM)	OK / ???	OK / 0 – 39
C Rx(Amp–ITM)	OK / ???	OK / 0 – 39
C Rx(Amp–Audio)	OK / ???	OK / 0 – 39
C Rx(AVM–ITM)	OK / ???	OK / 0 – 39
C Rx(Disp.3–Video Dist)	OK / ??? / –	OK / 0 – 39
C Rx(Video Dist–ITM)	OK / ???	OK / 0 – 39
C Rx(R.RomoteCont–ITM)	OK / ???	OK / 0 – 39

NOTE:
“???” indicates UNKWN

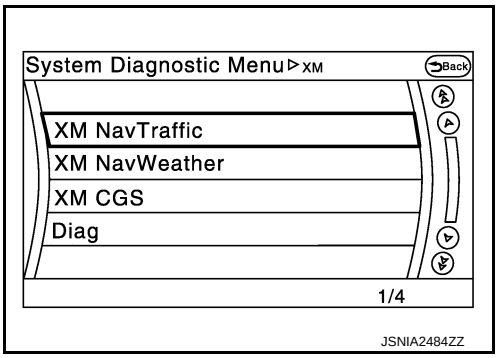
Hands-Free Phone

The hands-free phone reception volume adjustment and microphone and speaker test functions are also available.



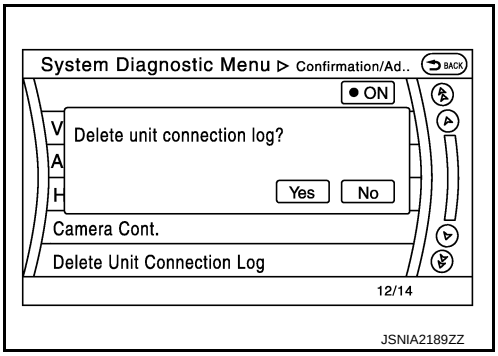
XM

- Change Channel
  - Any necessary channels required to receive traffic information from the satellite radio system can be set.
- Change Application ID
  - Any application ID'-s required to receive traffic information from the satellite radio system can be set.



Delete Unit Connection Log

Deletes any unit connection records and error records from the AV control unit memory. (Clear the records of the unit that has been removed.)

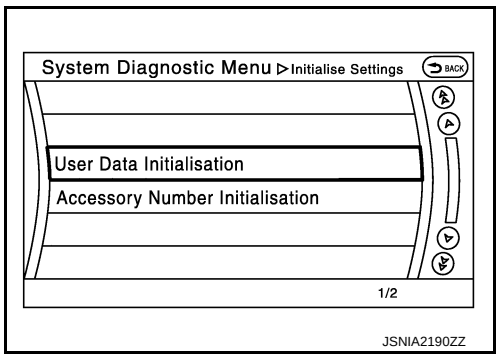


Initialize Settings

"User Data Initialization" and "Accessory Number Initialization" are possible.

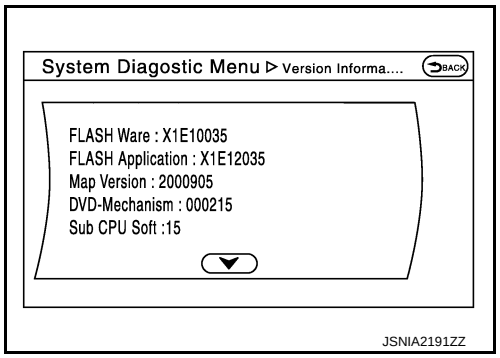
CAUTION:

- **Never perform Accessory Number Initialization except when configuration is unsuccessful.**
- **Accessory Number Initialization requires configuration. For details, refer to AV-139, "CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Special Repair Requirement".**



Version Information

Version information of the AV control unit is displayed.



CONSULT Function

INFOID:0000000009009815

APPLICATION ITEMS

CONSULT performs the following functions via the communication with the AV control unit.

Diagnosis mode	Description
Ecu Identification	The part number of AV control unit can be checked.
Self Diagnostic Result	Performs a diagnosis on the AV control unit and a connection diagnosis for the communication circuit of the Multi AV system, and displays the current and past malfunctions collectively.
Data Monitor	The diagnosis of vehicle signal that is input to the AV control unit can be performed.
Work Support	Steering angle sensor can be adjusted.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing AV control unit.

AV Communication

When "AV communication" of "CAN Diag Support Monitor" is selected, the following function will be performed.

AV communication	AV&NAVI C/U	Displays the communication status from AV control unit to each unit as well as the error counter.
	AUDIO	Displays the AV control unit communication status and the error counter.

ECU IDENTIFICATION

The part number of AV control unit is displayed.

SELF DIAGNOSIS RESULT

Refer to AV-69, "DTC Index".

- In CONSULT self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates "CRNT". The past malfunction indicates "PAST".
- The timing is displayed as "0" if any of the error codes [U1000], [U1010], [U1300] and [U1310] is detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

ALL SIGNALS

- Displays the status of the following vehicle signals inputted into the AV control unit.
- 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	Vehicle speed >= 8 km/h (5 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed < 8 km/h (5 MPH)	
PKB SIG	On	Parking brake is applied.	
	Off	Parking brake is released.	
ILLUM SIG	On	Block the light from the auto light optical sensor when the lighting switch is 1st or 2nd.	—
	Off	Either of the following conditions. • Lighting switch is OFF • Expose the auto light optical sensor to light when the lighting switch is 1st or 2nd.	
IGN SIG	On	Ignition switch is ON	
	Off	Ignition switch is in ACC position	
REV SIG	On	Selector lever is in R position	Changes in indication may be delayed. This is normal.
	Off	Selector lever is in any position other than R	
SIDE VIEW SW	Off	—	This item is displayed, but cannot be monitored.
ROOM LAMP	Off	—	This item is displayed, but cannot be monitored.

SELECTION FROM MENU

Allows the technician to select which vehicle signals should be displayed and displays the status of the selected vehicle signals.

Item to be selected	Description
VHCL SPD SIG	The same as when “ALL SIGNALS” is selected.
PKB SIG	
ILLUM SIG	
IGN SIG	
REV SIG	
SIDE VIEW SW	
ROOM LAMP	

WORK SUPPORT

Adjusts the neutral position of the steering angle sensor.

CAUTION:

For vehicles with VDC, adjust the steering angle sensor neutral position on the ABS actuator control unit side.

Item	Description
ST ANGLE SENSOR ADJUSTMENT	Adjusts the neutral position of the steering angle sensor.

CONFIGURATION

Configuration includes functions as follows.

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in AV control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the AV control unit.
Manual Configuration		Allows the writing of the vehicle specification into the AV control unit by hand.

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

CONSULT Function

INFOID:0000000009009816

CONSULT FUNCTIONS

CONSULT performs the following functions via the communication with the around view monitor control unit.

Diagnosis mode	Description
ECU Identification	Around view monitor control unit part number, software version, and hardware version can be identified.
Self Diagnostic Results	Around view monitor control unit and AV communication circuit connection diagnosis is performed. Current and previous malfunctions are displayed collectively.
Data Monitor	Diagnosis of vehicle signal that is received by around view monitor control unit can be performed.
Work Support	• Calibration and initialization of each camera can be performed. • Fine tuning of Birds-Eye view can be performed. • Target line calibration of rear wide view can be performed. • Display of predicted course line can be switched to ON/OFF. • Language of warning message can be selected. • Neutral position adjustment of steering angle sensor can be performed. • Camera screen activation enhancing display can be switched to ON/OFF. • Calibration of turning radius display can be performed. • Setting change can be performed depending on the vehicle specification with/without door mirror automatic retracting function. • “SONAR OFF” display can be switched to ON/OFF. • Camera zoom ratio can be changed and used for fine tuning.
Configuration	• The vehicle specification that is written in around view monitor control unit can be displayed or stored. • The vehicle specification can be written when around view monitor control unit is replaced.

ECU IDENTIFICATION

Around view monitor control unit part number, software version, and hardware version can be identified.

SELF DIAGNOSIS RESULT

Refer to AV-93, "DTC Index".

- In CONSULT self-diagnosis, self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates “CRNT”. The past malfunction indicates “PAST”.
- The timing is displayed as “0” if any of the error codes [U1000], [U1010], [U1300] and [U1310] is detected. The counter increases by 1 if the condition is normal at the next ignition switch ON cycle.

Freeze Frame Data (FFD)

The following vehicle status is recorded when DTC is detected and is displayed on CONSULT.

Item name	Display content
IGN counter (0 to 39)	Numerical value is displayed indicating the number of times that ignition switch is turned ON after the DTC is detected. • When “0” is displayed, it indicates that the system is presently malfunctioning. • When any numerical number other than “0” is displayed, it indicates that system malfunction in the past is detected, but the system is presently normal. **NOTE:** Each time when ignition switch turns OFF→ON, numerical number increases from 1→2→3...38→39. When number of times exceeds 39, numeric display does not increase and 39 is displayed until self-diagnosis is erased.

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

- Displays the status of the following vehicle signals inputted into the around view monitor control unit.
- For each signal, actual signal can be compared with the condition recognized on the system.

Display Item	Remarks
ST ANGLE SENSOR SIGNAL [ON/OFF]	Receiving status of steering angle signal received from steering angle sensor is switched to ON/OFF.
REVERSE SIGNAL [ON/OFF]	Receiving status of reverse signal received from AV control unit is displayed by ON/OFF.
VEHICLE SPEED SIGNAL [ON/OFF]	Receiving status of vehicle speed signal received from ABS actuator control unit is displayed by ON/OFF.
CAMERA SWITCH SIGNAL [ON/OFF]	Receiving status of camera switch signal received from AV control unit is displayed by ON/OFF.
CAMERA OFF SIGNAL [ON/OFF]	Receiving status of camera OFF signal received from AV control unit is displayed by ON/OFF.
ST ANGLE SENSOR TYPE [Absolute]	Input type of steering angle sensor is displayed. **NOTE:** For this vehicle, “Absolute” is displayed.
STEERING GEAR RATIO TYPE [TYPE1]	Type of steering gear ratio is displayed. **NOTE:** For this vehicle, “TYPE 1” is displayed.
STEERING POSITION [LHD]	Steering position is displayed. **NOTE:** For this vehicle, “LHD” is displayed.
REAR CAMERA IMAGE SIGNAL [OK/NG]	Input status of rear view camera image signal is displayed by OK/NG in real time.
R-CAMERA COMM STATUS [OK/NG]	Communication status with rear camera is displayed by OK/NG in real time.
R-CAMERA COMM LINE [OK/NG]	Status of communication line with rear camera is displayed by OK/NG in real time.
F-CAMERA IMAGE SIGNAL [OK/NG]	Input status of front view camera image signal is displayed by OK/NG in real time.
F-CAMERA COMM STATUS [OK/NG]	Communication status with front camera is displayed by OK/NG in real time.
F-CAMERA COMM LINE [OK/NG]	Status of communication line with front camera is displayed by OK/NG in real time.
DR-SIDE CAMERA IMAGE SIG [OK/NG]	Input status of side camera LH image signal is displayed by OK/NG in real time.
DR CAMERA COMM STATUS [OK/NG]	Communication status with side camera LH is displayed by OK/NG in real time.
DR-SIDE CAMERA COMM LINE [OK/NG]	Status of communication line with side camera LH is displayed by OK/NG in real time.
PA-SIDE CAMERA IMAGE SIG [OK/NG]	Input status of side camera RH image signal is displayed by OK/NG in real time.
PA CAMERA COMM STATUS [OK/NG]	Communication status with side camera RH is displayed by OK/NG in real time.
PA-SIDE CAMERA COMM LINE [OK/NG]	Status of communication line with side camera RH is displayed by OK/NG in real time.
ACC [OK/NG]	Input status of ACC signal input to around view monitor control unit is displayed by ON/OFF in real time.
FOLDING MOTOR VOLT 1 [ON/OFF]	Input status of retractable power door mirror LH operation signal input to around view monitor control unit is displayed by ON/OFF in real time.
FOLDING MOTOR VOLT 2 [ON/OFF]	Input status of retractable power door mirror LH operation signal input to around view monitor control unit is displayed by ON/OFF in real time.

WORK SUPPORT

Work support items	Description
CALIBRATING CAMERA IMAGE (FRONT CAMERA)	Performs the calibration of front camera. **NOTE:** Calibration of camera image caused by misalignment of the camera installation position is performed.
CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)	Performs the calibration of side camera RH. **NOTE:** Calibration of camera image caused by misalignment of the camera installation position is performed.
CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)	Performs the calibration of side camera LH. **NOTE:** Calibration of camera image caused by misalignment of the camera installation position is performed.
CALIBRATING CAMERA IMAGE (REAR CAMERA)	Performs the calibration of rear camera. **NOTE:** Calibration of camera image caused by misalignment of the camera installation position is performed.
INITIALIZE CAMERA IMAGE CALIBRATION	The calibration can be initialized to factory shipment condition. **NOTE:** Calibration of camera image caused by misalignment of the camera installation position is performed.
FINE TUNING OF BIRDS-EYE VIEW	The confirmation and adjustment of the difference between each camera can be performed. The fine adjustment function of camera calibration can check and adjust the difference between each camera.
REAR WIDE-VIEW FIXED GUIDE LINE CORRECTION	The position of rear wide view guiding line can be changed.
SELECT LANGUAGE OF WARNING MESSAGE	Language of warning message shown during camera image display can be selected. [ENGLISH, SPANISH, FRENCH, DUTCH, GERMAN, ITALIAN, PORTUGAL, RUSSIAN, JAPANESE, CHINESE 1 (TRADITIONAL), CHINESE 2 (SIMPLIFIED), KOREAN]
PREDICTIVE COURSE LINE DISPLAY	ON/OFF setting of predictive course line can be performed.
STEERING ANGLE SENSOR ADJUSTMENT	Steering angle sensor neutral position can be adjusted and registered. **CAUTION:** **For vehicles with VDC, adjust the steering angle sensor neutral position on the ABS actuator control unit side. Refer to BRC-62, "Work Procedure".**
NON-VIEWABLE AREA REMINDER	ON/OFF setting of the non-viewable area reminder can be performed.
TURNING RADIUS CORRECTION	Item is displayed, but it is not used.
CHANGE PARTS EQUIPPED WITH DOOR MIRROR AUTO FOLD FUNCTION SETTING	Item is displayed, but it is not used.
SONAR OFF POP-UP DISPLAY SETTING CHANGE	“SONAR OFF” display can be switched to ON/OFF.
ZOOM FUNCTION	Zoom ratio of each camera can be changed. **NOTE:** When the position cannot be aligned using “FINE TUNING OF BIRDS-EYE VIEW”, the adjustment may be performed using this “ZOOM FUNCTION”.

CONFIGURATION

Configuration includes functions as follows.

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in AV control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the AV control unit.
Manual Configuration		Allows the writing of the vehicle specification into the AV control unit by hand.

DIAGNOSIS SYSTEM (SONAR CONTROL UNIT)

CONSULT Function

INFOID:0000000009009817

CONSULT FUNCTIONS

CONSULT performs the following functions via communication with sonar control unit.

Diagnosis mode	Description
Ecu Identification	Displays the sonar control unit part number.
Self Diagnostic Result	The malfunctions recorded in the memory of sonar control unit are displayed.
Data Monitor	Sonar control unit input/output signal data is displayed in real time.
Active Test	Performs operation check of sonar buzzer.
Work Support	Performs volume adjustment of sonar buzzer.
Configuration	• The vehicle specification that is written in sonar control unit can be displayed and stored. • The vehicle specification can be written when sonar control unit is replaced.

ECU IDENTIFICATION INFORMATION

Displays sonar control unit part number.

SELF DIAGNOSIS RESULT

Refer to AV-99, "DTC Index".

Freeze Frame Data (FFD)

The following vehicle status is recorded when DTC is detected and is displayed on CONSULT.

Item name	Display content
ODO/TRIP METER (km)	Total driving distance (odometer value) upon DTC detection is displayed.
IGN counter (0 ～ 39)	Numerical value is displayed indicating the number of times that ignition switch is turned ON after the DTC is detected. • When “0”is displayed, it indicates that the system is presently malfunctioning. • When any numerical number other than “0” is displayed, it indicates that system malfunction in the past is detected, but the system is presently normal. **NOTE:** Each time when ignition switch turns OFF→ON, numerical number increases from 1→2→3...38→39. When number of times exceeds 39, numeric display does not increase and 39 is displayed until self-diagnosis is erased.

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitor item	Description
VEHICLE SPEED [km/h]	Vehicle speed that is calculated by vehicle speed signal received from the ABS actuator control unit is displayed.
SONAR C/U POWER SUPPLY [V]	Ignition power supply voltage received by sonar control unit is displayed.
SENSOR VOLTAGE [V]	Drive voltage transmitted to each corner/center sensor is displayed.
DETECTION MODE [Mode 1/Mode 2]	**NOTE:** It is displayed but not used.
P N RANGE [ON/OFF]	Status of P or N position received from TCM is displayed.
TRAILER CONNECT [Not connected]	**NOTE:** It is displayed but not used.

Monitor item	Description
LED [OFF]	**NOTE:** It is displayed but not used.
SONAR TEMPORARY OFF [OFF]	**NOTE:** It is displayed but not used.
SONAR PERMANENT OFF [OFF]	**NOTE:** It is displayed but not used.
SW OPRT AFTR IGN ON [OFF]	**NOTE:** It is displayed but not used.
REVERSE RANGE [ON/OFF]	Status of R position received from TCM is displayed.
SHRT DST FRM RR SENS [cm]	The closest approach detection distance detected by rear corner/center sensor is displayed.
SHRT DST FRM FR SENS [cm]	The closest approach detection distance detected by front corner/center sensor is displayed.
COR[RL] [cm]	Distance according to oscillation from rear corner sensor LH and detection by rear corner sensor LH is displayed.
COR[FL] [cm]	Distance according to oscillation from front corner sensor LH and detection by front corner sensor LH is displayed.
COR[RR] [cm]	Distance according to oscillation from rear corner sensor RH and detection by rear corner sensor RH is displayed.
COR[FR] [cm]	Distance according to oscillation from front corner sensor RH and detection by front corner sensor RH is displayed.
CEN[RL]/CEN[R] [cm]	Distance according to oscillation from rear center sensor LH and detection by rear center sensor LH is displayed.
CEN[FL]/CEN[F] [cm]	Distance according to oscillation from front center sensor LH and detection by front center sensor LH is displayed.
CEN[RR] [cm]	Distance according to oscillation from rear center sensor RH and detection by rear center sensor RH is displayed.
CEN[FR] [cm]	Distance according to oscillation from front center sensor RH and detection by front center sensor RH is displayed.
RVRB TIME COR[RL] [ms]	Reverberating time of rear corner sensor LH is displayed. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME COR[RR] [ms]	Reverberating time of rear corner sensor RH is displayed. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME COR[FL] [ms]	Reverberating time of front corner sensor LH is displayed. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME COR[FR] [ms]	Reverberating time of front corner sensor RH is displayed. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME CEN[RL] [ms]	Reverberating time of rear center sensor LH is displayed. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME CEN[RR] [ms]	Reverberating time of rear center sensor RH is displayed. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.

Monitor item	Description
RVRB TIME CEN[FL] [ms]	Reverberating time of front center sensor LH is displayed. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.
RVRB TIME CEN[FR] [ms]	Reverberating time of front center sensor RH is displayed. **NOTE:** Reverberating time is a period of time while sensor vibrates by super sonic waves after oscillating super sonic waves.

ACTIVE TEST

Test item	Function
REAR BUZZER	Sonar buzzer (rear) can be operated.
FRONT BUZZER	Sonar buzzer (front) can be operated.
LED	**NOTE:** Displayed, but not used

Work Support

Work support items	Description
VOLUME SETTING	Volume of sonar buzzer can be adjusted in 3 stages.
TRAILER HITCH DETECTION RANGE ADJUSTMENT	**NOTE:** Displayed, but not used

CONFIGURATION

Configuration includes functions as follows.

Function		Description
Read/Write Configuration	Before Replace ECU	Allows the reading of vehicle specification written in sonar control unit to store the specification in CONSULT.
	After Replace ECU	Allows the writing of the vehicle information stored in CONSULT into the sonar control unit.
Manual Configuration		Allows the writing of the vehicle specification into the sonar control unit by hand.

DIAGNOSIS SYSTEM (HEADREST DISPLAY UNIT)

Description

INFOID:0000000009009818

Self-diagnosis of headrest display unit can be performed by operating rear seat remote controller.

On Board Diagnosis Function

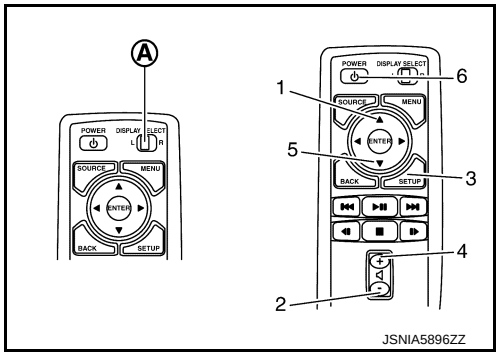
INFOID:0000000009009819

Self-diagnosis mode can check the following items.

Diagnosis item	Display	Description
Display Location	Left/Right/Un-known	Installation location of headrest display unit is displayed. **NOTE:** If displayed location is different from the actual location or shown as “unknown”, check location recognition signal circuit.
Software Ver.	*****	Software version of headrest display unit is displayed.
Hardware Ver.	*****	Hardware version of headrest display unit is displayed.
Seat Position	OK	Not used for this vehicle.
Unit ID	*****	ID of headrest display unit is displayed.

METHOD OF STARTING

1. Turn ignition switch to the ON position.
2. Turn the headrest display unit OFF.
3. Select “L” and press each switch of rear seat remote controller in the order shown below (within 20 seconds after ignition switch is turned ON).

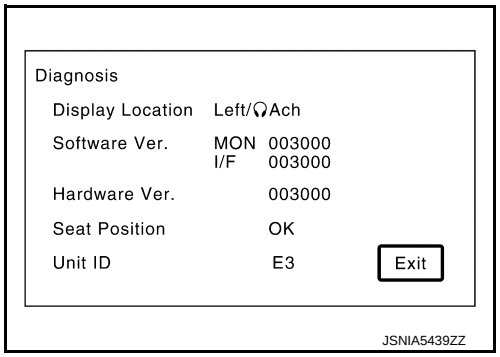


Ⓐ : **L position**

1. ▲
2. – **(VOL DOWN)**
3. **SETUP**
4. + **(VOL UP)**
5. ▼
6. **POWER**

NOTE:
Perform the operation of rear seat remote controller for headrest display unit of each side.

4. When the rear seat remote operation is performed as shown on procedure 3, self-diagnosis screen is displayed.
NOTE:
Self-diagnosis mode is canceled when pressing the enter switch of rear seat remote controller.



ECU DIAGNOSIS INFORMATION

AV CONTROL UNIT

Reference Value

INFOID:0000000009009820

VALUES ON THE DIAGNOSIS TOOL

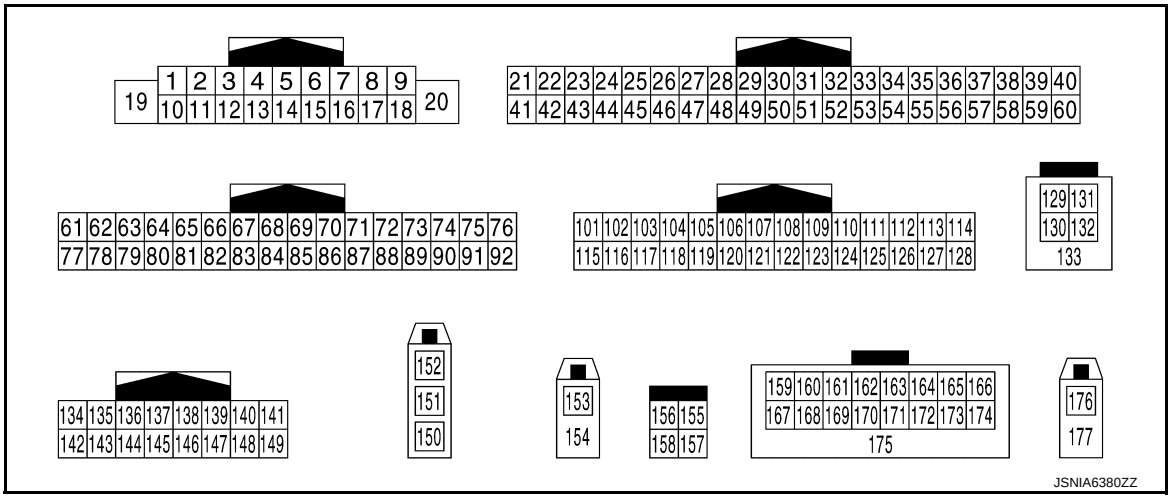
NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

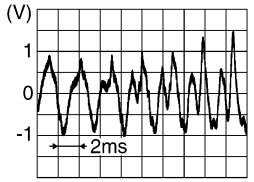
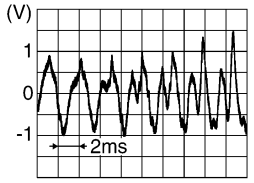
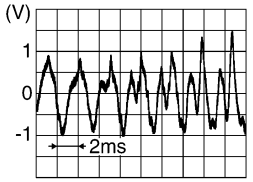
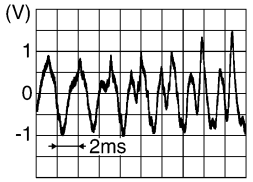
CONSULT MONITOR ITEM

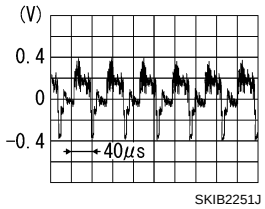
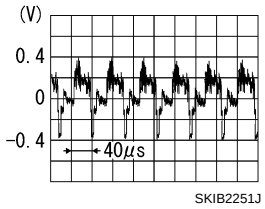
Monitor Item	Condition		Value/Status
VHCL SPD SIG	Ignition switch ON	Vehicle speed >= 8 km/h (5 MPH)	On
		Vehicle speed < 8 km/h (5 MPH)	Off
PKB SIG	Ignition switch ON	Parking brake is applied.	On
		Parking brake is released.	Off
ILLUM SIG	Ignition switch ON	Block the light from the auto light optical sensor when the lighting switch is 1st or 2nd.	On
		Expose the auto light optical sensor to light when the lighting switch is OFF, 1st or 2nd.	Off
IGN SIG	Ignition switch ON	—	On
	Ignition switch ACC	—	Off
REV SIG	Ignition switch ON	Selector lever is in the R position	On
		Selector lever in any position other than R	Off
SIDE VIEW SW	Ignition switch ON	This item is displayed, but cannot be monitored.	Off
ROOM LAMP	Ignition switch ON	This item is displayed, but cannot be monitored.	Off

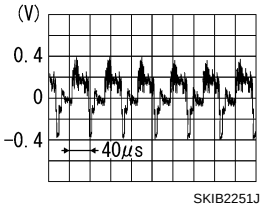
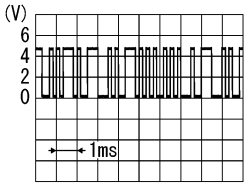
TERMINAL LAYOUT

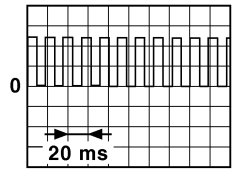
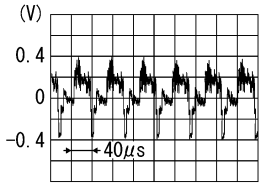
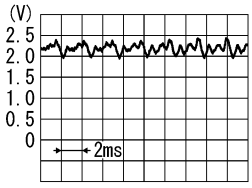
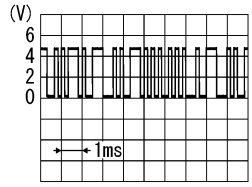
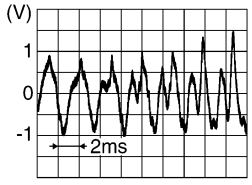


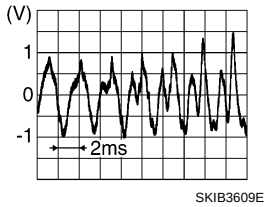
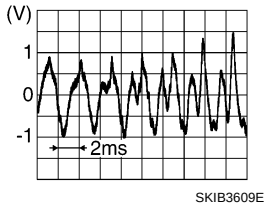
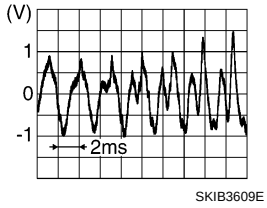
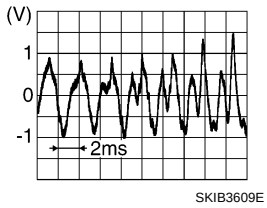
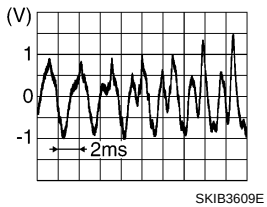
PHYSICAL VALUES

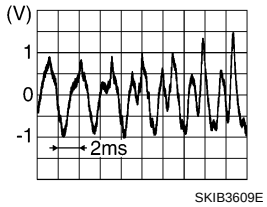
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (W/B)	Ground	BOSE amp. ON signal	Output	Ignition switch ACC	—	12.0 V
2 (L)	3 (P)	Sound signal front LH	Output	Ignition switch ON	Sound output	 SKIB3609E
4 (V)	5 (LG)	Sound signal rear LH	Output	Ignition switch ON	Sound output	 SKIB3609E
6 (Y/G)	15 (B)	Steering switch signal A	Input	Ignition switch ON	Keep pressing SOURCE switch.	0 V
					Keep pressing MENU UP switch.	1.0 V
					Keep pressing MENU DOWN switch.	2.0 V
					Keep pressing switch	3.0 V
					Keep pressing ENTER switch.	4.0 V
					Except for above.	5.0 V
7 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
10	—	Shield	—	—	—	—
11 (Y/L)	12 (Y/G)	Sound signal front RH	Output	Ignition switch ON	Sound output	 SKIB3609E
13 (O)	14 (W)	Sound signal rear RH	Output	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
16 (Y/L)	15 (B)	Steering switch signal B	Input	Ignition switch ON	Keep pressing VOL DOWN switch.	0 V
					Keep pressing VOL UP switch.	1.0 V
					Keep pressing switch.	2.0 V
					Keep pressing switch.	3.0 V
					Except for above.	5.0 V
19 (Y/R)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
20 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
26 (LG)	Ground	AUX image signal	Input	Ignition switch ON	At front AUX image is displayed.	 SKIB2251J
29 (W/B)	Ground	Disk eject signal	Input	Ignition switch ON	Pressing the eject switch.	0 V
					Except for above.	5.0 V
30 (R/W)	Ground	Mode change signal	Output	Ignition switch ON	Driver's Audio Stage ON	0 V
					Driver's Audio Stage OFF	8.5 V
33 (L)	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
34 (P)	Ground	Composite image signal	Output	Ignition switch ON	When DVD, USB or front AUX image is displayed on headrest display unit LH or RH.	 SKIB2251J
46 (V)	Ground	AUX image signal ground	—	Ignition switch ON	—	0 V
47	—	Shield	—	—	—	—
49 (R/W)	Ground	Switch ground	—	Ignition switch ON	—	0 V
53	—	Shield	—	—	—	—
65 (W)	Ground	Parking brake signal	Input	Ignition switch ON	Parking brake is applied.	0 V
					Parking brake is released.	4.5 V
67 (W)	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
68 (R)	Ground	Composite image signal	Output	Ignition switch ON	At DVD image is displayed.	 SKIB2251J
69 (O)	Ground	Intelligent key identification signal	Input	Ignition switch ACC	At door unlock Key 1.	5.0 V
					At door unlock Key 2.	0 V
70 (BR)	—	—	—	—	—	—
72 (Y)*1 (Y/G)*2	Ground	Microphone VCC	Output	Ignition switch ON	—	5.0 V
73 (Y/G)	Ground	Communication signal (CONT→DISP)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
74 (P)	—	CAN–L	Input/ Output	—	—	—
75 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
76 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
79 (L/O)	Ground	Dimmer signal	Input	Ignition switch ON	Either of the following conditions • Lighting switch is OFF • Lighting switch is 1st or 2nd, and the area around the vehicle is bright (shine a light on the optical sensor)	0 V
					Lighting switch is 1st or 2nd, and the area around the vehicle is dark (block the light from the optical sensor)	12.0 V
80 (GR/L)	Ground	Ignition signal	Input	Ignition switch ON	—	Battery voltage
81 (R/Y)	Ground	Reverse signal	Input	Ignition switch ON	Selector lever is in R position.	12.0 V
					Selector lever is in other than R position.	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
82 (BR/W)	Ground	Vehicle speed signal (8-pulse)	Input	Ignition switch ON	When vehicle speed is approx. 40 km/h (25 MPH)	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB
83	—	Shield	—	—	—	—
84 (W/B)	Ground	Composite image synchronizing signal	Output	Ignition switch ON	At DVD image is displayed.	 SKIB2251J
87 (BR)*1 (Y/L)*2	71	Microphone signal	Input	Ignition switch ON	Give a voice.	 PKIB5037J
88	—	Shield	—	—	—	—
89 (Y/L)	Ground	Communication signal (DISP→CONT)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
90 (L)	—	CAN–H	Input/ Output	—	—	—
91 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
92 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
104 (W)	119 (W/L)	AUX sound signal LH	Input	Ignition switch ON	When front AUX mode is selected.	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
106 (W)	120 (R)	Sound signal LH	Output	Ignition switch ON	When DVD or USB mode is selected on headrest display unit LH or RH.	 SKIB3609E
107 (B)	121 (G)	Sound signal RH	Output	Ignition switch ON	When DVD or USB mode is selected on headrest display unit LH or RH.	 SKIB3609E
117	—	Shield	—	—	—	—
118 (O)	119 (W/L)	AUX sound signal RH	Input	Ignition switch ON	When front AUX mode is selected.	 SKIB3609E
122	—	Shield	—	—	—	—
129 (G)	—	USB ground	—	—	—	—
130 (R)	—	USB D− signal	—	—	—	—
131 (W)	—	V BUS signal	—	—	—	—
132 (L)	—	USB D+ signal	—	—	—	—
133	—	Shield	—	—	—	—
135 (G)	136 (V)	Voice guidance signal	Output	Ignition switch ON	When inputting voice guidance.	 SKIB3609E
137 (R)	145 (W)	Sound signal woofer	Output	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
138 (L)	146 (P)	Sound signal center speaker	Input	Ignition switch ON	Sound output	 SKIB3609E
139	—	Shield	—	—	—	—
144	—	Shield	—	—	—	—
150	—	FM sub	Input	—	—	—
151	—	AM-FM main	Input	—	—	—
152	Ground	Antenna amp. ON signal	Input	Ignition switch ON	—	12.0 V
153	Ground	GPS antenna signal	Input	Ignition switch ON	Not connected GPS antenna connector.	5.0 V
154	—	Shield	—	—	—	—
157	Ground	RGB digital image signal (–)	Output	Ignition switch ON	Not connected connector.	1.3 V
158	Ground	RGB digital image signal (+)	Output	Ignition switch ON	Not connected connector.	1.3 V
159 (SB)	—	U-voice signal	—	—	—	—
160 (GR)	—	Voice ground	—	—	—	—
164 (R)	—	Manufacture specific signal	—	—	—	—
165 (L)	—	USB V BUS signal	—	—	—	—
166 (Y)	—	USB D-signal	—	—	—	—
167 (O)	—	D-voice signal	—	—	—	—
173 (B)	—	USB ground	—	—	—	—
174 (LG)	—	USB D+signal	—	—	—	—
175	—	Shield	—	—	—	—
176	Ground	Satellite radio antenna signal	Input	Ignition switch ON	Not connected satellite antenna connector.	5.0 V

*1: With telematics system
*2: Without telematics system

Fail-Safe

INFOID:0000000009009821

When the ambiance temperature becomes extremely low or extremely high, AV control unit displays the message and limits the AV control unit function.

FAIL-SAFE CONDITIONS

When the ambiance temperature is –20°C (–4°F) or lower, or when it is 70°C (158°F) or higher

Display

The messages displayed on fail-safe conditions are as shown below:

Fail-safe mode	Display (display of the fail-safe condition)
When HDD temperature is low	HDD system is experiencing problems due to extreme low temperature. Normal operation will resume when temperature rises.
When HDD temperature is high	HDD system is experiencing problems due to extreme high temperature. Normal operation will resume when temperature drops.

DESCRIPTION OF CONTROLS

Function		When Fail-safe Function is activated
Air conditioner	Operation	Only multifunction switch (preset switch) can be operated.
	Display	• LED of multifunction switch (preset switch) illuminates. • Aimed temperature, blow angle, and flow rate are displayed in simplified mode.
Audio	Operation	Only ON/OFF and volume control operations by multifunction switch (preset switch) are possible.
	Display	No display (“Fail-safe mode” is displayed)
Camera	Operation	Image tone cannot be controlled.
	Display	Cannot be superimposed. (warning display, tone control display)
Hands-free phone	Operation	Cannot be operated.
Navigation	Operation	Cannot be operated.
Self diagnosis		The display in simplified mode of fail-safe condition
CONSULT diagnosis		Cannot be operated.

Ability Operation Mode

There is an ability operation mode for Fail-safes due to low or high ambiance temperature.

If HDD data can be read, fail-safe is shown, then normal displays are displayed only for functions which can be operated.

RELEASE CONDITIONS OF FAIL-SAFE

Fail-safe is released on following conditions and normal mode is restored.

When The Temperature of HDD Is Low or High

If the ambient temperature becomes out of fail-safe condition range, normal mode is restored.

DTC Index

INFOID:0000000009009822

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT [U1000]	AV-148, "AV CONTROL UNIT : DTC Logic"
U1010	CONTROL UNIT (CAN) [1010]	AV-150, "AV CONTROL UNIT : DTC Logic"
U1200	Cont Unit [U1200]	AV-159, "DTC Logic"
U1201	GYRO NO CONN [U1201]	AV-160, "DTC Logic"
U1202	G-SENSOR NO CONN [U1202]	AV-161, "DTC Logic"
U1204	GPS COMM [U1204]	AV-162, "Diagnosis Procedure"
U1205	GPS ROM [U1205]	AV-163, "Diagnosis Procedure"
U1206	GPS RAM [U1206]	AV-164, "Diagnosis Procedure"

DTC	Display item	Refer to
U1207	GPS RTC [U1207]	AV-165, "Diagnosis Procedure"
U1216	CAN CONT [U1216]	AV-166, "DTC Logic"
U1217	BLUETOOTH MODULE [U1217]	AV-167, "DTC Logic"
U1218	HDD CONN [U1218]	AV-168, "Diagnosis Procedure"
U1219	HDD READ [U1219]	AV-169, "Diagnosis Procedure"
U121A	HDD WRITE [U121A]	AV-170, "Diagnosis Procedure"
U121B	HDD COMM [U121B]	AV-171, "Diagnosis Procedure"
U121C	HDD ACCESS [U121C]	AV-172, "Diagnosis Procedure"
U121D	DSP CONN [U121D]	AV-173, "Diagnosis Procedure"
U121E	DSP COMM [U121E]	AV-174, "Diagnosis Procedure"
U1225	USB CONTROLLER [U1225]	AV-175, "DTC Logic"
U1227	DVD COMM [U1227]	AV-176, "Diagnosis Procedure"
U1228	SUB CPU CONN [U1228]	AV-177, "DTC Logic"
U1229	iPod CERTIFICATION [U1229]	AV-178, "DTC Logic"
U122A	CONFIG UNFINISH [U122A]	AV-179, "Diagnosis Procedure"
U122E	Built-in AUDIO CONN [U122E]	AV-180, "DTC Logic"
U1231	AMP TEMP [U1231]	AV-181, "DTC Logic"
U1232	ST ANGLE SEN CALIB [1232]	AV-182, "AV CONTROL UNIT : DTC Logic"
U1243	FRONT DISP CONN [U1243]	AV-183, "Diagnosis Procedure"
U1244	GPS ANTENNA CONN [U1244]	AV-185, "Diagnosis Procedure"
U1258	XM ANTENNA CONN [U1258]	AV-186, "Diagnosis Procedure"
U125A	3RD DISP CONN [U125A]	AV-187, "Diagnosis Procedure"
U1263	USB OVERCURRENT [U1263]	AV-188, "Diagnosis Procedure"
U1264	ANTENNA AMP TERMINAL [OPEN or SHORT] [U1264]	AV-189, "Diagnosis Procedure"
U1265	AMP ON TERMINAL [GND-SHORT or VB-SHORT] [U1265]	AV-190, "Diagnosis Procedure"
U1601 U1603	FL-DOOR WOOFER/TWEETER [OPEN, SHORT, GND-SHORT or VB-SHOR]	AV-201, "Diagnosis Procedure"
U1609 U160B	FR-DOOR WOOFER/TWEETER [OPEN, SHORT, GND-SHORT or VB-SHOR]	AV-201, "Diagnosis Procedure"
U1627	F-INST L-TWEETER [OPEN, SHORT, GND-SHORT or VB-SHOR]	AV-202, "Diagnosis Procedure"
U162A	F-INST C-SQAWK [OPEN, SHORT, GND-SHORT or VB-SHOR]	AV-203, "Diagnosis Procedure"
U162F	F-INST R-TWEETER [OPEN, SHORT, GND-SHORT or VB-SHOR]	AV-202, "Diagnosis Procedure"
U1684 U1687	2L-DOOR SPEAKER/TWEETER [OPEN, SHORT, GND-SHORT or VB-SHOR]	AV-204, "Diagnosis Procedure"
U168C U168F	2R-DOOR SPEAKER/TWEETER [OPEN, SHORT, GND-SHORT or VB-SHOR]	AV-204, "Diagnosis Procedure"
U175D	R-LUGGAGE L-WOOFER [OPEN, SHORT, GND-SHORT or VB-SHOR]	AV-205, "Diagnosis Procedure"
U176A	R-ROOF L-SQAWK [OPEN, SHORT, GND-SHORT or VB-SHOR]	AV-206, "Diagnosis Procedure"
U1772	R-ROOF R-SQAWK [OPEN, SHORT, GND-SHORT or VB-SHOR]	AV-206, "Diagnosis Procedure"
U1310	CONTROL UNIT (AV) [U1310]	AV-200, "DTC Logic"

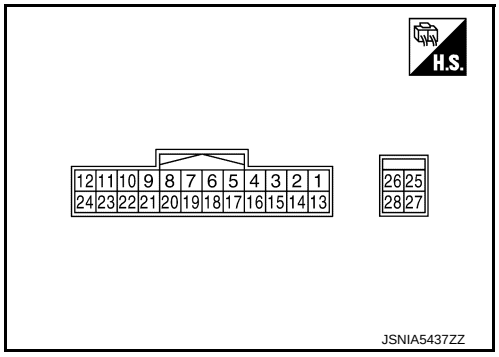
DTC	Display item	Refer to
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	AV-191, "Description"
U1300 U124E	• AV COMM CIRCUIT [U1300] • AMP CONN [U124E]	
U1300 U1246	• AV COMM CIRCUIT [U1300] • VIDEO DIST CONN [U1246]	
U1300 U125B	• AV COMM CIRCUIT [U1300] • AROUND CAMERA CONN [U125B]	
U1300 U125C	• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	
U1300 U1240 U125C U125B U1246	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • SONAR CONN [U125C] • AROUND CAMERA CONN [U125B] • VIDEO DIST CONN [U1246]	
U1300 U1240 U124E U125C U125B U1246	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • AMP CONN [U124E] • SONAR CONN [U125C] • AROUND CAMERA CONN [U125B] • VIDEO DIST CONN [U1246]	

FRONT DISPLAY UNIT

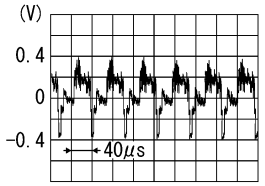
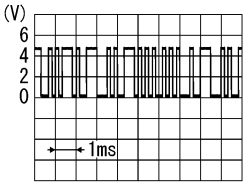
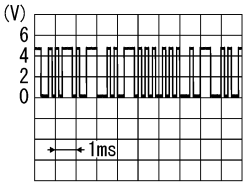
Reference Value

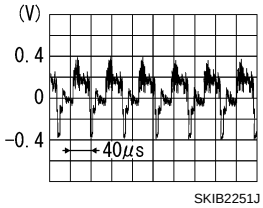
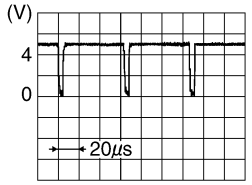
INFOID:0000000009009823

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
6	—	Shield	—	—	—	—
7	—	Shield	—	—	—	—
8 (W)	Ground	Camera image signal	Input	Ignition switch ON	At camera image is displayed.	 SKIB2251J
9 (Y/L)	Ground	Communication signal (DISP→CONT)	Output	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
10 (Y/G)	Ground	Communication signal (CONT→DISP)	Input	Ignition switch ON	When adjusting display brightness.	 PKIB5039J
11 (Y/R)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
12 (B)	Ground	Ground	—	Ignition switch ON	—	0 V

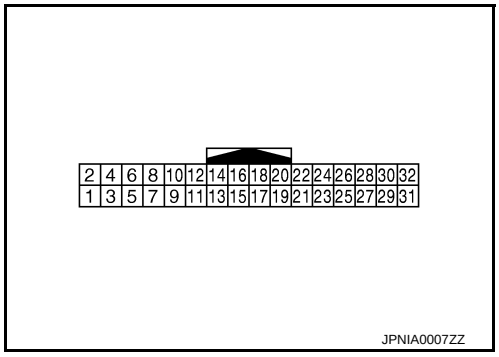
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
18 (R)	Ground	Composite image signal	Input	Ignition switch ON	At DVD image is displayed.	 SKIB2251J
19 (W)	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
20 (W/B)	Ground	Composite image synchro-nizing signal	Input	Ignition switch ON	—	 SKIB0825E
22	—	Shield	—	—	—	—
23 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
27	—	RGB digital image signal (–)	Input	—	—	—
28	—	RGB digital image signal (+)	Input	—	—	—

HEADREST DISPLAY UNIT

Reference Value

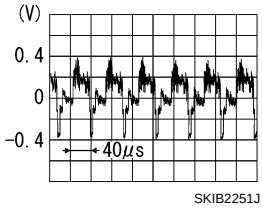
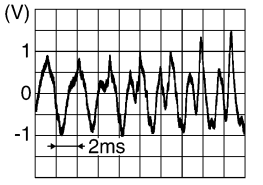
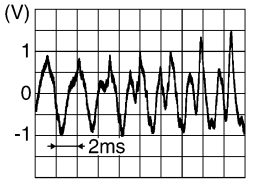
INFOID:0000000009009824

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (L)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (V)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
3 (GR)	Ground	Ground	—	Ignition switch ON	—	0 V
4 (L/R)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
9 (B/R)	Ground	Location recognition signal for headrest display unit RH	Input	Ignition switch ON	—	0 V
10 (L/B)	Ground	Location recognition signal for headrest display unit LH	Input	Ignition switch ON	—	0 V
11 (B)	—	AV communication signal (H)	Input/ Output	—	—	—
12 (G)	—	AV communication signal (H)	Input/ Output	—	—	—
13 (R)	—	AV communication signal (L)	Input/ Output	—	—	—
14 (W)	—	AV communication signal (L)	Input/ Output	—	—	—
15	—	Shield	—	—	—	—
18 (W/R)	Ground	ACC signal	Input	Ignition switch OFF	—	3.3 V
				Ignition switch ACC	—	0 V

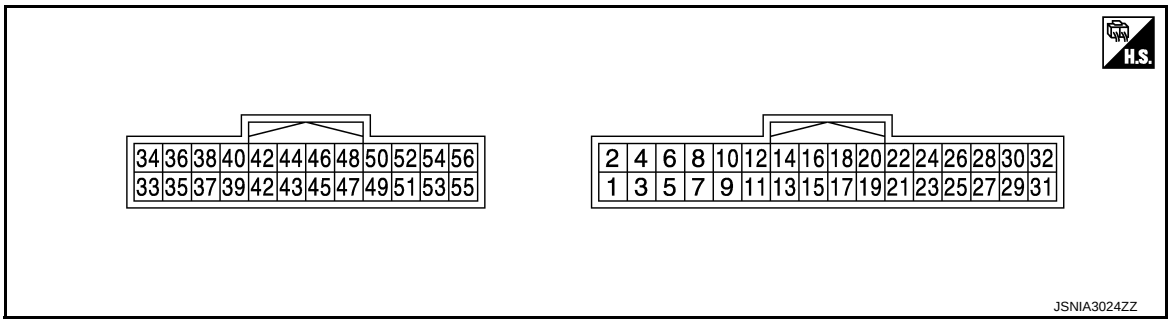
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
19 (L/Y)	Ground	Cont. ground	—	Ignition switch ON	—	0 V
20 (W/L)	Ground	Image switch signal	Output	Ignition switch ON	When DVD, USB or front AUX image is displayed on headrest display unit.	0.5 V
					When rear AUX image is displayed on headrest display unit.	4.5 V
23 (R/L)	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
24 (Y)	Ground	Composite image signal	Input	Ignition switch ON	When DVD, USB or front AUX image is displayed on headrest display unit.	 SKIB2251J
25	—	Shield	—	—	—	—
27 (R/W)	Ground	AV ground	—	Ignition switch ON	—	0 V
28	—	Shield	—	—	—	—
30 (P)	29 (BR)	Headphone sound signal RH	Input	Ignition switch ON	Headphone sound output.	 SKIB3609E
32 (SB)	31 (LG)	Headphone sound signal LH	Input	Ignition switch ON	Headphone sound output.	 SKIB3609E

VIDEO DISTRIBUTOR

Reference Value

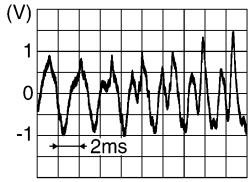
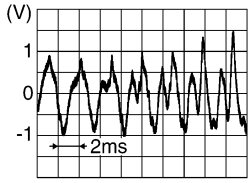
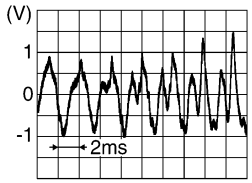
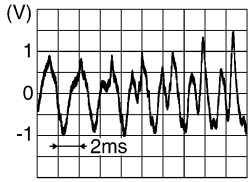
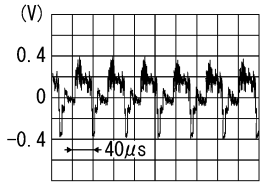
INFOID:0000000009009825

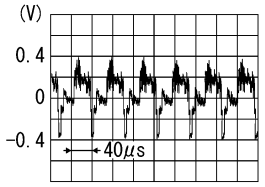
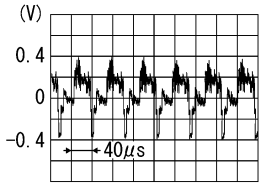
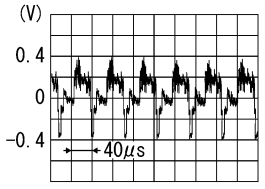
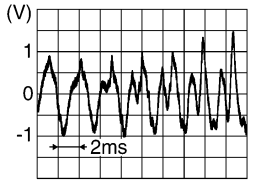
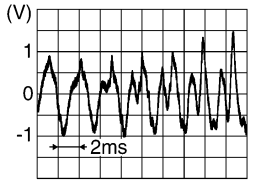
TERMINAL LAYOUT

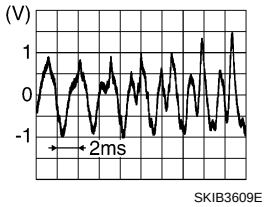
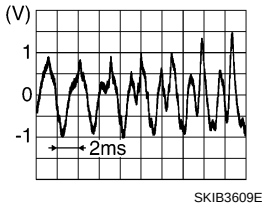


PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	—	Ground	—	Ignition switch ON	—	0 V
2 (Y/R)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
3 (B)	—	Ground	—	Ignition switch ON	—	0 V
4 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
5 (V/W)	Ground	Cont. ground for headrest display unit RH	—	Ignition switch ON	—	0 V
6 (L/W)	Ground	ACC signal for headrest display unit RH	Output	Ignition switch OFF	—	3.3 V
				Ignition switch ACC	—	0 V
7 (W/R)	Ground	Cont. ground for headrest display unit LH	—	Ignition switch ON	—	0 V
8 (GR/R)	Ground	ACC signal for headrest display unit LH	Output	Ignition switch OFF	—	3.3 V
				Ignition switch ACC	—	0 V
9 (O/B)	Ground	Image switch signal for headrest display unit RH	Input	Ignition switch ON	When DVD, USB or front AUX image is displayed on headrest display unit RH.	0.5 V
					When rear AUX image is displayed on headrest display unit RH.	4.5 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
10 (R/B)	Ground	Image switch signal for headrest display unit LH	Input	Ignition switch ON	When DVD, USB or front AUX image is displayed on headrest display unit LH.	0.5 V
					When rear AUX image is displayed on headrest display unit LH.	4.5 V
14 (B)	15 (G)	Headphone sound signal RH for headrest display unit RH	Output	Ignition switch ON	Output headphone sound from headrest display unit RH to headphone.	 SKIB3609E
16 (W)	17 (R)	Headphone sound signal LH for headrest display unit RH	Output	Ignition switch ON	Output headphone sound from headrest display unit RH to headphone.	 SKIB3609E
18 (P/L)	Ground	AV ground for headrest display unit RH	—	Ignition switch ON	—	0 V
19 (P)	Ground	AV ground for headrest display unit LH	—	Ignition switch ON	—	0 V
20 (B)	21 (G)	Headphone sound signal RH for headrest display unit LH	Output	Ignition switch ON	Output headphone sound from headrest display unit LH to headphone.	 SKIB3609E
22 (W)	23 (R)	Headphone sound signal LH for headrest display unit LH	Output	Ignition switch ON	Output headphone sound from headrest display unit LH to headphone.	 SKIB3609E
27 (W)	Ground	Composite image signal ground for headrest display unit RH	—	Ignition switch ON	—	0 V
28 (R)	Ground	Composite image signal for headrest display unit RH	Output	Ignition switch ON	When DVD, USB, front AUX or rear AUX image is displayed on headrest display unit RH.	 SKIB2251J

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
29	—	Shield	—	—	—	—
30	—	Shield	—	—	—	—
31 (Y/L)	Ground	Composite image signal ground for headrest display unit LH	—	Ignition switch ON	—	0 V
32 (Y/G)	Ground	Composite image signal for headrest display unit LH	Output	Ignition switch ON	When DVD, USB, front AUX or rear AUX image is displayed on headrest display unit LH.	 SKIB2251J
33 (L)	Ground	Composite image signal ground	—	Ignition switch ON	—	0 V
34 (P)	Ground	Composite image signal	Input	Ignition switch ON	When DVD, USB or front AUX image is displayed on headrest display unit LH or RH.	 SKIB2251J
35	—	Shield	—	—	—	—
40 (LG)	39 (V)	AUX image signal	Input	Ignition switch ON	When rear AUX image is displayed on headrest display unit LH or RH.	 SKIB2251J
41	—	Shield	—	—	—	—
45 (W)	46 (R)	Sound signal LH	Input	Ignition switch ON	When DVD, USB or front AUX mode is selected on headrest display unit LH or RH.	 SKIB3609E
47 (B)	48 (G)	Sound signal RH	Input	Ignition switch ON	When DVD, USB or front AUX mode is selected on headrest display unit LH or RH.	 SKIB3609E
49	—	Shield	—	—	—	—
53	—	Shield	—	—	—	—

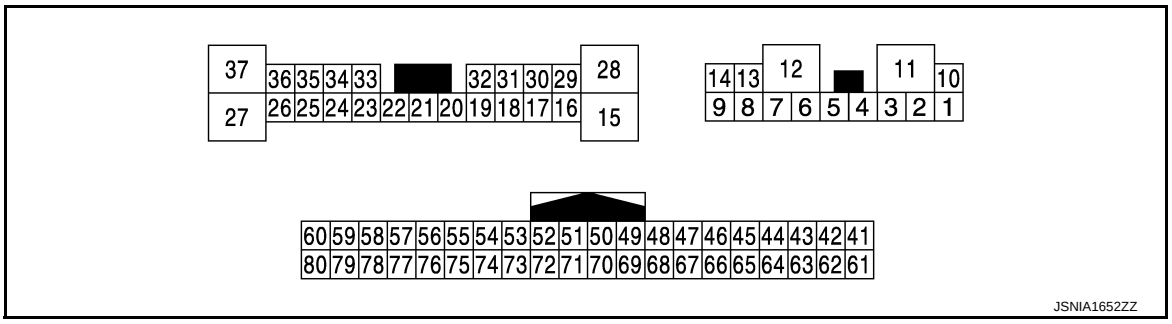
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
54 (B)	56 (R)	AUX sound signal LH	Input	Ignition switch ON	When rear AUX mode is selected on headrest display unit LH or RH.	 SKIB3609E
55 (W)	56 (R)	AUX sound signal RH	Input	Ignition switch ON	When rear AUX mode is selected on headrest display unit LH or RH.	 SKIB3609E

BOSE AMP.

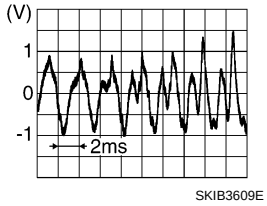
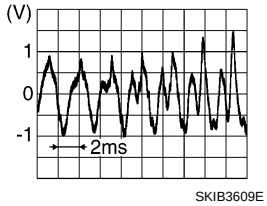
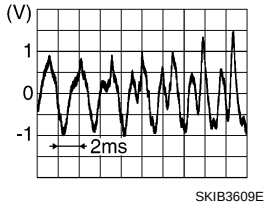
Reference Value

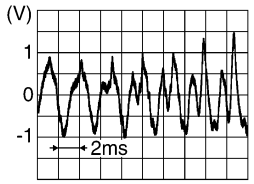
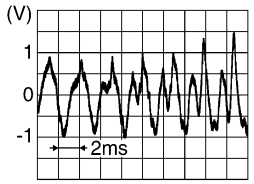
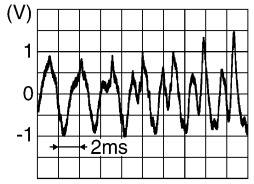
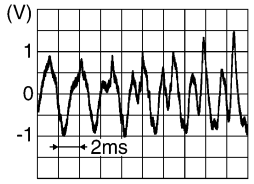
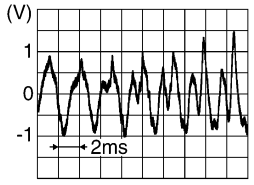
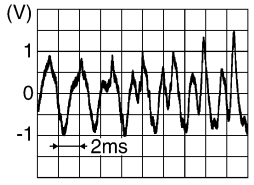
INFOID:0000000009009826

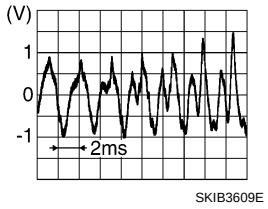
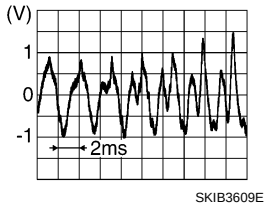
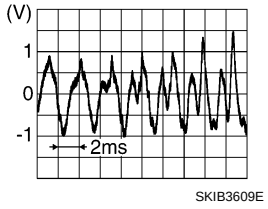
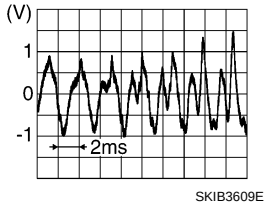
TERMINAL LAYOUT



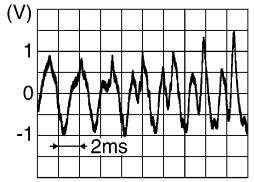
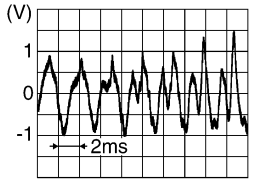
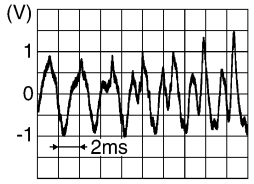
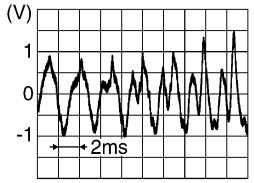
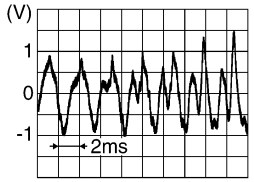
PHYSICAL VALUES (13 SPEAKERS MODELS)

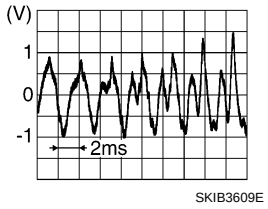
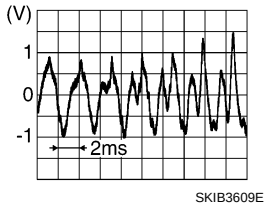
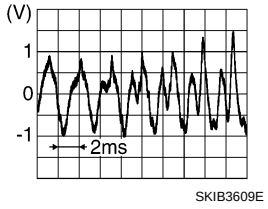
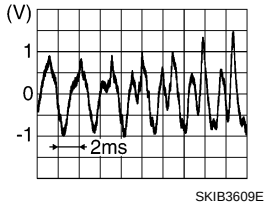
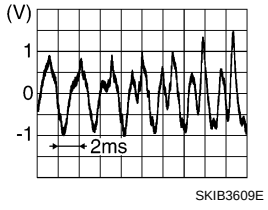
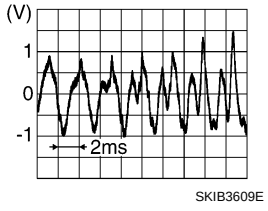
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (R/B)	2 (W/B)	Sound signal squawker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
4 (L)	3 (O)	Sound signal squawker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
10 (R)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
11 (W/B)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
12 (B)	—	Ground	—	Ignition switch ON	—	0 V
13 (W)	8 (R)	Sound signal woofer	Output	Ignition switch ON	Sound output	 SKIB3609E

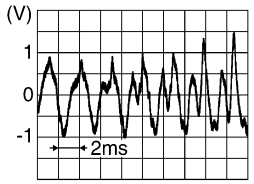
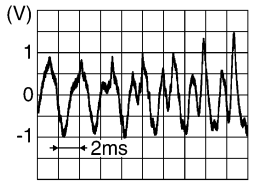
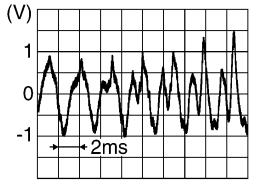
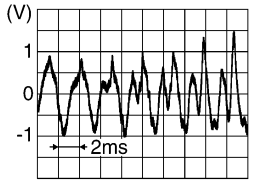
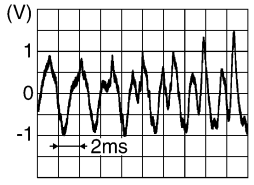
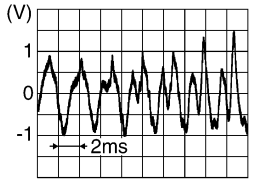
Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
14 (V)	9 (L)	Sound signal rear door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
16 (R)	17 (W)	Sound signal roof speaker LH and RH	Output	Ignition switch ON	Sound output	 SKIB3609E
18 (V)	19 (Y)	Sound signal front door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
20 (W/B)	Ground	BOSE amp. ON signal	Input	Ignition switch ON	—	12.0 V
24 (V)	23 (LG)	Sound signal rear LH	Input	Ignition switch ON	Sound output	 SKIB3609E
26 (O)	25 (W)	Sound signal rear RH	Input	Ignition switch ON	Sound output	 SKIB3609E
28 (L)	15 (R/Y)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
29 (GR/R)	30 (G/R)	Sound signal center speaker	Output	Ignition switch ON	Sound output	 SKIB3609E
31 (L/W)	32 (L)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
33 (Y/L)	34 (Y/G)	Sound signal front RH	Input	Ignition switch ON	Sound output	 SKIB3609E
35 (L)	36 (P)	Sound signal front LH	Input	Ignition switch ON	Sound output	 SKIB3609E
37 (R/W)	Ground	Mode change signal	Input	Ignition switch ON	Driver's Audio Stage ON	0 V
					Driver's Audio Stage OFF	8.5 V

PHYSICAL VALUES (15 SPEAKERS MODELS)

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (L/W)	2 (L)	Sound signal front door speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
3 (W)	4 (R)	Sound signal woofer	Output	Ignition switch ON	Sound output	 SKIB3609E
5 (V)	6 (Y)	Sound signal front door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
7 (B)	—	Ground	—	Ignition switch ON	—	0 V
10 (W/B)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
11 (R)	Ground	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
12 (B)	—	Ground	—	Ignition switch ON	—	0 V
14 (L)	9 (O)	Sound signal squawker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
16 (L)	29 (R/Y)	Sound signal rear door speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
17 (R/B)	18 (W/B)	Sound signal squawker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
22 (R)	33 (W)	Sound signal roof speaker LH	Output	Ignition switch ON	Sound output	 SKIB3609E
23 (O)	34 (G)	Sound signal roof speaker RH	Output	Ignition switch ON	Sound output	 SKIB3609E
24 (V)	35 (L)	Sound signal rear door speaker RH	Input	Ignition switch ON	Sound output	 SKIB3609E
31 (GR/R)	30 (G/R)	Sound signal center speaker	Output	Ignition switch ON	Sound output	 SKIB3609E
55 (Y)	—	AV communication signal (L)	—	—	—	—
56 (V)	Ground	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
64 (G)	44 (V)	Voice guidance signal	Input	Ignition switch ON	When inputting voice guidance.	 SKIB3609E

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
65 (L)	45 (P)	Sound signal front LH	Input	Ignition switch ON	Sound output	 SKIB3609E
66 (Y/L)	46 (Y/G)	Sound signal front RH	Input	Ignition switch ON	Sound output	 SKIB3609E
67 (V)	47 (LG)	Sound signal rear LH	Input	Ignition switch ON	Sound output	 SKIB3609E
68 (O)	48 (W)	Sound signal rear RH	Input	Ignition switch ON	Sound output	 SKIB3609E
69 (L)	49 (P)	Sound signal center speaker	Input	Ignition switch ON	Sound output	 SKIB3609E
70 (R)	50 (W)	Sound signal woofer	Input	Ignition switch ON	Sound output	 SKIB3609E
75 (BR)	—	AV communication signal (H)	—	—	—	—
79	—	Shield	—	—	—	—

AROUND VIEW MONITOR CONTROL UNIT

Reference Value

INFOID:0000000009009827

VALUES ON THE DIAGNOSIS TOOL

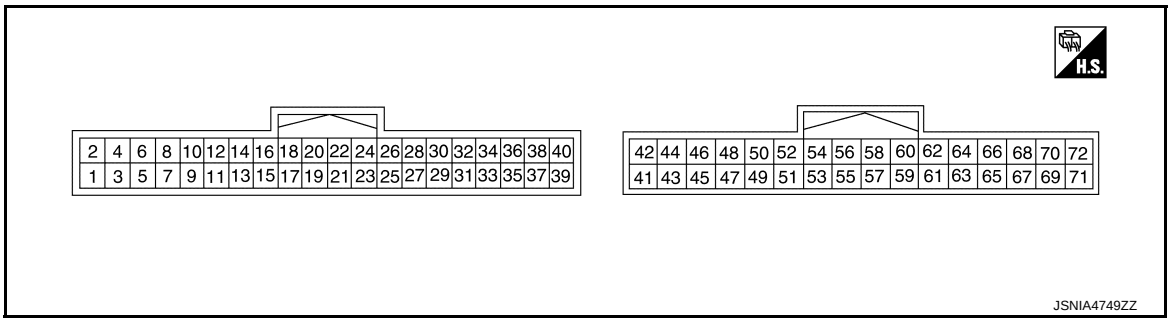
NOTE:
The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

CONSULT MONITOR ITEM

Monitor Item	Condition		Value/Status
ST ANGLE SENSOR SIGNAL [ON/OFF]	Ignition switch ON	When steering angle sensor signal is input	ON
		Other than the above	OFF
REVERSE SIGNAL [ON/OFF]	Ignition switch ON	R position	ON
		Other than R position	OFF
VEHICLE SPEED SIGNAL [ON/OFF]	Ignition switch ON	When vehicle speed is input	ON
		Other than the above	OFF
CAMERA SWITCH SIGNAL [ON/OFF]	Ignition switch ON	When camera switch signal is input	ON
		Other than the above	OFF
CAMERA OFF SIGNAL [ON/OFF]	Ignition switch ON	When camera OFF signal is input	ON
		Other than the above	OFF
ST ANGLE SENSOR TYPE [Absolute]	Ignition switch ON	—	Absolute
STEERING GEAR RATIO TYPE [TYPE1]	Ignition switch ON	—	TYPE1
STEERING POSITION [LHD]	Ignition switch ON	—	LHD
REAR CAMERA IMAGE SIGNAL [OK/NG]	Ignition switch ON	When rear camera image signal input status is normal	OK
		When rear view camera image signal input status is not normal	NG
R-CAMERA COMM STATUS [OK/NG]	Ignition switch ON	When communication status with rear camera is normal	OK
		When communication status with rear camera is not normal	NG
R-CAMERA COMM LINE [OK/NG]	Ignition switch ON	When communication line with rear camera is normal	OK
		When communication line with rear camera is not normal	NG
F-CAMERA IMAGE SIGNAL [OK/NG]	Ignition switch ON	When front camera image signal input status is normal	OK
		When front camera image signal input status is not normal	NG
F-CAMERA COMM STATUS [OK/NG]	Ignition switch ON	When communication status with front camera is normal	OK
		When communication status with front camera is not normal	NG
F-CAMERA COMM LINE [OK/NG]	Ignition switch ON	When communication line with front camera is normal	OK
		When communication line with front camera is not normal	NG
DR-SIDE CAMERA IMAGE SIG [OK/NG]	Ignition switch ON	When side camera LH image signal input status is normal	OK
		When side camera LH image signal input status is not normal	NG

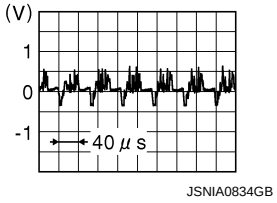
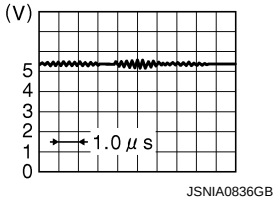
Monitor Item	Condition		Value/Status
DR CAMERA COMM STATUS [OK/NG]	Ignition switch ON	When communication status with side camera LH is normal	OK
		When communication status with side camera LH is not normal	NG
DR-SIDE CAMERA COMM LINE [OK/NG]	Ignition switch ON	When communication line with side camera LH is normal	OK
		When communication line with side camera LH is not normal	NG
PA-SIDE CAMERA IMAGE SIG [OK/NG]	Ignition switch ON	When side camera RH image signal input status is normal	OK
		When side camera RH image signal input status is not normal	NG
PA CAMERA COMM STATUS [OK/NG]	Ignition switch ON	When communication status with side camera RH is normal	OK
		When communication status with side camera RH is not normal	NG
PA-SIDE CAMERA COMM LINE [OK/NG]	Ignition switch ON	When communication line with side camera RH is normal	OK
		When communication line with side camera RH is not normal	NG
ACC	Ignition switch ACC		ON
	Ignition switch OFF		OFF
FOLDING MOTOR VOLT 1 [ON/OFF]	Ignition switch ON	Driver side door mirror is in expanded status	ON
		Driver side door mirror is in retracted status	OFF
FOLDING MOTOR VOLT 2 [ON/OFF]	Ignition switch ON	Driver side door mirror is in expanded status	OFF
		Driver side door mirror is in retracted status	ON

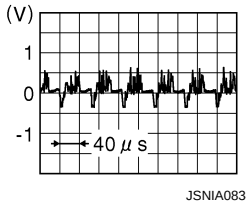
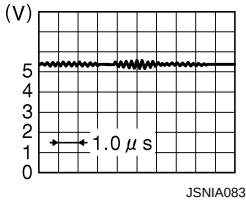
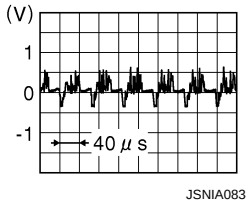
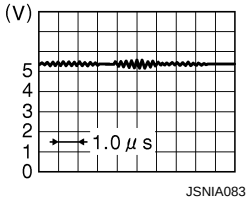
TERMINAL LAYOUT

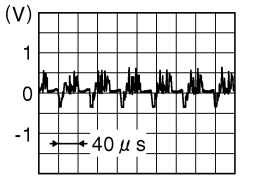
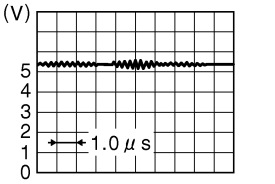
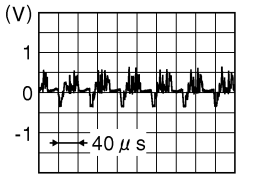


PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (B)	Ground	Ground	—	Ignition switch ON	—	0 V
2 (Y/G)	1 (B)	Battery power supply	Input	Ignition switch OFF	—	Battery voltage
3 (GR/L)	1 (B)	Ignition signal	Input	Ignition switch ON	—	Battery voltage

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
4 (V)	1 (B)	ACC power supply	Input	Ignition switch ACC	—	Battery voltage
19 (SB)	—	AV communication signal (H)	Input/ Output	—	—	—
20 (LG)	—	AV communication signal (L)	Input/ Output	—	—	—
25 (P)	—	Reverse	Input/ Output	Ignition switch ON	—	—
27 (L)	—	CAN-H	Input/ Output	—	—	—
28 (Y)*1 (R)*2	—	CAN-L	Input/ Output	—	—	—
30 (LG)	1 (B)	Retract motor operation signal (open)	Input	Ignition switch ON	Passenger side door mirror is in retracted status	0 V
					Passenger door mirror is in expanded status	12.0 V
32 (G/O)	1 (B)	Retract motor operation signal (close)	Input	Ignition switch ON	Passenger side door mirror is in retracted status	12.0 V
					Passenger door mirror is in expanded status	0 V
47 (W)	48	Camera image signal	Output	Ignition switch ON	—	 JSNIA0834GB
48	Ground	Camera image signal ground	—	Ignition switch ON	—	0 V
49 (B)	52 (W)	Rear camera communication signal	Input/ Output	Ignition switch ON	—	 JSNIA0836GB
50 (R)	52 (W)	Rear camera power supply	Output	Ignition switch ON	—	6.0 V
52 (W)	Ground	Rear camera ground	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
53 (G)	54	Rear camera image signal (+)	Input	Ignition switch ON	—	 JSNIA0834GB
54	Ground	Rear camera image signal (–)	—	Ignition switch ON	—	0 V
55 (W)	58 (B)	Side camera driver side communication signal	Input/ Output	Ignition switch ON	—	 JSNIA0836GB
56 (R)	58 (B)	Side camera driver side power supply	Output	Ignition switch ON	—	6.0 V
58 (B)	Ground	Side camera driver side ground	—	Ignition switch ON	—	0 V
59 (G)	60	Side camera driver side image signal (+)	Input	Ignition switch ON	—	 JSNIA0834GB
60	Ground	Side camera driver side image signal (–)	—	Ignition switch ON	—	0 V
61 (W)	64 (B)	Side camera passenger side communication signal	Input/ Output	Ignition switch ON	—	 JSNIA0836GB
62 (R)	64 (B)	Side camera passenger side power supply	Output	Ignition switch ON	—	6.0 V
64 (B)	Ground	Side camera passenger side ground	—	Ignition switch ON	—	0 V

Terminal (Wire color)		Description		Condition		Reference value (Approx.)
+	–	Signal name	Input/ Output			
65 (G)	66	Side camera passenger side image signal (+)	Input	Ignition switch ON	—	 JSNIA0834GB
66	Ground	Side camera passenger side image signal (–)	—	Ignition switch ON	—	0 V
67 (W)	70 (B)	Front camera communication signal	Input/ Output	Ignition switch ON	—	 JSNIA0836GB
68 (R)	70 (B)	Front camera power supply	Output	Ignition switch ON	—	6.0 V
70 (B)	Ground	Front camera ground	—	Ignition switch ON	—	0 V
71 (G)	72	Front camera image signal (+)	Input	Ignition switch ON	—	 JSNIA0834GB
72	Ground	Front camera image signal (–)	—	Ignition switch ON	—	0 V

*1: With Backup Collision Intervention
*2: Without Backup Collision Intervention

Fail-Safe

INFOID:0000000009009828

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U0428 ST ANGLE SENSOR CALIBRATION	Neutral position adjustment of steering angle sensor is not complete.	• Predicted course line is not displayed. • MOD (Moving Object Detection) function is stopped. • Front tire angle display is stopped. • Using “SETTING” menu display, switch each indicator of predicted course line display and MOD switch to “OFF” (turn OFF) so that switch operation cannot be performed.
U1000 CAN COMM CIRCUIT	When around view monitor control unit cannot transmit/receive CAN communication signal continuously for 2 seconds or more.	The following functions are stopped • When communication of steering angle sensor signal is not normal - Predicted course line is not displayed. - MOD (Moving Object Detection) function is stopped. - Front tire angle display is stopped. - Using “SETTING” menu display, switch each indicator of predicted course line display and MOD switch to “OFF” (turn OFF) so that switch operation cannot be performed. • When communication of vehicle signal, wheel speed sensor signal, and shift signal is not normal - Predicted course line is not displayed. - MOD (Moving Object Detection) function is stopped. - Using “SETTING” menu display, switch each indicator of predicted course line display and MOD switch to “OFF” (turn OFF) so that switch operation cannot be performed • When communication of sonar signal is not normal - Predicted course line is not displayed.

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U111A REAR CAMERA IMAGE SIGNAL	No-signal status of rear camera image signal is continued for 500 ms or more while ignition switch is ON. **NOTE:** Current malfunction is displayed only and is not saved.	Camera image is not displayed (Gray screen display).
U111B SIDE CAMERA RH IMAGE SIGNAL	No-signal status of side camera RH image signal is continued for 500 ms or more while ignition switch is ON. **NOTE:** Current malfunction is displayed only and is not saved.	
U111C FRONT CAMERA IMAGE SIGNAL	No-signal status of rear camera image signal is continued for 500 ms or more while ignition switch is ON. **NOTE:** Current malfunction is displayed only and is not saved.	
U111D SIDE CAMERA LH IMAGE SIGNAL	No-signal status of side camera LH image signal is continued for 500 ms or more while ignition switch is ON. **NOTE:** Current malfunction is displayed only and is not saved.	
U1232 ST ANGLE SEN CALIB	Neutral position adjustment of steering angle sensor is performed. NG signal from steering angle sensor is received.	• Predicted course line is not displayed. • MOD (Moving Object Detection) function is stopped. • Tire icon is stopped. • Using “SETTING” menu display, switch each indicator of predicted course line display and MOD switch to “OFF” (turn OFF) so that switch operation cannot be performed.
U1302 CAMERA POWER VOLT	Camera power supply voltage does not satisfy the following conditions for 2 seconds or more when ignition switch is turned ON. • When supplemental lighting power supply output is ON: 5.9 – 6.5 V. • When OFF: 0 V by camera power supply measurement.	Camera power output is stopped.
U1304 CAMERA IMAGE CALIB	• When camera calibration is incomplete. • When camera information in around view control unit and information read from camera are not the same. **NOTE:** Current malfunction is displayed only and is not saved.	Unmatched icon ☒ display (red) is displayed (applicable for unmatched camera only).
U1305 CONFIG UNFINISH	The vehicle setting of around view monitor control unit is incomplete. **NOTE:** Current malfunction is displayed only and is not saved.	Operation is according to the vehicle setting value as default value.

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
Other	When around view monitor control unit is not normal.	Switch to camera screen is not allowed.
	When communication between around view monitor control unit and each camera is not normal.	On applicable camera screen " ⚠ " marking (Red) is displayed.
	When communication line between around view monitor control unit and each camera image line are affected by electromagnetic noises.	On applicable camera image screen, ☒ display (Blue) is displayed.

DTC Index

INFOID:0000000009009829

DTC	CONSULT display	Refer to
U0428	ST ANGLE SENSOR CALIBRATION	AV-147, "DTC Logic"
U1000	CAN COMM CIRCUIT	AV-148, "AROUND VIEW MONITOR CONTROL UNIT : Description"
U1010	CONTROL UNIT (CAN)	AV-150, "AROUND VIEW MONITOR CONTROL UNIT : DTC Logic"
U111A	REAR CAMERA IMAGE SIGNAL	AV-151, "DTC Logic"
U111B	SIDE CAMERA RH IMAGE SIGNAL	AV-153, "DTC Logic"
U111C	FRONT CAMERA IMAGE SIGNAL	AV-155, "DTC Logic"
U111D	SIDE CAMERA LH IMAGE SIGNAL	AV-157, "DTC Logic"
U1232	ST ANGLE SEN CALIB	AV-182, "AROUND VIEW MONITOR CONTROL UNIT : DTC Logic"
U1302	CAMERA POWER VOLT	AV-193, "DTC Logic"
U1303	LED POWER SUPPLY VOLT	AV-197, "DTC Logic"
U1304	CAMERA IMAGE CALIB	AV-198, "DTC Logic"
U1305	CONFIG UNFINISH	AV-199, "DTC Logic"

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

Reference Value

INFOID:0000000009009830

VALUES ON THE DIAGNOSIS TOOL

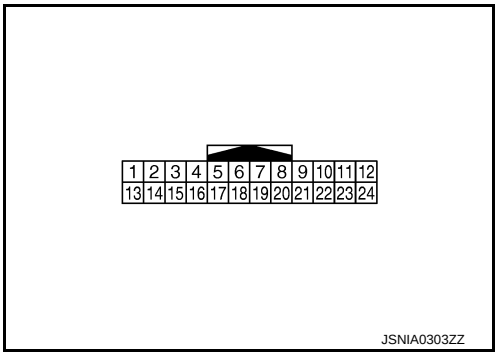
NOTE:
The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

CONSULT MONITOR ITEM

Monitor item	Condition		Value/Status
VEHICLE SPEED	While driving		Input value of vehicle speed signal
SONAR C/U POWER SUPPLY	Ignition switch ON		Battery voltage
SENSOR VOLTAGE	Ignition switch ON		Approx. 8 V
DETECTION MODE	**NOTE:** This item is displayed, but cannot be monitored.		
P N RANGE	Ignition switch ON	Selector lever P or N position	ON
		Other than the above	OFF
TRAILER CONNECT	**NOTE:** This item is displayed, but cannot be monitored.		
LED	**NOTE:** This item is displayed, but cannot be monitored.		
SONAR TEMPORARY OFF	**NOTE:** This item is displayed, but cannot be monitored.		
SONAR PERMANENT OFF	**NOTE:** This item is displayed, but cannot be monitored.		
SW OPRT AFTR IGN ON	**NOTE:** This item is displayed, but cannot be monitored.		
REVERSE RANGE	Ignition switch ON	Selector lever R position	ON
		Other than the above	OFF
SHRT DST FRM RR SENS	Ignition switch ON	An obstacle exists in the vicinity of rear corner/ center sensor. [Approx. 27 cm - 70 cm (10.63 in - 27.56 in)]	Almost agree with the distance from the closest obstacle to rear bumper. (27 cm ～ 70 cm)
		No obstacle exists in the vicinity of rear corner/ center sensor.	255 cm
SHRT DST FRM FR SENS	Ignition switch ON	An obstacle exists in the vicinity of front corner/ center sensor. [Approx. 27 cm - 70 cm (10.63 in - 27.56 in)]	Almost agree with the distance from the closest obstacle to front bumper. (27 cm ～ 70 cm)
		No obstacle exists in the vicinity of front corner/ center sensor.	255 cm
COR[RL]	Ignition switch ON	An obstacle exists in the vicinity of rear corner sensor LH. [Approx. 27 cm - 70 cm (10.63 in - 27.56 in)]	Almost agree with the distance from an obstacle to rear corner sensor LH. (27 cm ～ 70 cm)
		No obstacle exists in the vicinity of rear corner sensor LH.	255 cm
COR[FL]	Ignition switch ON	An obstacle exists in the vicinity of front corner sensor LH. [Approx. 27 cm - 70 cm (10.63 in - 27.56 in)]	Almost agree with the distance from an obstacle to front corner sensor LH. (27 cm ～ 70 cm)
		No obstacle exists in the vicinity of front corner sensor LH.	255 cm

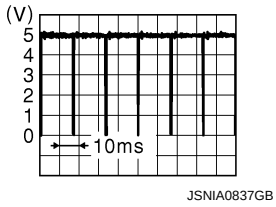
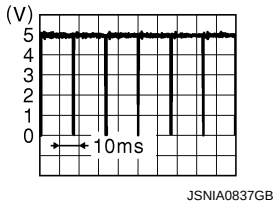
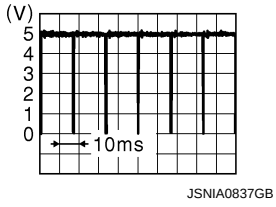
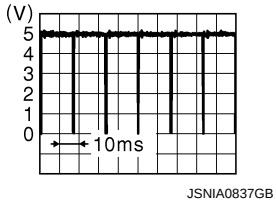
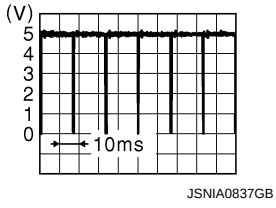
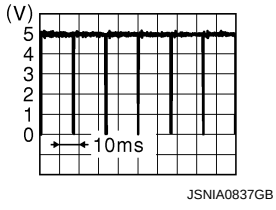
Monitor item	Condition		Value/Status
COR[RR]	Ignition switch ON	An obstacle exists in the vicinity of rear corner sensor RH. [Approx. 27 cm - 70 cm (10.63 in - 27.56 in)]	Almost agree with the distance from an obstacle to rear corner sensor RH. (27 cm ～ 70 cm)
		No obstacle exists in the vicinity of rear corner sensor RH.	255 cm
COR[FR]	Ignition switch ON	An obstacle exists in the vicinity of front corner sensor RH. [Approx. 27 cm - 70 cm (10.63 in - 27.56 in)]	Almost agree with the distance from an obstacle to front corner sensor RH. (27 cm ～ 70 cm)
		No obstacle exists in the vicinity of front corner sensor RH.	255 cm
CEN[RL]/CEN[R]	Ignition switch ON	An obstacle exists in the vicinity of rear center sensor LH. [Approx. 27 cm - 70 cm (10.63 in - 27.56 in)]	Almost agree with the distance from an obstacle to rear center sensor LH. (27 cm ～ 70 cm)
		No obstacle exists in the vicinity of rear center sensor LH.	255 cm
CEN[FL]/CEN[F]	Ignition switch ON	An obstacle exists in the vicinity of front center sensor LH. [Approx. 27 cm - 70 cm (10.63 in - 27.56 in)]	Almost agree with the distance from an obstacle to front center sensor LH. (27 cm ～ 70 cm)
		No obstacle exists in the vicinity of front center sensor LH.	255 cm
CEN[RR]	Ignition switch ON	An obstacle exists in the vicinity of rear center sensor RH. [Approx. 27 cm - 70 cm (10.63 in - 27.56 in)]	Almost agree with the distance from an obstacle to rear center sensor RH. (27 cm ～ 70 cm)
		No obstacle exists in the vicinity of rear center sensor RH.	255 cm
CEN[FR]	Ignition switch ON	An obstacle exists in the vicinity of front center sensor RH. [Approx. 27 cm - 70 cm (10.63 in - 27.56 in)]	Almost agree with the distance from an obstacle to front center sensor RH. (27 cm ～ 70 cm)
		No obstacle exists in the vicinity of front center sensor RH.	255 cm
RVRB TIME COR[RL]	Ignition switch ON		Approx. 1.60 ms
RVRB TIME COR[RR]	Ignition switch ON		Approx. 1.60 ms
RVRB TIME COR[FL]	Ignition switch ON		Approx. 1.60 ms
RVRB TIME COR[FR]	Ignition switch ON		Approx. 1.60 ms
RVRB TIME CEN[RL]	Ignition switch ON		Approx. 1.60 ms
RVRB TIME CEN[RR]	Ignition switch ON		Approx. 1.60 ms
RVRB TIME CEN[FL]	Ignition switch ON		Approx. 1.60 ms
RVRB TIME CEN[FR]	Ignition switch ON		Approx. 1.60 ms

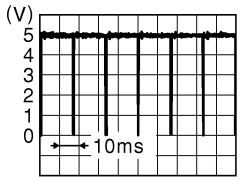
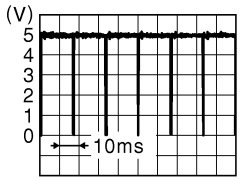
TERMINAL LAYOUT



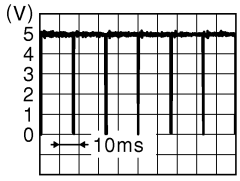
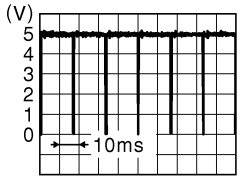
PHYSICAL VALUES

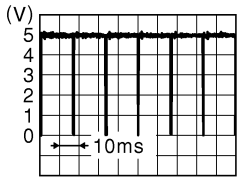
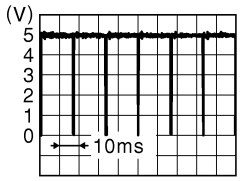
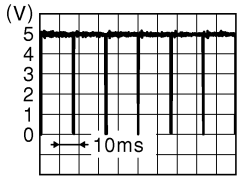
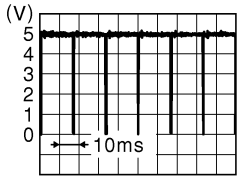
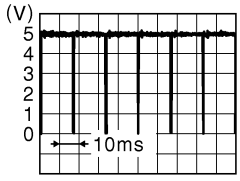
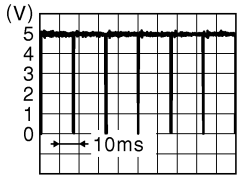
Without Backup Collision Intervention

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
3 (W)	12 (B)	Corner sensor signal front LH	Input	Ignition switch ON	—	 JSNIA0837GB
4 (R)	12 (B)	Corner sensor signal front RH	Input	Ignition switch ON	—	 JSNIA0837GB
5 (W)	12 (B)	Corner sensor signal rear LH	Input	Ignition switch ON	—	 JSNIA0837GB
6 (R)	12 (B)	Corner sensor signal rear RH	Input	Ignition switch ON	—	 JSNIA0837GB
7 (G)	12 (B)	Center sensor signal rear LH	Input	Ignition switch ON	—	 JSNIA0837GB
8 (Y)	12 (B)	Center sensor signal rear RH	Input	Ignition switch ON	—	 JSNIA0837GB

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	—	Signal name	Input/ Output			
9 (G)	12 (B)	Center sensor signal front LH	Input	Ignition switch ON	—	 JSNIA0837GB
10 (Y)	12 (B)	Center sensor signal front RH	Input	Ignition switch ON	—	 JSNIA0837GB
13 (GR/L)	24 (B)	Ignition power supply	Input	Ignition switch ON	—	Battery voltage
19 (L)	—	CAN-H	Input/ Output	—	—	—
20 (R)	—	CAN-L	Input/ Output	—	—	—
24 (B)	Ground	Ground	—	—	—	0 V

With Backup Collision Intervention

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	—	Signal name	Input/ Output			
3 (W)	12 (B)	Corner sensor signal front LH	Input	Ignition switch ON	—	 JSNIA0837GB
4 (R)	12 (B)	Corner sensor signal front RH	Input	Ignition switch ON	—	 JSNIA0837GB

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	—	Signal name	Input/ Output			
5 (W)	12 (B)	Corner sensor signal rear LH	Input	Ignition switch ON	—	 JSNIA0837GB
6 (R)	12 (B)	Corner sensor signal rear RH	Input	Ignition switch ON	—	 JSNIA0837GB
7 (G)	12 (B)	Center sensor signal rear LH	Input	Ignition switch ON	—	 JSNIA0837GB
8 (Y)	12 (B)	Center sensor signal rear RH	Input	Ignition switch ON	—	 JSNIA0837GB
9 (G)	12 (B)	Center sensor signal front LH	Input	Ignition switch ON	—	 JSNIA0837GB
10 (Y)	12 (B)	Center sensor signal front RH	Input	Ignition switch ON	—	 JSNIA0837GB
13 (GR/L)	24 (B)	Ignition power supply	Input	Ignition switch ON	—	Battery voltage
19 (L)	—	ITS communication-H	Input/ Output	—	—	—

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	−	Signal name	Input/ Output			
20 (Y)	—	ITS communication-L	Input/ Output	—	—	—
24 (B)	Ground	Ground	—	—	—	0 V

DTC Index

INFOID:0000000009009831

DTC	Display item	Refer to
U1000	CAN COMM CIRCUIT	AV-149, "SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : Description"
U1010	CONTROL UNIT (CAN)	AV-150, "SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : DTC Logic"
B2720	CORNER SENSOR [RL]	AV-207, "DTC Logic"
B2721	CENTER SENSOR [RL]	AV-210, "DTC Logic"
B2722	CENTER SENSOR [RR]	AV-213, "DTC Logic"
B2723	CORNER SENSOR [RR]	AV-216, "DTC Logic"
B2724	SONAR CONTROL UNIT	AV-219, "DTC Logic"
B2729	CORNER SENSOR [FL]	AV-220, "DTC Logic"
B272A	CENTER SENSOR [FL]	AV-223, "DTC Logic"
B272B	CENTER SENSOR [FR]	AV-226, "DTC Logic"
B272C	CORNER SENSOR [FR]	AV-229, "DTC Logic"

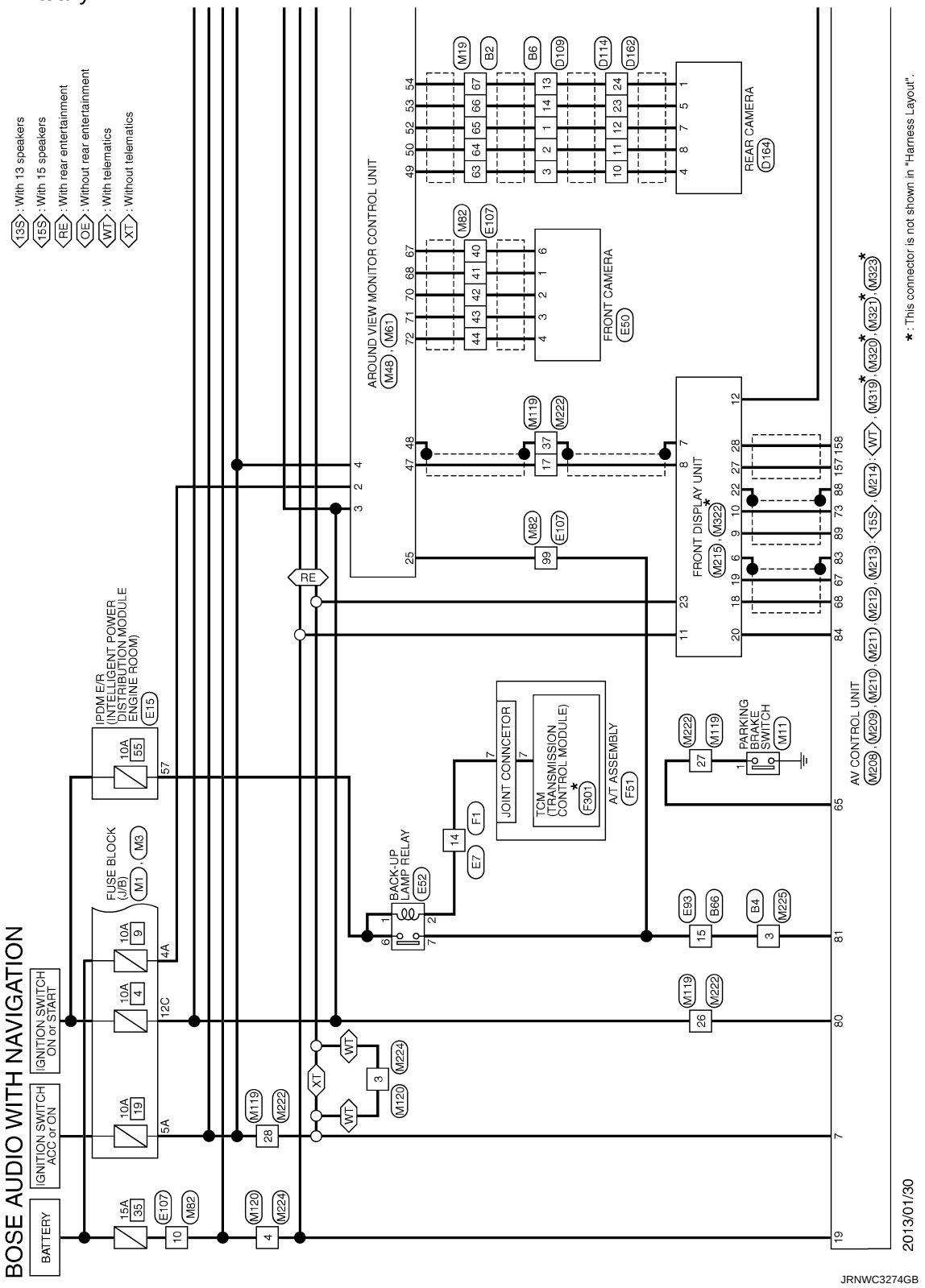
WIRING DIAGRAM

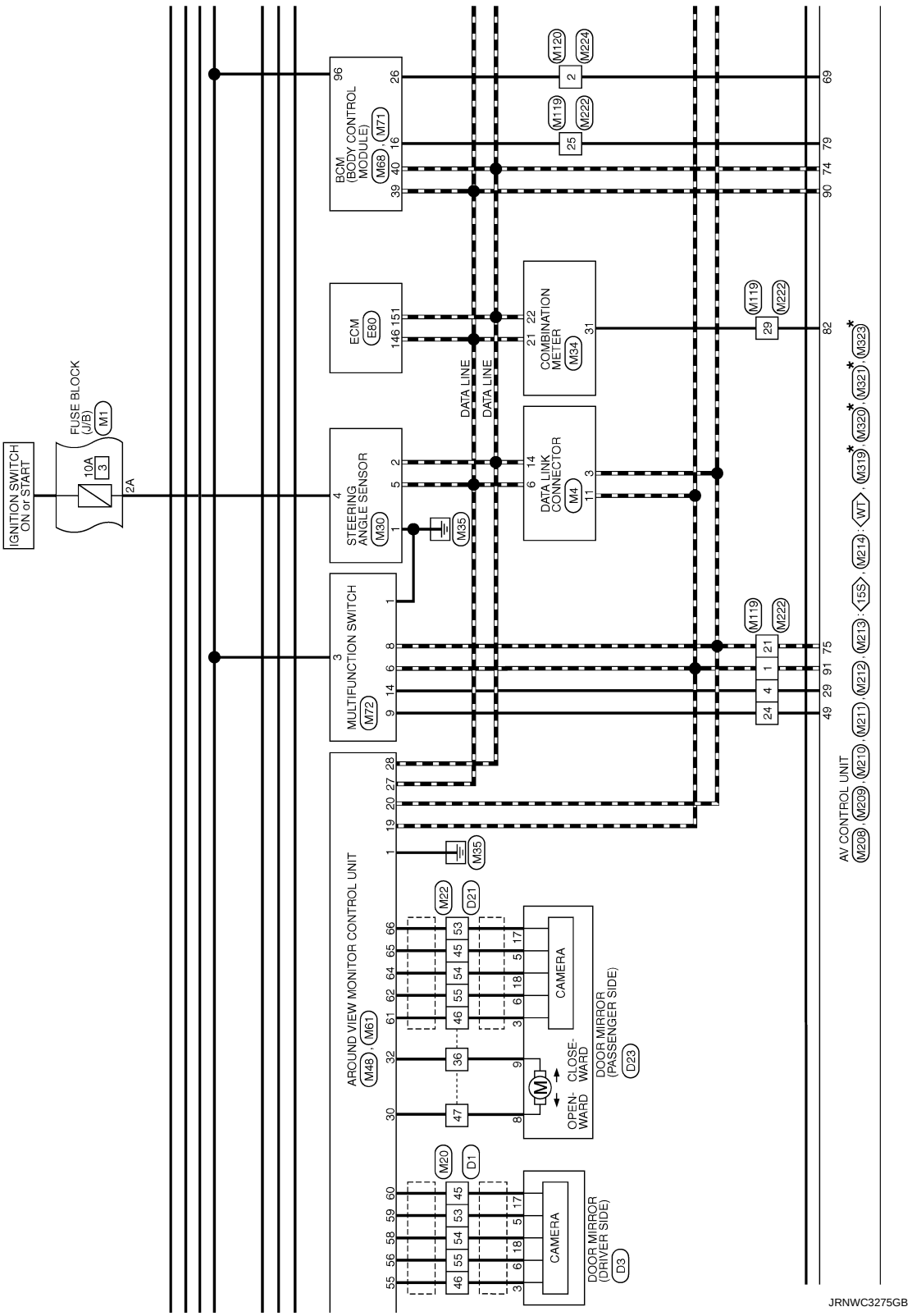
BOSE AUDIO WITH NAVIGATION

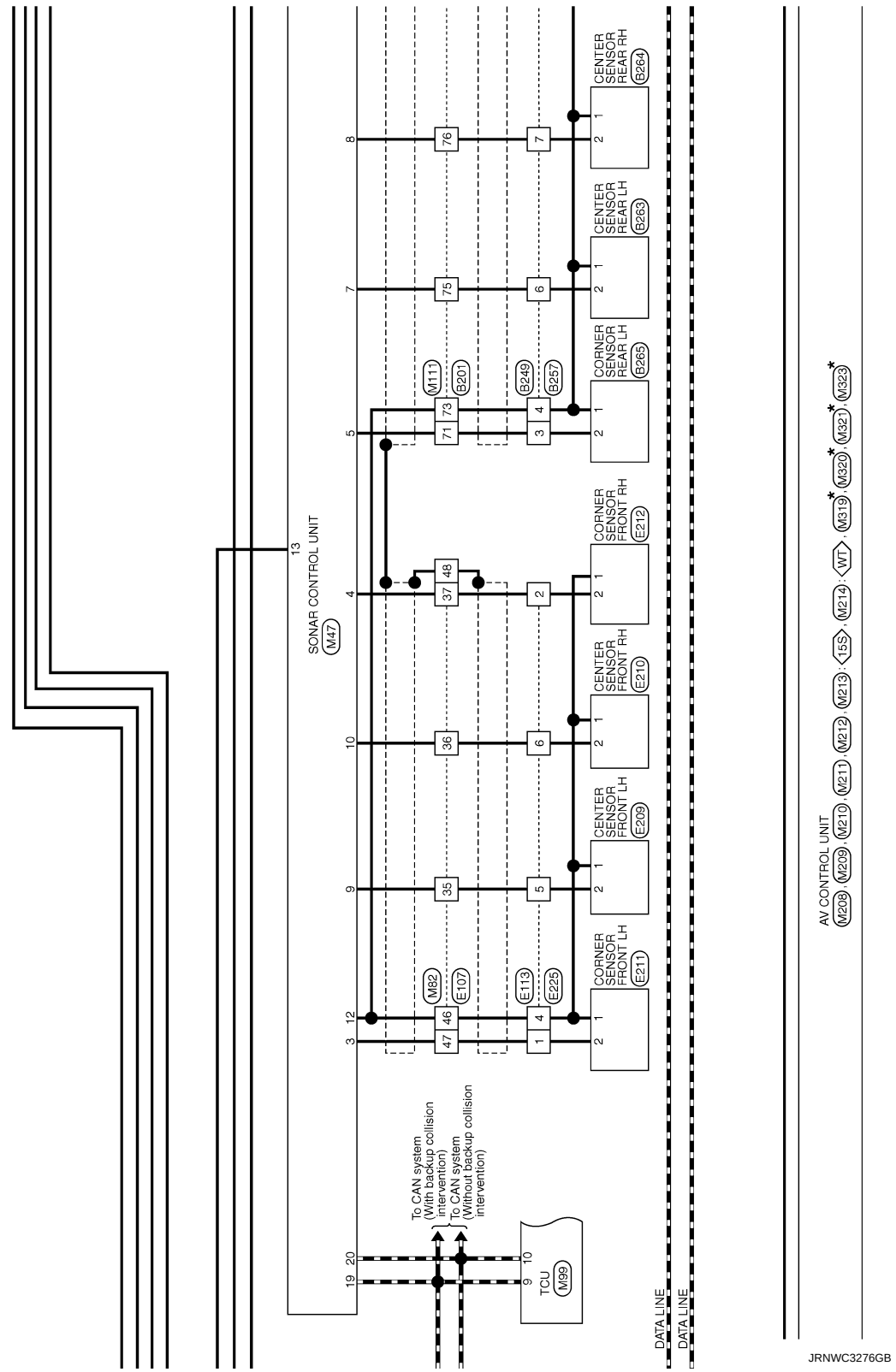
Wiring Diagram

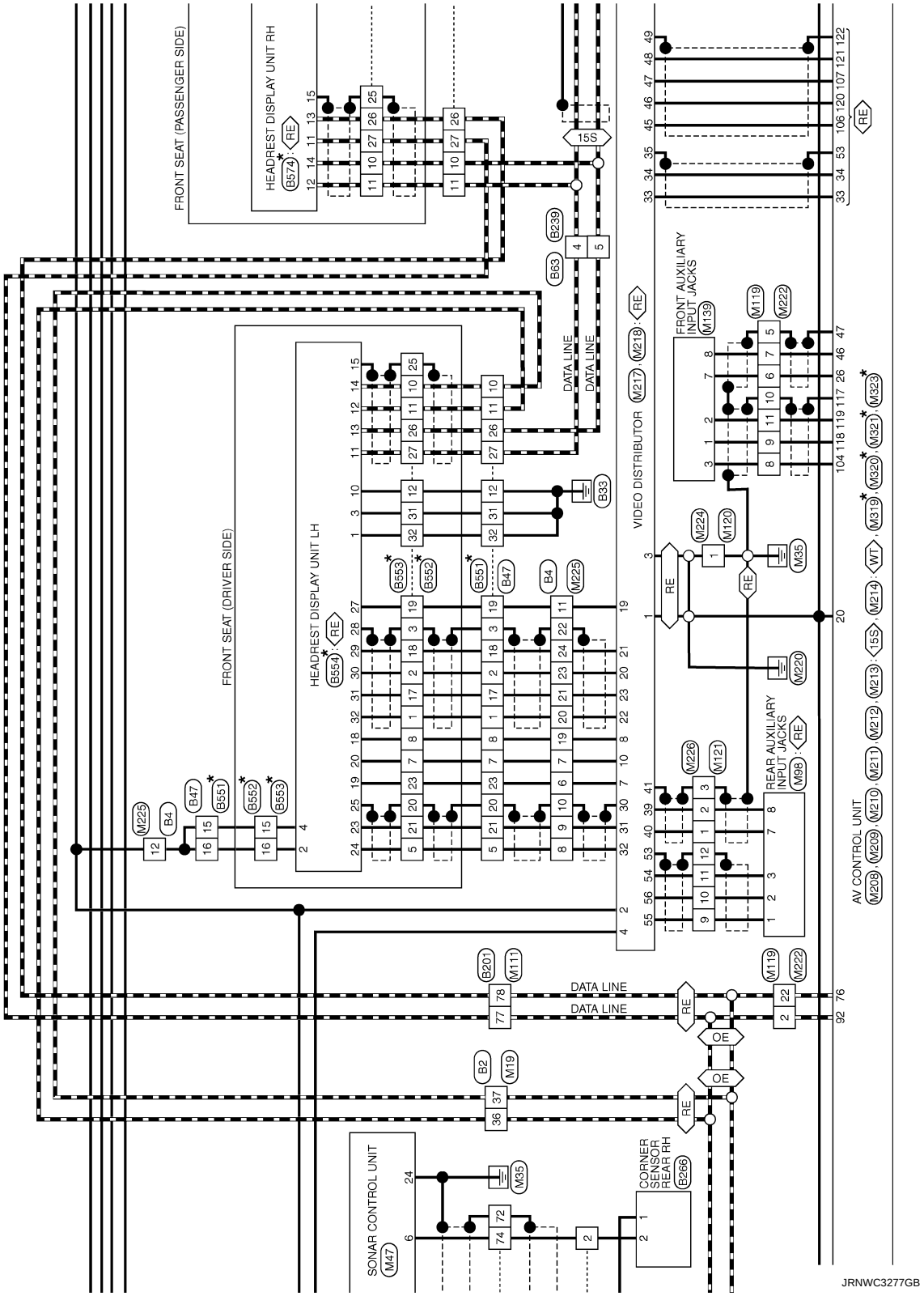
INFOID:0000000009009832

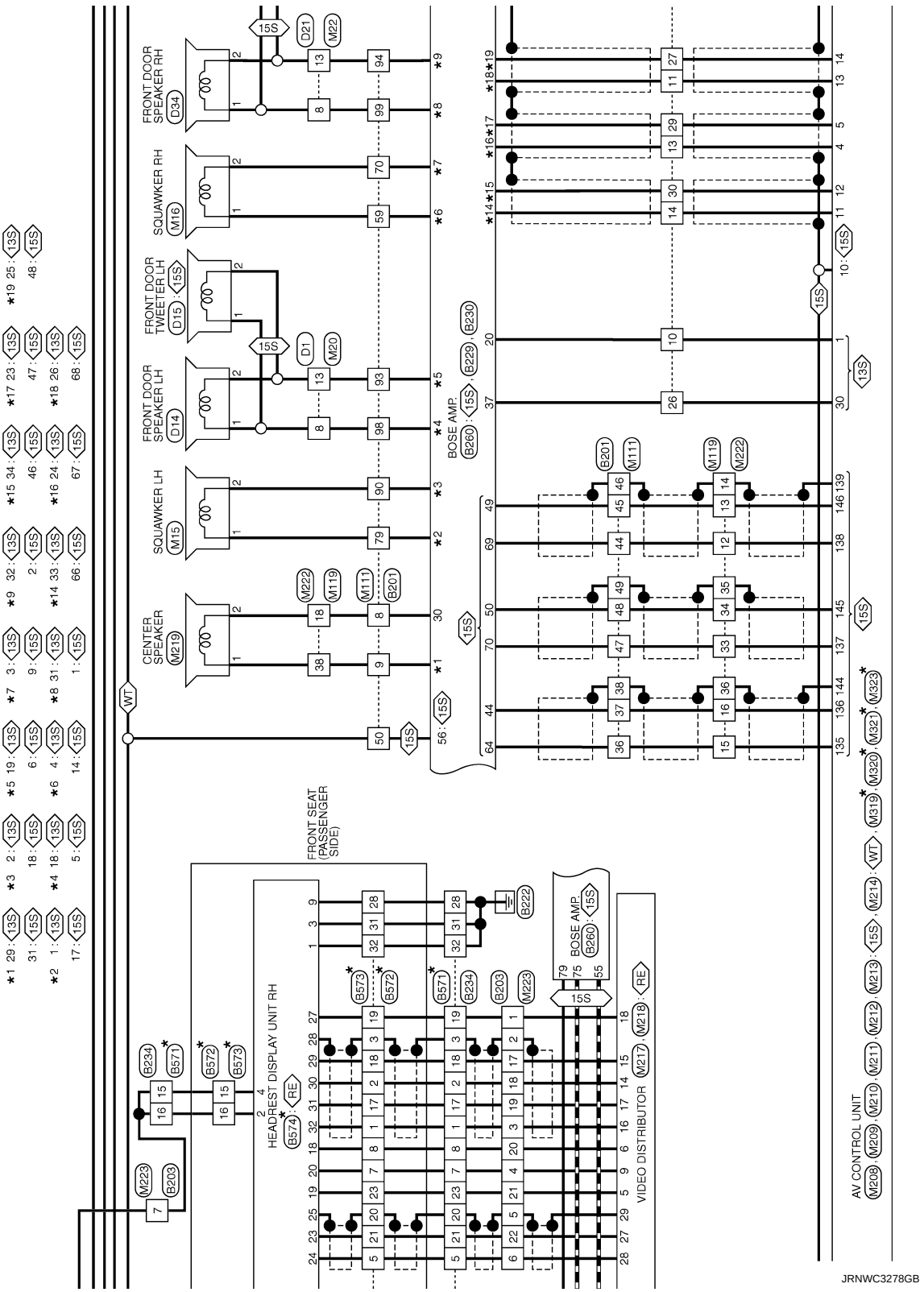
NOTE:
The name MULTIFUNCTION SWITCH indicates the integration of PRESET SWITCH and MULTIFUNCTION SWITCH virtually.

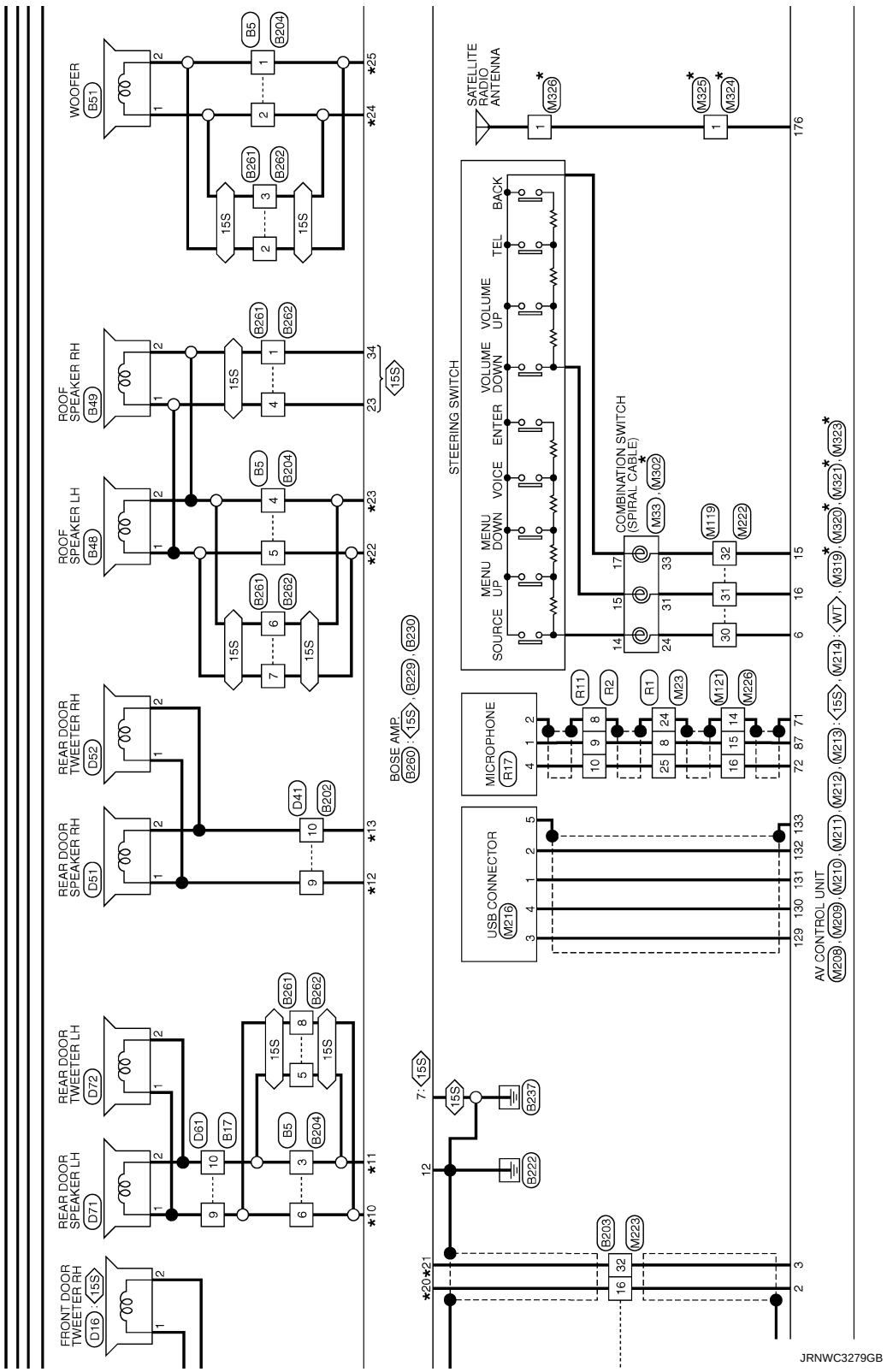


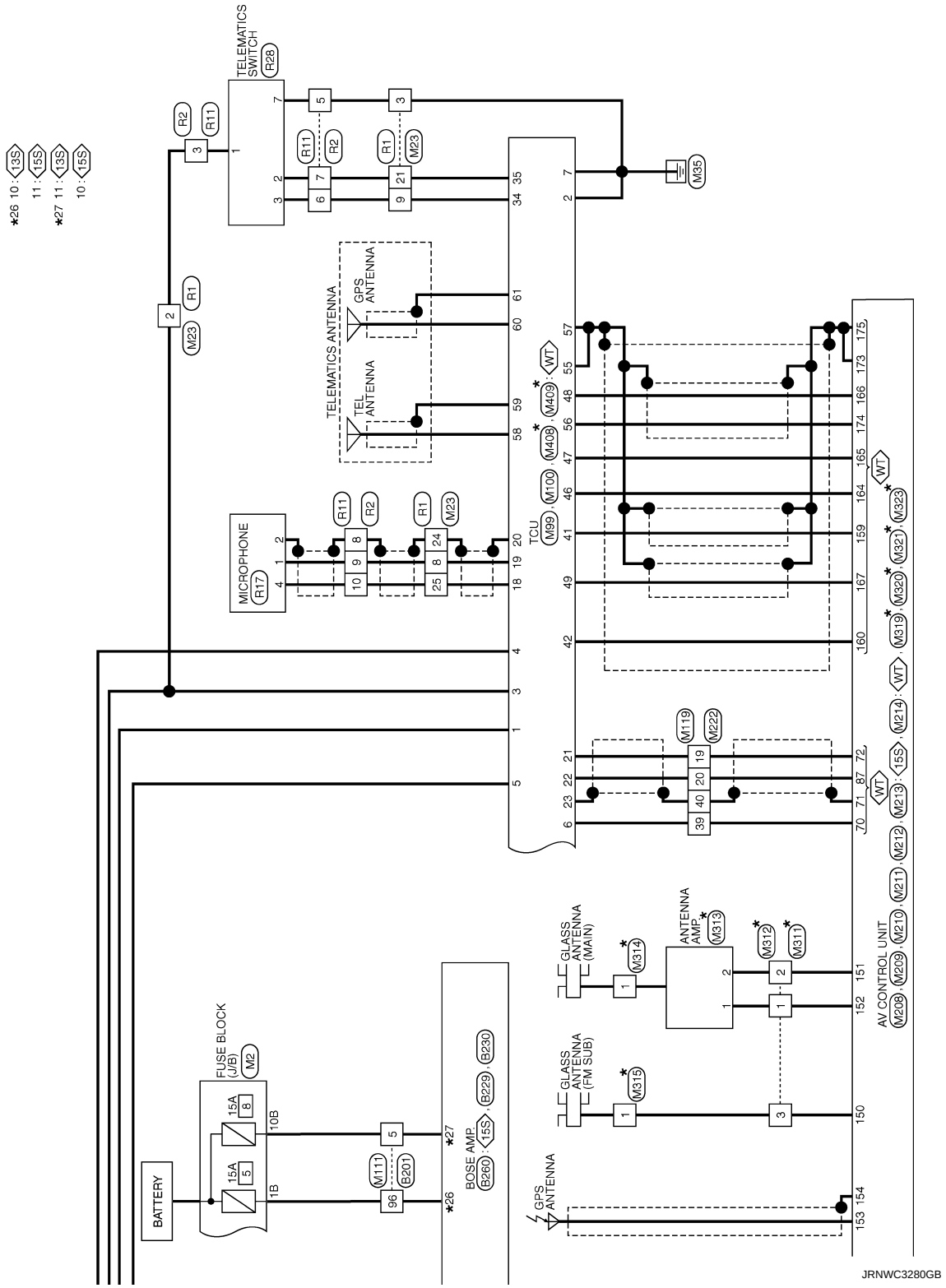

IGNITION SWITCH ON or START
FUSE BLOCK (J/B) M1
10A 3
2A
BCM (BODY CONTROL MODULE) M71 M68
ECM E80
STEERING ANGLE SENSOR M30
MULTIFUNCTION SWITCH M72
COMBINATION METER M34
DATA LINK CONNECTOR M4
DATA LINE
DATA LINE
M35
M120 M224
M119 M222
M119 M222
M119 M222
AROUND VIEW MONITOR CONTROL UNIT M48 M61
M22 D21
M20 D1
CAMERA
CAMERA
DOOR MIRROR (PASSENGER SIDE) D23
DOOR MIRROR (DRIVER SIDE) D3
OPEN-WARD
CLOSE-WARD
AV CONTROL UNIT M208 M209 M210 M211 M212 M213 15S M214 WT M319 M320 M321 M323
JRNWC3275GB


SONAR CONTROL UNIT
M47
13
CENTER SENSOR REAR RH
B264
CENTER SENSOR REAR LH
B263
CORNER SENSOR REAR LH
B265
CORNER SENSOR FRONT RH
E212
CENTER SENSOR FRONT RH
E210
CENTER SENSOR FRONT LH
E209
CORNER SENSOR FRONT LH
E211
M111
B201
B249
B257
M82
E107
E113
E225
To CAN system (With backup collision intervention)
To CAN system (Without backup collision intervention)
TCU
M99
DATA LINE
DATA LINE
AV CONTROL UNIT
M208 M209 M210 M211 M212 M213 15S M214 WT M319 M320 M321 M323
JRNWC3276GB


FRONT SEAT (PASSENGER SIDE)
HEADREST DISPLAY UNIT RH
B574
RE
15S
B239
B63
DATA LINE
DATA LINE
VIDEO DISTRIBUTOR
M217
M218
RE
FRONT AUXILIARY INPUT JACKS
M139
M119
M222
B33
M224
M120
M35
M220
FRONT SEAT (DRIVER SIDE)
HEADREST DISPLAY UNIT LH
B554
B553
B552
B551
B47
B4
M225
M226
M121
REAR AUXILIARY INPUT JACKS
M98
AV CONTROL UNIT
M208, M209, M210, M211, M212, M213, 15S, M214, WT, M319, M320, M321, M323
B201
M111
DATA LINE
DATA LINE
OE
OE
B2
M19
SONAR CONTROL UNIT
M47
CORNER SENSOR REAR RH
B266
JRNWC3277GB


FRONT DOOR SPEAKER RH D34
SQUAWKER RH M16
FRONT DOOR TWEETER LH D15
FRONT DOOR SPEAKER LH D14
SQUAWKER LH M15
CENTER SPEAKER M219
BOSE AMP B260
FRONT SEAT (PASSENGER SIDE)
HEADREST DISPLAY UNIT RH B574
VIDEO DISTRIBUTOR M217, M218
AV CONTROL UNIT M208, M209, M210, M211, M212, M213, M214
JRNWC3278GB

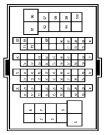

JRNWC3279GB


TELEMATICS SWITCH
R28
R2
R11
R1
M23
M35
GPS ANTENNA
TELEMATICS ANTENNA
TEL ANTENNA
MICROPHONE
R17
TCU
M99
M100
M409
M408
WT
M323
M321
M320
M319
M214
M213
15S
M212
M211
M210
M209
M208
AV CONTROL UNIT
M119
M222
GLASS ANTENNA (MAIN)
M314
ANTENNA AMP.
M313
M312
M311
GLASS ANTENNA (FM SUB)
M315
GPS ANTENNA
FUSE BLOCK (JB)
M2
15A 8
15A 5
10B
1B
BATTERY
M111
B201
96
BOSE AMP
B260
15S
B229
B230
*26 10 : 13S 11 : 15S
*27 11 : 13S 10 : 15S
JRNWC3280GB

BOSE AUDIO WITH NAVIGATION

Connector No.	B2
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

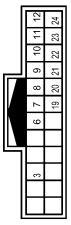
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	BR	-
5	R/W	-
6	L	-
7	V	-
9	G	-
11	W/B	-
12	BR	-
13	G/R	-
14	B/Y	-
15	W/R	-
16	GR/R	-
18	G/W	-
19	V	-
20	W/G	-
21	B/W	-
22	V	-
24	G	-
25	O	-
26	Y	-
27	L/O	-
28	Y/R	-
29	L	-
30	R	-
31	G/Y	-
32	B/SB	-
33	LG/R	-
34	BR/W	-
35	GR/R	-
36	SB	-
37	LG	-
38	L	-
39	P	-
40	W/G	-
41	O	-
42	G/R	-
43	V/W	-
44	LG/B	-
45	R/Y	-
46	B	-
47	BR	-
49	GR	-
50	R/B	-
51	W/R	-
52	BR/Y	-
53	O/B	-
54	G/O	-
55	R/B	-
56	LG/R	-
57	GR/R	-
58	Y/G	-
59	V/W	-
60	R	-
63	B	-
64	R	-
65	W	-
66	G	-
67	SHIELD	-
69	LG/B	-
70	P/L	-
71	L	-
72	R	-
77	Y/B	-
78	Y/L	-
79	Y	-
80	W/R	-
81	Y/L	-
84	L/O	-
86	O	-
87	W/R	-
88	O	-
89	W/L	-
90	GR/L	-
91	W	-
92	G	-
94	W/R	-
96	L/W	-
97	R	-
98	V	-
99	L/W	-
100	P/B	-

Connector No.	B4
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
3	R/Y	-
6	W/R	-
7	R/B	-
8	Y/G	-
9	Y/L	-
10	SHIELD	-
11	P	-
12	Y/R	-
19	GR/R	-
20	W	-
21	R	-
22	SHIELD	-
23	B	-
24	G	-

Connector No.	B5
Connector Name	WIRE TO WIRE
Connector Type	NS06FW-CS

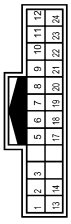
H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	W	-
3	R/Y	-
4	W	-
5	R	-

6	L	-

Connector No.	B6
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH

H.S.



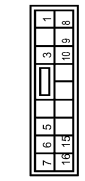
Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	R	-
3	B	-
5	LG	-
6	GR	-
7	L/O	-
8	Y	-
9	L	-
10	B/W	-
11	W/G	-
12	W/R	-
13	SHIELD	-
14	G	-
17	BR/Y	-
18	W/L	-
19	Y/L	-
20	G/Y	-
21	L/Y	-
22	L/W	-
23	G/W	-
24	L/R	-

JRNWC5794GB

BOSE AUDIO WITH NAVIGATION

Connector No.	B17
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS

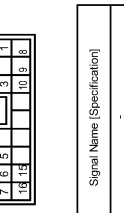
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/R	-
3	G	-
5	R	-
6	L/O	-
7	O	-
8	B	-
9	L	-
10	R/Y	-
15	V	-
16	W	-

Connector No.	B47
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	B	-
3	SHIELD	-
5	Y/G	-
7	R/B	-
8	GR/R	-
10	LG	-
11	SB	-
12	B	-
15	Y/R	-
16	Y/R	-
17	R	-
18	G	-
19	P	-
20	SHIELD	-
21	Y/L	-
23	W/R	-
26	LG	-
27	SB	-
31	B	-
32	B	-

Connector No.	B48
Connector Name	ROOF SPEAKER LH
Connector Type	TK02FBR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	W	-

Connector No.	B49
Connector Name	ROOF SPEAKER RH
Connector Type	TK02FBR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	- [With 15-speakers]
	R	- [With 12-speakers]
2	G	- [With 15-speakers]
	W	- [With 12-speakers]

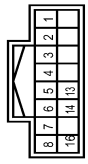
Connector No.	B51
Connector Name	WOOFER
Connector Type	NS02FBR-CS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	SOUND SIGNAL WOOFER (+)
2	R	SOUND SIGNAL WOOFER (-)

Connector No.	B63
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH

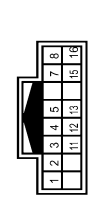
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
3	Y/R	-
4	SB	-
5	LG	-
6	Y	-
7	L/O	-
8	G	-
13	R/L	-
14	G	-
16	W	-

Connector No.	B66
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-NH

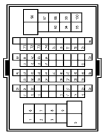
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	G	-
4	W	-
5	SHIELD	-
7	GR	-
8	R/W	-
11	R	-
12	V	-
13	P/L	-
15	R/Y	-
16	L/W	-

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	G	-
3	W	-
5	W/B	-
6	L/Y	-
7	R	-
8	G/R	-
9	GR/R	-

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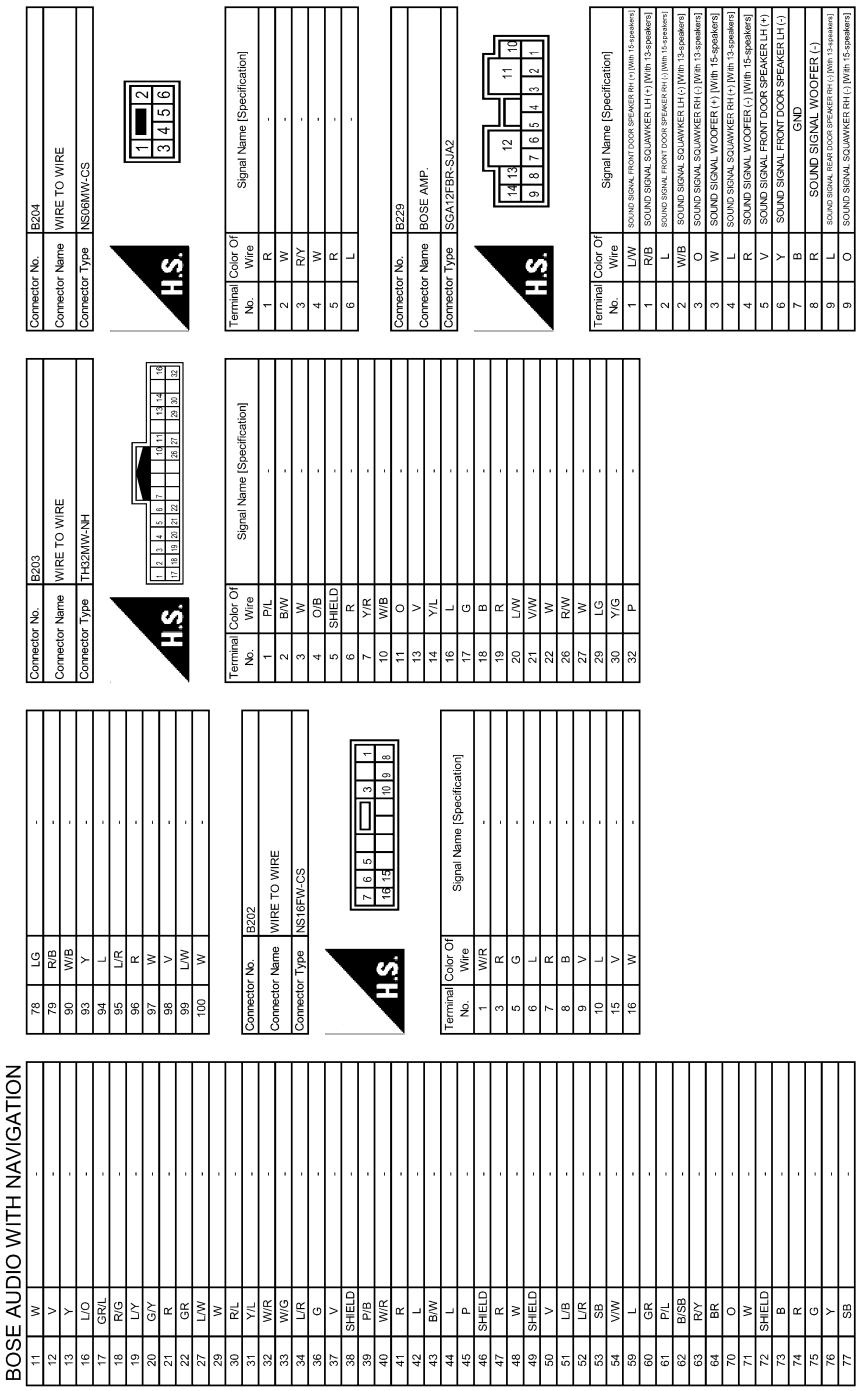

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BOSE AUDIO WITH NAVIGATION

10	R	BATTERY [With 13-speakers]
10	W/B	BATTERY [With 15-speakers]
11	R	BATTERY [With 15-speakers]
11	W/B	BATTERY [With 13-speakers]
12	B	GND
13	W	SOUND SIGNAL WOOFER (+)
14	L	SOUND SIGNAL SQUAWKER RH (+) [With 15-speakers]
14	V	SOUND SIGNAL REAR DOOR SPEAKER RH (+) [With 13-speakers]

34	Y/G	SOUND SIGNAL FRONT RH (-) [With 13-speakers]
35	L	SOUND SIGNAL FRONT LH (+) [With 13-speakers]
35	L	SOUND SIGNAL REAR DOOR SPEAKER RH (-) [With 15-speakers]
36	P	SOUND SIGNAL FRONT LH (-)
37	R/W	MODE CHANGE SIGNAL

Connector No.	B230
Connector Name	BOSE AMP.
Connector Type	SCA19FBR-SGA44

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
15	R/Y	SOUND SIGNAL REAR DOOR SPEAKER LH (-)
16	L	SOUND SIGNAL REAR DOOR SPEAKER LH (+) [With 15-speakers]
16	R	SOUND SIGNAL ROOF SPEAKER (+) [With 13-speakers]
17	R/B	SOUND SIGNAL SQUAWKER LH (+) [With 15-speakers]
17	W	SOUND SIGNAL ROOF SPEAKER (-) [With 13-speakers]
18	V	SOUND SIGNAL FRONT DOOR SPEAKER LH (+) [With 13-speakers]
18	W/B	SOUND SIGNAL SQUAWKER LH (-) [With 15-speakers]
19	Y	SOUND SIGNAL FRONT DOOR SPEAKER LH (-)
20	W/B	BOSE AMP. ON SIGNAL
22	R	SOUND SIGNAL ROOF SPEAKER LH (+)
23	LG	SOUND SIGNAL REAR LH (-) [With 13-speakers]
23	O	SOUND SIGNAL REAR DOOR SPEAKER RH (+) [With 15-speakers]
24	V	SOUND SIGNAL REAR LH (+) [With 13-speakers]
25	W	SOUND SIGNAL REAR RH (-)
26	O	SOUND SIGNAL REAR RH (+)
28	L	SOUND SIGNAL REAR DOOR SPEAKER LH (+)
29	GR/R	SOUND SIGNAL CENTER SPEAKER (+) [With 15-speakers]
29	R/Y	SOUND SIGNAL REAR DOOR SPEAKER LH (-) [With 15-speakers]
30	G/R	SOUND SIGNAL CENTER SPEAKER (-)
31	GR/R	SOUND SIGNAL CENTER SPEAKER (+) [With 15-speakers]
31	L/W	SOUND SIGNAL FRONT DOOR SPEAKER RH (+) [With 13-speakers]
32	L	SOUND SIGNAL FRONT DOOR SPEAKER RH (+)
33	W	SOUND SIGNAL ROOF SPEAKER LH (-) [With 15-speakers]
33	Y/L	SOUND SIGNAL FRONT RH (+) [With 13-speakers]
34	G	SOUND SIGNAL ROOF SPEAKER RH (-) [With 15-speakers]

Connector No.	B234
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	B	-
3	B/W	-
5	R	-
7	O/B	-
8	L/W	-
10	LG	-
11	SB	-
15	Y/R	-
16	Y/R	-
17	R	-
18	G	-
19	P/L	-
20	SHIELD	-
21	W	-
23	V/W	-
26	LG	-
27	SB	-
28	B	-
31	B	-
32	B	-

Connector No.	B239
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
3	Y	-
4	SB	-
5	LG	-
6	Y	-
7	L	-
8	G	-
13	R/L	-
14	G	-
16	W	-

Connector No.	B249
Connector Name	WIRE TO WIRE
Connector Type	RS08MGY-PR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	R	-
3	W	-
4	B	-
6	G	-
7	Y	-

Connector No.	B257
Connector Name	WIRE TO WIRE
Connector Type	RS08FGY-PR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	R	-
3	W	-
4	B	-
6	G	-
7	Y	-

Connector No.	B260
Connector Name	BOSE AMP.
Connector Type	TH40FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
44	V	VOICE GUIDANCE SIGNAL (-)
45	P	SOUND SIGNAL FRONT LH (-)
46	Y/G	SOUND SIGNAL FRONT RH (-)
47	LG	SOUND SIGNAL REAR LH (-)
48	W	SOUND SIGNAL REAR RH (-)
49	P	SOUND SIGNAL CENTER SPEAKER (-)
50	W	SOUND SIGNAL WOOFER (-)
55	Y	AV COMM (L)
56	V	ACC
64	G	VOICE GUIDANCE SIGNAL (+)
65	L	SOUND SIGNAL FRONT LH (+)
66	Y/L	SOUND SIGNAL FRONT RH (+)
67	V	SOUND SIGNAL REAR LH (+)
68	O	SOUND SIGNAL REAR RH (+)
69	L	SOUND SIGNAL CENTER SPEAKER (+)

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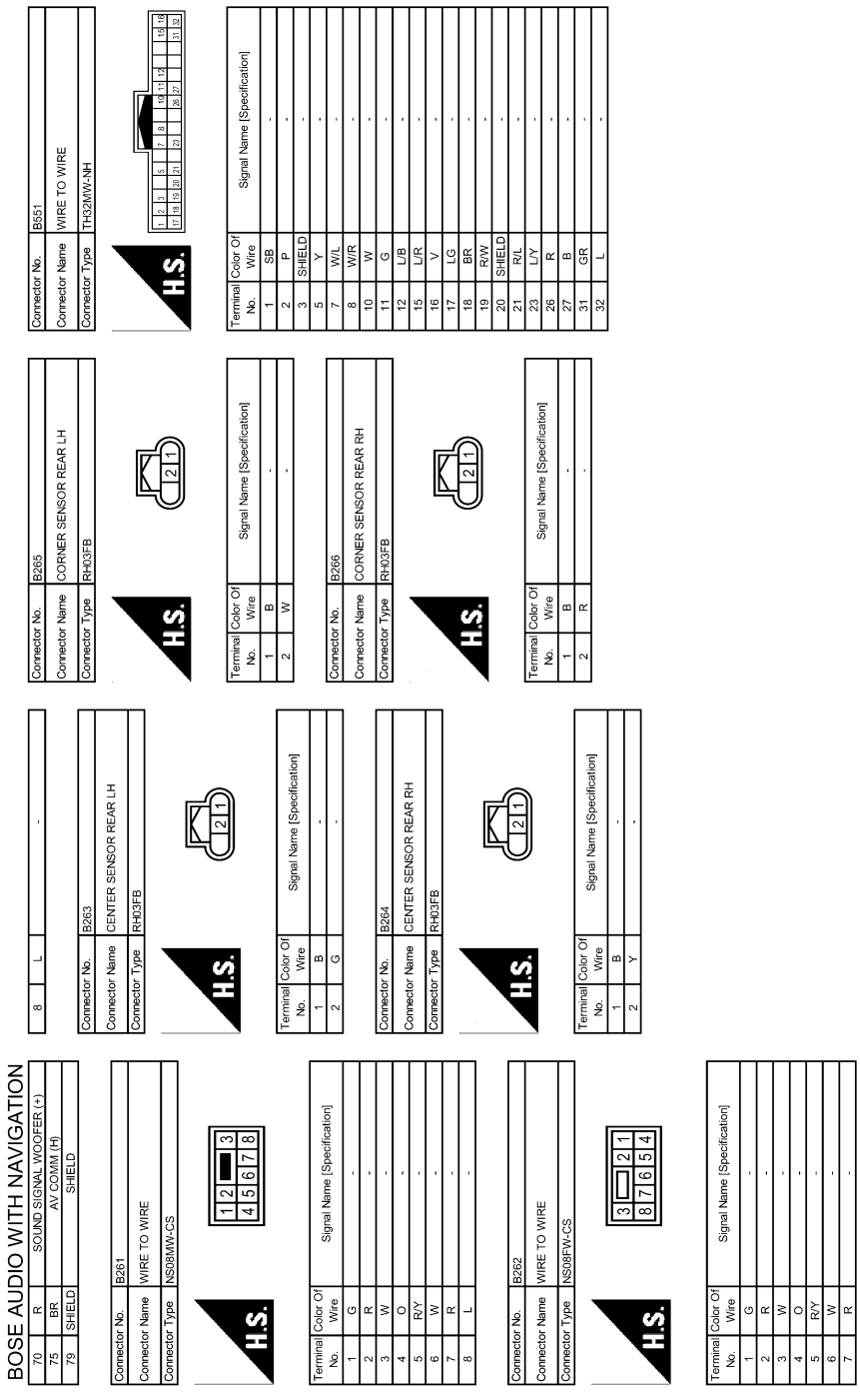

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BOSE AUDIO WITH NAVIGATION

Connector No.	B552
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	P	-
3	SHIELD	-
5	Y	-
7	W/L	-
8	W/R	-
10	W	-
11	G	-
12	L/B	-
15	L/R	-
16	V	-
17	LG	-
18	BR	-
19	R/W	-
20	SHIELD	-
21	R/L	-
23	L/Y	-
25	SHIELD	-
26	R	-
27	B	-
31	GR	-
32	L	-

Connector No.	B553
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	GND
2	V	BAT
3	GR	GND
4	L/R	BAT
10	L/B	LOCK/UNLOCK/PEDESIGNAL FOR HEADREST DISPLAY UNIT LH
11	B	AV COMM (H)
12	G	AV COMM (H)
13	R	AV COMM (L)
14	W	AV COMM (L)
15	SHIELD	SHIELD
18	W/R	ACC SIGNAL
19	L/Y	CONT. GND
20	W/L	IMAGE SWITCH SIGNAL
23	R/L	COMPOSITE IMAGE SIGNAL GND
24	Y	COMPOSITE IMAGE SIGNAL
25	SHIELD	SHIELD
27	R/W	AV GND
28	SHIELD	SHIELD
29	BR	HEADPHONE SOUND SIGNAL RH (-)
30	P	HEADPHONE SOUND SIGNAL RH (+)
31	LG	HEADPHONE SOUND SIGNAL LH (-)
32	SB	HEADPHONE SOUND SIGNAL LH (+)

Connector No.	B554
Connector Name	HEADREST DISPLAY UNIT LH
Connector Type	TH32FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	P	-
3	SHIELD	-
5	Y	-
7	W/L	-
8	W/R	-
10	W	-
11	G	-
15	L/R	-
16	V	-
17	LG	-
18	BR	-
19	R/W	-
20	SHIELD	-
21	R/L	-
23	L/Y	-
26	R	-
27	B	-
28	B/R	-
31	GR	-
32	L	-

Connector No.	B571
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH

H.S.

JRNWC5799GB

BOSE AUDIO WITH NAVIGATION

Connector No.	B572
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	P	-
3	SHIELD	-
5	Y	-
7	W/L	-
8	W/R	-
10	W	-
11	G	-
15	L/R	-
16	V	-
17	LG	-
18	BR	-
19	R/W	-
20	SHIELD	-
21	R/L	-
23	L/Y	-
25	SHIELD	-
26	R	-
27	B	-
28	B/R	-
31	GR	-
32	L	-

Connector No.	B573
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	P	-
3	SHIELD	-
5	Y	-
7	W/L	-
8	W/R	-
10	W	-
11	G	-
15	L/R	-
16	V	-
17	LG	-
18	BR	-
19	R/W	-
20	SHIELD	-
21	R/L	-
23	L/Y	-
25	SHIELD	-
26	R	-
27	B	-
28	B/R	-
31	GR	-
32	L	-

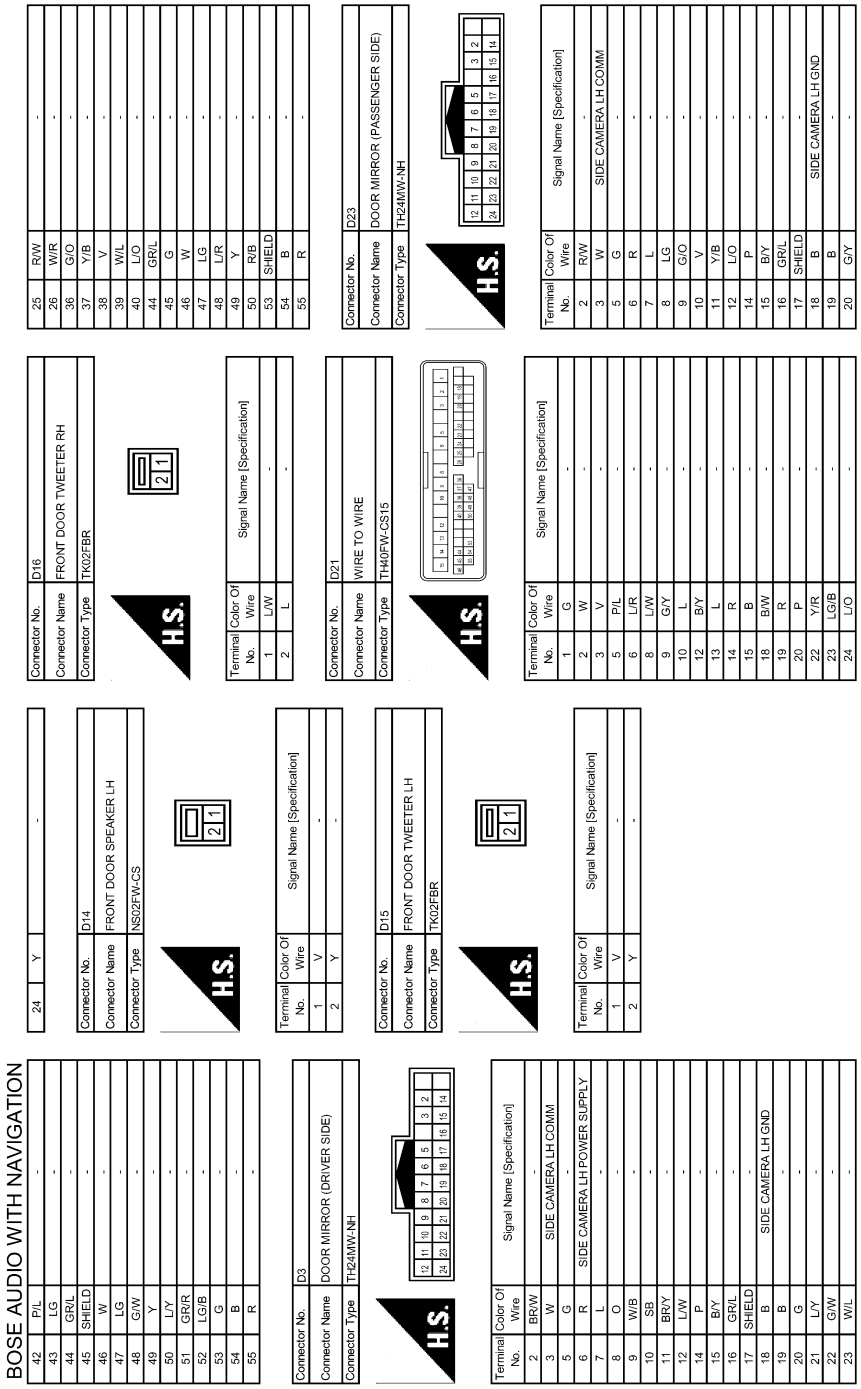
Connector No.	B574
Connector Name	HEADREST DISPLAY UNIT RH
Connector Type	TH32FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	GND
2	V	BAT
3	GR	GND
4	L/R	BAT
9	B/R	LOCATION RECOGNITION SIGNAL FOR HEADREST DISPLAY UNIT RH
11	B	AV COMM (H)
12	G	AV COMM (H)
13	R	AV COMM (L)
14	W	AV COMM (L)
15	SHIELD	SHIELD
18	W/R	ACC SIGNAL
19	L/Y	CONT. GND
20	W/L	IMAGE SWITCH SIGNAL
23	R/L	COMPOSITE IMAGE SIGNAL GND
24	Y	COMPOSITE IMAGE SIGNAL
25	SHIELD	SHIELD
27	R/W	AV GND
28	SHIELD	SHIELD
29	BR	HEADPHONE SOUND SIGNAL RH (-)
30	P	HEADPHONE SOUND SIGNAL RH (+)
31	LG	HEADPHONE SOUND SIGNAL LH (-)
32	SB	HEADPHONE SOUND SIGNAL LH (+)

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	V	-
4	Y	-
5	LG/R	-
6	BR/W	-
8	V	-
9	G	-
10	L	-
12	B/Y	-
13	Y	-
14	R	-
15	B	-
16	GR/R	-
17	R/W	-
18	B	-
19	R	-
20	P	-
22	V	-
23	P/B	-
24	L/O	-
25	BR/W	-
26	W/R	-
27	V	-
28	W/G	-
29	Y/G	-
30	O/L	-
31	GR/B	-
32	BR	-
33	V/W	-
36	G/O	-
37	BR/Y	-
38	SB	-
39	W/L	-
40	L/W	-
41	Y/G	-

JRNWC5800GB



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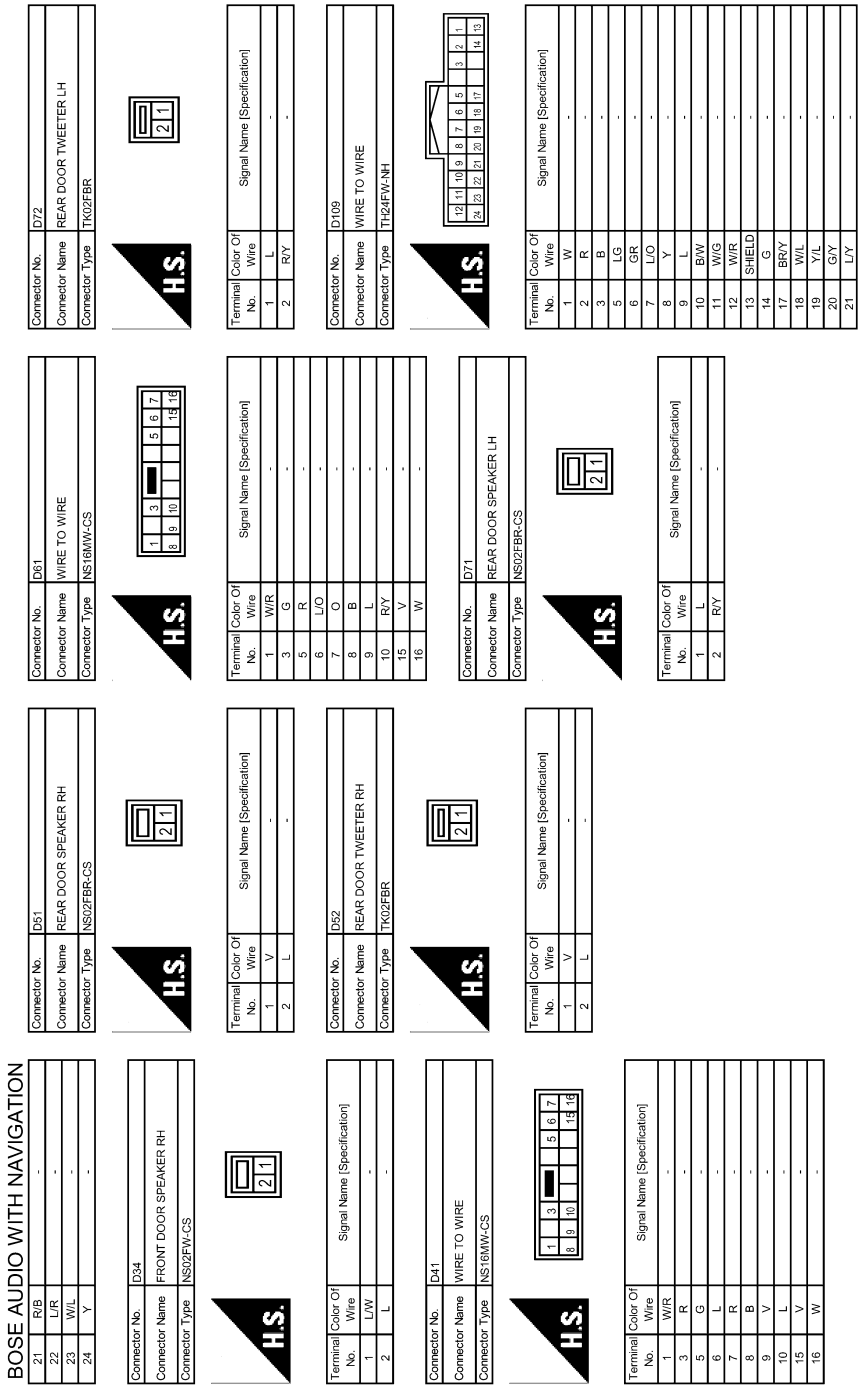

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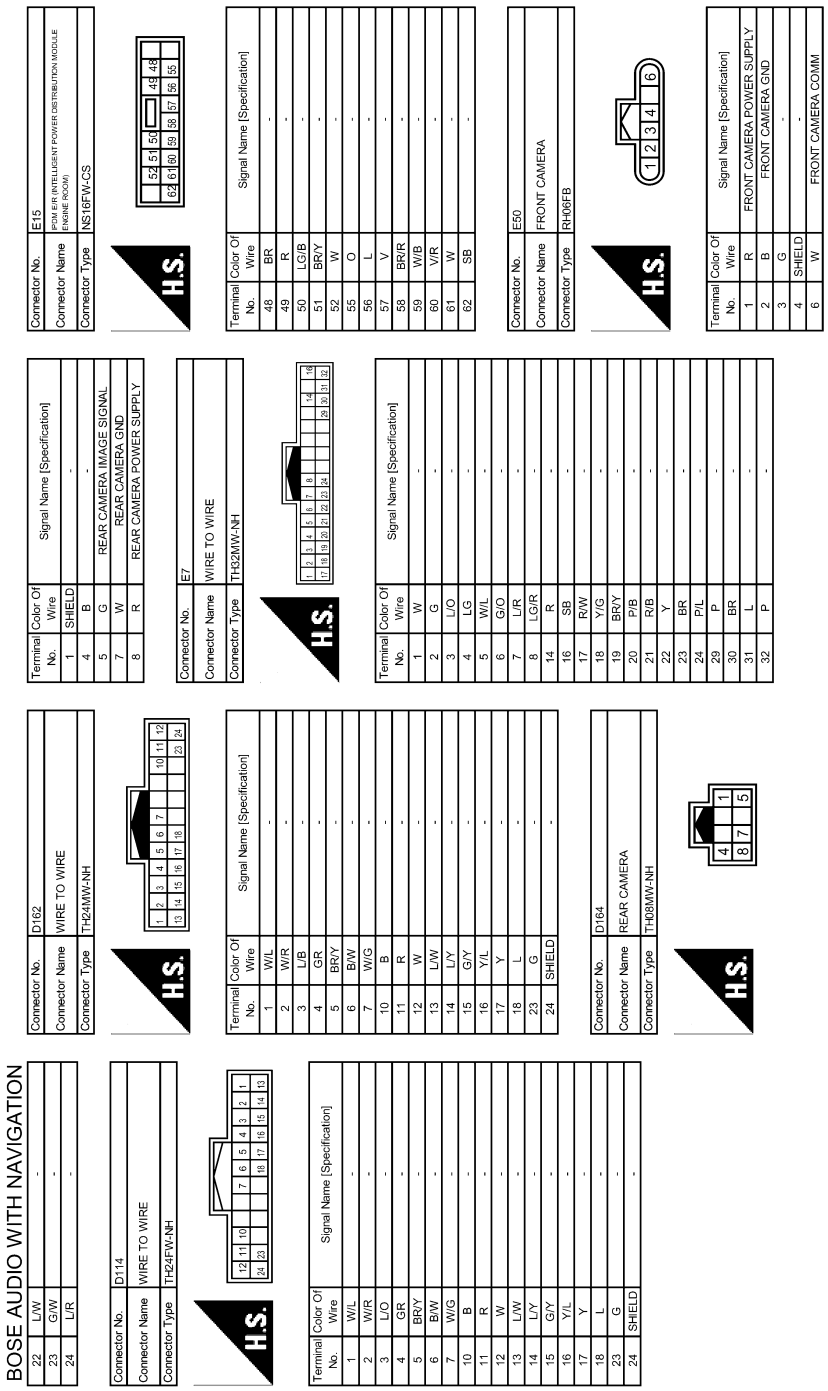


JRNWC5803GB

BOSE AUDIO WITH NAVIGATION

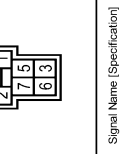
Connector No.	E52
Connector Name	BACK-UP LAMP RELAY
Connector Type	M06FBR-R-LC

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	R	-
3	W/B	-
5	Y/L	-
6	V	-
7	R/Y	-

Connector No.	E80
Connector Name	ECM
Connector Type	MA855FB-MEB10-LH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
111	R	FUEL INJECTOR DRIVER POWER SUPPLY
112	SB	FUEL INJECTOR DRIVER POWER SUPPLY
113	G	-
114	B	ECM GROUND
115	B	ECM GROUND
120	Y	EVAP CANISTER VENT CONTROL VALVE
122	BR/W	VEL ACTUATOR MOTOR RELAY XMOT SIGNAL XVEL CONTROL MODULE
123	V/R	THROTTLE CONTROL MOTOR RELAY
125	GR	FUEL PUMP CONTROL MODULE (FPCM)
126	O	ACCELERATOR PEDAL POSITION SENSOR 2
128	Y	ASCD/ICC STEERING SWITCH
129	P/L	SENSOR GROUND
130	R	SENSOR GROUND
131	L/W	SENSOR POWER SUPPLY
133	SB	SENSOR POWER SUPPLY
134	V/W	FUEL TEMPERATURE SENSOR
136	W/R	ACCELERATOR PEDAL POSITION SENSOR 1
137	W/G	SENSOR POWER SUPPLY
138	V	BATTERY CURRENT SENSOR
139	G	BATTERY TEMPERATURE SENSOR
140	R/Y	SENSOR GROUND
141	SB	IGNITION SWITCH
142	R/W	FUEL PUMP CONTROL MODULE (FPCM) CHECK
143	L/Y	EVAP CONTROL SYSTEM PRESSURE SENSOR
144	O/B	REFRIGERANT PRESSURE SENSOR
146	L	CAN COMMUNICATION LINE
147	G/Y	ASCD/ICC BRAKE SWITCH
150	R	SENSOR GROUND
151	P	CAN COMMUNICATION LINE
156	L	POWER SUPPLY FOR ECM (BACK-UP)
158	W/B	STOP LAMP SWITCH
161	R/W	ECM COMMUNICATION LINE
163	L/G	ECM RELAY (SELF SHUT-OFF)
165	GR/R	-
166	W	ECM COMMUNICATION LINE
169	G/B	ENGINE SPEED SIGNAL OUTPUT
171	W	POWER SUPPLY FOR ECM
172	W	POWER SUPPLY FOR ECM
173	O	THROTTLE CONTROL MOTOR POWER SUPPLY
174	B	ECM GROUND
175	B	ECM GROUND

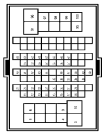
Connector No.	E83
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	G	-
4	W	-
5	SHIELD	-
7	GR	-
8	R/W	-
11	R	-
12	V	-
13	P/L	-
15	R/Y	-
16	L/W	-

Connector No.	E107
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
4	V/W	-
5	G/R	-
6	P	-
9	GR/L	-
10	Y/R	-
11	L/R	-
12	W/G	-
13	BR/Y	-
14	LG	-
15	BR/W	-
16	B/Y	-
17	W/B	-
18	GR/R	-
20	W/R	-
21	B	-
22	R/L	-
23	G/R	-
24	R/W	-
25	W/L	-
26	R	-
27	L	-
28	G/B	-
35	G	-
36	Y	-
37	R	-
38	G/Y	-
39	O	-
40	W	-
41	R	-
42	B	-
43	G	-
44	SHIELD	-
46	B	-
47	W	-
48	SHIELD	-
49	W	-
50	SHIELD	-
51	Y/R	-
52	GR	-
53	LG/B	-
54	LG/R	-
55	R/G	-
56	B/R	-
57	SB	-
60	G	-
61	B	-
62	W	-
63	R	-
64	SHIELD	-
65	L/Y	-
66	V	-
67	B/W	-
91	G/R	-
95	SB	-
96	G/R	-
97	GR/L	-
98	G/W	-
99	R/Y	-
100	L	-

Connector No.	E113
Connector Name	WIRE TO WIRE
Connector Type	RS06MB

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	R	-
4	B	-

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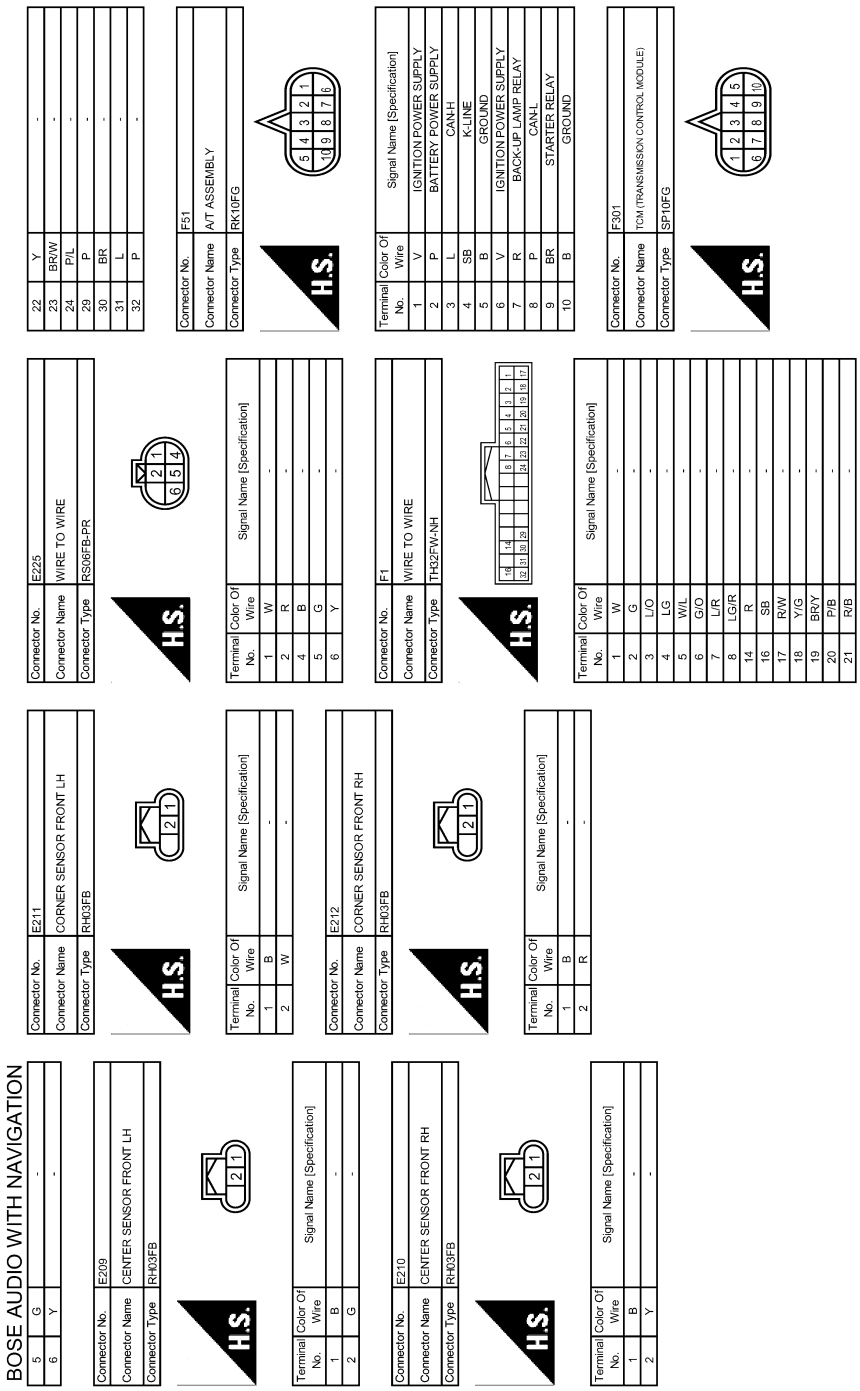

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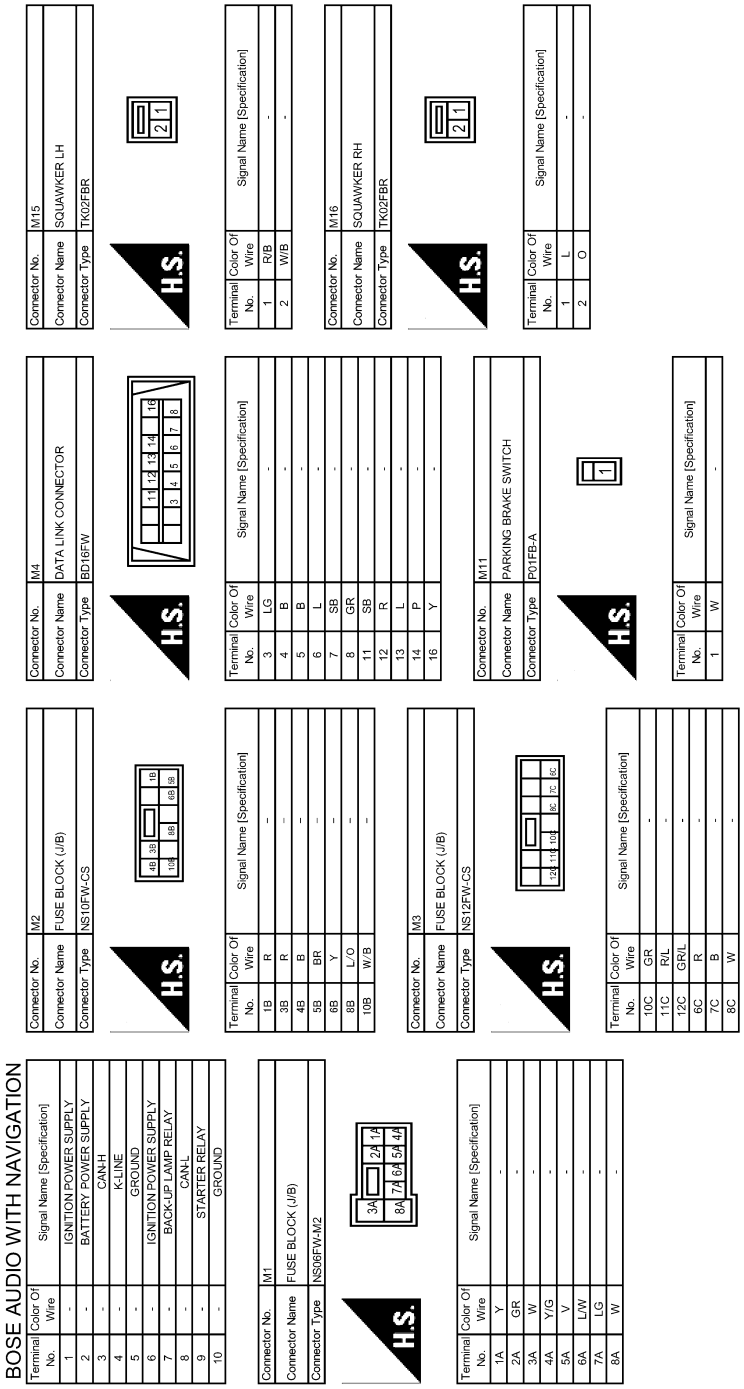

JRNWC5806GB

BOSE AUDIO WITH NAVIGATION

Connector No.	M19
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	BR	-
5	R/W	-
6	L	-
7	V	-
9	G	-
11	W/B	-
12	BR	-
13	G/R	-
14	B/Y	-
15	W/R	-
16	GR/R	-
18	G/W	-
19	V	-
20	W/G	-
21	B/W	-
22	V	-
24	G	-
25	O	-
26	Y	-
27	L/O	-
28	Y/R	-
29	L	-
30	R	-
31	G/Y	-
32	B/SB	-
33	LG/R	-
34	BR/W	-
35	GR/R	-
36	SB	-
37	LG	-
38	L	-
39	P	-
40	W/G	-
41	O	-
42	G/R	-
43	V/W	-
44	LG/B	-
45	R/Y	-
46	B	-
47	BR/W	-
49	GR	-
50	R/B	-
51	W/R	-
52	BR/Y	-
53	O/B	-
54	G/O	-
55	R/B	-
56	LG/R	-
57	GR/R	-
58	Y/G	-
59	V/W	-
60	R	-
63	B	-
64	R	-
65	W	-
66	G	-
67	SHIELD	-
69	LG/B	-
70	P/L	-
71	L	-
72	R	-
77	Y/B	-
78	Y/L	-
79	Y	-
80	W/R	-
81	Y/L	-
84	L/O	-
86	O	-
87	W/R	-
88	O	-
89	W/L	-
90	GR/L	-
91	W	-
92	G	-
94	W/R	-
96	L/W	-
97	R	-
98	V	-
99	L/W	-
100	P/B	-

Connector No.	M20
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	V	-
4	Y	-
5	LG/R	-
6	BR/W	-
8	V	-
9	G	-
10	L	-
12	B/Y	-
13	Y	-
14	R	-
15	B	-
16	GR/R	-
17	V/W	-
18	B	-
19	R	-
20	P	-
22	V	-
23	P/B	-
24	L/O	-
25	BR/W	-
26	W/R	-
27	V	-
28	W/G	-
29	Y/G	-
30	O/L	-
31	GR/B	-
32	BR	-
33	V/W	-
36	G/O	-
37	BR/Y	-
38	SB	-
39	W/L	-
40	L/W	-
41	Y/G	-
42	P/L	-
43	LG	-
44	GR	-
45	SHIELD	-
46	W	-
47	LG	-
48	G/W	-
49	Y	-
50	L/Y	-
51	GR/R	-
52	LG/B	-
53	G	-
54	B	-
55	R	-

Connector No.	M22
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	W	-
3	V	-
5	P/L	-
6	L/R	-
8	L/W	-
9	G/Y	-
10	L	-
12	B/Y	-
13	L	-
14	R	-
15	B	-
18	B/W	-
19	R	-
20	P	-
22	Y/R	-
23	LG/B	-
24	L/W	-
25	W/R	-
26	W/R	-

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36	G/O
37	Y/B
38	V
39	W/L
40	L/O
44	GR
45	G
46	W
47	LG
48	L/R
49	Y
50	R/B
53	SHIELD
54	B
55	R

Connector No.	M23
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	V	-
3	B	-
4	Y	-
5	GR	-
6	B/Y	-
7	B	-
8	Y/L	-
9	G	-
10	B	-
11	R	-
12	Y	-
14	Y	-
15	W/R	-
16	L/O	-
17	Y	-
18	L/O	-
20	W	-
21	O	-

22	SB
23	Y/R
24	SHIELD
25	Y/G
26	L/O
27	W/G
28	Y
29	L
30	B/SB
31	BR
32	GR/L

Connector No.	M30
Connector Name	STEERING ANGLE SENSOR
Connector Type	TH08FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	P	-
4	GR	-
5	L	-

31	Y/L
32	R
33	B
34	P/B

Connector No.	M34
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	BATTERY POWER SUPPLY
2	GR	IGNITION SIGNAL
3	B	GROUND
4	B	ILL GND
5	B	ILL CONTROL OUTPUT
7	R	TOW MODE SIGNAL
8	P/L	TRIP RESET SWITCH SIGNAL
11	G	ENTER SWITCH SIGNAL
12	O	SELECT SWITCH SIGNAL
13	W/R	ILLUMINATION CONTROL SWITCH SIGNAL (+)
14	R	ILLUMINATION CONTROL SWITCH SIGNAL (-)
15	R/W	AIR BAG SIGNAL
18	W/R	AMBIENT SENSOR SIGNAL
19	V/W	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL
20	B	AMBIENT SENSOR GROUND
21	L	CAN-H
22	P	CAN-L
23	B	GROUND
24	V	FUEL LEVEL SENSOR GROUND
25	O/L	ALTERNATOR SIGNAL
26	W	PARKING BRAKE SWITCH SIGNAL
28	GR/R	SECURITY SIGNAL
29	BR	WASHER LEVEL SWITCH SIGNAL
30	SB	VEHICLE SPEED SIGNAL (2-PULSE)
31	BR/W	VEHICLE SPEED SIGNAL (8-PULSE)
33	W	SNOW MODE SIGNAL
34	BR/Y	FUEL LEVEL SENSOR SIGNAL
35	O/B	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
36	G/Y	PASSENGER SEAT BELT WARNING SIGNAL
37	R/Y	NON-MANUAL MODE SIGNAL

38	L/W
39	Y/B
40	G/W

MANUAL MODE SHIFT DOWN SIGNAL
MANUAL MODE SHIFT UP SIGNAL
MANUAL MODE SIGNAL

Connector No.	M47
Connector Name	SONAR CONTROL UNIT
Connector Type	TH24FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	CORNER SENSOR FRONT LH
4	R	CORNER SENSOR FRONT RH
5	W	CORNER SENSOR REAR LH
6	R	CORNER SENSOR REAR RH
7	G	SONAR RR INNER LH
8	Y	SONAR RR INNER RH
9	G	SONAR FR INNER LH
10	Y	SONAR FR INNER RH
12	B	SENSOR GND
13	GR/L	IGN
19	L	CAN-H [Without ADAS]
19	L	ITS-CAN H [With ADAS]
20	R	CAN-L [Without ADAS]
20	Y	ITS-CAN L [With ADAS]
24	B	GND

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Connector No.	M48
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
2	Y/G	BATTERY POWER SUPPLY
3	GR/L	IGNITION SIGNAL
4	V	ACC POWER SUPPLY
19	SB	AV COMM (H)
20	LG	AV COMM (L)
25	P	REV
27	L	CAN-H
28	R	CAN-L [Without ADAS]
28	Y	CAN-L [With ADAS]
30	LG	RETRACT MOTOR OPERATION SIGNAL (OPEN)
32	G/O	RETRACT MOTOR OPERATION SIGNAL (CLOSE)

Connector No.	M61
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH32FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
47	W	CAMERA IMAGE SIGNAL
48	SHIELD	CAMERA IMAGE SIGNAL GROUND
49	B	REAR CAMERA COMMUNICATION SIGANAL
50	R	REAR CAMERA POWER SUPPLY
52	W	REAR CAMERA GROUND
53	G	REAR CAMERA IMAGE SIGNAL (+)
54	SHIELD	REAR CAMERA IMAGE SIGNAL (-)
55	W	SIDE CAMERA DRIVER SIDE COMMUNICATION SIGNAL
56	R	SIDE CAMERA DRIVER SIDE POWER SUPPLY
58	B	SIDE CAMERA DRIVER SIDE GROUND
59	G	SIDE CAMERA DRIVER SIDE IMAGE SIGNAL (+)
60	SHIELD	SIDE CAMERA DRIVER SIDE IMAGE SIGNAL (-)
61	W	SIDE CAMERA PASSENGER SIDE COMMUNICATION SIGNAL
62	R	SIDE CAMERA PASSENGER SIDE POWER SUPPLY
64	B	SIDE CAMERA PASSENGER SIDE GROUND
65	G	SIDE CAMERA PASSENGER SIDE IMAGE SIGNAL (+)
66	SHIELD	SIDE CAMERA PASSENGER SIDE IMAGE SIGNAL (-)
67	W	FRONT CAMERA COMMUNICATION SIGNAL
68	R	FRONT CAMERA POWER SUPPLY
70	B	FRONT CAMERA GROUND
71	G	FRONT CAMERA IMAGE SIGNAL (+)
72	SHIELD	FRONT CAMERA IMAGE SIGNAL (-)

Connector No.	M68
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	BR/Y	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	V	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	R	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	P/B	OPTICAL SENSOR
16	L/O	DIMMER SIGNAL
17	Y/G	SENSOR PWR SPLY
18	B/Y	RECEIVER/SENSOR GND
19	BR	RECEIVER PWR SPLY
20	G/R	KYLS ENT RECEIVER COMM
21	P	NATS ANT AMP.
22	W/B	KYLS ENT RECEIVER RSSI
23	GR/R	SECURITY IND CONT
24	SB	DONGLE LINK
25	LG/R	NATS ANT AMP.
26	O	INTELLIGENT KEY IDENTIFICATION
29	W	HAZARD SW
30	W/L	BK DOOR OPNR SW
31	W/G	DR DOOR UNLOCK SENSOR
32	LG	COMBI SW OUTPUT 5
33	Y	COMBI SW OUTPUT 4
34	W	COMBI SW OUTPUT 3
35	R/W	COMBI SW OUTPUT 2
36	SB	COMBI SW OUTPUT 1
37	G/Y	SHIFT P
39	L	CAN-H
40	P	CAN-L

Connector No.	M71
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
72	P	PUDDLE LAMP CONT
73	W	ON IND
74	Y/B	TRAILER TURN SIG RH CONT
75	LG/R	DRIVER DOOR REQUEST SW
76	SB	PUSH SW
77	O/L	TRAILER TURN SIG LH CONT
78	P/B	DRIVER DOOR ANT+
79	V	DRIVER DOOR ANT-
80	LG/B	PASSENGER DOOR ANT+
81	Y/R	PASSENGER DOOR ANT-
82	W/G	BACK DOOR ANT+
83	B/W	BACK DOOR ANT-
84	BR	ROOM ANT1+
85	Y	ROOM ANT1-
86	W	ROOM ANT2+
87	B	ROOM ANT2-
88	V	LAGGAGE ROOM ANT+
89	G	LAGGAGE ROOM ANT-
90	Y	PUSH-BTN IGN SW ILL PWR
91	O	LOCK IND
92	L	LOW SIDE PUSH LED
93	GR/R	I-KEY WARN BUZZER
96	BR	ACC RELAY CONT
97	R/W	STARTER RELAY CONT
98	O	IGN RELAY (IPDM E/R) CONT
99	R	IGN RELAY (F/B) CONT
100	P/L	PASSENGER DOOR REQUEST SW
101	W/B	IGN PWR SPLY 2
102	BR	SHIFT N/P
104	R/B	A/T SHIFT SELECT PWR SPLY
105	O/L	STOP LAMP SW 2
106	Y/G	BLWR FAN MTR RELAY CONT
109	L/W	ACC IND

Connector No.	M72
Connector Name	MULTIFUNCTION SWITCH
Connector Type	TH16FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
3	V	ACC
4	L/W	ILL
5	B/O	ILL CONT
6	SB	AV COMM (H)
8	LG	AV COMM (L)
9	R/W	SW GND
14	W/B	DISK EJECT SIGNAL

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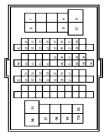
Connector No.	M82
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

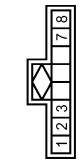
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
4	V/W	-
5	G/R	-
6	P	-
9	GR/L	-
10	Y/R	-
11	L/R	-
12	W/G	-
13	BR/Y	-
14	LG	-
15	BR/W	-
16	B/Y	-
17	W/B	-
18	GR/R	-
20	W/R	-
21	B	-
22	R/L	-
23	G/R	-
24	R/W	-
25	W/L	-
26	R	-
27	L	-
28	B/SB	-
35	G	-
36	Y	-
37	R	-
38	G/Y	-
39	O	-
40	W	-
41	R	-
42	B	-
43	G	-
44	SHIELD	-
46	B	-
47	W	-
48	SHIELD	-
49	W	-
50	SHIELD	-
51	Y/R	-
52	GR	-
53	LG/B	-
54	LG/R	-
55	R/G	-
56	B/O	-
57	SB	-
60	G	-
61	B	-
62	W	-
63	R	-
64	SHIELD	-
65	L/Y	-
66	V	-
67	B/W	-
91	G/R	-
95	SB	-
96	G/R	-
97	GR/L	-
98	G/W	-
99	P	-
100	L	-

Connector No.	M98
Connector Name	REAR AUXILIARY INPUT JACKS
Connector Type	A08FW

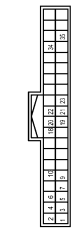
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	AUX SOUND SIGNAL RH (+)
2	R	AUX SOUND SIGNAL GND
3	B	AUX SOUND SIGNAL LH (+)
7	LG	AUX IMAGE SIGNAL
8	V	AUX IMAGE SIGNAL GND

Connector No.	M99
Connector Name	TCU
Connector Type	TH40FW-NH

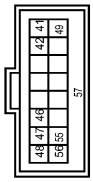
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y/R	BAT
2	B	GND
3	BR	ACC
4	GR/L	IGN
5	V	ACC OUT
6	BR	AV-ACC
7	B	GND
9	L	V-CAN H
10	P	V-CAN L
18	Y/G	MIC VCC
19	Y/L	MIC SIG
20	SHIELD	MIC GND
21	Y	DCM MIC VCC
22	BR	DCM MIC SIG
23	SHIELD	DCM MIC GND
34	G	ECALL SW
35	O	LED A

Connector No.	M100
Connector Name	TCU
Connector Type	HAA16FGY

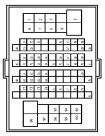
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
41	SB	U-VOICE
42	GR	VOICE GND
46	R	MANUFACTURE SPECIFIC
47	L	USB VBUS
48	Y	USB D-
49	O	D-VOICE
55	B	USB GND
56	LG	USB D+
57	SHIELD	CONN CHASSIS GND

Connector No.	M111
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	G	-
3	W/R	-
5	W/B	-
6	L/Y	-
7	R	-
8	G/R	-
9	GR/R	-
11	W	-
12	V	-
13	Y	-
16	L/O	-
17	GR/L	-
18	R/G	-
19	L/Y	-
20	G/Y	-
21	R	-
22	GR	-
27	L/O	-
29	SB	-
30	R/L	-
31	Y/L	-
32	W/R	-
33	W/G	-
34	L/R	-
36	G	-
37	V	-
38	SHIELD	-

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39	P/B	-
40	W/R	-
41	R	-
42	L/W	-
43	B/W	-
44	L	-
45	P	-
46	SHIELD	-
47	R	-
48	W	-
49	SHIELD	-
50	V	-
51	O/L	-
52	L/R	-
53	SB	-
54	V/W	-
59	L	-
60	GR	-
61	P/L	-
62	B/SB	-
63	R/Y	-
64	BR	-
70	O	-
71	W	-
72	SHIELD	-
73	B	-
74	R	-
75	G	-
76	Y	-
77	SB	-
78	LG	-
79	R/B	-
90	W/B	-
93	Y	-
94	L	-
95	L/R	-
96	R	-
97	W	-
98	V	-
99	L/W	-
100	W	-

Connector No.	M119
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	SB	-
3	L	-
4	W/B	-
5	SHIELD	-
6	LG	-
7	V	-
8	W	-
9	O	-
10	SHIELD	-
11	W/L	-
12	L	-
13	P	-
14	SHIELD	-
15	G	-
16	V	-
17	W	-
18	G/R	-
19	Y	-
20	BR	-
21	LG	-
22	LG	-
23	P	-
24	R/W	-
25	L/O	-
26	GR/L	-
27	W	-
28	BR	- [Without DCM] - [With DCM]
28	V	
29	BR/W	-
30	Y/G	-
31	Y/L	-
32	B	-
33	R	-
34	W	-
35	SHIELD	-
36	SHIELD	-
37	SHIELD	-
38	GR/R	-
39	BR	-
40	SHIELD	-

Connector No.	M120
Connector Name	WIRE TO WIRE
Connector Type	NS04MW-CS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	O	-
3	BR	-
4	Y/R	-

Connector No.	M121
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	LG	-
2	V	-
3	SHIELD	-
9	W	-
10	R	-
11	B	-
12	SHIELD	-
14	SHIELD	-
15	Y/L	-
16	Y/G	-

Connector No.	M139
Connector Name	FRONT AUXILIARY INPUT JACKS
Connector Type	A08FW

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	AUX SOUND SIGNAL RH (+)
2	W/L	AUX SOUND SIGNAL GND
3	W	AUX SOUND SIGNAL LH (+)
7	LG	AUX IMAGE SIGNAL
8	V	AUX IMAGE SIGNAL GND

Connector No.	M206
Connector Name	AV CONTROL UNIT
Connector Type	TH18FW-CS2

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/B	BOSE AMP. ON SIGNAL
2	L	SOUND SIGNAL FRONT LH (+)
3	P	SOUND SIGNAL FRONT LH (-)
4	V	SOUND SIGNAL REAR LH (+)
5	LG	SOUND SIGNAL REAR LH (-)
6	Y/G	STRG SW A
7	V	ACC
10	SHIELD	SHIELD
11	Y/L	SOUND SIGNAL FRONT RH (+)
12	Y/G	SOUND SIGNAL FRONT RH (-)
13	O	SOUND SIGNAL REAR RH (+)
14	W	SOUND SIGNAL REAR RH (-)

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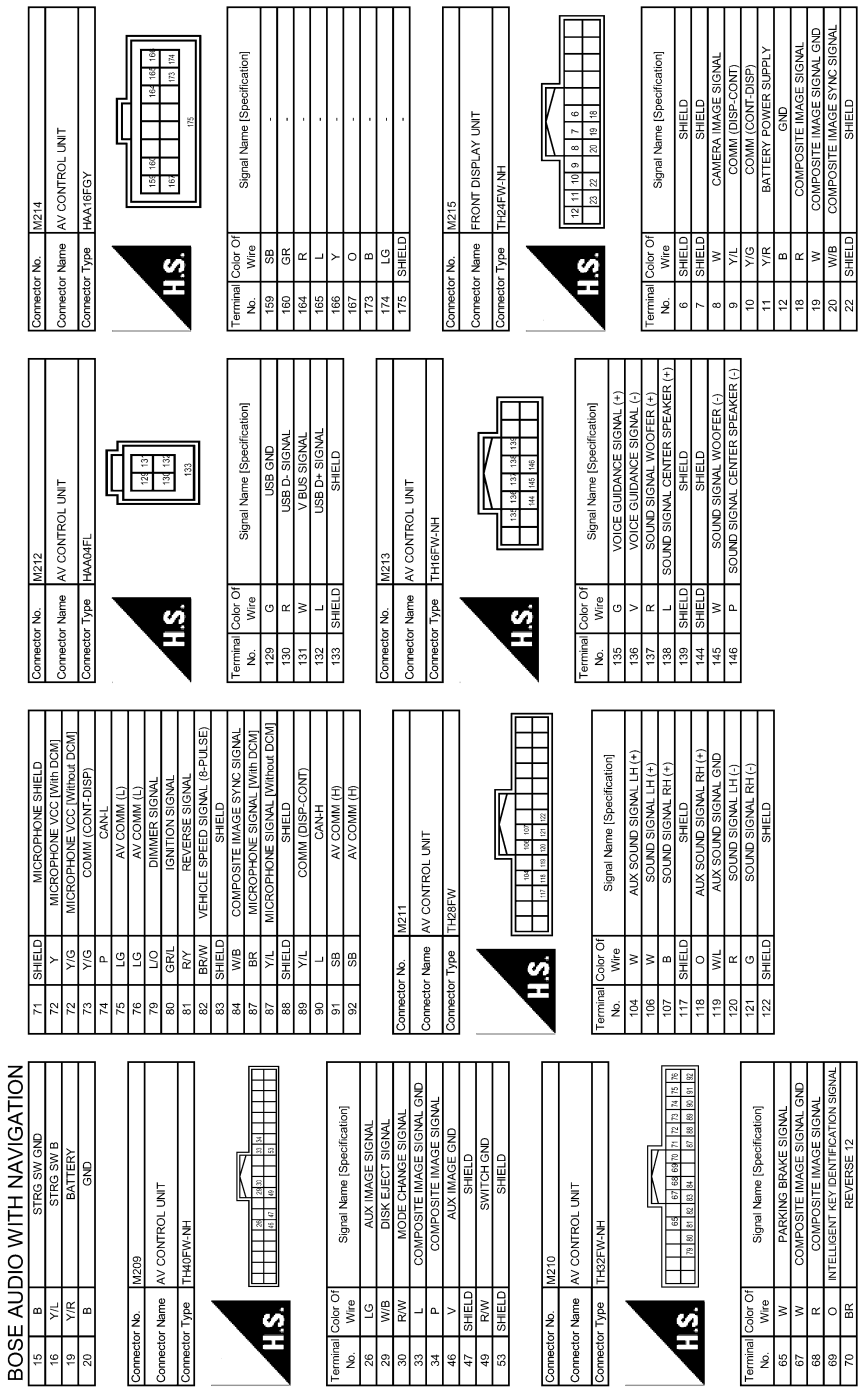

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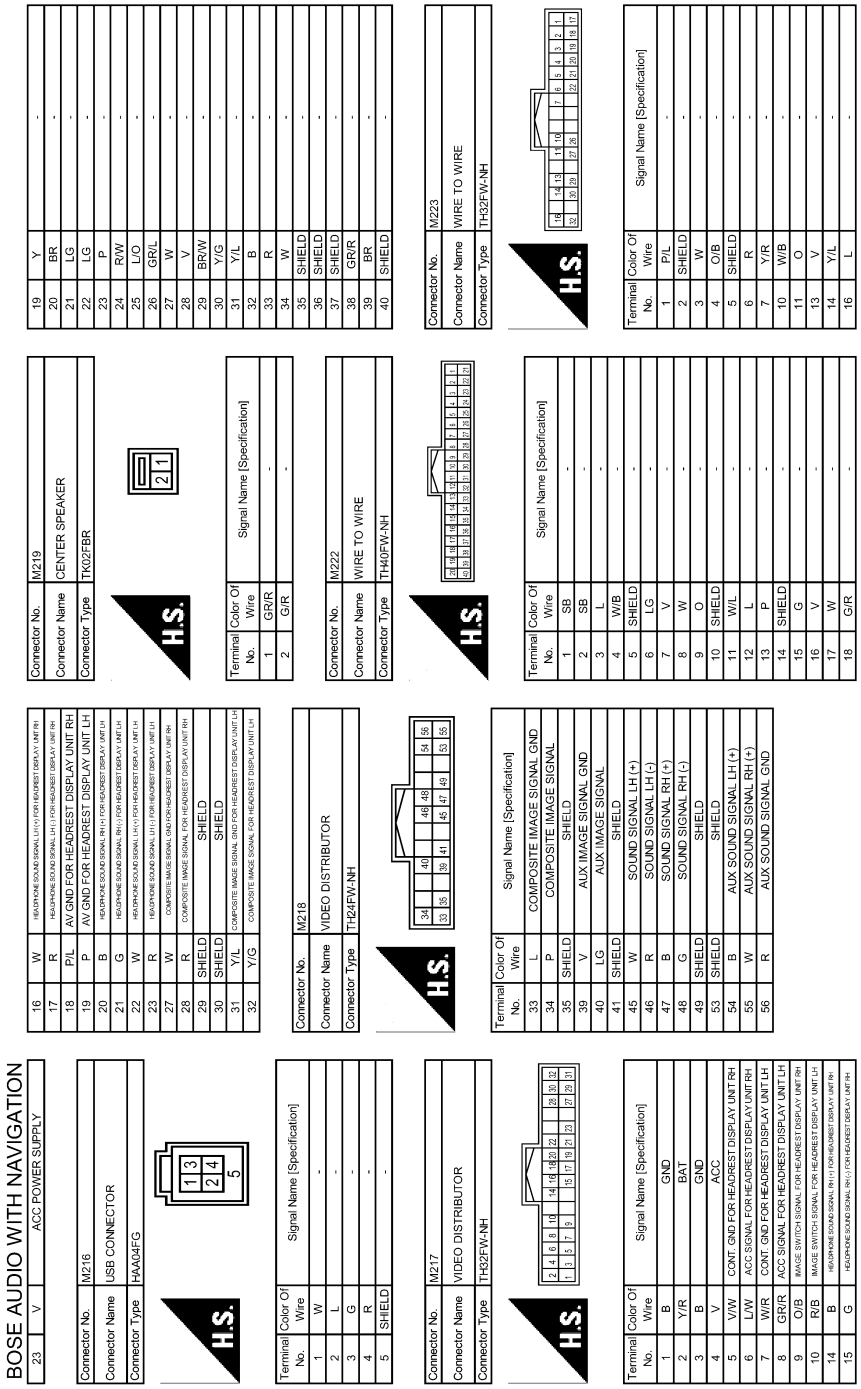

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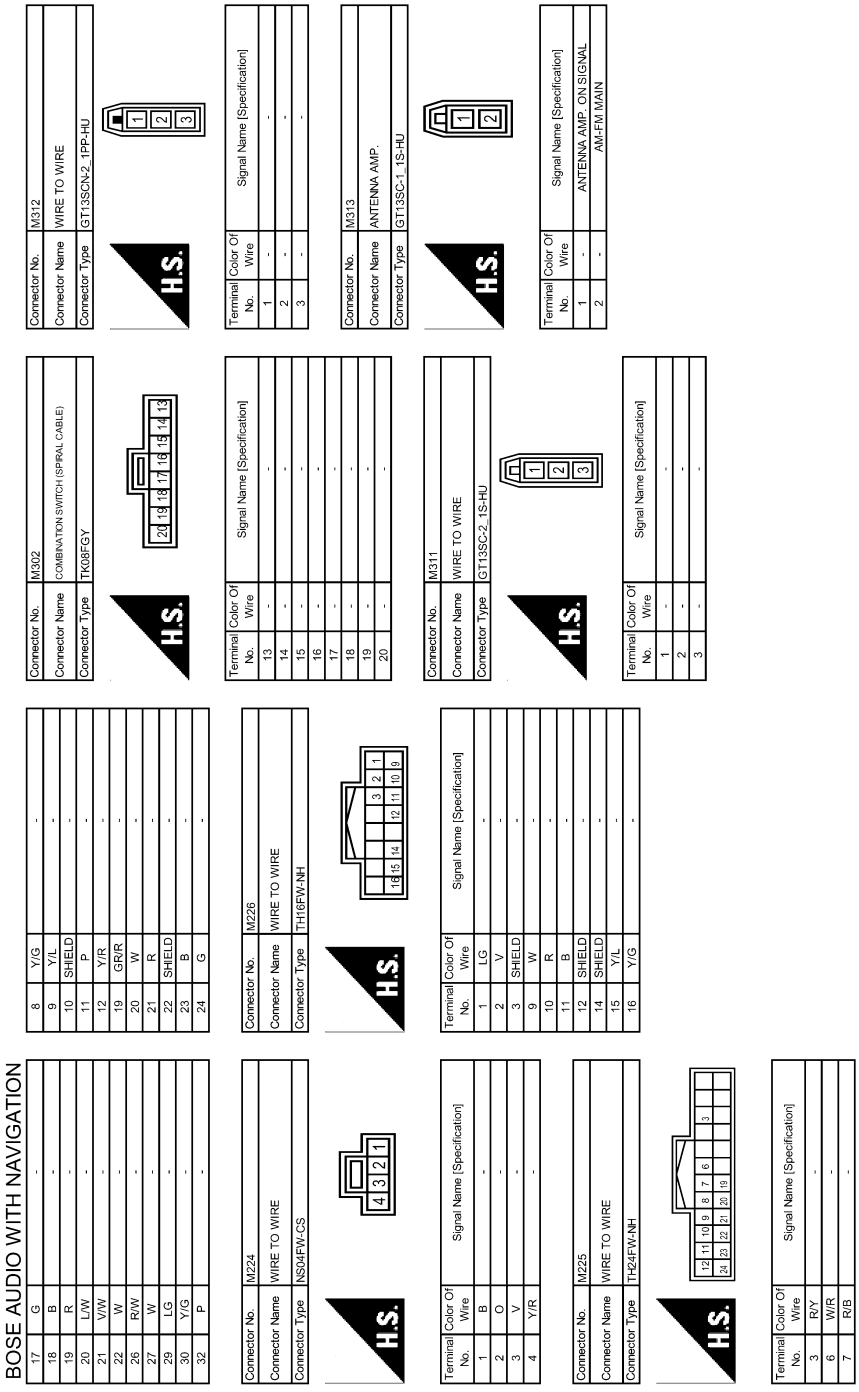

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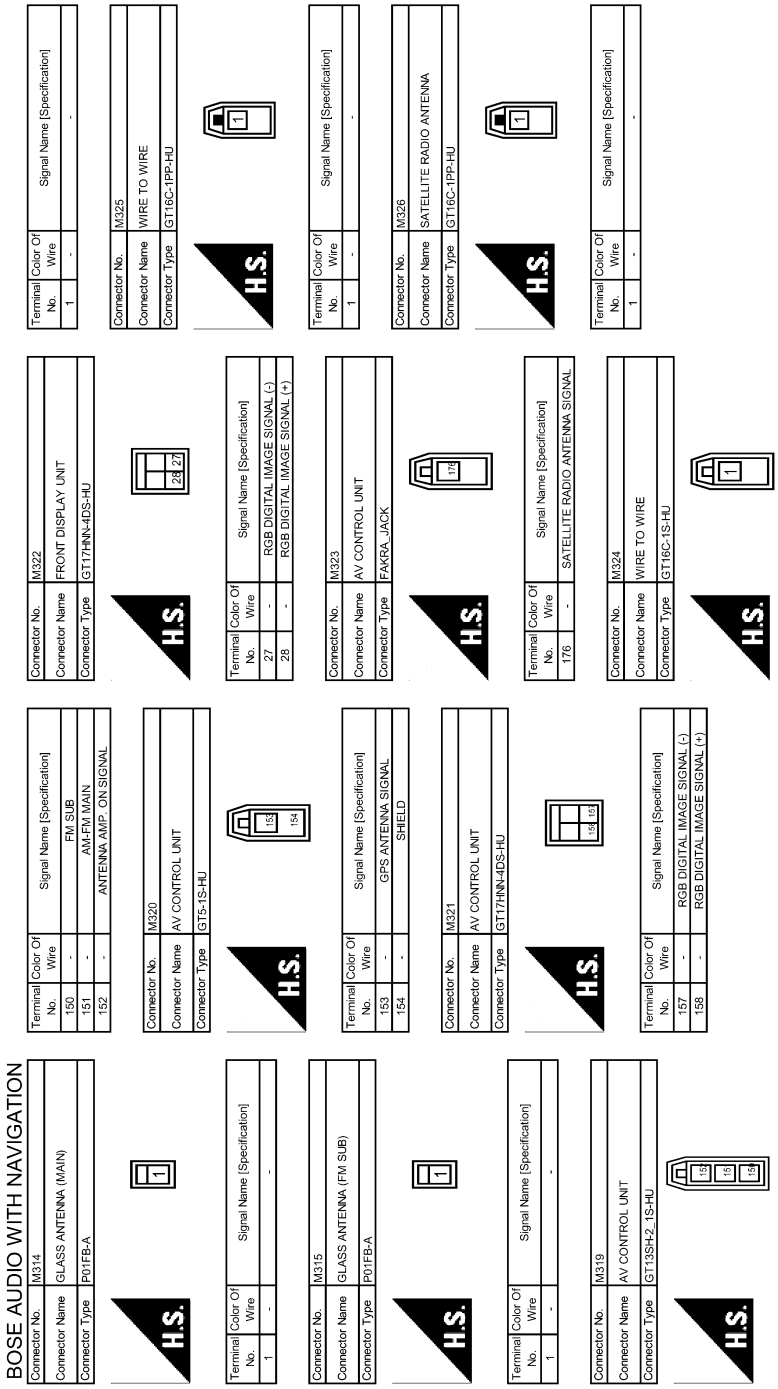

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Connector No.	M408
Connector Name	TCU
Connector Type	GT16C-1P-DS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
58	-	TEL ANTENNA SIGNAL
59	-	SHIELD

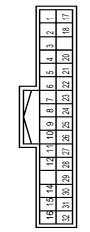
Connector No.	M409
Connector Name	TCU
Connector Type	GT5E-1P-DS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
60	-	GPS ANTENNA SIGNAL
61	-	SHIELD

Connector No.	R1
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH

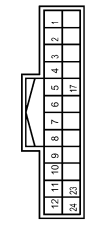
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	V	-
3	B	-
4	Y	-
5	B/R	-
6	B/Y	-
7	B	-
8	Y/L	-
9	G	-
10	B	-
11	R	-
12	Y	-
14	B/Y	-
15	W/R	-
16	L/O	-
17	Y	-
18	L/O	-
20	W	-
21	O	-
22	SB	-
23	Y	-
24	SHIELD	-
25	Y/G	-
26	L	-
27	W/G	-
28	Y	-
29	L	-
30	B/SB	-
31	BR	-
32	B/R	-

Connector No.	R2
Connector Name	WIRE TO WIRE
Connector Type	TH24FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	GR	-
3	V	-
4	L/O	-
5	B	-
6	G	-
7	O	-
8	SHIELD	-
9	Y/L	-
10	Y/G	-
11	B/SB	-
12	W/R	-
17	L/O	-
23	BR	-
24	B/Y	-

Connector No.	R11
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	GR	-
3	V	-
4	L/O	-
5	B	-

6	G	-
7	O	-
8	SHIELD	-
9	Y/L	-
10	Y/G	-
11	B/SB	-
12	W/R	-
17	L/O	-
23	BR	-
24	B/Y	-

Connector No.	R17
Connector Name	MICROPHONE
Connector Type	TK04FW

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	MICROPHONE SIGNAL
2	SHIELD	MICROPHONE GND
4	R	MICROPHONE VCC

Connector No.	R28
Connector Name	TELEMATICS SWITCH
Connector Type	TH08FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	ACC
2	BR	LDE_A
3	G	E-CALL_SW
5	SB	ILL
6	B	ILL_CONT(GND)

JRNWC5816GB

JRNWC5817GB

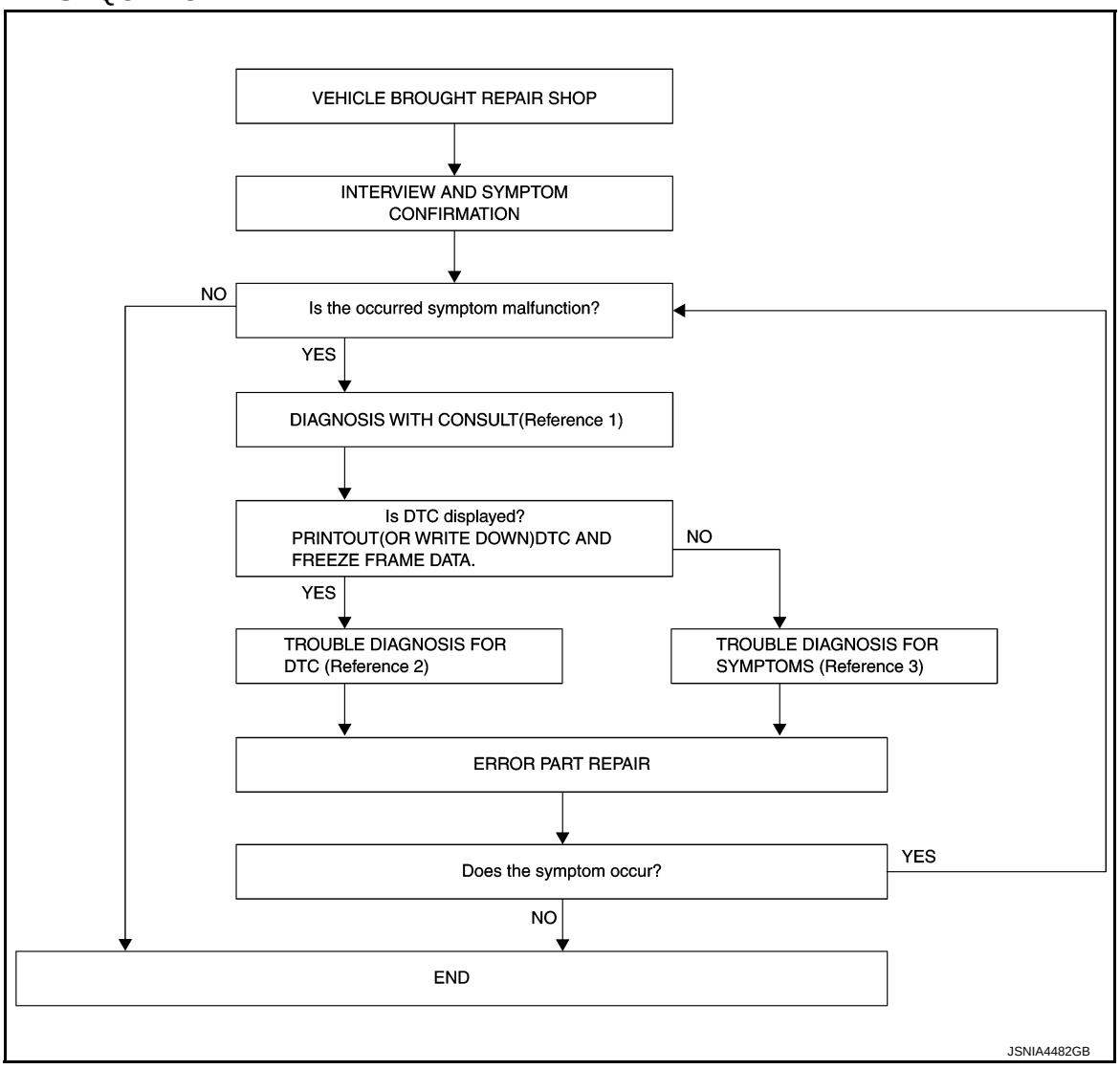
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow (Multi AV)

INFOID:0000000009009833

OVERALL SEQUENCE



- Reference 1··· Refer to AV-51, "CONSULT Function".
- Reference 2··· Refer to AV-69, "DTC Index".
- Reference 3··· Refer to AV-264, "Symptom Table".

DETAILED FLOW

1.INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

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

2.DIAGNOSIS WITH CONSULT

1. Connect CONSULT and perform a self-diagnosis for “MULTI AV”. Refer to AV-51, "CONSULT Function".
   NOTE:
   Skip to step 4 of the diagnosis procedure if “MULTI AV” is not displayed.
2. When DTC is detected, follow the instructions below:

- Record DTC and Freeze Frame Data.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-69, "DTC Index".

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-264, "Symptom Table".

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “MULTI AV” with CONSULT.
   NOTE:
   Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

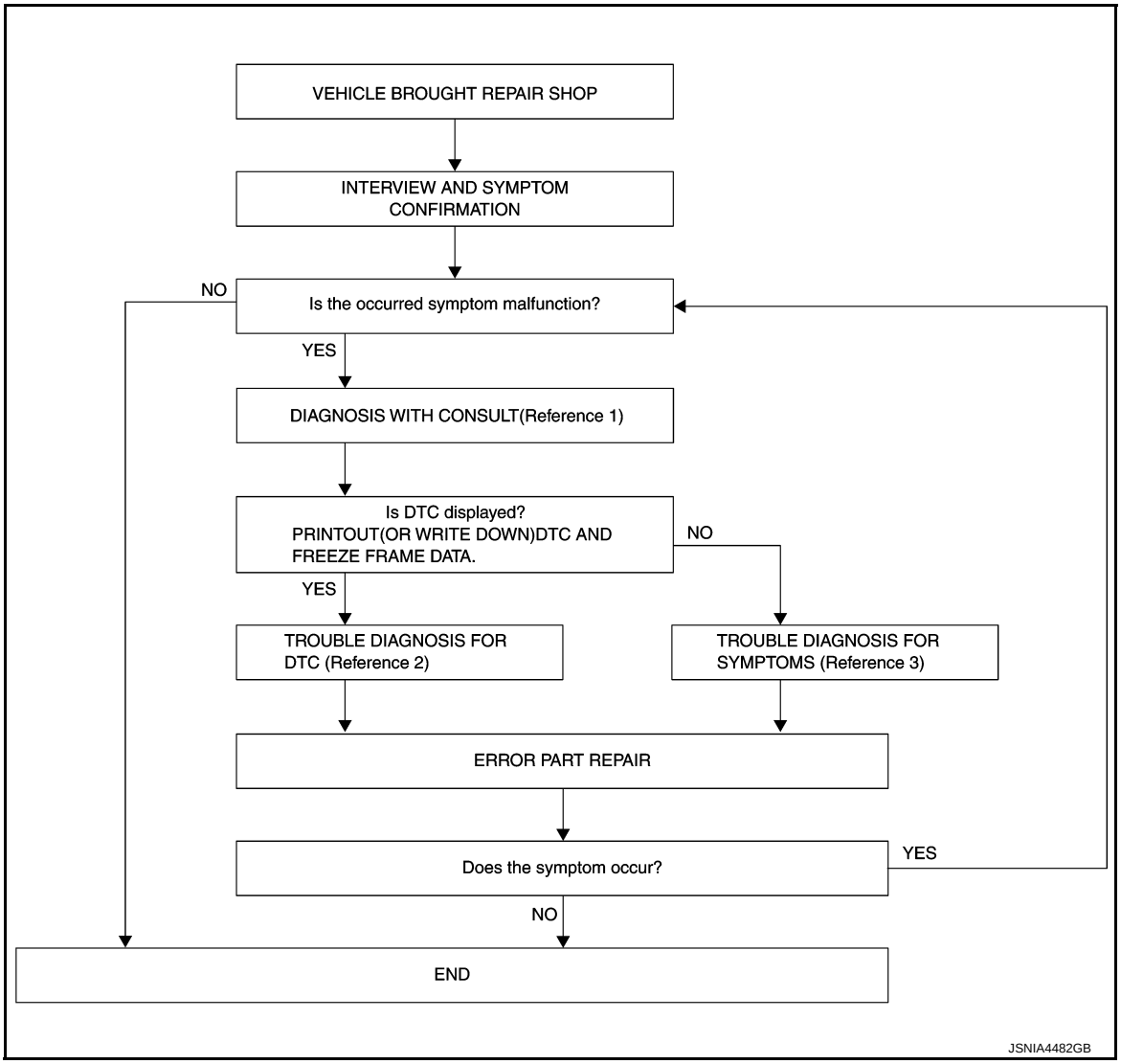
Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

Work Flow (Around View Monitor)

INFOID:0000000009009834

OVERALL SEQUENCE



- Reference 1··· Refer to AV-54, "CONSULT Function".
- Reference 2··· Refer to AV-93, "DTC Index".
- Reference 3··· Refer to AV-264, "Symptom Table".

DETAILED FLOW

1.INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

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

2.DIAGNOSIS WITH CONSULT

1. Connect CONSULT and perform a self-diagnosis for “AVM”. Refer to AV-54, "CONSULT Function".
   NOTE:
   Skip to step 4 of the diagnosis procedure if “AVM” is not displayed.
2. When DTC is detected, follow the instructions below:

- Record DTC and Freeze Frame Data.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-93, "DTC Index".

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-264, "Symptom Table".

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “AVM” with CONSULT.
   NOTE:
   Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

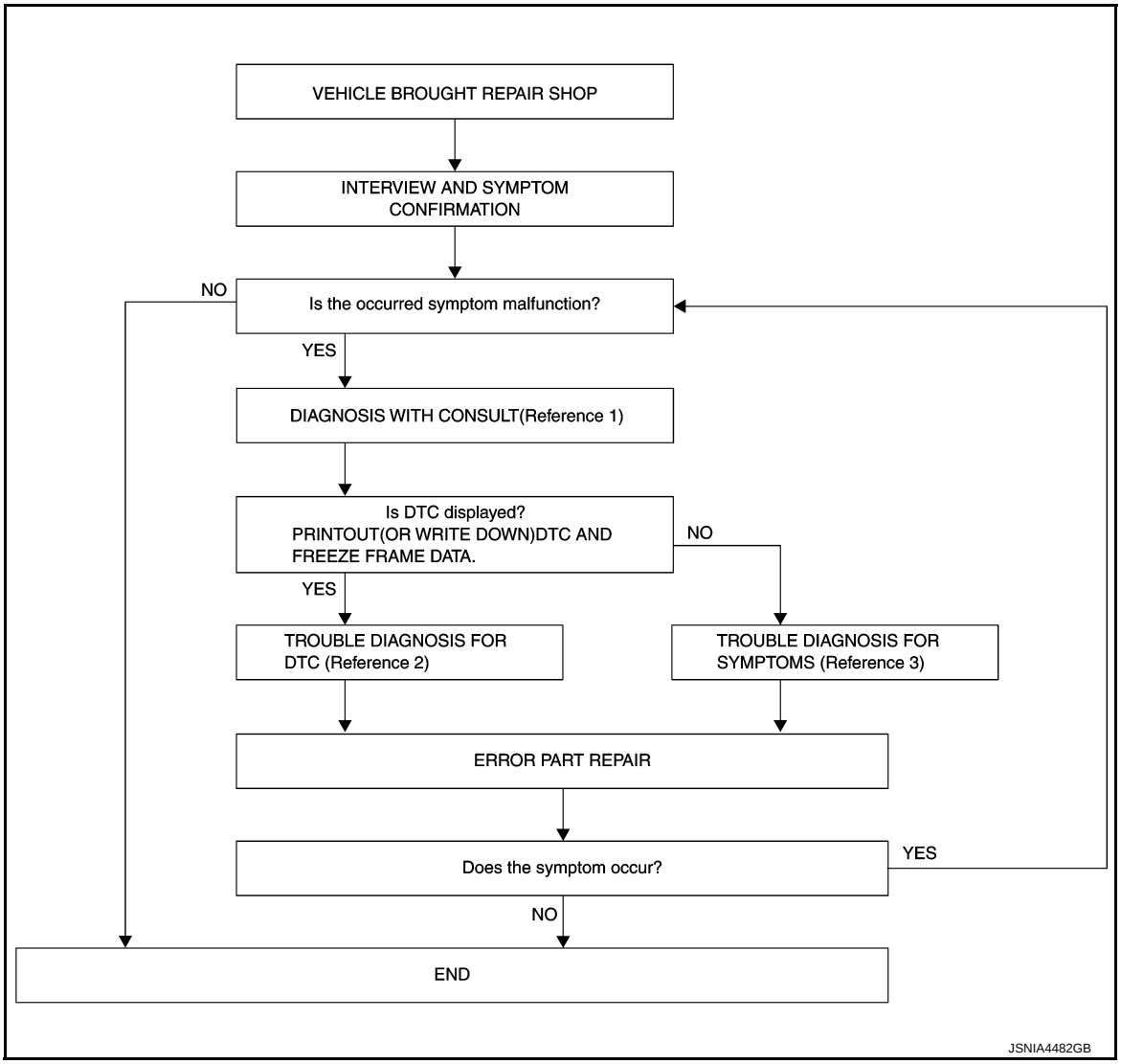
Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

Work Flow (Camera Assistance Sonar)

INFOID:0000000009009835

OVERALL SEQUENCE



- Reference 1··· Refer to AV-58, "CONSULT Function".
- Reference 2··· Refer to AV-99, "DTC Index".
- Reference 3··· Refer to AV-264, "Symptom Table".

DETAILED FLOW

1. INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

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

2. DIAGNOSIS WITH CONSULT

1. Connect CONSULT and perform a self-diagnosis for “SONAR”. Refer to AV-58, "CONSULT Function".
   NOTE:
   Skip to step 4 of the diagnosis procedure if “SONAR” is not displayed.
2. When DTC is detected, follow the instructions below:

- Record DTC and Freeze Frame Data.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-99, "DTC Index".

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-264, "Symptom Table".

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “SONAR” with CONSULT.
   NOTE:
   Erase the stored self-diagnosis results after repairing or replacing the relevant components if any DTC has been indicated in the self-diagnosis results.
3. Check that the symptom does not occur.

Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Description

INFOID:0000000009009836

Perform the following operations when replacing AV control unit.
Configuration, refer to AV-137, "CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement".

ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Description

INFOID:0000000009009837

Perform the following operations when replacing around view monitor control unit.
1. Configuration, refer to AV-139, "CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Special Repair Requirement".
2. Calibrating camera image, refer to AV-142, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

ADDITIONAL SERVICE WHEN REPLACING SONAR CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING SONAR CONTROL UNIT : Description

INFOID:0000000009009838

Perform the following operations when replacing sonar control unit.
Configuration, refer to AV-140, "CONFIGURATION (SONAR CONTROL UNIT) : Special Repair Requirement".

CONFIGURATION (AV CONTROL UNIT)

CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement

INFOID:0000000009009839

1. SAVING VEHICLE SPECIFICATION

CONSULT Configuration
Perform “Before Replace ECU”, and save the current vehicle specification in CONSULT.
Is the vehicle specification saved normally?

YES >> GO TO 2.
NO >> GO TO 4.

2. REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to AV-282, "Removal and Installation".

>> GO TO 3.

3. WRITING VEHICLE SPECIFICATION

CONSULT Configuration
Select “Configuration” or “After Replace ECU”, and write the vehicle specification saved in CONSULT to AV control unit.
NOTE:
If selection items are not displayed on the CONSULT screen, touch “NEXT.”

>> GO TO 6.

4. REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to AV-282, "Removal and Installation".

>> GO TO 5.

5. WRITE VEHICLE SPECIFICATION

CONSULT Configuration

Select “Manual Configuration”, and write the setting value as shown in the following table to AV control unit according to the vehicle specification.

CAUTION:

Grasp vehicle specifications precisely. The control of ECU may not function normally if the specifications are misread.

NOTE:

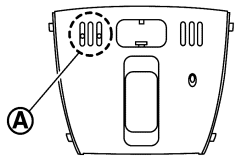
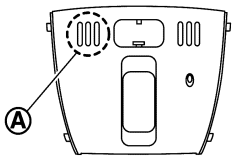
- The items shown in this list depend on vehicle specifications.
- The config list may not be displayed depending on vehicle specifications. This is not a malfunction.

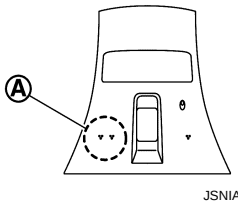
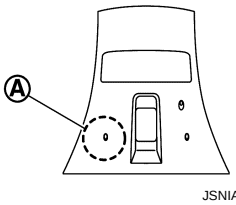
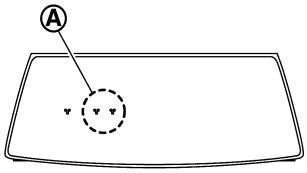
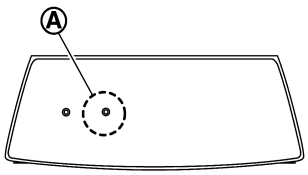
MANUAL SETTING ITEM		Detail
Items	Setting value	
CHANNEL	INFINITI	Infiniti channel
	NISSAN	Nissan channel
SOUND SYSTEM	BASE	Without BOSE system
	BOSE	With 13 speakers
	BOSE SURROUND	With 15 speakers
	ROCKFORD FOSGATE	—
	ROCKFORD SUB	—
CAMERA SYSTEM	NONE/AVM	Without camera system or with around view monitor system
	REAR CAMERA	With rear view monitor system
	REAR+SIDE	With rear view monitor system and front-side view monitor function
SUPER LOCK	WITH	With super lock function
	WITHOUT	Without super lock function
MICROPHONE	DIRECTIONAL MIC	With directional microphone*
	NON-DIRECTIONAL MIC	With non-directional microphone*

NOTE:

AVM: Around view monitor

*: In the following table, find an illustration that the Ⓐ part matches the vehicle and select microphone type.

Directional microphone	Non-directional microphone
 JSNIA5541ZZ	 JSNIA5542ZZ
Ⓐ: Microphone installation position	Ⓐ: Microphone installation position

Directional microphone	Non-directional microphone
 JSNIA5543ZZ	 JSNIA5544ZZ
Ⓐ: Microphone installation position	Ⓐ: Microphone installation position
 JSNIA5545ZZ	 JSNIA5546ZZ
Ⓐ: Microphone installation position	Ⓐ: Microphone installation position

>> GO TO 6.

6.PERFORM SELF-DIAGNOSIS

Ⓜ CONSULT Self Diagnostic Result
Perform self-diagnosis of CONSULT, and check whether or not DTC U122A is detected.

Is DTC U122A detected?

>> GO TO 5.
>> GO TO 7.

7.OPERATION CHECK

Check that the operation of the AV control unit and camera images (fixed guide lines and predictive course lines) are normal.

>> WORK END

CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT)

CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Special Repair Requirement

INFOID:0000000009009840

1.SAVING VEHICLE SPECIFICATION

Ⓜ CONSULT Configuration
Perform “Before Replace ECU”, and save the current vehicle specification in CONSULT.

Is the vehicle specification saved normally?

YES >> GO TO 2.
NO >> GO TO 4.

2.REPLACE AROUND VIEW MONITOR CONTROL UNIT

Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

Ⓜ CONSULT Configuration
Select “Configuration” or “After Replace ECU”, and write the vehicle specification saved in CONSULT to around view monitor control unit.

>> GO TO 6.

4.REPLACE AROUND VIEW MONITOR CONTROL UNIT

Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".

>> GO TO 5.

5.WRITE VEHICLE SPECIFICATION

CONSULT Configuration
Select “Manual Configuration”, and write the vehicle specification to around view monitor control unit.
NOTE:
Around view monitor control unit does not have any setting items. Selection of items on “Manual Configuration” screen is not required.

>> GO TO 6.

6.PERFORM SELF-DIAGNOSIS

CONSULT Self Diagnostic Result
Perform self-diagnosis of CONSULT, and check whether or not DTC U1305 is detected.

Is DTC U1305 detected?

>> GO TO 5.
>> GO TO 7.

7.OPERATION CHECK

Check that the operation of the around view monitor control unit and camera images (fixed guide lines and predictive course lines) are normal.

>> WORK END

CONFIGURATION (SONAR CONTROL UNIT)

CONFIGURATION (SONAR CONTROL UNIT) : Special Repair Requirement

INFOID:0000000009009841

1.SAVING VEHICLE SPECIFICATION

CONSULT Configuration
Perform “Before Replace ECU”, and save the current vehicle specification in CONSULT.

Is the vehicle specification saved normally?

YES >> GO TO 2.
NO >> GO TO 4.

2.REPLACE SONAR CONTROL UNIT

Replace sonar control unit. Refer to AV-309, "Removal and Installation".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

CONSULT Configuration
Select “Configuration” or “After Replace ECU”, and write the vehicle specification saved in CONSULT to sonar control unit.

>> GO TO 6.

4.REPLACE SONAR CONTROL UNIT

Replace sonar control unit. Refer to AV-309, "Removal and Installation".

>> GO TO 5.

5.WRITE VEHICLE SPECIFICATION

CONSULT Configuration
Select “Manual Configuration”, and write the vehicle specification to sonar control unit.
NOTE:
Sonar monitor control unit does not have any setting items. Selection of items on “Manual Configuration” screen is not required.

>> GO TO 6.

6.PERFORM SELF-DIAGNOSIS

CONSULT Self Diagnostic Result
Perform self-diagnosis of CONSULT, and check whether or not DTC B2724 is detected.

Is DTC B2724 detected?

>> GO TO 5.
>> GO TO 7.

7.OPERATION CHECK

Check that the operation of the sonar control unit is normal.

>> WORK END

PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT

PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Description

INFOID:0000000009009842

Adjust the center position of the predictive course line of the rear view monitor if it is shifted.

PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Special Repair Requirement

INFOID:0000000009009843

1.DRIVING

Drive the vehicle straight ahead 100 m (328.1 ft) or more at a speed of 30 km/h (18.6 MPH) or more.

>> END

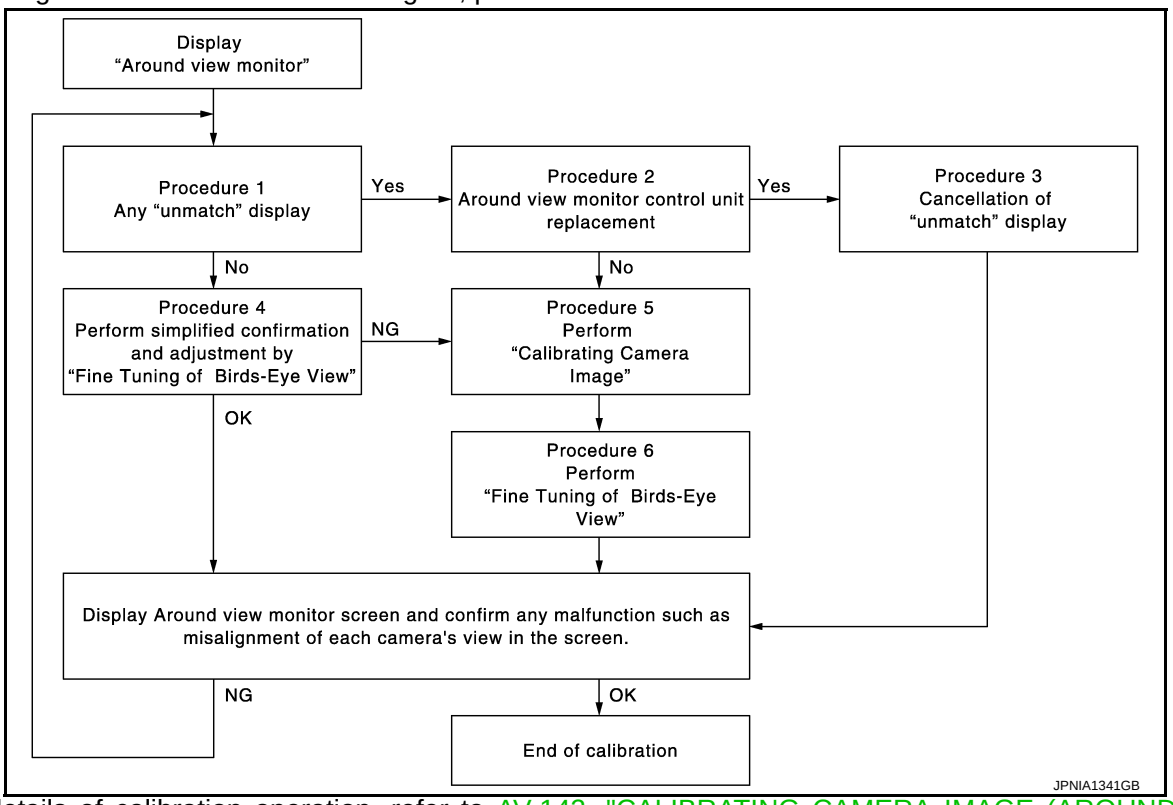
CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Description

INFOID:0000000009009844

- Perform camera calibration and perform writing to the around view monitor control unit, after removal/installation or replacement of each camera or camera mounting parts (front grille, door mirror, or others), or replacement of around view monitor control unit.
- By performing this camera calibration procedure, the boundary of each camera image is aligned to the white lines on the road near the vehicle. The boundary of each camera image may not be aligned to the white lines far from the vehicle. The farther the line, the greater the difference is.

• Following the flowchart shown in the figure, perform calibration.



• For details of calibration operation, refer to AV-142, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement

INFOID:0000000009009845

CAUTION:

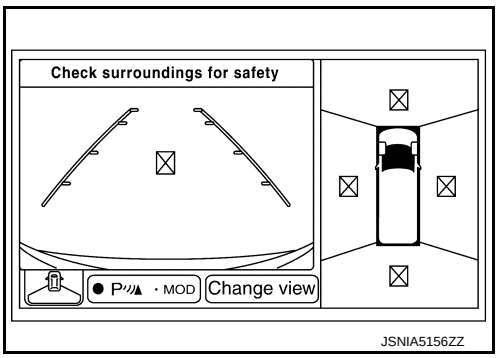
When around view monitor control unit is replaced, perform the control unit setting before performing this calibration. Refer to AV-141, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Description".

1.CHECK AROUND VIEW MONITOR SCREEN

Check whether or not un-match display “☒” is on screen.

Is un-match display on screen?

YES >> GO TO 2.
NO >> GO TO 4.



2.CHECK WHETHER OR NOT AROUND VIEW MONITOR CONTROL UNIT IS REPLACED

Check whether or not around view monitor control unit is replaced.

Is around view monitor control unit replaced?

YES >> GO TO 3.
NO >> GO TO 5.

3.RELEASE UN-MATCH DISPLAY (PERFORM ONLY WHEN AROUND VIEW MONITOR CONTROL UNIT IS REPLACED)

CONSULT work support

1. Select “CALIBRATING CAMERA IMAGE”.
NOTE:
In random order, perform the operation for all cameras for which un-match display ⊠ appears.
- Front camera: “CALIBRATING CAMERA IMAGE (FRONT CAMERA)”
- Passenger side camera: “CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)”
- Driver side camera: “CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)”
- Rear camera: “CALIBRATING CAMERA IMAGE (REAR CAMERA)”
2. On each camera calibration screen, press “APPLY” button, and then press “OK” button.
CAUTION:
- **Never perform any operation other than selecting “APPLY” button.**
- **Never perform “INITIALIZE CAMERA IMAGE CALIBRATION”.**
3. Display the around view monitor screen. Check that images are displayed normally without any difference between images for each camera.

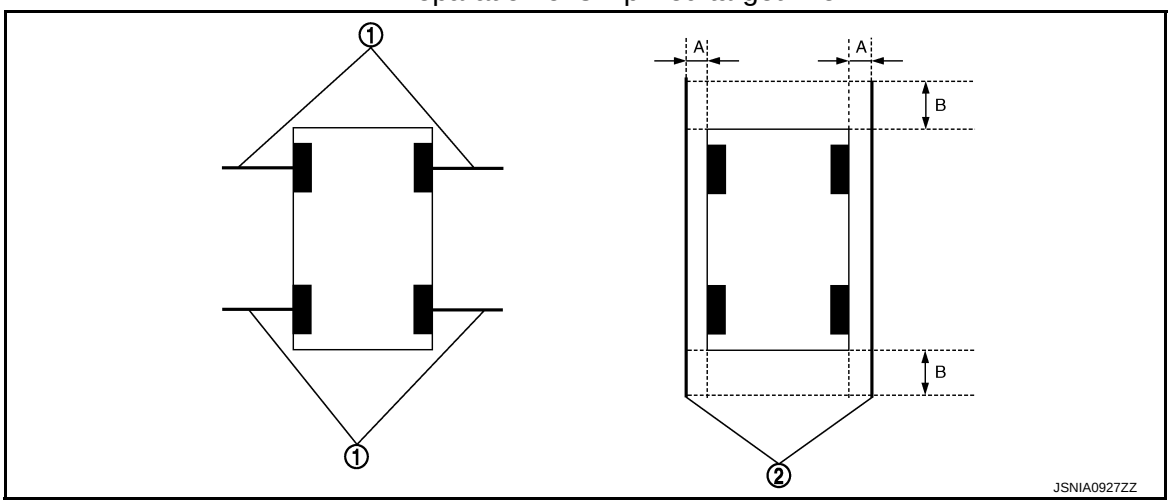
Is there a malfunction such as a difference between camera images?

YES >> Calibration end
NO >> GO TO 1.

4. PERFORM SIMPLIFIED CONFIRMATION/ADJUSTMENT BY “FINE TUNING OF BIRDS-EYE VIEW”

1. Put target line 1 beside each axle using packing tape, etc.
2. Put target line 2 at a position approximately 30 cm (11.81 in) away from each side of the vehicle (the left and right). Check that the target line is a length equivalent to the vehicle length, plus an additional approximate length of 1.0 m (39.37 in) (in parallel with the vehicle as much as possible).

Preparation of simplified target line

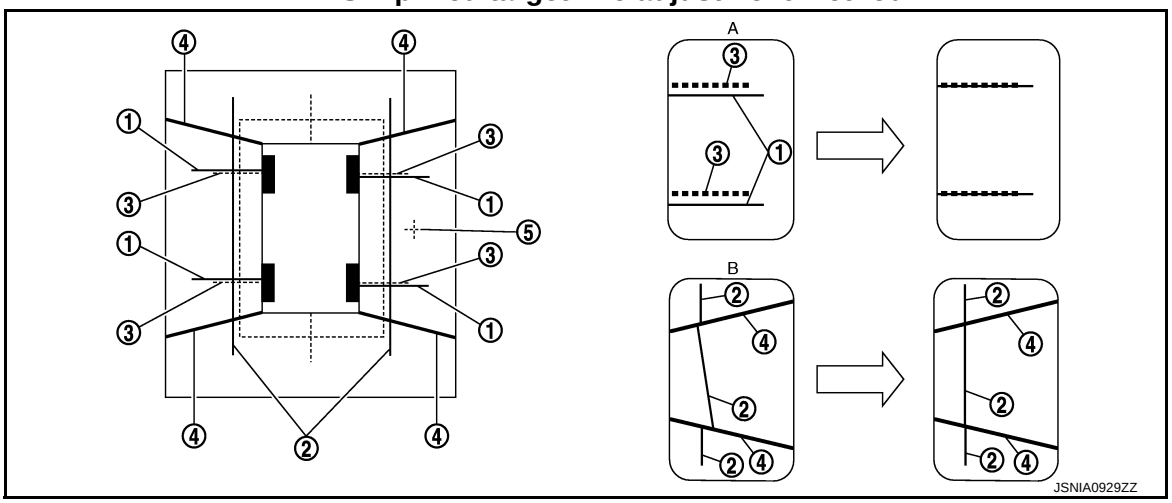


1. Target lines 1
2. Target lines 2
A. Approx. 30 cm (11.81 in)
B. Approx. 1.0 m (39.37 in)

3. CONSULT work support
Select “FINE TUNING OF BIRDS-EYE VIEW”.
4. Select the left and right cameras on CONSULT screen. Perform the following calibration.
- Check that target line 1 and marker are aligned normally on screen. If difference is detected, align marker using “+” and “–” of “AXIS X” and “AXIS Y” on CONSULT screen.
- Check that target line 2 is aligned normally on screen without difference between images of each camera. If difference is detected, align images so that line 2 is displayed in a straight line using “+” and “–”of “AXIS X”, “AXIS Y”, and “ROTATE” on CONSULT screen.

NOTE:
Press “SELECT” button on CONSULT screen and select camera position for adjustment.
CAUTION:
- **Never adjust the front camera and rear camera. Only adjust the side cameras LH/RH.**
- **Perform adjustment operation slowly because approximately 1 second is required for changing image on screen.**

Simplified target line adjustment method



1.	Target lines 1	2.	Target lines 2	3.	Marker for target line 1
4.	Boundary between cameras	5.	Crosshair cursor (mark indicated the selected camera)		
A.	Adjustment method for target lines 1 (right)	B.	Adjustment method for target lines 2 (right)		

5. Adjust the left and right cameras. Check that difference of images on screen between target line 1 and marker, and between target lines 2 are solved. Press “APPLY”.
   NOTE:
   - The setting can be initialized to factory default condition using “CALIBRATING CAMERA IMAGE” of work support.
   - The adjustment value on this mode is cancelled when “INITIALIZE CAMERA IMAGE CALIBRATION” is performed.

Is the difference corrected?

YES >> • Select “OK” to end calibration.
CAUTION:
After selecting “OK”, never perform any operation other than “BACK” on CONSULT.

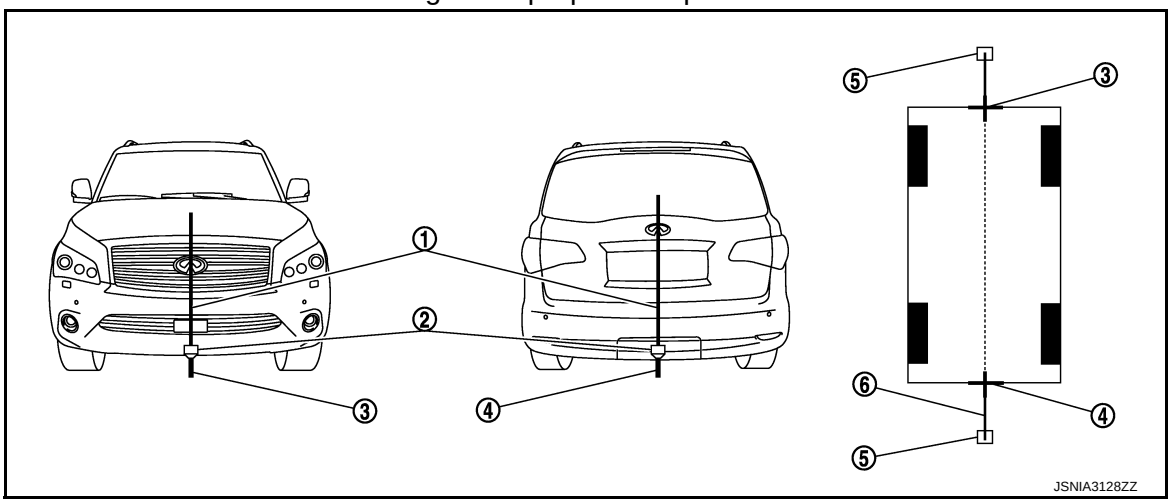
NO >> GO TO 5.

5. PERFORM “CALIBRATING CAMERA IMAGE”

Preparation of target line

1. Hang a string with a weight as shown in the figure. Put the points FM0, RM0 (mark) on the ground at the center of the vehicle front end and rear end using white packing tape or a pen.
2. Route the vinyl string under the vehicle, and then pull and fix the vinyl string at a point approximately 1.0 m (39.37 in) at the front and rear of the vehicle through points FM0 and RM0 using packing tape.

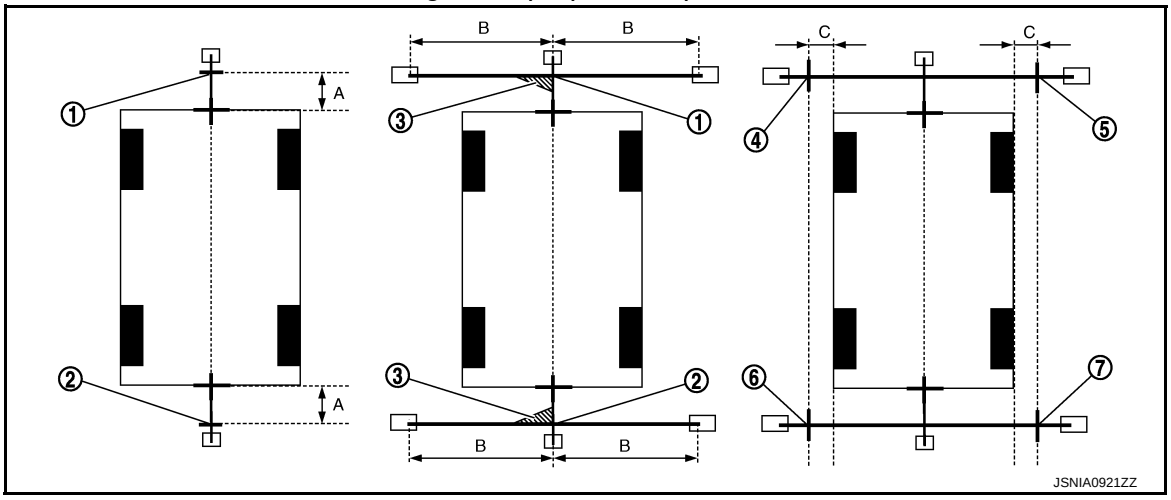
Target line preparation procedure 1



1. Thread
2. Weight
3. Point FM0 (mark)
4. Point RM0 (mark)
5. Packing tape (to fix the vinyl string)
6. Vinyl string

3. Put points FM and RM (mark) 75 cm (29.53 in) from the points FM0 and RM0individually.
4. Route the vinyl string through points FM and RM using a triangle scale, and then fix it at approximately 1.5 m (59.06 in) on both sides with packing tape.
5. Put points FL, FR, RL, and RR (mark) at distance of a half the vehicle width, plus 30 cm (11.81 in) to the left and right from points FM and RM.

Target line preparation procedure 2

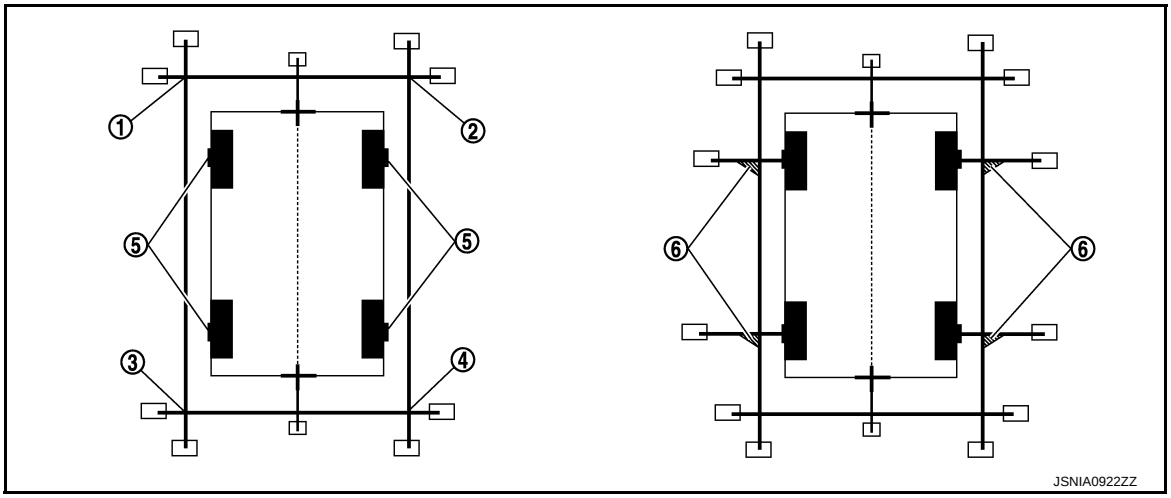


1. Point FM
2. Point RM
3. Triangle scale
4. Point FL (mark)
5. Point FR (mark)
6. Point RL (mark)
7. Point RR (mark)

A. 75 cm (29.53 in)
B. Approximately 1.5 m (59.06 in)
C: 30 cm (11.81 in) [A half of the vehicle width plus 30 cm (11.81 in) from the points FM and RM]

6. Draw the lines of the points FL – RL and FR – RR with the vinyl string, and fix it with packing tape.
7. Put a mark on the center of each axle, draw vertical lines to the lines of points FL – RL and FR – RR from the marks on the center of the axle using a triangle scale, and then fix the lines using packing tape.

Target line preparation procedure 3



1. Point FL
2. Point FR
3. Point RL
4. Point RR
5. Center position of axle
6. Triangle scale

Perform “CALIBRATING CAMERA IMAGE”
CONSULT work support

1. Select “CALIBRATING CAMERA IMAGE”.
   NOTE:
   In random order, perform the operation for all cameras.
- Front camera: “CALIBRATING CAMERA IMAGE (FRONT CAMERA)”
- Passenger side camera: “CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)”
- Driver side camera: “CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)”
- Rear camera: “CALIBRATING CAMERA IMAGE (REAR CAMERA)”

2. On each calibration screen of “REAR CAMERA”, “FRONT CAMERA”, “DR-SIDE CAMERA”, and “PASS-SIDE CAMERA”, operate “+” and “–” of “AXIS X”, “AXIS Y”, and “ROTATE”, so that images on screen of target line and calibration maker are aligned.
3. Press “APPLY” button on CONSULT screen. “Writing...” is displayed, and then the adjustment result is displayed on the display.
   CAUTION:
   Check that “Writing...” is displayed. Never perform other operations while “Writing...” is displayed.
4. Press “APPLY” button on CONSULT screen. “Writing...” is displayed, and then the adjustment result is written to around view monitor control unit.
   CAUTION:
   Check that “Writing...” is displayed. Never perform other operations while “Writing...” is displayed.

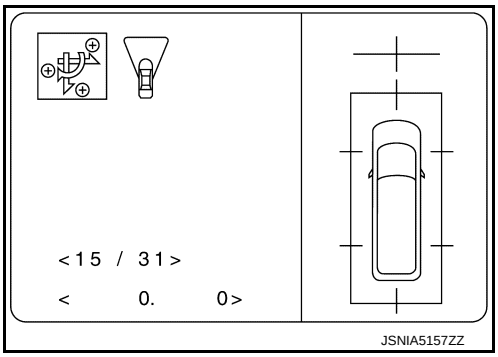
>> GO TO 6.

6. PERFORM “FINE TUNING OF BIRDS-EYE VIEW”

This mode is designed to align the boundary between each camera image that cannot be aligned in the “CALIBRATING CAMERA IMAGE” mode.

CONSULT work support

1. Select “FINE TUNING OF BIRDS-EYE VIEW”.
2. Operate “+” and “–” of “AXIS X”, “AXIS Y”, and “ROTATE”, so that images on screen of target line on the ground and marker are aligned between each camera.
   CAUTION:
   Perform adjustment operation slowly because approximately 1 second is required for changing image on screen.
   NOTE:
   Press “SELECT” button on CONSULT screen and select camera position for adjustment.



3. Press “APPLY” button on CONSULT screen. “Writing...” is displayed, and then the adjustment result is displayed on the display.
   CAUTION:
   Check that “Writing...” is displayed. Never perform other operations while “Writing...” is displayed.
4. Press “APPLY” button on CONSULT screen. “Writing...” is displayed, and then the adjustment result is written to around view monitor control unit.
   CAUTION:
   - **Check that “Writing...” is displayed. Never perform other operations while “Writing...” is displayed.**
   - **After selecting “OK”, never perform any operation other than “BACK” on CONSULT.**

NOTE:
- The setting can be initialized to the factory default setting using “CALIBRATING CAMERA IMAGE” of work support.
- The adjustment value on this mode is cancelled when “INITIALIZE CAMERA IMAGE CALIBRATION” is performed.

>> Calibration end

DTC/CIRCUIT DIAGNOSIS

U0428 STEERING ANGLE SENSOR

DTC Logic

INFOID:0000000009009846

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U0428	ST ANGLE SENSOR CALIBRATION [U0428]	The neutral position adjustment of the steering angle sensor is incomplete.	Adjust neutral position of the steering angle sensor.

NOTE:
If DTC “U1232” is detected, first diagnose the DTC “U1232”.

Diagnosis Procedure

INFOID:0000000009009847

1.ADJUST THE NEUTRAL POSITION OF THE STEERING ANGLE SENSOR

When U0428 is detected, adjust the neutral position of the steering angle sensor.

>> Perform adjustment of the neutral position of the steering angle sensor. Refer to AV-51, "CONSULT Function".

CAUTION:
For vehicles with VDC, adjust the steering angle sensor neutral position on the ABS actuator control unit side.

U1000 CAN COMM CIRCUIT

AV CONTROL UNIT

AV CONTROL UNIT : Description

INFOID:0000000009009848

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 independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-32, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

AV CONTROL UNIT : DTC Logic

INFOID:0000000009009849

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Probable malfunction location
U1000	CAN COMM CIRCUIT [U1000]	AV control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009009850

1.PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of “MULTI AV”.

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to “LAN system”. Refer to LAN-22, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI section. Refer to GI-43, "Intermittent Incident".

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : Description

INFOID:0000000009009851

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 independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-32, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

AROUND VIEW MONITOR CONTROL UNIT : DTC Logic

INFOID:0000000009009852

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Probable malfunction location
U1000	CAN COMM CIRCUIT [U1000]	Around view monitor control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009009853

1.PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of “AVM”.

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to LAN-22, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-43, "Intermittent Incident".

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : Description

INFOID:0000000009009854

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 independently). In CAN communication, control units are connected with 2 communication lines (CAN-H, CAN-L) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.
CAN Communication Signal Chart. Refer to LAN-32, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart".

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : DTC Logic

INFOID:0000000009009855

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Probable malfunction location
U1000	CAN COMM CIRCUIT [U1000]	Sonar control unit is not transmitting or receiving CAN communication signal for 2 seconds or more.	CAN communication system.

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : Diagnosis Procedure

INFOID:0000000009009856

1.PERFORM SELF-DIAGNOSTIC

1. Turn ignition switch ON and wait for 2 seconds or more.
2. Check “Self Diagnostic Result” of “SONAR”.

Is “CAN COMM CIRCUIT” displayed?

YES >> Refer to LAN-22, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-43, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

AV CONTROL UNIT

AV CONTROL UNIT : DTC Logic

INFOID:0000000009009857

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Probable malfunction factor
U1010	CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly.

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : DTC Logic

INFOID:0000000009009858

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Probable malfunction factor
U1010	CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the around view monitor control unit if the malfunction occurs constantly.

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : DTC Logic

INFOID:0000000009009859

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Probable malfunction factor
U1010	CONTROL UNIT (CAN) [U1010]	CAN initial diagnosis malfunction is detected.	Replace the sonar control unit if the malfunction occurs constantly.

U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:0000000009009860

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U111A	REAR CAMERA IMAGE SIGNAL	Rear camera image signal circuit is open or shorted.	Check rear camera image signal circuit between rear camera and around view monitor control unit.

Diagnosis Procedure

INFOID:0000000009009861

1.CHECK CONTINUITY REAR CAMERA POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and rear camera connector.
3. Check continuity between around view monitor control unit harness connector and rear camera harness connector.

Around view monitor control unit		Rear camera		Continuity
Connector	Terminals	Connector	Terminals	
M61	50	D164	8	Existed
	52		7	

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M61	50		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE REAR CAMERA POWER SUPPLY

1. Connect around view monitor control unit connector and rear camera connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
M61	50	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".

3.CHECK CONTINUITY REAR CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and rear camera connector.
3. Check continuity between around view monitor control unit harness connector and rear camera harness connector.

Around view monitor control unit		Rear camera		Continuity
Connector	Terminals	Connector	Terminals	
M61	53	D164	5	Existed
	54		1	

4. Check continuity between around view monitor control unit harness connector and ground.

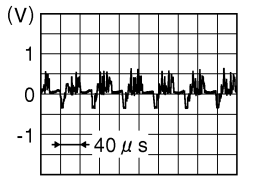
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
M61	53, 54		Not existed

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK REAR CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit connector and rear camera connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit					
Connector	Terminal	Connector	Terminal		
M61	53	M61	54	“CAMERA” switch is ON or shift position is “R”.	

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Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".
NO >> Replace rear camera. Refer to AV-306, "Removal and Installation".

U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:0000000009009862

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U111B	SIDE CAMERA RH IMAGE SIGNAL	Side camera RH image signal circuit is open or shorted.	Check side camera RH image signal circuit between side camera RH and around view monitor control unit.

Diagnosis Procedure

INFOID:0000000009009863

1.CHECK CONTINUITY SIDE CAMERA RH POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
3. Check continuity between door mirror (passenger side) harness connector and around view monitor control unit.

Door mirror (passenger side)		Around view monitor control unit		Continuity
Connector	Terminals	Connector	Terminals	
D23	6	M61	62	Existed
	18		64	

4. Check continuity between door mirror (passenger side) connector harness connector and ground.

Door mirror (passenger side)		Ground	Continuity
Connector	Terminals		
D23	6		Not existed
	18		

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE SIDE CAMERA RH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Around view monitor control unit				
Connector	Terminal			
M61	62	Ground	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".

3.CHECK CONTINUITY SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.

3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminals	Connector	Terminals	
M61	65	D23	5	Existed
	66		17	

4. Check continuity between around view monitor control unit harness connector and ground.

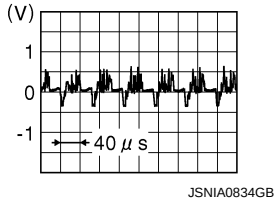
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
M61	65		Not existed
	66		

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK SIDE CAMERA RH IMAGE SIGNAL

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit					
Connector	Terminal	Connector	Terminal		
M61	65	M61	66	“CAMERA” switch is ON or shift position is “R”.	

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Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".
NO >> Replace side camera RH. Refer to AV-307, "Removal and Installation".

U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:0000000009009864

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U111C	REAR CAMERA IMAGE SIGNAL	Front camera image signal circuit is open or shorted.	Check front camera image signal circuit between front camera and around view monitor control unit.

Diagnosis Procedure

INFOID:0000000009009865

1.CHECK CONTINUITY FRONT CAMERA POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and front camera connector.
3. Check continuity between around view monitor control unit harness connector and front camera harness connector.

Front camera		Around view monitor control unit		Continuity
Connector	Terminals	Connector	Terminals	
E50	1	M61	68	Existed
	2		70	

4. Check continuity between front camera harness connector and ground.

Front camera		Ground	Continuity
Connector	Terminals		
E50	1		Not existed
	2		

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE FRONT CAMERA POWER SUPPLY

1. Connect around view monitor control unit connector and front camera connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector.

Probe				Condition	Voltage (Approx.)
(+)		(–)			
Around view monitor control unit					
Connector	Terminal	Connector	Terminal		
M61	68	M61	70	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".

3.CHECK CONTINUITY FRONT CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and front camera connector.
3. Check continuity between around view monitor control unit harness connector and front camera harness connector.

Around view monitor control unit		Front camera		Continuity
Connector	Terminals	Connector	Terminals	
M61	71	E50	3	Existed
	72		4	

4. Check continuity between around view monitor control unit harness connector and ground.

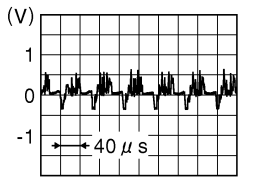
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
M61	71		Not existed
	72		

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK FRONT CAMERA IMAGE SIGNAL

1. Connect around view monitor control unit connector and front camera connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit					
Connector	Terminal	Connector	Terminal		
M61	71	M61	72	“CAMERA” switch is ON or shift position is “R”.	

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Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".
NO >> Replace front camera. Refer to AV-305, "Removal and Installation".

U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

DTC Logic

INFOID:0000000009009866

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U111D	SIDE CAMERA LH IMAGE SIGNAL	Side camera LH image signal circuit is open or shorted.	Check side camera LH image signal circuit between side camera LH and around view monitor control unit.

Diagnosis Procedure

INFOID:0000000009009867

1.CHECK CONTINUITY SIDE CAMERA LH POWER SUPPLY AND GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Door mirror (driver side)		Around view monitor control unit		Continuity
Connector	Terminals	Connector	Terminals	
D3	6	M61	56	Existed
	18		58	

4. Check continuity between around view monitor control unit harness connector and ground.

Door mirror (driver side)		Ground	Continuity
Connector	Terminals		
D3	6		Not existed
	18		

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE SIDE CAMERA LH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check voltage between around view monitor control unit harness connector and ground.

Probe				Condition	Voltage (Approx.)
(+)		(–)			
Around view monitor control unit					
Connector	Terminal	Connector	Terminal		
M61	56	M61	58	“CAMERA” switch is ON or shift position is “R”.	6.0 V

Is inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".

3.CHECK CONTINUITY SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminals	Connector	Terminals	
M61	59	D3	5	Existed
	60		17	

4. Check continuity between around view monitor control unit harness connector and ground.

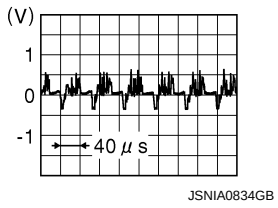
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
M61	59		Not existed
	60		

Is inspection result normal?

YES >> GO TO 4.
NO >> Repair harness or connector.

4. CHECK SIDE CAMERA LH IMAGE SIGNAL

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector.

(+)		(–)		Condition	Reference value
Around view monitor control unit					
Connector	Terminal	Connector	Terminal		
M61	59	M61	60	“CAMERA” switch is ON or shift position is “R”.	

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Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".
NO >> Replace side camera LH. Refer to AV-307, "Removal and Installation".

U1200 AV CONTROL UNIT

DTC Logic

INFOID:0000000009009868

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1200	Cont Unit [U1200]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

U1201 AV CONTROL UNIT

DTC Logic

INFOID:0000000009009869

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1201	GYRO NO CONN [U1201]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

U1202 AV CONTROL UNIT

DTC Logic

INFOID:0000000009009870

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1202	G-SENSOR NO CONN [U1202]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

U1204 AV CONTROL UNIT

Description

INFOID:0000000009009871

An intermittent error caused by strong radio interference may be detected unless any symptoms (GPS reception error, etc.) occur. Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

DTC Logic

INFOID:0000000009009872

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1204	GPS CONN [U1204]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009009873

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-282, "Removal and Installation".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1205 AV CONTROL UNIT

Description

INFOID:0000000009009874

An intermittent error caused by strong radio interference may be detected unless any symptoms (GPS reception error, etc.) occur. Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

DTC Logic

INFOID:0000000009009875

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1205	GPS ROM [U1205]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009009876

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-282, "Removal and Installation".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1206 AV CONTROL UNIT

Description

INFOID:0000000009009877

An intermittent error caused by strong radio interference may be detected unless any symptoms (GPS reception error, etc.) occur. Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

DTC Logic

INFOID:0000000009009878

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1206	GPS RAM [U1206]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009009879

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-282, "Removal and Installation".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1207 AV CONTROL UNIT

Description

INFOID:0000000009009880

An intermittent error caused by strong radio interference may be detected unless any symptoms (GPS reception error, etc.) occur. Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

DTC Logic

INFOID:0000000009009881

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1207	GPS RTC [U1207]	GPS malfunction is detected.	An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs. Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009009882

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the self-diagnosis results. Turn ignition switch OFF.
2. Turn ignition switch ON. Perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Replace AV control unit. Refer to AV-282, "Removal and Installation".
NO >> An intermittent error caused by strong radio interference may be detected unless any symptom (GPS reception error, etc.) occurs.

U1216 AV CONTROL UNIT

DTC Logic

INFOID:0000000009009883

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1216	CAN CONT [U1216]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

U1217 AV CONTROL UNIT

DTC Logic

INFOID:0000000009009884

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1217	BLUETOOTH MODULE [U1217]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

U1218 AV CONTROL UNIT

DTC Logic

INFOID:0000000009009885

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1218	HDD CONN [U1218]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009009886

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

U1219 AV CONTROL UNIT

DTC Logic

INFOID:0000000009009887

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1219	HDD READ [U1219]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009009888

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

U121A AV CONTROL UNIT

DTC Logic

INFOID:0000000009009889

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121A	HDD WRITE [U121A]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009009890

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

U121B AV CONTROL UNIT

DTC Logic

INFOID:0000000009009891

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121B	HDD COMM [U121B]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009009892

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

U121C AV CONTROL UNIT

DTC Logic

INFOID:0000000009009893

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121C	HDD ACCESS [U121C]	AV control unit malfunction is detected.	• If the music box function has no malfunctions, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009009894

1.CHECK MUSIC BOX FUNCTION

Is music box function normal?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

U121D AV CONTROL UNIT

DTC Logic

INFOID:0000000009009895

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121D	DSP CONN [U121D]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009009896

1.CHECK PLAYBACK OF A DISK (CD)

Can a disk (CD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

U121E AV CONTROL UNIT

DTC Logic

INFOID:0000000009009897

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U121E	DSP COMM [U121E]	AV control unit malfunction is detected.	• If a disc can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009009898

1.CHECK PLAYBACK OF A DISK (CD)

Can a disk (CD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

U1225 AV CONTROL UNIT

DTC Logic

INFOID:0000000009009899

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1225	USB CONTROLLER [U1225]	USB connection malfunction is detected.	Check that the connection to the USB connector is normal.

U1227 AV CONTROL UNIT

DTC Logic

INFOID:0000000009009900

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1227	DVD COMM [U1227]	AV control unit malfunction is detected.	• If DVD can be played, then there is a possibility of the detection of a temporary malfunction. • Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009009901

1.CHECK PLAYBACK OF A DISK (DVD)

Can a disc (DVD) be played?

YES >> Malfunction may be detected transitory.
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

U1228 AV CONTROL UNIT

DTC Logic

INFOID:0000000009009902

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1228	SUB CPU CONN [U1228]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

U1229 AV CONTROL UNIT

DTC Logic

INFOID:0000000009009903

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1229	iPod CERTIFICATION [U1229]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

U122A AV CONTROL UNIT

DTC Logic

INFOID:0000000009009904

DTC	Display contents of CONSULT	DTC detection condition	Action to take
U122A	CONFIG UNFINISH [U122A]	The writing of configuration data is incomplete.	Write configuration data with CONSULT.

Diagnosis Procedure

INFOID:0000000009009905

1.PERFORM THE SELF-DIAGNOSIS

When U122A is detected, write configuration data with CONSULT.

>> Write configuration data with CONSULT. Refer to AV-51, "CONSULT Function".

U122E AV CONTROL UNIT

DTC Logic

INFOID:0000000009009906

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U122E	Built-in AUDIO CONN [U122E]	AV control unit malfunction is detected.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

U1231 BOSE AMP.

DTC Logic

INFOID:0000000009009907

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1231	AMP TEMP [U1231]	BOSE amp. malfunction is detected.	Replace the BOSE amp. if the malfunction occurs constantly. Refer to AV-294, "Removal and Installation".

U1232 STEERING ANGLE SENSOR

AV CONTROL UNIT

AV CONTROL UNIT : DTC Logic

INFOID:0000000009009908

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1232	ST ANGLE SEN CALIB [1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009009909

1.ADJUST THE PREDICTIVE COURSE LINE CENTER POSITION OF THE STEERING ANGLE SENSOR

When U1232 is detected, adjust the predictive course line center position of the steering angle sensor.

>> Adjusts the steering angle sensor neutral position on ABS actuator and electrical unit (control unit) side. Refer to BRC-62, "Work Procedure".

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : DTC Logic

INFOID:0000000009009910

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1232	ST ANGLE SEN CALIB [1232]	Predictive course line center position adjustment of the steering angle sensor is incomplete.	Adjust the predictive course line center position of the steering angle sensor.

AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009009911

1.ADJUST THE PREDICTIVE COURSE LINE CENTER POSITION OF THE STEERING ANGLE SENSOR

When U1232 is detected, adjust the predictive course line center position of the steering angle sensor.

>> Adjusts the steering angle sensor neutral position on ABS actuator and electrical unit (control unit) side. Refer to BRC-62, "Work Procedure".

U1243 FRONT DISPLAY UNIT

DTC Logic

INFOID:0000000009009912

DTC	Display contents of CONSULT	DTC Detection Condition	Possible causes
U1243	FRONT DISP CONN [U1243]	When either one of the following items is detected. • front display unit power supply and ground circuits are malfunctioning. • serial communication circuits between front display unit and AV control unit are malfunctioning.	• Front display unit power supply and ground circuits. • Serial communication circuits between front display unit and AV control unit.

Diagnosis Procedure

INFOID:0000000009009913

1.CHECK FRONT DISPLAY UNIT POWER SUPPLY AND GROUND CIRCUITS

Check front display unit power supply and ground circuits. Refer to AV-233, "FRONT DISPLAY UNIT : Diagnosis Procedure".

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY COMMUNICATION CIRCUITS

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

Front display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M215	9	M210	89	Existed
	10		73	

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

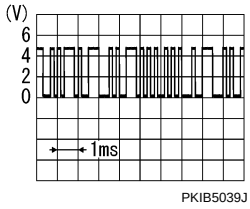
Front display unit		Ground	Continuity
Connector	Terminals		
M215	9		Not existed
	10		

Is inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK COMMUNICATION SIGNAL

1. Connect front display unit connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector and ground.

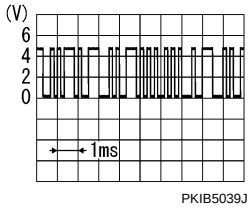
(+)		(–)	Condition	Reference value
Front display unit				
Connector	Terminal			
M215	9	Ground	When adjusting display brightness.	 PKIB5039J

Is inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

4. CHECK COMMUNICATION SIGNAL

Check signal between front display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Front display unit				
Connector	Terminal			
M215	10	Ground	When adjusting display brightness.	 PKIB5039J

Is inspection result normal?

YES >> INSPECTION END
NO >> Replace front display unit. Refer to AV-283, "Removal and Installation".

U1244 GPS ANTENNA

DTC Logic

INFOID:0000000009009914

DTC	Display contents of CONSULT	DTC Detection Condition	Possible causes
U1244	GPS ANTENNA CONN [U1244]	GPS antenna connection malfunction is detected.	GPS antenna disconnection

Diagnosis Procedure

INFOID:0000000009009915

1.GPS ANTENNA CHECK

Visually check GPS antenna and antenna feeder.

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Disconnect GPS antenna connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit terminal and ground.

(+)		
AV control unit	(–)	Voltage (Approx.)
Terminal		
153	Ground	5.0 V

Is inspection result normal?

YES >> INSPECTION END
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

U1258 SATELLITE RADIO ANTENNA

DTC Logic

INFOID:0000000009009916

DTC	Display contents of CONSULT	DTC Detection Condition	Possible causes
U1258	XM ANTENNA CONN [U1258]	Satellite radio antenna connection malfunction is detected.	Satellite radio antenna disconnection.

Diagnosis Procedure

INFOID:0000000009009917

1. SATELLITE RADIO ANTENNA CHECK

Visually check satellite radio antenna and antenna feeder.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2. CHECK AV CONTROL UNIT VOLTAGE

1. Disconnect satellite radio antenna connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit and ground.

(+)		
AV control unit	(–)	Voltage (Approx.)
Terminal		
176	Ground	5.0 V

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

U125A HEADREST DISPLAY UNIT

DTC Logic

INFOID:0000000009009918

DTC	Display contents of CONSULT	DTC Detection Condition	Possible causes
U125A	3RD DISP CONN [U125A]	When either one of the following items are detected: • headrest display unit RH power supply and ground circuits are malfunctioning. • AV communication circuits between headrest display unit LH and headrest display unit RH are malfunctioning. • location recognition signal circuit between headrest display unit RH and ground is malfunctioning.	• Headrest display unit RH power supply and ground circuits. • AV communication circuits between Headrest display unit LH and headrest display unit RH. • Location recognition signal circuit between headrest display unit RH and ground.

Diagnosis Procedure

INFOID:0000000009009919

1.CHECK HEADREST DISPLAY UNIT RH POWER SUPPLY AND GROUND CIRCUIT

Check headrest display unit RH power supply and ground circuits. Refer to AV-233, "HEADREST DISPLAY UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK CONTINUITY AV COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect headrest display unit LH connector and headrest display unit RH connector.
3. Check continuity between headrest display unit LH harness connector and headrest display unit RH harness connector.

Headrest display unit LH		Headrest display unit RH		Continuity
Connector	Terminals	Connector	Terminals	
B554	11	B574	12	Existed
	13		14	

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair harness or connector.

3.CHECK LOCATION RECOGNITION SIGNAL CIRCUIT

Check location recognition signal circuit between headrest display unit RH and ground. Refer to AV-247, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace headrest display unit RH. Refer to AV-284, "Exploded View".
NO >> Repair harness or connector.

U1263 USB

DTC Logic

INFOID:0000000009009920

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1263	USB OVERCURRENT [U1263]	Detection of overcurrent in USB connector.	Check USB harness between the AV control unit and USB connector.

Diagnosis Procedure

INFOID:0000000009009921

1.CHECK USB HARNESS

Visually check USB harness.

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-282, "Removal and Installation".
NO >> Replace USB harness.

U1264 ANTENNA AMP.

DTC Logic

INFOID:0000000009009922

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1264	ANTENNA AMP TERMINAL [U1264]	Radio antenna amp. ON circuit is open or shorted.	Check antenna amp. ON signal circuit between the AV control unit and radio antenna amp.

Diagnosis Procedure

INFOID:0000000009009923

1. CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND ANTENNA AMP.

1. Turn ignition switch OFF.
2. Disconnect antenna amp. connector and AV control unit connector.
3. Check continuity between AV control unit harness connector and antenna amp. harness connector.

AV control unit		Antenna amp.		Continuity
Connector	Terminals	Connector	Terminals	
M319	152	M313	1	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminals		
M319	152		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK VOLTAGE AV CONTROL UNIT

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Voltage (Approx.)
AV control unit			
Connector	Terminals		
M319	152	Ground	12.0 V

Is the inspection result normal?

YES >> Replace antenna amp. Refer to AV-295, "Removal and Installation".
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

U1265 BOSE AMP.

DTC Logic

INFOID:0000000009009924

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1265	AMP ON TERMINAL [U1265]	BOSE amp. ON signal circuit is open or shorted.	Check BOSE amp. ON signal circuit between the AV control unit and BOSE amp.

Diagnosis Procedure

INFOID:0000000009009925

1.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND BOSE AMP.

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector and AV control unit connector.
3. Check continuity between AV control unit harness connector and BOSE amp. harness connector.

AV control unit		BOSE amp.		Continuity
Connector	Terminals	Connector	Terminals	
M208	1	B230	20	Existed

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminals		
M208	1		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE AV CONTROL UNIT

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Voltage (Approx.)
AV control unit			
Connector	Terminals		
M208	1	Ground	12.0 V

Is the inspection result normal?

YES >> Replace BOSE amp. Refer to AV-294, "Removal and Installation".
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

U1300 AV COMM CIRCUIT

Description

INFOID:0000000009009926

U1300 is indicated when malfunction occurs in communication signal of multi AV system. Indicated simultaneously, without fail, with the malfunction of control units connected to AV control unit with communication line. Determine the possible malfunction cause from the table below.

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1300 U1240	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240]	When either one of the following items are detected: • multifunction switch power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and multifunction switch are malfunctioning.	• Multifunction switch power supply and ground circuits. • AV communication circuits between AV control unit and multifunction switch.
U1300 U124E	• AV COMM CIRCUIT [U1300] • AMP CONN [U124E]	When either one of the following items are detected: • BOSE amp. power supply and ground circuits are malfunctioning. • AV communication circuits between headrest display unit LH and BOSE amp. are malfunctioning.	• BOSE amp. power supply and ground circuits. Refer to AV-235, "BOSE AMP. : Diagnosis Procedure". • AV communication circuits between headrest display unit LH and BOSE amp.
U1300 U1246	• AV COMM CIRCUIT [U1300] • VIDEO DIST CONN [U1246]	When either one of the following items are detected: • video distributor power supply and ground circuits are malfunctioning. • headrest display unit LH power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and headrest display unit LH are malfunctioning. • location recognition signal circuit between headrest display unit LH and ground is malfunctioning.	• Video distributor power supply and ground circuits. Refer to AV-234, "VIDEO DISTRIBUTOR : Diagnosis Procedure". • Headrest display unit LH power supply and ground circuits. Refer to AV-233, "HEADREST DISPLAY UNIT : Diagnosis Procedure". • AV communication circuits between AV control unit and headrest display unit LH. • Location recognition signal circuit between headrest display unit LH and ground. Refer to AV-247, "Diagnosis Procedure".
U1300 U125B	• AV COMM CIRCUIT [U1300] • AROUND CAMERA CONN [U125B]	When either one of the following items are detected: • around view monitor control unit power supply and ground circuits are malfunctioning. • AV communication circuits between AV control unit and around view monitor control unit are malfunctioning.	• Around view monitor control unit power supply and ground circuits. Refer to AV-236, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure". • AV communication circuits between AV control unit and around view monitor control unit.
U1300 U125C	• AV COMM CIRCUIT [U1300] • SONAR CONN [U125C]	When either one of the following items are detected: • Sonar control unit power supply and ground circuits are malfunctioning. • Around view monitor control unit CAN communication circuits are malfunctioning. • Sonar control unit CAN communication circuits are malfunctioning.	• Sonar control unit power supply and ground circuits. Refer to AV-237, "SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : Diagnosis Procedure". • Around view monitor control unit CAN communication circuit. • Sonar control unit CAN communication circuit.

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1300 U1240 U125B U1246	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • AROUND CAMERA CONN [U125B] • VIDEO DIST CONN [U1246]	AV communication circuits between AV control unit and multifunction switch are malfunctioning.	AV communication circuits between AV control unit and multifunction switch.
U1300 U1240 U124E U125B U1246	• AV COMM CIRCUIT [U1300] • SWITCH CONN [U1240] • AMP CONN [U124E] • AROUND CAMERA CONN [U125B] • VIDEO DIST CONN [U1246]		

U1302 CAMERA POWER VOLT

DTC Logic

INFOID:0000000009009927

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1302	CAMERA POWER VOLT [U1302]	Camera power supply voltage does not satisfy the following conditions for 2 seconds or more when ignition switch is turned ON. • When supplemental lighting power supply output is ON: 5.9 – 6.5 V. • When OFF: 0 V by camera power supply measurement.	• Short circuit to battery or short circuit to ground of camera power supply output circuit. • Around view monitor control unit

Diagnosis Procedure

INFOID:0000000009009928

1.CHECK AROUND VIEW MONITOR CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check around view monitor control unit power supply and ground circuit. Refer to AV-236, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".

Is the check result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK REAR CAMERA POWER SUPPLY OUTPUT CIRCUIT (CHECK FOR SHORT CIRCUIT)

1. Disconnect around view monitor control unit connector and rear camera connector.
2. Check whether or not continuity between around view monitor control unit harness connector and ground is normal.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M61	50		Not existed

Is the check result normal?

YES >> GO TO 3.
NO >> Repair the harnesses or connectors.

3.CHECK REAR CAMERA POWER SUPPLY 1

1. Connect around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check whether or not voltage between around view monitor control unit harness connectors is normal.

Probe				Reference value
(+)		(–)		
Around view monitor control unit				
Connector	Terminal	Connector	Terminal	
M61	50	M61	52	Approx. 6.0 V

Is the check result normal?

YES >> GO TO 4.
NO >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".

4.CHECK REAR CAMERA POWER SUPPLY 2

1. Turn ignition switch OFF.
2. Connect rear camera connector.
3. Turn ignition switch ON.
4. Check whether or not voltage between around view monitor control unit harness connectors is normal.

Probe				Reference value
(+)		(–)		
Around view monitor control unit				
Connector	Terminal	Connector	Terminal	
M61	50	M61	52	Approx. 6.0 V

Is the check result normal?

YES >> GO TO 5.
NO >> Replace rear camera. Refer to AV-306, "Removal and Installation".

5. CHECK FRONT CAMERA POWER SUPPLY OUTPUT CIRCUIT (CHECK FOR SHORT CIRCUIT)

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and front camera connector.
3. Check whether or not continuity between around view monitor control unit harness connector and ground is normal.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M61	68		Not existed

Is the check result normal?

YES >> GO TO 6.
NO >> Repair the harnesses or connectors.

6. CHECK FRONT CAMERA POWER SUPPLY 1

1. Connect around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check whether or not voltage between around view monitor control unit harness connectors is normal.

Probe				Reference value
(+)		(–)		
Around view monitor control unit				
Connector	Terminal	Connector	Terminal	
M61	68	M61	70	Approx. 6.0 V

Is the check result normal?

YES >> GO TO 7.
NO >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".

7. CHECK FRONT CAMERA POWER SUPPLY 2.

1. Turn ignition switch OFF.
2. Connect front camera connector.
3. Turn ignition switch ON.
4. Check whether or not voltage between around view monitor control unit harness connectors is normal.

Probe				Reference value
(+)		(–)		
Around view monitor control unit				
Connector	Terminal	Connector	Terminal	
M61	68	M61	70	Approx. 6.0 V

Is the check result normal?

YES >> GO TO 8.
NO >> Replace front camera. Refer to AV-305, "Removal and Installation".

8. CHECK SIDE CAMERA RH POWER SUPPLY OUTPUT CIRCUIT (CHECK FOR SHORT CIRCUIT)

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check whether or not continuity between around view monitor control unit harness connector and ground is normal.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M61	62		Not existed

Is the check result normal?

YES >> GO TO 9.
NO >> Repair the harnesses or connectors.

9. CHECK SIDE CAMERA RH POWER SUPPLY 1

1. Connect around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check whether or not voltage between around view monitor control unit harness connectors is normal.

Probe				Reference value
(+)		(–)		
Around view monitor control unit				
Connector	Terminal	Connector	Terminal	
M61	62	M61	64	Approx. 6.0 V

Is the check result normal?

YES >> GO TO 10.
NO >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".

10. CHECK SIDE CAMERA RH POWER SUPPLY 2

1. Turn ignition switch OFF.
2. Connect door mirror (driver side) connector.
3. Turn ignition switch ON.
4. Check whether or not voltage between around view monitor control unit harness connectors is normal.

Probe				Reference value
(+)		(–)		
Around view monitor control unit				
Connector	Terminal	Connector	Terminal	
M61	62	M61	64	Approx. 6.0 V

Is the check result normal?

YES >> GO TO 11.
NO >> Replace side camera RH. Refer to AV-307, "Removal and Installation".

11. CHECK SIDE CAMERA LH POWER SUPPLY OUTPUT CIRCUIT (CHECK FOR SHORT CIRCUIT)

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
3. Check whether or not continuity between around view monitor control unit harness connector and ground is normal.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M61	56		Not existed

Is the check result normal?

YES >> GO TO 12.
NO >> Repair the harnesses or connectors.

12. CHECK SIDE CAMERA LH POWER SUPPLY 1

1. Connect around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check whether or not voltage between around view monitor control unit harness connectors is normal.

Probe				Reference value
(+)		(–)		
Around view monitor control unit				
Connector	Terminal	Connector	Terminal	
M61	56	M61	58	Approx. 6.0 V

Is the check result normal?

YES >> GO TO 13.
NO >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".

13. CHECK SIDE CAMERA LH POWER SUPPLY 2

1. Turn ignition switch OFF.
2. Connect door mirror (passenger side) connector.
3. Turn ignition switch ON.
4. Check whether or not voltage between around view monitor control unit harness connectors is normal.

Probe				Reference value
(+)		(–)		
Around view monitor control unit				
Connector	Terminal	Connector	Terminal	
M61	56	M61	58	Approx. 6.0 V

Is the check result normal?

YES >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".
NO >> Replace side camera LH. Refer to AV-307, "Removal and Installation".

U1303 LED POWER SUPPLY VOLT

DTC Logic

INFOID:0000000009009929

DTC	Display contents of CONSULT	DTC detection condition	Action to take
U1303	LED POWER SUPPLY VOLT [U1303]	The following condition of the supplemental lighting supply voltage is not satisfied for continuously 2 seconds or more when turning the ignition switch ON. • Supplemental lighting supply output ON: 5.2 - 5.8 V	• Short circuit to battery or short circuit to ground of supplemental lighting output circuit. • Replace the around view monitor.

NOTE:
This vehicle is equipped with a supplemental lighting supply output circuit (harness) but not a supplemental light.

Diagnosis Procedure

INFOID:0000000009009930

1.CHECK INFRARED LED POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminals	Connector	Terminals	
M48	5	D23	4	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M48	5		Not existed

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".
NO >> Repair harness or connector.

U1304 CAMERA IMAGE CALIBRATION

DTC Logic

INFOID:0000000009009931

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1304	CAMERA IMAGE CAL-IB	Camera calibration is incomplete. **NOTE:** Current malfunction is displayed only and is not saved.	Perform camera calibration.

Diagnosis Procedure

INFOID:0000000009009932

1.PERFORM CALIBRATING CAMERA IMAGE

Perform camera calibration when DTC U1304 is detected.

>> Perform camera calibration. Refer to AV-141, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Description".

U1305 CONFIG UNFINISH

DTC Logic

INFOID:0000000009009933

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1305	CONFIG UNFINISH [U1305]	The configuration of around view monitor control unit is incomplete. **NOTE:** Current malfunction is displayed only and is not saved.	Perform the configuration of around view monitor control unit.

Diagnosis Procedure

INFOID:0000000009009934

1.PERFORM CONFIGURATION OF AROUND VIEW MONITOR CONTROL UNIT

Perform configuration of around view monitor control unit when DTC U1305 is detected.

>> Perform configuration of around view monitor control unit. Refer to AV-139, "CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Special Repair Requirement".

U1310 AV CONTROL UNIT

DTC Logic

INFOID:0000000009009935

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1310	CONTROL UNIT (AV) [U1310]	An initial diagnosis error is detected in AV communication circuit.	Replace the AV control unit if the malfunction occurs constantly. Refer to AV-282, "Removal and Installation".

U1601, U1603, U1609, U160B FRONT DOOR SPEAKER/TWEETER

DTC Logic

INFOID:0000000009009936

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1601 U1603	FL-DOOR WOOFER [OPEN, SHORT, GND-SHORT or VB-SHOR] [U1601, U1603]	When either one of the following items are detected: • sound signal circuits between BOSE amp. and front door speaker LH are malfunctioning. • sound signal circuits between BOSE amp. and front door tweeter LH are malfunctioning.	• Sound signal circuits between BOSE amp. and front door speaker LH. • Sound signal circuits between BOSE amp. and front door tweeter LH.
U1609 U160B	FR-DOOR WOOFER [OPEN, SHORT, GND-SHORT or VB-SHOR] [U1609, U160B]	When either one of the following items are detected: • sound signal circuits between BOSE amp. and front door speaker RH are malfunctioning. • sound signal circuits between BOSE amp. and front door tweeter RH are malfunctioning.	• Sound signal circuits between BOSE amp. and front door speaker RH. • Sound signal circuits between BOSE amp. and front door tweeter RH.

Diagnosis Procedure

INFOID:0000000009009937

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the “self-diagnosis” results of “MULTI AV”. Turn ignition switch OFF.
2. Turn ignition switch ON. perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES–1 >> U1601 or U1603: Check harnesses between BOSE amp. and front door speaker LH or between BOSE amp. and front door tweeter LH.
YES–2 >> U1609 or U160B: Check harnesses between BOSE amp. and front door speaker RH or between BOSE amp. and front door tweeter RH.
NO >> Refer to GI-43, "Intermittent Incident".

U1627, U162F SQUAWKER

DTC Logic

INFOID:0000000009009938

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1627	F-INST L-TWEETER [OPEN, SHORT, GND-SHORT or VB-SHOR] [U1627]	Sound signal circuits between BOSE amp. and squawker LH are malfunctioning.	Sound signal circuits between BOSE amp. and squawker LH.
U162F	F-INST R-TWEETER [OPEN, SHORT, GND-SHORT or VB-SHOR] [U162F]	Sound signal circuits between BOSE amp. and squawker RH are malfunctioning.	Sound signal circuits between BOSE amp. and squawker RH.

Diagnosis Procedure

INFOID:0000000009009939

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the “self-diagnosis” results of “MULTI AV”. Turn ignition switch OFF.
2. Turn ignition switch ON. perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES–1 >> U1627: Check harnesses between BOSE amp. and squawker LH.
YES–2 >> U162F: Check harnesses between BOSE amp. and squawker RH.
NO >> Refer to GI-43, "Intermittent Incident".

U162A CENTER SPEAKER

DTC Logic

INFOID:0000000009009940

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U162A	F-INST C-SQUAWK [OPEN, SHORT, GND-SHORT, or VB-SHORT] [U162A]	Sound signal circuits between BOSE amp. and center speaker are malfunctioning.	Sound signal circuits between BOSE amp. and center speaker.

Diagnosis Procedure

INFOID:0000000009009941

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the “self-diagnosis” results of “MULTI AV”. Turn ignition switch OFF.
2. Turn ignition switch ON. perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Check harnesses between BOSE amp. and center speaker.
NO >> Refer to GI-43, "Intermittent Incident".

U1684, U1687, U168C, U168F REAR DOOR SPEAKER/TWEETER

DTC Logic

INFOID:0000000009009942

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1684 U1687	2L-DOOR SPEAKER [OPEN, SHORT, GND-SHORT or VB-SHOR]	When either one of the following items are detected: • sound signal circuits between BOSE amp. and rear door speaker LH are malfunctioning. • sound signal circuits between BOSE amp. and rear door tweeter LH are malfunctioning.	• Sound signal circuits between BOSE amp. and rear door speaker LH. • Sound signal circuits between BOSE amp. and rear door tweeter LH.
U168C U168F	2R-DOOR SPEAKER [OPEN, SHORT, GND-SHORT or VB-SHOR]	When either one of the following items are detected: • sound signal circuits between BOSE amp. and rear door speaker RH are malfunctioning. • sound signal circuits between BOSE amp. and rear door tweeter RH are malfunctioning.	• Sound signal circuits between BOSE amp. and rear door speaker RH. • Sound signal circuits between BOSE amp. and rear door tweeter RH.

Diagnosis Procedure

INFOID:0000000009009943

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the “self-diagnosis” results of “MULTI AV”. Turn ignition switch OFF.
2. Turn ignition switch ON. perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES–1 >> U1684 or U1687: Check harnesses between BOSE amp. and rear door speaker LH or between BOSE amp. and rear door tweeter LH.
YES–2 >> U168C or U168F: Check harnesses between BOSE amp. and rear door speaker RH and between BOSE amp. and rear door tweeter RH.
NO >> Refer to GI-43, "Intermittent Incident".

U175D WOOFER

DTC Logic

INFOID:0000000009009944

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U175D	R-LUGGAGE L-WOOFER [OPEN, SHORT, GND-SHORT or VB-SHOR] [U175D]	Sound signal circuits between BOSE amp. and woofer are malfunctioning.	Sound signal circuits between BOSE amp. and woofer.

Diagnosis Procedure

INFOID:0000000009009945

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the “self-diagnosis” results of “MULTI AV”. Turn ignition switch OFF.
2. Turn ignition switch ON. perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES >> Check harnesses between BOSE amp. and woofer.
NO >> Refer to GI-43, "Intermittent Incident".

U176A, U1772 ROOF SPEAKER

DTC Logic

INFOID:0000000009009946

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U176A	R-ROOF L-SQAWK [OPEN, SHORT, GND-SHORT or VB-SHOR] [U176A]	Sound signal circuits between BOSE amp. and roof speaker LH malfunctioning.	Sound signal circuits between BOSE amp. and roof speaker LH.
U1772	R-ROOF R-SQAWK [OPEN, SHORT, GND-SHORT or VB-SHOR] [U1772]	Sound signal circuits between BOSE amp. and roof speaker RH malfunctioning.	Sound signal circuits between BOSE amp. and roof speaker RH.

Diagnosis Procedure

INFOID:0000000009009947

1.PERFORM THE SELF-DIAGNOSIS

1. Delete the “self-diagnosis” results of “MULTI AV”. Turn ignition switch OFF.
2. Turn ignition switch ON. perform the self-diagnosis again.
3. Check that the DTC is detected again.

Is any DTC detected?

YES–1 >> U176A: Check harnesses between BOSE amp. and roof speaker LH.
YES–2 >> U1772: Check harnesses between BOSE amp. and roof speaker RH.
NO >> Refer to GI-43, "Intermittent Incident".

B2720 CORNER SENSOR [RL]

DTC Logic

INFOID:0000000009009948

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
B2720	CORNER SENSOR [RL] SHORT-BAT	Short circuit to power supply is detected in harness between sonar control unit and rear corner sensor LH when ignition switch is turned ON.	Check harness between sonar control unit and rear corner sensor LH.
	CORNER SENSOR [RL] OPEN/SHORT-GND	Short circuit to ground or open circuit is detected in harness between sonar control unit and rear corner sensor LH when ignition switch is turned ON.	Check harness between sonar control unit and rear corner sensor LH.
	CORNER SENSOR [RL] SENSOR	Rear corner sensor LH malfunction is detected when ignition switch is turned ON.	Replace corner sensor.
	CORNER SENSOR [RL] CONFIG ERROR	Control unit setting of sonar control unit is incomplete or is not set normally.	Perform control unit setting of sonar control unit.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

Turn ignition switch OFF, and wait for 10 seconds or more.

>> GO TO 2.

2.DETECT DTC

CONSULT SELF-DIAGNOSIS
1. Turn ignition switch ON.
2. Perform “SONAR” self-diagnosis.

Is DTC “B2720” detected?

YES (“CORNER SENSOR [RL] SHORT-BAT” is detected.)>>Refer to AV-207, "SHORT-BAT : Diagnosis Procedure".
YES (“CORNER SENSOR [RL] OPEN/SHORT-GND” is detected.)>>Refer to AV-208, "OPEN/SHORT-GND : Diagnosis Procedure".
YES (“CORNER SENSOR [RL] SENSOR” is detected.)>>Refer to AV-208, "SENSOR : Diagnosis Procedure".
YES (“CORNER SENSOR [RL] CONFIG ERROR” is detected.)>>Refer to AV-209, "CONFIG ERROR : Diagnosis Procedure".
NO >> INSPECTION END

SHORT-BAT

SHORT-BAT : Diagnosis Procedure

INFOID:0000000009009949

1.CHECK REAR CORNER SENSOR LH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 1

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and rear corner sensor LH connector.
3. Turn ignition switch ON.
4. Check voltage between sonar control unit connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M47	5		0 V

Is the check result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors (short circuit to power supply harness).

2.CHECK REAR CORNER SENSOR LH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 2

Check continuity between sonar control unit connector and rear corner sensor LH connector.

Rear corner sensor LH		Ground	Continuity
Connector	Terminal		
B265	2		Not existed

Is the check result normal?

YES >> Replace rear corner sensor LH. Refer to AV-310, "Removal and Installation".
NO >> Repair the harnesses or connectors (short circuit to power supply harness).

OPEN/SHORT-GND

OPEN/SHORT-GND : Diagnosis Procedure

INFOID:0000000009009950

1.CHECK REAR CORNER SENSOR LH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and rear corner sensor LH connector.
3. Check continuity between sonar control unit connector and rear corner sensor LH connector.

Sonar control unit		Rear corner sensor LH		Continuity
Connector	Terminal	Connector	Terminal	
M47	5	B265	2	Existed

4. Check for continuity between sonar control unit and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	5		Not existed

Is the check result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors.

2.CHECK REAR CORNER SENSOR LH GROUND CIRCUIT.

Check continuity between sonar control unit connector and rear corner sensor LH connector.

Sonar control unit		Rear corner sensor LH		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	B265	1	Existed

Is the check result normal?

YES >> Replace rear corner sensor LH. Refer to AV-310, "Removal and Installation".
NO >> Repair the harnesses or connectors.

SENSOR

SENSOR : Diagnosis Procedure

INFOID:0000000009009951

1.PERFORM CONFIRMATION PROCEDURES

1. Perform DTC confirmation procedure. Refer to AV-207, "DTC Logic".
2. Perform self-diagnosis. Check whether or not DTC “B2720 CORNER SENSOR [RL] SENSOR” is detected.

Is DTC “B2720 CORNER SENSOR [RL] SENSOR” detected?

YES >> Replace rear corner sensor LH. Refer to AV-310, "Removal and Installation".

NO >> Malfunction may be detected temporarily. Wait for constant malfunction if malfunction symptom is not confirmed.

CONFIG ERROR

CONFIG ERROR : Diagnosis Procedure

INFOID:0000000009009952

1. PERFORM CONFIGURATION OF SONAR CONTROL UNIT

1. Perform configuration of sonar control unit. Refer to AV-140, "CONFIGURATION (SONAR CONTROL UNIT) : Special Repair Requirement".
2. Perform DTC confirmation procedure. Refer to AV-207, "DTC Logic".

Is DTC “B2720 CORNER SENSOR [RL] CONFIG ERROR” detected?

YES >> Replace rear corner sensor LH. Refer to AV-310, "Removal and Installation".
NO >> Check is complete.

B2721 CENTER SENSOR [RL]

DTC Logic

INFOID:0000000009316272

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
B2721	CENTER SENSOR [RL] SHORT-BAT	Short circuit to power supply is detected in harness between sonar control unit and rear center sensor LH when ignition switch is turned ON.	Check harness between sonar control unit and rear center sensor LH.
	CENTER SENSOR [RL] OPEN/SHORT-GND	Short circuit to ground or open circuit is detected in harness between sonar control unit and rear center sensor LH when ignition switch is turned ON.	Check harness between sonar control unit and rear center sensor LH.
	CENTER SENSOR [RL] SENSOR	Rear center sensor LH malfunction is detected when ignition switch is turned ON.	Replace center sensor.
	CENTER SENSOR [RL] CONFIG ERROR	Control unit setting of sonar control unit is incomplete or is not set normally.	Perform control unit setting of sonar control unit.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

Turn ignition switch OFF, and wait for 10 seconds or more.

>> GO TO 2.

2.DETECT DTC

CONSULT SELF-DIAGNOSIS
1. Turn ignition switch ON.
2. Perform “SONAR” self-diagnosis.

Is DTC “B2721” detected?

YES (“CENTER SENSOR [RL] SHORT-BAT” is detected.)>>Refer to AV-210, "SHORT-BAT : Diagnosis Procedure".
YES (“CENTER SENSOR [RL] OPEN/SHORT-GND” is detected.)>>Refer to AV-211, "OPEN/SHORT-GND : Diagnosis Procedure".
YES (“CENTER SENSOR [RL] SENSOR” is detected.)>>Refer to AV-211, "SENSOR : Diagnosis Procedure".
YES (“CENTER SENSOR [RL] CONFIG ERROR” is detected.)>>Refer to AV-212, "CONFIG ERROR : Diagnosis Procedure".
NO >> INSPECTION END

SHORT-BAT

SHORT-BAT : Diagnosis Procedure

INFOID:0000000009316273

1.CHECK REAR CENTER SENSOR LH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 1

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and rear center sensor LH connector.
3. Turn ignition switch ON.
4. Check voltage between sonar control unit connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M47	7		0 V

Is the check result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors (short circuit to power supply harness).

2.CHECK REAR CENTER SENSOR LH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 2

Check continuity between sonar control unit connector and rear center sensor LH connector.

Rear center sensor LH		Ground	Continuity
Connector	Terminal		
B263	1		Not existed

Is the check result normal?

YES >> Replace rear center sensor LH. Refer to AV-310, "Removal and Installation".
NO >> Repair the harnesses or connectors (short circuit to power supply harness).

OPEN/SHORT-GND

OPEN/SHORT-GND : Diagnosis Procedure

INFOID:0000000009316274

1.CHECK REAR CENTER SENSOR LH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and rear center sensor LH connector.
3. Check continuity between sonar control unit connector and rear center sensor LH connector.

Sonar control unit		Rear center sensor LH		Continuity
Connector	Terminal	Connector	Terminal	
M47	7	B263	2	Existed

4. Check for continuity between sonar control unit and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	7		Not existed

Is the check result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors.

2.CHECK REAR CENTER SENSOR LH GROUND CIRCUIT.

Check continuity between sonar control unit connector and rear center sensor LH connector.

Sonar control unit		Rear center sensor LH		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	B263	1	Existed

Is the check result normal?

YES >> Replace rear center sensor LH. Refer to AV-310, "Removal and Installation".
NO >> Repair the harnesses or connectors.

SENSOR

SENSOR : Diagnosis Procedure

INFOID:0000000009316275

1.PERFORM CONFIRMATION PROCEDURES

1. Perform DTC confirmation procedure. Refer to AV-210, "DTC Logic".
2. Perform self-diagnosis. Check whether or not DTC “B2721 CENTER SENSOR [RL] SENSOR” is detected.

Is DTC “B2721 CENTER SENSOR [RL] SENSOR” detected?

YES >> Replace rear center sensor LH. Refer to AV-310, "Removal and Installation".
NO >> Malfunction may be detected temporarily. Wait for constant malfunction if malfunction symptom is not confirmed.

CONFIG ERROR

CONFIG ERROR : Diagnosis Procedure

INFOID:0000000009316276

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

1. Perform configuration of sonar control unit. Refer to AV-140, "CONFIGURATION (SONAR CONTROL UNIT) : Special Repair Requirement".
2. Perform DTC confirmation procedure. Refer to AV-210, "DTC Logic".

Is DTC “B2721 CENTER SENSOR [RL] CONFIG ERROR” detected?

YES >> Replace rear center sensor LH. Refer to AV-310, "Removal and Installation".
NO >> Check is complete.

B2722 CENTER SENSOR [RR]

DTC Logic

INFOID:0000000009316277

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
B2722	CENTER SENSOR [RR] SHORT-BAT	Short circuit to power supply is detected in harness between sonar control unit and rear center sensor RH when ignition switch is turned ON.	Check harness between sonar control unit and rear center sensor RH.
	CENTER SENSOR [RR] OPEN/SHORT-GND	Short circuit to ground or open circuit is detected in harness between sonar control unit and rear center sensor RH when ignition switch is turned ON.	Check harness between sonar control unit and rear center sensor RH.
	CENTER SENSOR [RR] SENSOR	Rear center sensor RH malfunction is detected when ignition switch is turned ON.	Replace center sensor.
	CENTER SENSOR [RR] CONFIG ERROR	Control unit setting of sonar control unit is incomplete or is not set normally.	Perform control unit setting of sonar control unit.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

Turn ignition switch OFF, and wait for 10 seconds or more.

>> GO TO 2.

2.DETECT DTC

CONSULT SELF-DIAGNOSIS
1. Turn ignition switch ON.
2. Perform “SONAR” self-diagnosis.

Is DTC “B2722” detected?

YES (“CENTER SENSOR [RR] SHORT-BAT” is detected.)>>Refer to AV-213, "SHORT-BAT : Diagnosis Procedure".
YES (“CENTER SENSOR [RR] OPEN/SHORT-GND” is detected.)>>Refer to AV-214, "OPEN/SHORT-GND : Diagnosis Procedure".
YES (“CENTER SENSOR [RR] SENSOR” is detected.)>>Refer to AV-214, "SENSOR : Diagnosis Procedure".
YES (“CENTER SENSOR [RR] CONFIG ERROR” is detected.)>>Refer to AV-215, "CONFIG ERROR : Diagnosis Procedure".
NO >> INSPECTION END

SHORT-BAT

SHORT-BAT : Diagnosis Procedure

INFOID:0000000009316278

1.CHECK REAR CENTER SENSOR RH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 1

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and rear center sensor RH connector.
3. Turn ignition switch ON.
4. Check voltage between sonar control unit connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M47	8		0 V

Is the check result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors (short circuit to power supply harness).

2.CHECK REAR CENTER SENSOR RH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 2

1. Turn ignition switch OFF.
2. Check continuity between sonar control unit connector and rear center sensor RH connector.

Rear center sensor RH		Ground	Continuity
Connector	Terminal		
B264	2		Not existed

Is the check result normal?

YES >> Replace rear center sensor RH. Refer to AV-310, "Removal and Installation".
NO >> Repair the harnesses or connectors (short circuit to power supply harness).

OPEN/SHORT-GND

OPEN/SHORT-GND : Diagnosis Procedure

INFOID:0000000009316279

1.CHECK REAR CENTER SENSOR RH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and rear center sensor RH connector.
3. Check continuity between sonar control unit connector and rear center sensor RH connector.

Sonar control unit		Rear center sensor RH		Continuity.
Connector	Terminal	Connector	Terminal	
M47	8	B264	2	Existed

4. Check for continuity between sonar control unit and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	8		Not existed

Is the check result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors.

2.CHECK REAR CENTER SENSOR RH GROUND CIRCUIT

Check continuity between sonar control unit connector and rear center sensor RH connector.

Sonar control unit		Rear center sensor RH		Continuity.
Connector	Terminal	Connector	Terminal	
M47	12	B264	1	Existed

Is the check result normal?

YES >> Replace rear center sensor RH. Refer to AV-310, "Removal and Installation".
NO >> Repair the harnesses or connectors.

SENSOR

SENSOR : Diagnosis Procedure

INFOID:0000000009316280

1.PERFORM CONFIRMATION PROCEDURES

1. Perform DTC confirmation procedure.AV-213, "DTC Logic".
2. Perform self-diagnosis. Check whether or not DTC “B2722 CENTER SENSOR [RR] SENSOR” is detected.

Is DTC “B2722 CENTER SENSOR [RR] SENSOR” detected?

YES >> Replace rear center sensor RH. Refer to AV-310, "Removal and Installation".

NO >> Malfunction may be detected temporarily. Wait for constant malfunction if malfunction symptom is not confirmed.

CONFIG ERROR

CONFIG ERROR : Diagnosis Procedure

INFOID:0000000009316281

1. PERFORM CONFIGURATION OF SONAR CONTROL UNIT

1. Perform configuration of sonar control unit. Refer to AV-140, "CONFIGURATION (SONAR CONTROL UNIT) : Special Repair Requirement".
2. Perform DTC confirmation procedure. Refer to AV-213, "DTC Logic".

Is DTC “B2722 CENTER SENSOR [RR] CONFIG ERROR” detected?

YES >> Replace rear center sensor RH. Refer to AV-310, "Removal and Installation".
NO >> Check is complete.

B2723 CORNER SENSOR [RR]

DTC Logic

INFOID:0000000009009953

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
B2723	CORNER SENSOR [RR] SHORT-BAT	Short circuit to power supply is detected in harness between sonar control unit and rear corner sensor RH when ignition switch is turned ON.	Check harness between sonar control unit and rear corner sensor RH.
	CORNER SENSOR [RR] OPEN/SHORT-GND	Short circuit to ground or open circuit is detected in harness between sonar control unit and rear corner sensor RH when ignition switch is turned ON.	Check harness between sonar control unit and rear corner sensor RH.
	CORNER SENSOR [RR] SENSOR	Rear corner sensor RH malfunction is detected when ignition switch is turned ON.	Replace corner sensor.
	CORNER SENSOR [RR] CONFIG ERROR	Control unit setting of sonar control unit is incomplete or is not set normally.	Perform control unit setting of sonar control unit.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

Turn ignition switch OFF, and wait for 10 seconds or more.

>> GO TO 2.

2.DETECT DTC

CONSULT SELF-DIAGNOSIS
1. Turn ignition switch ON.
2. Perform “SONAR” self-diagnosis.

Is DTC “B2723” detected?

YES (“CORNER SENSOR [RR] SHORT-BAT” is detected.)>>Refer to AV-216, "SHORT-BAT : Diagnosis Procedure".
YES (“CORNER SENSOR [RR] OPEN/SHORT-GND” is detected.)>>Refer to AV-217, "OPEN/SHORT-GND : Diagnosis Procedure".
YES (“CORNER SENSOR [RR] SENSOR” is detected.)>>Refer to AV-217, "SENSOR : Diagnosis Procedure".
YES (“CORNER SENSOR [RR] CONFIG ERROR” is detected.)>>Refer to AV-218, "CONFIG ERROR : Diagnosis Procedure".
NO >> INSPECTION END

SHORT-BAT

SHORT-BAT : Diagnosis Procedure

INFOID:0000000009009954

1.CHECK REAR CORNER SENSOR RH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 1

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and rear corner sensor RH connector.
3. Turn ignition switch ON.
4. Check voltage between sonar control unit connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M47	6		0 V

Is the check result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors (short circuit to power supply harness).

2.CHECK REAR CORNER SENSOR RH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 2

1. Turn ignition switch OFF.
2. Check continuity between sonar control unit connector and rear corner sensor RH connector.

Rear corner sensor RH		Ground	Continuity
Connector	Terminal		
B266	2		Not existed

Is the check result normal?

YES >> Replace rear corner sensor RH. Refer to AV-310, "Removal and Installation".
NO >> Repair the harnesses or connectors (short circuit to power supply harness).

OPEN/SHORT-GND

OPEN/SHORT-GND : Diagnosis Procedure

INFOID:0000000009009955

1.CHECK REAR CORNER SENSOR RH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and rear corner sensor RH connector.
3. Check continuity between sonar control unit connector and rear corner sensor RH connector.

Sonar control unit		Rear corner sensor RH		Continuity.
Connector	Terminal	Connector	Terminal	
M47	6	B266	2	Existed

4. Check for continuity between sonar control unit and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	6		Not existed

Is the check result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors.

2.CHECK REAR CORNER SENSOR RH GROUND CIRCUIT

Check continuity between sonar control unit connector and rear corner sensor RH connector.

Sonar control unit		Rear corner sensor RH		Continuity.
Connector	Terminal	Connector	Terminal	
M47	12	B266	1	Existed

Is the check result normal?

YES >> Replace rear corner sensor RH. Refer to AV-310, "Removal and Installation".
NO >> Repair the harnesses or connectors.

SENSOR

SENSOR : Diagnosis Procedure

INFOID:0000000009009956

1.PERFORM CONFIRMATION PROCEDURES

1. Perform DTC confirmation procedure.AV-216, "DTC Logic".
2. Perform self-diagnosis. Check whether or not DTC “B2723 CORNER SENSOR [RR] SENSOR” is detected.

Is DTC “B2723 CORNER SENSOR [RR] SENSOR” detected?

YES >> Replace rear corner sensor RH. Refer to AV-310, "Removal and Installation".
NO >> Malfunction may be detected temporarily. Wait for constant malfunction if malfunction symptom is not confirmed.

CONFIG ERROR

CONFIG ERROR : Diagnosis Procedure

INFOID:0000000009009957

1. PERFORM CONFIGURATION OF SONAR CONTROL UNIT

1. Perform configuration of sonar control unit. Refer to AV-140, "CONFIGURATION (SONAR CONTROL UNIT) : Special Repair Requirement".
2. Perform DTC confirmation procedure. Refer to AV-216, "DTC Logic".

Is DTC “B2723 CORNER SENSOR [RR] CONFIG ERROR” detected?

YES >> Replace rear corner sensor RH. Refer to AV-310, "Removal and Installation".
NO >> Check is complete.

B2724 SONAR CONTROL UNIT

DTC Logic

INFOID:0000000009009958

DTC DETECTION LOGIC

DTC No.	CONSULT indication	DTC detection condition	Troubleshooting
B2724	SONAR CONTROL UNIT CONFIG ERROR	Control unit setting of sonar control unit is incomplete or is not set normally.	Perform control unit setting of sonar control unit.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

Turn ignition switch OFF, and wait for 10 seconds or more.

>> GO TO 2.

2.DETECT DTC

CONSULT SELF-DIAGNOSIS
1. Turn ignition switch ON.
2. Perform “SONAR” self-diagnosis.

Is DTC “B2724” detected?

YES >> Refer to AV-219, "Diagnosis Procedure".
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000009009959

1.PERFORM CONFIGURATION OF SONAR CONTROL UNIT

1. Perform configuration of sonar control unit. Refer to AV-140, "CONFIGURATION (SONAR CONTROL UNIT) : Special Repair Requirement".
2. Perform DTC confirmation procedure. Refer to AV-219, "DTC Logic".

Is DTS DTC“B2724 SONAR CONTROL UNIT CONFIG ERROR” detected?

YES >> Replace the sonar control unit. Refer to AV-309, "Removal and Installation".
NO >> Check is complete.

B2729 CORNER SENSOR [FL]

DTC Logic

INFOID:0000000009009960

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
B2729	CORNER SENSOR [FL] SHORT-BAT	Short circuit to power supply is detected in harness between sonar control unit and front corner sensor LH when ignition switch is turned ON.	Check harness between sonar control unit and front corner sensor LH.
	CORNER SENSOR [FL] OPEN/SHORT-GND	Short circuit to ground or open circuit is detected in harness between sonar control unit and front corner sensor LH when ignition switch is turned ON.	Check harness between sonar control unit and front corner sensor LH.
	CORNER SENSOR [FL] SENSOR	Front corner sensor LH malfunction is detected when ignition switch is turned ON.	Replace corner sensor.
	CORNER SENSOR [FL] CONFIG ERROR	Control unit setting of sonar control unit is incomplete or is not set normally.	Perform control unit setting of sonar control unit.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

Turn ignition switch OFF, and wait for 10 seconds or more.

>> GO TO 2.

2.DETECT DTC

CONSULT SELF-DIAGNOSIS
1. Turn ignition switch ON.
2. Perform “SONAR” self-diagnosis.

Is DTC “B2729” detected?

YES (“CORNER SENSOR [FL] SHORT-BAT” is detected.)>>Refer to AV-220, "SHORT-BAT : Diagnosis Procedure".
YES (“CORNER SENSOR [FL] OPEN/SHORT-GND” is detected.)>>Refer to AV-221, "OPEN/SHORT-GND : Diagnosis Procedure".
YES (“CORNER SENSOR [FL] SENSOR” is detected.)>>Refer to AV-221, "SENSOR : Diagnosis Procedure".
YES (“CORNER SENSOR [FL] CONFIG ERROR” is detected.)>>Refer to AV-222, "CONFIG ERROR : Diagnosis Procedure".
NO >> INSPECTION END

SHORT-BAT

SHORT-BAT : Diagnosis Procedure

INFOID:0000000009009961

1.CHECK FRONT CORNER SENSOR RH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 1

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and front corner sensor LH connector.
3. Turn ignition switch ON.
4. Check voltage between sonar control unit connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M47	3		0 V

Is the check result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors (short circuit to power supply harness).

2.CHECK FRONT CORNER SENSOR RH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 2

Check continuity between sonar control unit connector and front corner sensor LH connector.

Front corner sensor LH		Ground	Continuity
Connector	Terminal		
E211	2		Not existed

Is the check result normal?

YES >> Replace front corner sensor LH. Refer to AV-310, "Removal and Installation".
NO >> Repair the harnesses or connectors (short circuit to power supply harness).

OPEN/SHORT-GND

OPEN/SHORT-GND : Diagnosis Procedure

INFOID:0000000009009962

1.CHECK FRONT CORNER SENSOR LH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and front corner sensor LH connector.
3. Check continuity between sonar control unit connector and front corner sensor LH connector.

Sonar control unit		Front corner sensor LH		Continuity
Connector	Terminal	Connector	Terminal	
M47	3	E211	2	Existed

4. Check for continuity between sonar control unit and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	3		Not existed

Is the check result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors.

2.CHECK FRONT CORNER SENSOR LH GROUND CIRCUIT

Check continuity between sonar control unit connector and front corner sensor LH connector.

Sonar control unit		Front corner sensor LH		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	E211	1	Existed

Is the check result normal?

YES >> Replace front corner sensor LH. Refer to AV-310, "Removal and Installation".
NO >> Repair the harnesses or connectors.

SENSOR

SENSOR : Diagnosis Procedure

INFOID:0000000009009963

1.PERFORM CONFIRMATION PROCEDURES

1. Perform DTC confirmation procedure. Refer to AV-220, "DTC Logic".
2. Perform self-diagnosis. Check whether or not DTC “B2729 CORNER SENSOR [FL] SENSOR” is detected.

Is DTC “B2729 CORNER SENSOR [FL] SENSOR” detected?

YES >> Replace front corner sensor LH. Refer to AV-310, "Removal and Installation".
NO >> Malfunction may be detected temporarily. Wait for constant malfunction if malfunction symptom is not confirmed.

CONFIG ERROR

CONFIG ERROR : Diagnosis Procedure

INFOID:0000000009009964

1.PERFORM CONTROL UNIT SETTING OF SONAR CONTROL UNIT

1. Perform control unit setting of sonar control unit. Refer to AV-140, "CONFIGURATION (SONAR CONTROL UNIT) : Special Repair Requirement".
2. Perform DTC confirmation procedure. Refer to AV-220, "DTC Logic".

Is DTC “B2729 CORNER SENSOR [RL] CONFIG ERROR” detected?

YES >> Replace front corner sensor LH. Refer to AV-310, "Removal and Installation".
NO >> Check is complete.

B272A CENTER SENSOR [FL]

DTC Logic

INFOID:0000000009316282

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
B272A	CENTER SENSOR [FL] SHORT-BAT	Short circuit to power supply is detected in harness between sonar control unit and front center sensor LH when ignition switch is turned ON.	Check harness between sonar control unit and front center sensor LH.
	CENTER SENSOR [FL] OPEN/SHORT-GND	Short circuit to ground or open circuit is detected in harness between sonar control unit and front center sensor LH when ignition switch is turned ON.	Check harness between sonar control unit and front center sensor LH.
	CENTER SENSOR [FL] SENSOR	Front center sensor LH malfunction is detected when ignition switch is turned ON.	Replace center sensor.
	CENTER SENSOR [FL] CONFIG ERROR	Control unit setting of sonar control unit is incomplete or is not set normally.	Perform control unit setting of sonar control unit.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

Turn ignition switch OFF, and wait for 10 seconds or more.

>> GO TO 2.

2.DETECT DTC

CONSULT SELF-DIAGNOSIS
1. Turn ignition switch ON.
2. Perform “SONAR” self-diagnosis.

Is DTC “B272A” detected?

YES (“CENTER SENSOR [FL] SHORT-BAT” is detected.)>>Refer to AV-223, "SHORT-BAT : Diagnosis Procedure".
YES (“CENTER SENSOR [FL] OPEN/SHORT-GND” is detected.)>>Refer to AV-224, "OPEN/SHORT-GND : Diagnosis Procedure".
YES (“CENTER SENSOR [FL] SENSOR” is detected.)>>Refer to AV-224, "SENSOR : Diagnosis Procedure".
YES (“CENTER SENSOR [FL] CONFIG ERROR” is detected.)>>Refer to AV-225, "CONFIG ERROR : Diagnosis Procedure".
NO >> INSPECTION END

SHORT-BAT

SHORT-BAT : Diagnosis Procedure

INFOID:0000000009316283

1.CHECK FRONT CENTER SENSOR LH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 1

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and front center sensor LH connector.
3. Turn ignition switch ON.
4. Check voltage between sonar control unit connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M47	9		0 V

Is the check result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors (short circuit to power supply harness).

2.CHECK FRONT CENTER SENSOR LH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 2

Check continuity between sonar control unit connector and front center sensor LH connector.

Front center sensor LH		Ground	Continuity
Connector	Terminal		
E209	2		Not existed

Is the check result normal?

YES >> Replace front center sensor LH. Refer to AV-310, "Removal and Installation".
NO >> Repair the harnesses or connectors (short circuit to power supply harness).

OPEN/SHORT-GND

OPEN/SHORT-GND : Diagnosis Procedure

INFOID:0000000009316284

1.CHECK FRONT CENTER SENSOR LH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and front center sensor LH connector.
3. Check continuity between sonar control unit connector and front center sensor LH connector.

Sonar control unit		Front center sensor LH		Continuity
Connector	Terminal	Connector	Terminal	
M47	9	E209	2	Existed

4. Check for continuity between sonar control unit and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	9		Not existed

Is the check result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors.

2.CHECK FRONT CENTER SENSOR LH GROUND CIRCUIT

Check continuity between sonar control unit connector and front center sensor LH connector.

Sonar control unit		Front center sensor LH		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	E209	1	Existed

Is the check result normal?

YES >> Replace front center sensor LH. Refer to AV-310, "Removal and Installation".
NO >> Repair the harnesses or connectors.

SENSOR

SENSOR : Diagnosis Procedure

INFOID:0000000009316285

1.PERFORM CONFIRMATION PROCEDURES

1. Perform DTC confirmation procedure. Refer to AV-223, "DTC Logic".
2. Perform self-diagnosis. Check whether or not DTC “B272A CENTER SENSOR [FL] SENSOR” is detected.

Is DTC “B272A CENTER SENSOR [FL] SENSOR” detected?

YES >> Replace front center sensor LH. Refer to AV-310, "Removal and Installation".
NO >> Malfunction may be detected temporarily. Wait for constant malfunction if malfunction symptom is not confirmed.

CONFIG ERROR

CONFIG ERROR : Diagnosis Procedure

INFOID:0000000009316286

1.PERFORM CONTROL UNIT SETTING OF SONAR CONTROL UNIT

1. Perform control unit setting of sonar control unit. Refer to AV-140, "CONFIGURATION (SONAR CONTROL UNIT) : Special Repair Requirement".
2. Perform DTC confirmation procedure. Refer to AV-223, "DTC Logic".

Is DTC “B272A CENTER SENSOR [RL] CONFIG ERROR” detected?

YES >> Replace front center sensor LH. Refer to AV-310, "Removal and Installation".
NO >> Check is complete.

B272B CENTER SENSOR [FR]

DTC Logic

INFOID:0000000009316287

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
B272B	CENTER SENSOR [FR] SHORT-BAT	Short circuit to power supply is detected in harness between sonar control unit and front center sensor RH when ignition switch is turned ON.	Check harness between sonar control unit and front center sensor RH.
	CENTER SENSOR [FR] OPEN/SHORT-GND	Short circuit to ground or open circuit is detected in harness between sonar control unit and front center sensor RH when ignition switch is turned ON.	Check harness between sonar control unit and front center sensor RH.
	CENTER SENSOR [FR] SENSOR	Front center sensor RH malfunction is detected when ignition switch is turned ON.	Replace center sensor.
	CENTER SENSOR [FR] CONFIG ERROR	Control unit setting of sonar control unit is incomplete or is not set normally.	Perform control unit setting of sonar control unit.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

Turn ignition switch OFF, and wait for 10 seconds or more.

>> GO TO 2.

2.DETECT DTC

CONSULT SELF-DIAGNOSIS
1. Turn ignition switch ON.
2. Perform “SONAR” self-diagnosis.

Is DTC “B272B” detected?

YES (“CENTER SENSOR [FR] SHORT-BAT” is detected.)>>Refer to AV-226, "SHORT-BAT : Diagnosis Procedure".
YES (“CENTER SENSOR [FR] OPEN/SHORT-GND” is detected.)>>Refer to AV-227, "OPEN/SHORT-GND : Diagnosis Procedure".
YES (“CENTER SENSOR [FR] SENSOR” is detected.)>>Refer to AV-227, "SENSOR : Diagnosis Procedure".
YES (“CENTER SENSOR [FR] CONFIG ERROR” is detected.)>>Refer to AV-228, "CONFIG ERROR : Diagnosis Procedure".
NO >> INSPECTION END

SHORT-BAT

SHORT-BAT : Diagnosis Procedure

INFOID:0000000009316288

1.CHECK FRONT CENTER SENSOR RH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 1

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and front center sensor RH connector.
3. Turn ignition switch ON.
4. Check voltage between sonar control unit connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M47	10		0 V

Is the check result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors (short circuit to power supply harness).

2.CHECK FRONT CENTER SENSOR RH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 2

Check continuity between sonar control unit connector and front center sensor RH connector.

Front center sensor RH		Ground	Continuity
Connector	Terminal		
E210	2		Not existed

Is the check result normal?

YES >> Replace front center sensor RH. Refer to AV-310, "Removal and Installation".
NO >> Repair the harnesses or connectors (short circuit to power supply harness).

OPEN/SHORT-GND

OPEN/SHORT-GND : Diagnosis Procedure

INFOID:0000000009316289

1.CHECK FRONT CENTER SENSOR RH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and front center sensor RH connector.
3. Check continuity between sonar control unit connector and front center sensor RH connector.

Sonar control unit		Front center sensor RH		Continuity
Connector	Terminal	Connector	Terminal	
M47	10	E210	2	Existed

4. Check for continuity between sonar control unit and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	10		Not existed

Is the check result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors.

2.CHECK FRONT CENTER SENSOR RH GROUND CIRCUIT

Check continuity between sonar control unit connector and front center sensor RH connector.

Sonar control unit		Front center sensor RH		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	E210	1	Synchronization is applied.

Is the check result normal?

YES >> Replace front center sensor RH. Refer to AV-310, "Removal and Installation".
NO >> Repair the harnesses or connectors.

SENSOR

SENSOR : Diagnosis Procedure

INFOID:0000000009316290

1.PERFORM CONFIRMATION PROCEDURES

1. Perform DTC confirmation procedure. Refer to AV-226, "DTC Logic".
2. Perform self-diagnosis. Check whether or not DTC “B272B CENTER SENSOR [FR] SENSOR” is detected.

Is DTC “B272B CENTER SENSOR [FR] SENSOR” detected?

YES >> Replace front center sensor RH. Refer to AV-310, "Removal and Installation".

NO >> Malfunction may be detected temporarily. Wait for constant malfunction if malfunction symptom is not confirmed.

CONFIG ERROR

CONFIG ERROR : Diagnosis Procedure

INFOID:0000000009316291

1. PERFORM CONTROL UNIT SETTING OF SONAR CONTROL UNIT

1. Perform control unit setting of sonar control unit. Refer to AV-140, "CONFIGURATION (SONAR CONTROL UNIT) : Special Repair Requirement".
2. Perform DTC confirmation procedure. Refer to AV-226, "DTC Logic".

Is DTC “B272B CENTER SENSOR [FR] CONFIG ERROR” detected?

YES >> Replace front center sensor RH. Refer to AV-310, "Removal and Installation".
NO >> Check is complete.

B272C CORNER SENSOR [FR]

DTC Logic

INFOID:0000000009009965

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
B272C	CORNER SENSOR [FR] SHORT-BAT	Short circuit to power supply is detected in harness between sonar control unit and front corner sensor RH when ignition switch is turned ON.	Check harness between sonar control unit and front corner sensor RH.
	CORNER SENSOR [FR] OPEN/SHORT-GND	Short circuit to ground or open circuit is detected in harness between sonar control unit and front corner sensor RH when ignition switch is turned ON.	Check harness between sonar control unit and front corner sensor RH.
	CORNER SENSOR [FR] SENSOR	Front corner sensor RH malfunction is detected when ignition switch is turned ON.	Replace corner sensor.
	CORNER SENSOR [FR] CONFIG ERROR	Control unit setting of sonar control unit is incomplete or is not set normally.	Perform control unit setting of sonar control unit.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

Turn ignition switch OFF, and wait for 10 seconds or more.

>> GO TO 2.

2.DETECT DTC

CONSULT SELF-DIAGNOSIS
1. Turn ignition switch ON.
2. Perform “SONAR” self-diagnosis.

Is DTC “B272C” detected?

YES (“CORNER SENSOR [FR] SHORT-BAT” is detected.)>>Refer to AV-229, "SHORT-BAT : Diagnosis Procedure".
YES (“CORNER SENSOR [FR] OPEN/SHORT-GND” is detected.)>>Refer to AV-230, "OPEN/SHORT-GND : Diagnosis Procedure".
YES (“CORNER SENSOR [FR] SENSOR” is detected.)>>Refer to AV-230, "SENSOR : Diagnosis Procedure".
YES (“CORNER SENSOR [FR] CONFIG ERROR” is detected.)>>Refer to AV-231, "CONFIG ERROR : Diagnosis Procedure".
NO >> INSPECTION END

SHORT-BAT

SHORT-BAT : Diagnosis Procedure

INFOID:0000000009009966

1.CHECK FRONT CORNER SENSOR RH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 1

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and front corner sensor RH connector.
3. Turn ignition switch ON.
4. Check voltage between sonar control unit connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M47	4		0 V

Is the check result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors (short circuit to power supply harness).

2.CHECK FRONT CORNER SENSOR RH SIGNAL CIRCUIT (SHORT CIRCUIT TO POWER SUPPLY) 2

Check continuity between sonar control unit connector and front corner sensor RH connector.

Front corner sensor RH		Ground	Continuity
Connector	Terminal		
E212	2		Not existed

Is the check result normal?

YES >> Replace front corner sensor RH. Refer to AV-310, "Removal and Installation".
NO >> Repair the harnesses or connectors (short circuit to power supply harness).

OPEN/SHORT-GND

OPEN/SHORT-GND : Diagnosis Procedure

INFOID:0000000009009967

1.CHECK FRONT CORNER SENSOR RH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect sonar control unit connector and front corner sensor RH connector.
3. Check continuity between sonar control unit connector and front corner sensor RH connector.

Sonar control unit		Front corner sensor RH		Continuity
Connector	Terminal	Connector	Terminal	
M47	4	E212	2	Existed

4. Check for continuity between sonar control unit and ground.

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	4		Not existed

Is the check result normal?

YES >> GO TO 2.
NO >> Repair the harnesses or connectors.

2.CHECK FRONT CORNER SENSOR RH GROUND CIRCUIT

Check continuity between sonar control unit connector and front corner sensor RH connector.

Sonar control unit		Front corner sensor RH		Continuity
Connector	Terminal	Connector	Terminal	
M47	12	E212	1	Synchronization is applied.

Is the check result normal?

YES >> Replace front corner sensor RH. Refer to AV-310, "Removal and Installation".
NO >> Repair the harnesses or connectors.

SENSOR

SENSOR : Diagnosis Procedure

INFOID:0000000009009968

1.PERFORM CONFIRMATION PROCEDURES

1. Perform DTC confirmation procedure. Refer to AV-229, "DTC Logic".
2. Perform self-diagnosis. Check whether or not DTC “B272C CORNER SENSOR [FR] SENSOR” is detected.

Is DTC “B272C CORNER SENSOR [FR] SENSOR” detected?

YES >> Replace front corner sensor RH. Refer to AV-310, "Removal and Installation".
NO >> Malfunction may be detected temporarily. Wait for constant malfunction if malfunction symptom is not confirmed.

CONFIG ERROR

CONFIG ERROR : Diagnosis Procedure

INFOID:0000000009009969

1. PERFORM CONTROL UNIT SETTING OF SONAR CONTROL UNIT

1. Perform control unit setting of sonar control unit. Refer to AV-140, "CONFIGURATION (SONAR CONTROL UNIT) : Special Repair Requirement".
2. Perform DTC confirmation procedure. Refer to AV-229, "DTC Logic".

Is DTC “B272C CORNER SENSOR [FR] CONFIG ERROR” detected?

YES >> Replace front corner sensor RH. Refer to AV-310, "Removal and Installation".
NO >> Check is complete.

POWER SUPPLY AND GROUND CIRCUIT
AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009009970

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK BATTERY POWER SUPPLY CIRCUIT

Check voltage between AV control unit harness connectors and ground.

Signal name	(+)		(-)	Ignition switch position	Voltage (Approx.)
	AV control unit				
	Connector	Terminal			
Battery power supply	M208	19	Ground	OFF	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between AV control unit and fuse.

3.CHECK ACC POWER SUPPLY CIRCUIT

Check voltage between AV control unit harness connectors and ground.

Signal name	(+)		(-)	Ignition switch position	Voltage (Approx.)
	AV control unit				
	Connector	Terminal			
ACC power supply	M208	7	Ground	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.
NO >> • Check harness between AV control unit and BCM/fuse.
NOTE:
ACC power supply circuit varies according to specifications.

4.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connectors.
3. Check continuity between AV control unit harness connectors and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M208	20		Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

FRONT DISPLAY UNIT

FRONT DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000009009971

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK BATTERY POWER SUPPLY CIRCUIT

Check voltage between display unit harness connector and ground.

Signal name	(+)		(-)	Ignition switch position	Voltage (Approx.)
	Display unit				
	Connector	Terminal			
Battery power supply	M215	11	Ground	OFF	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

3.CHECK ACC POWER SUPPLY CIRCUIT

Check voltage between display unit harness connectors and ground.

Signal name	(+)		(-)	Ignition switch position	Voltage (Approx.)
	Display unit				
	Connector	Terminal			
ACC power supply	M215	23	Ground	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.
NO >> • Check harness between display unit and BCM/fuse.
NOTE:
ACC power supply circuit varies according to specifications.

4.CHECK GROUND CIRCUIT

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

Display unit		Ground	Continuity
Connector	Terminal		
M215	12		Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

HEADREST DISPLAY UNIT

HEADREST DISPLAY UNIT : Diagnosis Procedure

INFOID:0000000009009972

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between headrest display unit harness connector and ground.

Signal name	Connector	Terminal	Ignition switch position	Value (Approx.)
Battery power supply	B554*1 B574*2	2 4	OFF	Battery voltage

- *1: Headrest display unit LH
- *2: Headrest display unit RH

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between headrest display unit and fuse.

3.CHECK GROUND CIRCUIT

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

Signal name	Connector	Terminal	Ignition switch position	Continuity
Ground	B554*1 B574*2	1 3	OFF	Existed

- *1: Headrest display unit LH
- *2: Headrest display unit RH

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

VIDEO DISTRIBUTOR

VIDEO DISTRIBUTOR : Diagnosis Procedure

INFOID:0000000009009973

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	35
Ignition switch ACC or ON	19

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK BATTERY POWER SUPPLY CIRCUIT

Check voltage between video distributor harness connector and ground.

Signal name	(+) Video distributor Connector	(+) Video distributor Terminal	(-)	Ignition switch position	Voltage (Approx.)
Battery power supply	M217	2	Ground	OFF	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

3.CHECK ACC POWER SUPPLY CIRCUIT

Check voltage between video distributor harness connectors and ground.

Signal name	(+) Video distributor Connector	(+) Video distributor Terminal	(-)	Ignition switch position	Voltage (Approx.)
ACC power supply	M217	4	Ground	ACC	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.
NO >> • Check harness between video distributor and BCM/fuse.
NOTE:
ACC power supply circuit varies according to specifications.

4.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect video distributor connector.
3. Check continuity between video distributor harness connectors and ground.

Video distributor Connector	Video distributor Terminal	Ground	Continuity
M217	1		Existed
	3		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

BOSE AMP.

BOSE AMP. : Diagnosis Procedure

INFOID:0000000009009974

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	5
Battery	8

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

Check voltage between BOSE amp. harness connector and ground.

Signal name	Connector	Terminal	Ignition switch position	Value (Approx.)
Battery power supply	B229	10	OFF	Battery voltage
Battery power supply	B229	11	OFF	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Check harness between BOSE amp. and fuse.

3.CHECK GROUND CIRCUIT

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

Signal name	Connector	Terminal	Ignition switch position	Continuity
Ground	B229	12	OFF	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:0000000009009975

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Battery	9
Ignition switch ACC	19
Ignition switch ON or START	4

Is inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUITS

Check voltage between around view monitor control unit harness connector and ground.

Signal name	Connector	Terminal	Ignition switch position	Value (Approx.)
Battery power supply	M48	2	OFF	Battery voltage
ACC power supply	M48	4	ACC	Battery voltage
Ignition signal	M48	3	ON	Battery voltage

Is inspection result normal?

YES >> GO TO 3.
NO >> Check harness between around view monitor control unit and fuse.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector.
3. Check continuity between around view monitor control unit harness connector and ground.

Signal name	Connector	Terminal	Ignition switch position	Continuity
Ground	M48	1	OFF	Existed

Is inspection result normal?

YES >> INSPECTION END

NO >> Repair harness or connector.

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR)

SONAR CONTROL UNIT (WITH AROUND VIEW MONITOR) : Diagnosis Procedure

INFOID:0000000009009976

1.CHECK FUSE

Check for blown fuses.

Power source	Fuse No.
Ignition switch ON or START	4

Is the inspection result normal?

YES >> GO TO 2.
NO >> Be sure to eliminate cause of malfunction before installing new fuse.

2.CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between sonar control unit harness connector and ground.

Sonar control unit		Ground	Voltage (Approx.)
Connector	Terminal		
M47	13		Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace sonar control unit power supply harness.

3.CHECK GROUND CIRCUIT

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

Sonar control unit		Ground	Continuity
Connector	Terminal		
M47	24		Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace sonar control unit ground harness.

RGB DIGITAL IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000009009977

Transmit the image displayed with AV control unit with RGB digital image signal to the front display unit.

Diagnosis Procedure

INFOID:0000000009009978

1.CHECK CONTINUITY RGB DIGITAL IMAGE SIGNAL CIRCUIT

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

Front display unit		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M322	27	M321	157	Existed
	28		158	

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

Front display unit		Ground	Continuity
Connector	Terminals		
M322	27		Not existed
	28		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK RGB DIGITAL IMAGE SIGNAL

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Front display unit				
Connector	Terminal			
M322	27	Ground	—	1.3 V
	28			

Is the inspection result normal?

YES >> Replace front display unit. Refer to AV-283, "Removal and Installation".
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

COMPOSITE IMAGE SIGNAL CIRCUIT (AV CONTROL UNIT TO FRONT DISPLAY UNIT)

Description

INFOID:0000000009009979

- DVD is played by inserting DVD into the AV control unit.
- DVD image signals are transmitted to the front display unit and video distributor.
- AV control unit receives the image signal from the front auxiliary input jacks and then transmits it to the front display unit.
- AV control unit receives the image signal from the USB (video data) and then transmits it to the front display unit and video distributor.
- Video distributor receives the image signal from the AV control unit and then transmits it to the headrest display unit.

Diagnosis Procedure

INFOID:0000000009009980

1.CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

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

AV control unit		Front display unit		Continuity
Connector	Terminal	Connector	Terminal	
M210	68	M215	18	Existed

4. Check continuity between AV control unit harness connector and ground.

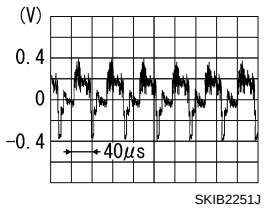
AV control unit		Ground	Continuity
Connector	Terminal		
M210	68		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMPOSITE IMAGE SIGNAL

1. Connect AV control unit connector and front display unit connector.
2. Turn ignition switch ON.
3. Check signal between AV control unit harness connector and ground.

(+)		(–)	Condition	Reference value
AV control unit				
Connector	Terminal			
M210	68	Ground	At DVD image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace front display unit. Refer to AV-283, "Removal and Installation".
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

COMPOSITE IMAGE SIGNAL CIRCUIT (AV CONTROL UNIT TO VIDEO DISTRIBUTOR)

Description

INFOID:0000000009009981

- DVD is played by inserting DVD into the AV control unit.
- DVD image signals are transmitted to the front display unit and video distributor.
- AV control unit receives the image signal from the front auxiliary input jacks and then transmits it to the front display unit.
- AV control unit receives the image signal from the USB (video data) and then transmits it to the front display unit and video distributor.
- Video distributor receives the image signal from the AV control unit and then transmits it to the headrest display unit.

Diagnosis Procedure

INFOID:0000000009009982

1.CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and video distributor connector.
3. Check continuity between AV control unit harness connector and video distributor harness connector.

AV control unit		Video distributor		Continuity
Connector	Terminal	Connector	Terminal	
M209	34	M218	34	Existed

4. Check continuity between video distributor harness connector and ground.

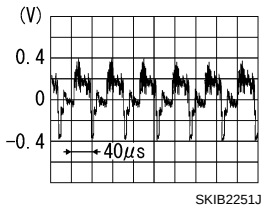
Video distributor		Ground	Continuity
Connector	Terminal		
M218	34		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMPOSITE IMAGE SIGNAL

1. Connect AV control unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between video distributor harness connector and ground.

(+)		(–)	Condition	Reference value
Video distributor				
Connector	Terminal			
M218	34	Ground	When DVD, USB or front AUX image is displayed on headrest display unit LH or RH.	

SKIB2251J

Is the inspection result normal?

YES >> Replace video distributor. Refer to AV-285, "Removal and Installation".
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

COMPOSITE IMAGE SIGNAL CIRCUIT (VIDEO DISTRIBUTOR TO HEADREST DISPLAY UNIT)

Description

INFOID:0000000009009983

- DVD is played by inserting DVD into the AV control unit.
- DVD image signals are transmitted to the front display unit and video distributor.
- AV control unit receives the image signal from the front auxiliary input jacks and then transmits it to the front display unit.
- AV control unit receives the image signal from the USB (video data) and then transmits it to the front display unit and video distributor.
- Video distributor receives the image signal from the AV control unit and then transmits it to the headrest display unit.

Diagnosis Procedure

INFOID:0000000009009984

1. CHECK CONTINUITY COMPOSITE IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect video distributor connector and headrest display unit connector.
3. Check continuity between video distributor harness connector and headrest display unit harness connector.

Video distributor		Headrest display unit		Continuity
Connector	Terminal	Connector	Terminal	
M217	32	B554*1	24	Existed
	28	B574*2	24	Existed

*1: Headrest display unit LH
*2: Headrest display unit RH

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

Headrest display unit		Ground	Continuity
Connector	Terminal		
B554*1	24		Not existed
B574*2	24		

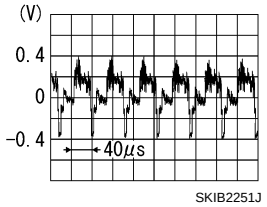
*1: Headrest display unit LH
*2: Headrest display unit RH

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2. CHECK COMPOSITE IMAGE SIGNAL

1. Connect video distributor connector and rear display unit connector.
2. Turn ignition switch ON.
3. Check signal between rear display unit harness connector using an oscilloscope.

(+)		(–)	Condition	Reference value
Headrest display unit				
Connector	Terminal			
B554*1	24	Ground	When DVD, USB or front AUX image is displayed on headrest display unit LH or RH.	
B574*2	24			

SKIB2251J

*1: Headrest display unit LH
*2: Headrest display unit RH

Is the inspection result normal?

YES >> Replace headrest display unit. Refer to AV-284, "Exploded View".
NO >> Replace video distributor. Refer to AV-285, "Removal and Installation".

AUX IMAGE SIGNAL CIRCUIT (FRONT AUXILIARY INPUT JACKS TO AV CONTROL UNIT)

Description

INFOID:0000000009009985

- Transmits the image signal of AUX device from front auxiliary input jacks to AV control unit.
- AV control unit transmits the image signal that is input to the front display unit.

Diagnosis Procedure

INFOID:0000000009009986

1.CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front auxiliary input jacks connector and AV control unit connector.
3. Check continuity between front auxiliary input jacks harness connector and AV control unit harness connector.

Front auxiliary input jacks		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M139	7	M209	26	Existed

4. Check continuity between front auxiliary input jacks harness connector and ground.

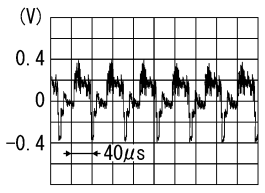
Front auxiliary input jacks		Ground	Continuity
Connector	Terminal		
M139	7		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AUX IMAGE SIGNAL

1. Connect front auxiliary input jacks connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check signal between front auxiliary input jacks harness connector and ground.

(+)		(–)	Condition	Reference value
Front auxiliary input jacks				
Connector	Terminal			
M139	7	Ground	At front AUX image is displayed.	

SKIB2251J

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-282, "Removal and Installation".
NO >> Check that there is no malfunction in the external device.

AUX IMAGE SIGNAL CIRCUIT (REAR AUXILIARY INPUT JACKS TO VIDEO DISTRIBUTOR)

Description

INFOID:0000000009009987

- Transmits the image signal of AUX device from rear auxiliary input jacks to the video distributor.
- Video distributor transmits the image signal that is input to the headrest display unit.

Diagnosis Procedure

INFOID:0000000009009988

1.CHECK CONTINUITY AUX IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear auxiliary input jacks connector and video distributor connector.
3. Check continuity between rear auxiliary input jacks harness connector and video distributor harness connector.

Rear auxiliary input jacks		Video distributor		Continuity
Connector	Terminal	Connector	Terminal	
M98	7	M218	40	Existed

4. Check continuity between rear auxiliary input jacks harness connector and ground.

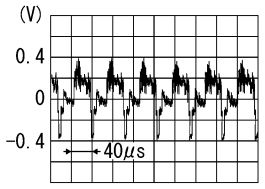
Rear auxiliary input jacks		Ground	Continuity
Connector	Terminal		
M98	7		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AUX IMAGE SIGNAL

1. Connect rear auxiliary input jacks connector and video distributor connector.
2. Turn ignition switch ON.
3. Check signal between rear auxiliary input jacks harness connector and ground.

(+)		(–)	Condition	Reference value
Rear auxiliary input jacks				
Connector	Terminal			
M98	7	Ground	At rear AUX image is displayed on headrest display unit.	

SKIB2251J

Is the inspection result normal?

YES >> Replace video distributor. Refer to AV-285, "Removal and Installation".
NO >> Check that there is no malfunction in the external device.

IMAGE SWITCH SIGNAL CIRCUIT

Description

INFOID:0000000009009989

- Image switch signal is input from headrest display unit to video distributor, according to rear seat remote controller operation.
- When image switch signal is input from headrest display unit to video distributor, image output from AV control unit and image output from auxiliary input jacks switch.

Diagnosis Procedure

INFOID:0000000009009990

1.CHECK CONTINUITY IMAGE SWITCH SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect headrest display unit connector and video distributor connector.
3. Check continuity between headrest display unit harness connector and video distributor harness connector.

Headrest display unit		Video distributor		Continuity
Connector	Terminal	Connector	Terminal	
B554*1	20	M217	10	Existed
B574*2	20		9	Existed

*1: Headrest display unit LH
*2: Headrest display unit RH

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

Headrest display unit		Ground	Continuity
Connector	Terminal		
B554*1	20		Not existed
B574*2	20		

*1: Headrest display unit LH
*2: Headrest display unit RH

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VIDEO DISTRIBUTOR VOLTAGE

1. Connect headrest display unit connector and video distributor connector.
2. Turn ignition switch ON.
3. Check voltage between video distributor harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
Video distributor				
Connector	Terminal			
M217	9	Ground	When DVD, USB or front AUX image is displayed on headrest display unit RH.	0.5 V
			When rear AUX image is displayed on headrest display unit RH.	4.5 V
	10		When DVD, USB or front AUX image is displayed on headrest display unit LH.	0.5 V
			When rear AUX image is displayed on headrest display unit LH.	4.5 V

Is the inspection result normal?

YES >> Replace video distributor. Refer to AV-285, "Removal and Installation".
NO >> Replace headrest display unit LH (RH). Refer to AV-284, "Exploded View".

LOCATION RECOGNITION SIGNAL CIRCUIT

Description

INFOID:0000000009009991

The headrest display unit operates by recognizing a mounting position by the input of the location recognition signal.

Diagnosis Procedure

INFOID:0000000009009992

1.CHECK CONTINUITY LOCATION RECOGNITION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect headrest display unit connector LH (RH).
3. Check continuity between headrest display unit connector LH (RH) harness connector and ground.

Headrest display unit		Ground	Continuity
Connector	Terminals		
B554*1	10		Existed
B574*2	9		

*1: Headrest display unit LH
*2: Headrest display unit RH

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair harness or connector.

DISK EJECT SIGNAL CIRCUIT

Description

INFOID:0000000009009993

The eject signal is output to AV control unit when the eject switch of multifunction switch is pressed.

Diagnosis Procedure

INFOID:0000000009009994

1.CHECK CONTINUITY DISK EJECT SIGNAL CIRCUIT

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

Multifunction switch		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M72	14	M209	29	Existed

4. Check continuity between multifunction switch harness connector and ground.

Multifunction switch		Ground	Continuity
Connector	Terminal		
M72	14		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK AV CONTROL UNIT VOLTAGE

1. Connect multifunction switch connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
AV control unit				
Connector	Terminal			
M209	29	Ground	Pressing the eject switch	0 V
			Except for above	5.0 V

Is the inspection result normal?

YES >> Replace preset switch. Refer to AV-298, "Removal and Installation".
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

MODE CHANGE SIGNAL CIRCUIT

Description

INFOID:0000000009009995

- AV control unit transmits the mode change signal to BOSE amp.
- Driver's Audio Stage controls the speaker's output characteristic by BOSE amp. so that the driver's seat is to be the center of sounds.

Diagnosis Procedure

INFOID:0000000009009996

1.CHECK CONTINUITY MODE CHANGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector and AV control unit connector.
3. Check continuity between BOSE amp. harness connector and AV control unit harness connector.

AV control unit		BOSE amp.		Continuity
Connector	Terminal	Connector	Terminal	
M209	30	B230	37	Existed

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

BOSE amp.		Ground	Continuity
Connector	Terminal		
B230	37		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK MODE CHANGE SIGNAL

1. Connect BOSE amp. connector and AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between BOSE amp. harness connector and ground.

(+)		(–)	Condition	Voltage (Approx.)
BOSE amp.				
Connector	Terminal			
B230	37	Ground	Driver's Audio Stage ON.	0 V
			Driver's Audio Stage OFF.	8.5 V

Is the inspection result normal?

YES >> Replace BOSE amp. Refer to AV-294, "Removal and Installation".
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

MICROPHONE SIGNAL CIRCUIT

Description

INFOID:0000000009009997

Supply power from AV control unit to microphone. The microphone transmits the sound/voice to the AV control unit.

Diagnosis Procedure

INFOID:0000000009009998

1.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND MICROPHONE CIRCUIT

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

AV control unit		Microphone		Continuity
Connector	Terminals	Connector	Terminals	
M210	71	R17	2	Existed
	72		4	
	87		1	

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminals		
M210	72		Not existed
	87		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE MICROPHONE VCC

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

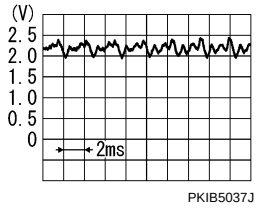
(+)		(–)	Voltage (Approx.)
AV control unit		Ground	
Connector	Terminal		
M210	72		5.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.
2. Check signal between AV control unit harness connector.

(+)		(–)		Condition	Reference value
AV control unit		AV control unit			
Connector	Terminal	Connector	Terminal		
M210	87	M210	71	Give a voice.	

PKIB5037J

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-282, "Removal and Installation".
NO >> Replace microphone. Refer to AV-302, "Removal and Installation".

CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000009009999

Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.

Diagnosis Procedure

INFOID:0000000009010000

1.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect front display unit connector and around view monitor control unit connector.
3. Check continuity between front display unit harness connector and around view monitor control unit harness connector.

Front display unit		Around view monitor control unit		Continuity
Connector	Terminal	Connector	Terminal	
M215	8	M48	47	Existed

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

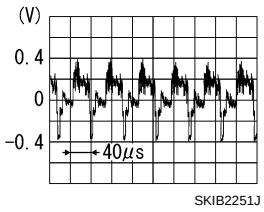
Front display unit		Ground	Continuity
Connector	Terminal		
M215	8		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK CAMERA IMAGE SIGNAL

1. Connect front display unit connector and around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check signal between front display unit harness connector and ground.

(+)		(–)	Condition	Reference value
Front display unit				
Connector	Terminal			
M215	8	Ground	At camera image is displayed.	

SKIB2251J

Is inspection result normal?

YES >> Replace front display unit. Refer to AV-282, "Removal and Installation".
NO >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".

FRONT CAMERA COMMUNICATION SIGNAL CIRCUIT

Description

INFOID:0000000009010001

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predictive course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

Diagnosis Procedure

INFOID:0000000009010002

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and front camera connector.
3. Check continuity between around view monitor control unit harness connector and front camera harness connector.

Around view monitor control unit		Front camera		Continuity
Connector	Terminal	Connector	Terminal	
M61	67	E50	6	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

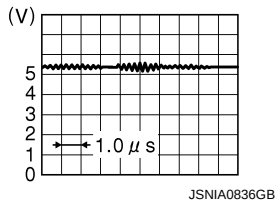
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M61	67		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and front camera connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+) Around view monitor control unit		(–)	Condition	Reference value
Connector	Terminal			
M61	67	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".
NO >> Replace front camera. Refer to AV-305, "Removal and Installation".

REAR CAMERA COMMUNICATION SIGNAL CIRCUIT

Description

INFOID:0000000009010003

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predictive course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

Diagnosis Procedure

INFOID:0000000009010004

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and rear camera connector.
3. Check continuity between around view monitor control unit harness connector and rear camera harness connector.

Around view monitor control unit		Rear camera		Continuity
Connector	Terminal	Connector	Terminal	
M61	49	D164	4	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

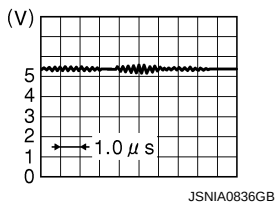
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M61	49		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and rear camera connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+)		(–)	Condition	Reference value
Around view monitor control unit				
Connector	Terminal			
M61	49	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".
NO >> Replace rear camera. Refer to AV-306, "Removal and Installation".

SIDE CAMERA LH COMMUNICATION SIGNAL CIRCUIT

Description

INFOID:0000000009010005

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predictive course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

Diagnosis Procedure

INFOID:0000000009010006

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (driver side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (driver side) harness connector.

Around view monitor control unit		Door mirror (driver side)		Continuity
Connector	Terminal	Connector	Terminal	
M61	55	D3	3	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

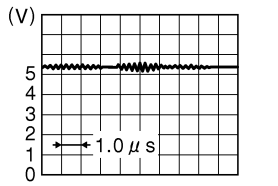
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M61	55		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and door mirror (driver side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+) Around view monitor control unit		(–)	Condition	Reference value
Connector	Terminal			
M61	55	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".
NO >> Replace side camera LH. Refer to AV-307, "Removal and Installation".

SIDE CAMERA RH COMMUNICATION SIGNAL CIRCUIT

Description

INFOID:0000000009010007

- Around view monitor control unit supplies to the front camera, rear camera and side camera. And then it superimpose the images from each camera and outputs then to the front display unit.
- Superimpose the guiding lines, predictive course line and sonar indicator to the camera image that outputs to the front display unit.
- Around view monitor control unit performs the reception/transmission of communication signal with each camera.

Diagnosis Procedure

INFOID:0000000009010008

1.CHECK CONTINUITY COMMUNICATION SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
3. Check continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
M61	61	D23	3	Existed

4. Check continuity between around view monitor control unit harness connector and ground.

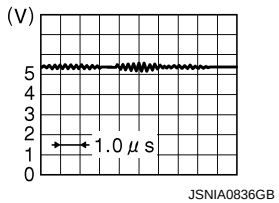
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M61	61		Not existed

Is inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK COMMUNICATION SIGNAL

1. Connect around view monitor control unit connector and door mirror (passenger side) connector.
2. Turn ignition switch ON.
3. Check signal between around view monitor control unit harness connector and ground.

(+) Around view monitor control unit		(–)	Condition	Reference value
Connector	Terminal			
M61	61	Ground	“CAMERA” switch is ON or shift position is “R”.	

JSNIA0836GB

Is inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-304, "Removal and Installation".
NO >> Replace side camera RH. Refer to AV-307, "Removal and Installation".

RETRACT MOTOR OPERATION SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000009010009

1. CHECK RETRACT MOTOR OPERATION SIGNAL CIRCUIT [BETWEEN AROUND VIEW MONITOR CONTROL UNIT AND DOOR MIRROR (PASSENGER SIDE)]

1. Disconnect around view monitor control unit connector and door mirror (passenger side) connector.
2. Check whether or not continuity between around view monitor control unit harness connector and door mirror (passenger side) harness connector is normal.

Around view monitor control unit		Door mirror (passenger side)		Continuity
Connector	Terminal	Connector	Terminal	
M48	30	D23	8	Existed
	32		9	

3. Check whether or not continuity between around view monitor control unit harness connector and ground is normal.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M48	30		Not existed
	32		

Is the check result normal?

YES >> Perform diagnosis of door mirror (passenger side) retract motor operation signal circuit. Refer to MIR-10, "Wiring Diagram".

NO >> Repair the harnesses or connectors.

STEERING SWITCH SIGNAL A CIRCUIT

Description

INFOID:0000000009010010

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000009010011

1.CHECK STEERING SWITCH SIGNAL A CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	6	M33	24	Existed

3. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M208	6		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-14, "Exploded View".

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit		AV control unit		
Connector	Terminal	Connector	Terminal	
M208	6	M208	15	5.0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-258, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering wheel. Refer to ST-33, "Exploded View".

Component Inspection

INFOID:0000000009010012

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

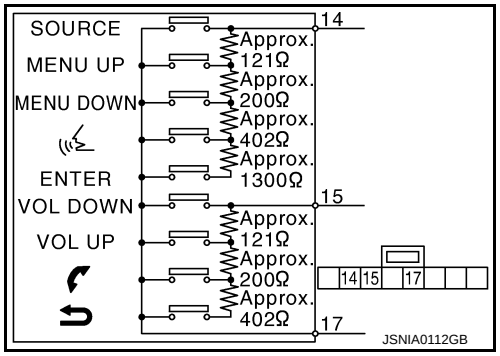
Standard

Between terminals 14 and 17

ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω

Between terminals 15 and 17

switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω



STEERING SWITCH SIGNAL B CIRCUIT

Description

INFOID:0000000009010013

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000009010014

1.CHECK STEERING SWITCH SIGNAL B CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	16	M33	31	Existed

3. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M208	16		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-14, "Exploded View".

3.CHECK AV CONTROL UNIT VOLTAGE

1. Connect AV control unit connector and spiral cable connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

(+)		(–)		Voltage (Approx.)
AV control unit		AV control unit		
Connector	Terminal	Connector	Terminal	
M208	16	M208	15	5.0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-260, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering wheel. Refer to ST-33, "Exploded View".

Component Inspection

INFOID:0000000009010015

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

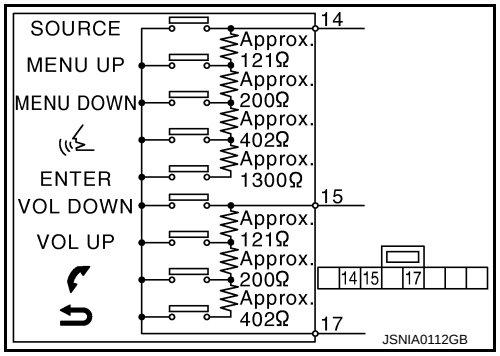
Standard

Between terminals 14 and 17

ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω

Between terminals 15 and 17

switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω



STEERING SWITCH GROUND CIRCUIT

Description

INFOID:0000000009010016

Transmits the steering switch signal to AV control unit.

Diagnosis Procedure

INFOID:0000000009010017

1.CHECK STEERING SWITCH SIGNAL GROUND CIRCUIT

1. Disconnect AV control unit connector and spiral cable connector.
2. Check continuity between AV control unit harness connector and spiral cable harness connector.

AV control unit		Spiral cable		Continuity
Connector	Terminal	Connector	Terminal	
M208	15	M33	33	Existed

3. Connect AV control unit connector.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK SPIRAL CABLE

Check spiral cable.

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace spiral cable. Refer to SR-14, "Exploded View".

3.CHECK GROUND CIRCUIT

1. Connect AV control unit connector.
2. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminal		
M208	15		Existed

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace AV control unit. Refer to AV-282, "Removal and Installation".

4.CHECK STEERING SWITCH

1. Turn ignition switch OFF.
2. Check steering switch. Refer to AV-262, "Component Inspection".

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace steering wheel. Refer to ST-33, "Exploded View".

Component Inspection

INFOID:0000000009010018

Measure the resistance between the steering switch connector terminals 14 to 17 and 15 to 17.

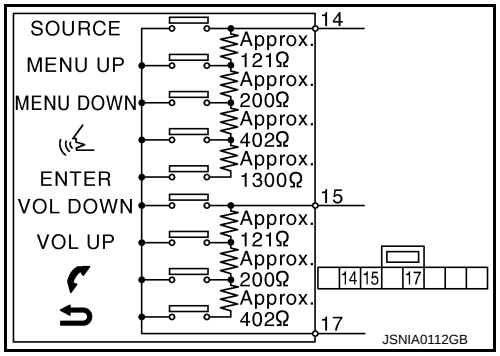
Standard

Between terminals 14 and 17

ENTER switch ON	: 2003 – 2043 Ω
switch ON	: 716 – 730 Ω
MENU DOWN switch ON	: 318 – 324 Ω
MENU UP switch ON	: 120 – 122 Ω
SOURCE switch ON	: 0 Ω

Between terminals 15 and 17

switch ON	: 716 – 730 Ω
switch ON	: 318 – 324 Ω
VOL UP switch ON	: 120 – 122 Ω
VOL DOWN switch ON	: 0 Ω



SYMPTOM DIAGNOSIS

MULTI AV SYSTEM SYMPTOMS

Symptom Table

INFOID:0000000009010019

RELATED TO NAVIGATION

Symptoms	Check items	Probable malfunction location
Multifunction switch and preset switch operation does not work.	• All switches cannot be operated. • “MULTI AV” is displayed on system selection screen when the CONSULT is started.	• Multifunction switch power supply and ground circuit malfunction. • AV communication circuit between AV control unit and multifunction switch. Perform CONSULT self-diagnosis. Refer to AV-51, "CONSULT Function".
	• All switches cannot be operated. • “MULTI AV” is not displayed on system selection screen when the CONSULT is initialized.	AV control unit power supply and ground circuit malfunction. Refer to AV-232, "AV CONTROL UNIT : Diagnosis Procedure".
	Only specified switch cannot be operated.	Multifunction switch or preset switch malfunction. Perform multifunction switch and preset switch self-diagnosis function. Refer to AV-37, "On Board Diagnosis Function".
Fuel economy display is abnormal.	There is malfunction in the CONSULT “self-diagnosis result” of “MULTI AV”. Refer to AV-51, "CONSULT Function".	Perform detected DTC diagnosis. Refer to AV-69, "DTC Index".
	There is no malfunction in the CONSULT “self-diagnosis results” of “MULTI AV”. Refer to AV-51, "CONSULT Function".	Ignition signal circuit malfunction.
Guide sound is not heard or too low.	On the setting display select “system sound (guide sound volume, etc.),” and confirm that guide sound is ON.	AV control unit malfunction. Replace AV control unit. Refer to AV-282, "Removal and Installation".

RELATED TO HANDS-FREE PHONE (EXCEPT FOR MEXICO)

- Before performing diagnosis, confirm that the cellular phone being used by the customer is compatible with the vehicle.
- It is possible that a malfunction is occurring due to a version change of the phone even though the phone is a compatible type. This can be confirmed by changing the cellular phone to another compatible type, and checking that it operates normally. It is important to determine whether the cause of the malfunction is the vehicle or the cellular phone.

Check Compatibility

1. Make sure the customer's Bluetooth® related concern is understood.
2. Verify the customer's concern.
   NOTE:
   The customer's phone may be required, depending upon their concern.
3. Write down the customer's phone brand, model, and service provider.
   NOTE:
   It is necessary to know the service provider. On occasion, a given phone may be on the approved list with one provider, but may not be on the approved list with other providers.
4. Go to “www.nissanusa.com/bluetooth/”.

a. Using the website's search engine, find out if the customer's phone is on the approved list.

b. If the customer's phone is NOT on the approved list:

   Stop diagnosis here. The customer needs to obtain a Bluetooth® phone that is on the approved list before any further action.

c. If the feature related to the customer's concern shows as “N” (not compatible):

Stop diagnosis here. If the customer still wants the feature to function, they will need to get an approved phone showing the feature as “Y” (compatible) in the “Basic Features” list.

d. If the feature related to the customer's concern shows as “Y” (compatible):
Perform diagnosis as per the following table.

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection. (no connection is displayed on the display at the guide.)	Repeat the registration of cellular phone.	AV control unit malfunction. Replace AV control unit. Refer to AV-282, "Removal and Installation".
Hands-free phone cannot be established.	• Hands-free phone operation can be made, but the communication cannot be established. • Hands-free phone operation can be performed, however, voice between each other cannot be heard during the conversation.	
The other party's voice cannot be heard by hands-free phone.	Check the “microphone speaker” in Inspection & Adjustment Mode if sound is heard.	
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-250, "Diagnosis Procedure".
The system cannot be operated.	• The voice recognition can be controlled. • Steering switch's ”VOL UP”, “VOL DOWN” and “↩” switch works, but “📞” it does not work.	Steering switch malfunction. Replace steering wheel. Refer to ST-33, "Exploded View".
	Steering switch's “📞”, ”VOL UP”, “VOL DOWN” and “↩” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-260, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-262, "Diagnosis Procedure".

RELATED TO HANDS-FREE PHONE (FOR MEXICO)

Symptoms	Check items	Probable malfunction location
Does not recognize cellular phone connection. (no connection is displayed on the display at the guide.)	Repeat the registration of cellular phone.	AV control unit malfunction. Replace AV control unit. Refer to AV-282, "Removal and Installation".
Hands-free phone cannot be established.	• Hands-free phone operation can be made, but the communication cannot be established. • Hands-free phone operation can be performed, however, voice between each other cannot be heard during the conversation.	
The other party's voice cannot be heard by hands-free phone.	Check the “microphone speaker” in Inspection & Adjustment Mode if sound is heard.	
Originating sound is not heard by the other party with hands-free phone communication.	Sound operation function is normal.	
	Sound operation function does not work.	Microphone signal circuit malfunction. Refer to AV-250, "Diagnosis Procedure".

Symptoms	Check items	Probable malfunction location
The system cannot be operated.	• The voice recognition can be controlled. • Steering switch's "VOL UP", "VOL DOWN" and "↩" switch works, but "📞" it does not work.	Steering switch malfunction. Replace steering wheel. Refer to ST-33, "Exploded View".
	Steering switch's "📞", "VOL UP", "VOL DOWN" and "↩" switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-260, "Diagnosis Procedure".
	All steering switches do not work.	Steering switch ground circuit malfunction. Refer to AV-262, "Diagnosis Procedure".

RELATED TO AROUND VIEW MONITOR

Symptoms	Check items		Probable malfunction location
Screen is not switched to camera image, when camera switch is pressed and when shift position is shifted to the reverse position.	"AVM" is not displayed on the system selection screen of CONSULT.		Around view monitor control unit power supply circuit • BAT power supply circuit • Ignition power supply circuit • ACC power supply circuit
	Check that the following data monitor items operate normally using CONSULT • Camera switch signal • Reverse signal	Camera switch signal and reverse signal are normal	Around view monitor control unit
		Camera switch signal or reverse signal is not normal	AV communication circuit
Screen is switched when pressing camera switch or shifting selector lever to the reverse position, however, all views are not displayed.	Only superimposing is displayed (only images that AV control unit plots are displayed).		Camera image signal circuit (between around view monitor control unit and front display) Refer to AV-252, "Diagnosis Procedure".
	Superimposing is not displayed.		Communication circuit between AV control unit and front display Refer to AV-51, "CONSULT Function"
The screen is not switched to the rear view image even if the selector is shifted to the reverse position.	The front view is displayed normally.		CAN communication circuit (TCM)
• Front view screen is not displayed. • Front of top view screen is displayed.	Check the following data monitor items using CONSULT. • Front camera image signal • Front view camera communication status • Front camera communication line	• Image signal: NG • Communication status: NG • Communication line: NG	Front camera power supply circuit and image signal circuit Refer to AV-155, "Diagnosis Procedure".
		• Image signal: OK • Communication status: NG • Communication line: NG	Front camera communication circuit Refer to AV-253, "Diagnosis Procedure".
• The rear view screen is not displayed. • Rear of top view screen is not displayed.	Check the following data monitor items using CONSULT. • Rear camera image signal • Rear camera communication status • Rear camera communication line	• Image signal: NG • Communication status: NG • Communication line: NG	Rear camera power supply circuit and image signal circuit Refer to AV-151, "Diagnosis Procedure".
		• Image signal: OK • Communication status: NG • Communication line: NG	Rear camera communication signal circuit Refer to AV-254, "Diagnosis Procedure".

Symptoms	Check items		Probable malfunction location
• The side view screen is not displayed. • Left side of top view screen is not displayed.	Check the following data monitor items using CONSULT. • Side camera LH image signal • Side camera LH communication status • Side camera LH communication line	• Image signal: NG • Communication status: NG • Communication line: NG	Side camera LH power supply circuit and image signal circuit Refer to AV-157, "Diagnosis Procedure".
		• Image signal: OK • Communication status: NG • Communication line: NG	Side camera LH communication circuit Refer to AV-255, "Diagnosis Procedure".
Right side of top view image is not displayed.	Check the following data monitor items using CONSULT. • Side camera RH image signal • Side camera RH communication status • Side camera RH communication line	• Image signal: NG • Communication status: NG • Communication line: NG	Side camera RH power supply circuit and image signal circuit Refer to AV-153, "Diagnosis Procedure".
		• Image signal: OK • Communication status: NG • Communication line: NG	Side camera RH communication circuit Refer to AV-256, "Diagnosis Procedure".
MOD warning operates while door mirror is in retracting operation.	—		Retract motor operation signal circuit Refer to AV-257, "Diagnosis Procedure".

RELATED TO CAMERA ASSISTANCE SONAR

Symptoms	Check items	Possible malfunction location/Action to take
Sonar indicator is not displayed normally (always displayed in red).	Only 1 indicator is not displayed normally (always displayed in red).	• Corner/center sensor of applicable position is not normal. • Corner/center sensor harness circuit of applicable position Perform self-diagnosis of sonar system. Refer to AV-58, "CONSULT Function".
	Display of all 6 indicators is not normal (always displayed in red).	• Corner/center sensor ground circuit Perform self-diagnosis of sonar system. Refer to AV-58, "CONSULT Function". • Sonar control unit power supply and ground circuit • AV communication circuit. Perform self-diagnosis of multi AV system using CONSULT. Refer to AV-58, "CONSULT Function".

RELATED TO RGB IMAGE

Symptoms	Check items	Probable malfunction location
RGB image is not shown.	—	RGB digital image signal circuit malfunction. Refer to AV-238, "Diagnosis Procedure".

RELATED TO AUDIO (13 SPEAKERS MODELS)

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to AV-248, "Diagnosis Procedure".

Symptoms	Check items	Probable malfunction location
No sound comes out or the level of the sound is low.	No sound from all speakers.	• BOSE amp. ON signal circuit malfunction. • BOSE amp. power supply and ground circuits malfunction. Refer to AV-235, "BOSE AMP. : Diagnosis Procedure".
	Only a certain speaker (front right, front left, rear right, or rear left, etc.) does not output sound.	• Poor connector connection of speaker. • Sound signal circuit malfunction between AV control unit and BOSE amp. • Sound signal circuit malfunction between BOSE amp. and speaker. • Malfunction in speaker. • Malfunction in AV control unit. • Malfunction in BOSE amp.
Noise is mixed with audio.	Noise comes out from all speakers.	• Malfunction in AV control unit. • Malfunction in BOSE amp.
	Noise comes out only from a certain speaker (front right, front left, rear right, or rear left, etc.).	• Poor connector connection of speaker. • Sound signal circuit malfunction between AV control unit and BOSE amp. • Sound signal circuit malfunction between BOSE amp. and speaker. • Malfunction in speaker. • Poor installation of speaker (e.g. backlash and looseness) • Malfunction in AV control unit. • Malfunction in BOSE amp.
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	Poor connector connection of antenna or antenna feeder.
Radio is not received or poor reception.	• Other audio sounds are normal. • Any radio cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no obstacles generating external noises).	• Antenna amp. ON signal circuit malfunction. • Poor connector connection of antenna or antenna feeder.
Satellite radio is not received.	There is malfunction in the CONSULT self-diagnosis result. Refer to AV-51, "CONSULT Function".	• Malfunction in antenna, antenna feeder, or AV control unit. Perform DTC diagnosis. Refer to AV-69, "DTC Index". • Poor continuity in antenna feeder. • Poor connector connection of antenna or antenna feeder.
	There is no malfunction in the CONSULT self-diagnosis result. Refer to AV-51, "CONSULT Function".	• Poor continuity in antenna feeder. • Poor connector connection of antenna or antenna feeder. • Loose satellite radio antenna mounting nut. Refer to AV-296, "Exploded View".

RELATED TO AUDIO (15 SPEAKERS MODELS)

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to AV-248, "Diagnosis Procedure".

Symptoms	Check items	Probable malfunction location
No sound comes out or the level of the sound is low.	No sound from all speakers.	• AV communication circuit malfunction. Perform DTC diagnosis Refer to AV-69, "DTC Index". • BOSE amp. power supply and ground circuits malfunction. Refer to AV-235, "BOSE AMP. : Diagnosis Procedure".
	Only a certain speaker (front right, front left, rear right, or rear left, etc.) does not output sound.	• Poor connector connection of speaker. • Sound signal circuit malfunction between AV control unit and BOSE amp. • Sound signal circuit malfunction between BOSE amp. and speaker. • Malfunction in speaker. • Malfunction in AV control unit. • Malfunction in BOSE amp.
Noise is mixed with audio.	Noise comes out from all speakers.	• Malfunction in AV control unit. • Malfunction in BOSE amp.
	Noise comes out only from a certain speaker (front right, front left, rear right, or rear left, etc.).	• Poor connector connection of speaker. • Sound signal circuit malfunction between AV control unit and BOSE amp. • Sound signal circuit malfunction between BOSE amp. and speaker. • Malfunction in speaker. • Poor installation of speaker (e.g. backlash and looseness) • Malfunction in AV control unit. • Malfunction in BOSE amp.
	Noise is mixed with radio only (when the car hits a bump or while driving over bad roads).	Poor connector connection of antenna or antenna feeder.
Radio is not received or poor reception.	• Other audio sounds are normal. • Any radio cannot be received or poor reception is caused even after moving to a service area with good reception (e.g. a place with clear view and no obstacles generating external noises).	• Antenna amp. ON signal circuit malfunction. • Poor connector connection of antenna or antenna feeder.
Satellite radio is not received.	There is malfunction in the CONSULT self-diagnosis result. Refer to AV-51, "CONSULT Function".	• Malfunction in antenna, antenna feeder, or AV control unit. Perform DTC diagnosis. Refer to AV-69, "DTC Index". • Poor continuity in antenna feeder. • Poor connector connection of antenna or antenna feeder.
	There is no malfunction in the CONSULT self-diagnosis result. Refer to AV-51, "CONSULT Function".	• Poor continuity in antenna feeder. • Poor connector connection of antenna or antenna feeder. • Loose satellite radio antenna mounting nut. Refer to AV-296, "Exploded View".

RELATED TO VOICE CONTROL

Symptoms	Check items	Probable malfunction location
The voice cannot be controlled even if the voice control screen is displayed.	Voice sounds at “Voice Microphone Test” of Confirmation/Adjustment mode.	AV control unit malfunction. Replace AV control unit. Refer to AV-282, "Removal and Installation".
	Voice does not sound at “Voice Microphone Test” of Confirmation/Adjustment mode.	Microphone circuit malfunction. Refer to AV-250, "Diagnosis Procedure".

Symptoms	Check items	Probable malfunction location
The voice cannot be controlled (Voice control screen is not displayed).	• Hands-free phone system can be operated. • Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN” and “ENTER” switch works, but “ ” it does not work.	Steering switch malfunction. Replace steering wheel. Refer to ST-33, "Exploded View".
	Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN”, “ ” and “ENTER” switches do not work.	Steering switch signal A circuit malfunction. Refer to AV-258, "Diagnosis Procedure".
	None of the steering switch operations work.	Steering switch ground circuit malfunction. Refer to AV-262, "Diagnosis Procedure".

RELATED TO STEERING SWITCH

Symptoms	Probable malfunction location
None of the steering switch operations work.	Steering switch ground circuit malfunction. Refer to AV-262, "Diagnosis Procedure".
Only specified switch cannot be operated.	Steering switch malfunction. Replace steering wheel. Refer to ST-33, "Exploded View".
Steering switch's “SOURCE”, “MENU UP”, “MENU DOWN“, “ ” and “ENTER” switches do not work.	Steering switch signal A circuit malfunction. Refer to AV-258, "Diagnosis Procedure".
Steering switch's “ ”, “VOL UP”, “VOL DOWN” and “ ” switches do not work.	Steering switch signal B circuit malfunction. Refer to AV-260, "Diagnosis Procedure".

RELATED TO USB

NOTE:

Check that there is no malfunction of USB equipment main body before performing a diagnosis.

Symptoms	Check items	Possible malfunction location / Action to take
iPod® or USB memory can not be recognized.	—	• USB harness malfunction. • USB connector malfunction.

iPod® is a trademark of Apple inc., registered in the U.S. and other countries.

RELATED TO DVD MODE

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to AV-248, "Diagnosis Procedure".
DVD image is not displayed.	Front display unit, headrest display unit LH and RH are not displayed.	Perform CONSULT self-diagnosis. Refer to AV-51, "CONSULT Function".
	Headrest display unit LH and RH are normal.	Composite image signal circuit between AV control unit and front display unit. Refer to AV-239, "Diagnosis Procedure".
	Front display unit is normal.	Refer to “RELATED TO HEADREST DISPLAY UNIT AND REAR AUXILIARY INPUT”
DVD sound is not heard.	No sound from all speakers.	• Amp. ON signal circuit malfunction. • BOSE amp. power supply and ground circuits malfunction.
	Sound is not heard from woofer.	• Woofer power supply and ground circuit malfunction. • Sound signal (woofer) circuit malfunction.
	Sound is heard only from specific places.	Sound signals circuit of suspect system.

RELATED TO FRONT AUXILIARY INPUT

NOTE:

Check that there is no malfunction of AUX equipment main body before performing a diagnosis.

Symptoms	Check items	Probable malfunction location
No voice sound is heard when front AUX mode is selected.	Voice sound is heard when other modes are selected.	AUX sound signal circuit between front auxiliary input jacks and AV control unit.
Image is not displayed when front AUX mode is selected.	DVD image is displayed on front display unit, headrest display unit LH and RH.	AUX image signal circuit between front auxiliary input jacks and AV control unit. Refer to AV-243, "Diagnosis Procedure".
	Headrest display unit LH and RH are normal.	Composite image signal circuit between AV control unit and front display unit. Refer to AV-239, "Diagnosis Procedure".
	Front display unit is normal.	Refer to “RELATED TO HEADREST DISPLAY UNIT AND REAR AUXILIARY INPUT”

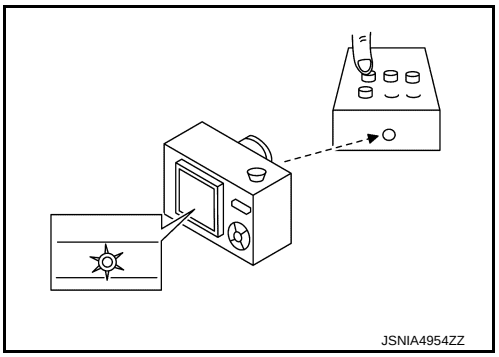
RELATED TO REAR DISPLAY

Perform the diagnosis of the following items before starting diagnosis by symptom.

- Self-diagnosis: Refer to AV-51, "CONSULT Function".
- Self-diagnosis mode: Refer to AV-37, "On Board Diagnosis Function" (AV control unit), and AV-61, "On Board Diagnosis Function" (Headrest display unit).
- Power supply system: Refer to AV-233, "HEADREST DISPLAY UNIT : Diagnosis Procedure".

Symptom	Check Item		Possible malfunction location / Action to take
Video is not shown on the rear display screen.	Use the touch button in the front display to switch video images on the rear display.	Video is shown.	Operate with the remote to see if videos can be switched.
		Video is not shown.	Replace rear display.
Inoperative with the remote.	All keys inoperative.	• Check by touching and check battery polarity. • Replace battery.	• Check with a remote from the same vehicle family. • Check infrared* of the luminescent part (LED) of the remote.
	Some keys inoperative.	• Check with a remote from the same vehicle family. • Check infrared* of the luminescent part (LED) of the remote.	The function corresponding to the remote operation is not included. (This is not a malfunction.)
Rear display screen is black.	Play a DVD.	Video is not shown.	Switch from AUX mode to DVD mode and check video.
		Screen is dark.	Adjust screen for image quality. (This is not a malfunction.)
		Screen. Is black.	Replace rear display.
Video shown on rear display screen becomes distorted or rolls up/down.	Adjust the color and image settings using the display screen menu items.		If the symptom does not change, replace rear display.
Rear display screen is blue.	—		Replace rear display.

*: To check infrared, check light of the luminescent part (LED) through the lens of digital camera when operating the remote.



RELATED TO HEADPHONE

Symptom	Check Item		Possible malfunction location / Action to take
Audio cannot be heard from headphone.	• Turn ON the rear display. • Switch the slide switch on the left side of headphone.	Audio cannot be heard.	Check power supply of headphone.
Headphone cannot be turned ON.	• Battery polarity. • Battery poor contact • Battery replacement	Power is ON. (Power indicator lamp: ON)	This is not a malfunction.
		Power cannot be turned ON. (Power indicator lamp: OFF)	Replace headphone.

RELATED TO HEADREST DISPLAY UNIT AND REAR AUXILIARY INPUT

NOTE:

- Check that there is no malfunction of AUX equipment main body before performing a diagnosis.
- Check that the remaining amount of the rear seat remote controller battery is sufficient to perform diagnosis.

Symptoms	Check items		Probable malfunction location / Action to take
Headrest display unit cannot be powered on for both side.	Headrest display unit can be powered on by “Rear display” in “Settings” menu of front display unit.		Rear seat remote controller malfunction
	• Headrest display unit can not be powered on by “Rear display” in “Settings” menu of front display unit. • Check “Display Location” in diagnosis function of headrest display unit LH. Refer to AV-61, "On Board Diagnosis Function".	Diagnosis result is normal.	• AV communication circuits between AV control unit and headrest display unit LH. • Video distributor power supply and ground circuits. Refer to AV-234, "VIDEO DISTRIBUTOR : Diagnosis Procedure".
		Diagnosis result is not normal.	Location recognition signal circuit between headrest display unit LH and ground. Refer to AV-247, "Diagnosis Procedure".
		Diagnosis function cannot be started.	Headrest display unit LH power supply and ground circuits. Refer to AV-233, "HEADREST DISPLAY UNIT : Diagnosis Procedure".
Headrest display unit RH cannot be powered on.	• Headrest display unit LH is normal. • Check “Display Location” in diagnosis function of headrest display unit RH. Refer to AV-61, "On Board Diagnosis Function".	Diagnosis result is normal.	AV communication circuits between headrest display unit LH and headrest display unit RH.
		Diagnosis result is not normal.	Location recognition signal circuit between headrest display unit RH and ground. Refer to AV-247, "Diagnosis Procedure".
		Diagnosis function cannot be started.	Headrest display unit RH power supply and ground circuits. Refer to AV-233, "HEADREST DISPLAY UNIT : Diagnosis Procedure".
DVD, USB and front AUX image cannot be played on headrest display unit of both side.	• Front display unit is normal. • Rear AUX image is normal.		Composite image signal circuit between AV control unit and video distributor. Refer to AV-240, "Diagnosis Procedure".
Rear AUX image cannot be played on headrest display unit of both side.	DVD, USB and front AUX images are normal.		AUX image signal circuit between rear auxiliary input jacks and video distributor. Refer to AV-244, "Diagnosis Procedure".
DVD, USB, and front AUX image cannot be played only on headrest display unit LH (RH).	—		Composite image signal circuit between video distributor and headrest display unit LH (RH). Refer to AV-241, "Diagnosis Procedure".

Symptoms	Check items	Probable malfunction location / Action to take
It does not change to DVD USB and front AUX mode only on headrest display unit LH (RH).	Rear AUX image is normal.	Image switch signal circuit between headrest display unit LH (RH) and video distributor. Refer to AV-245, "Diagnosis Procedure".
Menu is not displayed on headrest display LH (RH).	—	Replace headrest display unit LH (RH). Refer to AV-284, "Exploded View".

NORMAL OPERATING CONDITION

Description

INFOID:0000000009010020

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

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No image is displayed on front display unit.	The display is turned off.	Press "☀/☽" to turn on the display.
	The interior of the vehicle becomes the a little less than 80°C (176°F) or high temperature, and the protection of the display acts, and a display is turned off.	Wait until the interior of the vehicle has cooled down.
No image is displayed on front (rear) display unit	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The systems in the video mode.	Press "DISC-AUX" to change the mode.
Screen not clear.	Contrast setting is not appropriate.	Adjust the contrast of the display.
No voice guidance is available. Or The volume is too high or too low.	The volume is not set correctly, or it is turned off.	Adjust the volume of voice guidance.
	Voice guidance is not provided for certain streets (roads displayed in gray).	This is not a malfunction.
No map is displayed on the screen.	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 on front display unit.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the navigation system.
A displayed screen cannot be switched to the "Display Setup" screen of the headrest display unit LH (RH).	"Display Setup" screen is shown on the headrest display unit on the other side.	Press "DISP (L)" or "DISP (R)" to switch to a screen other than "Display Setup" screen.
The set value can not be initialized on the "Display Setup" screen of the headrest display unit LH (RH).	No change in each default value before.	This is not a malfunction.

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.

RELATED TO VOICE RECOGNITION

Related to Basic Operation

Symptom	Possible cause	Possible solution
The system does not recognize your command. or The system recognizes your command incorrectly	The interior of the vehicle is too noisy.	Close the windows or have other occupants quiet.
	The volume of your voice is too low.	Speak louder.
	The volume if your voice is too loud.	Speak softer.
	Your pronunciation is unclear.	Speak clearly.
	You are speaking before the voice recognition is ready	Press and release " " switch on the steering switch, and speak a command after the tone sounds.
	8 seconds or more have passed after you pressed and released " " switch on the steering switch.	Make sure to speak a command within 8 seconds after you press and release " " switch 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.
	The fan of the air conditioner is too loud.	Lower the fan speed as necessary as voice command can be recognized more easily.

Related to Item Choice

The system should respond correctly to all voice commands without difficulty. If problems are encountered, follow the solutions given in this guide for the appropriate error.

Where the solutions are listed by number, try each solution in turn, starting with number one, until the problem is resolved.

Symptom/ error message	Solution
Displays "COMMAND NOT RECOGNIZED" or the system fails to interpret the command correctly.	1. Ensure that the command format is valid.
	2. Speak clearly without pausing between words and at a level appropriate to the ambient noise level.
	3. Ensure that the ambient noise level is not excessive, for example, windows open or defrost on. **NOTE:** If it is too noisy to use the phone, it is likely that voice commands will not be recognized.
	4. If optional words of the command have been omitted, then command should be tried with these in place.
The system consistently selects the wrong voicetag	1. Ensure that the voicetag requested matches what was originally stored. This can be confirmed by giving the "Addressbook" Directory or Phone Directory command.
	2. Replace one of the voicetags being confused with a different voicetag.

Related to Telephone

The system should respond correctly to all voice commands without difficulty. If problems are encountered, try the following solutions.

Where the solutions are listed by number, try each solution in turn, starting with number 1, until the problem is resolved.

Symptom	Solution
System fails to interpret the command correctly.	1. Ensure that the command is valid.
	2. Ensure that the command is spoken after the tone.
	3. Speak clearly without pausing between words and at level appropriate to the ambient noise level in the vehicle.
	4. Ensure that the ambient noise level is not excessive (for example, windows open or defroster on). **NOTE:** If it is too noisy to use the phone, it is likely that the voice commands will not be recognized.
	5. If more than one command was said at a time, try saying the commands separately.
	6. If the system consistently fails to recognize commands, the voice training procedure should be carried out to improve the recognition response for the speaker. See "Speaker adaptation (SA) mode" earlier in this section. Refer to "OWNER'S MANUAL".

Symptom	Solution
The system consistently selects the wrong voicetag	1. Ensure that the phone book entry name requested matches what was originally stored. This can be confirmed by using the “List Names” command.
	2. Replace one of the names being confused with a new name.

RELATED TO AUDIO

- The majority of the audio malfunctions are the result of outside causes (bad CD, electromagnetic interference, etc.). Check the symptoms below to diagnose the malfunction.
- The vehicle itself can be a source of noise if noise prevention parts or electrical equipment is malfunctioning. Check if noise is caused and/or changed by engine speed, ignition switch turned to each position, and operation of each piece of electrical equipment, and then determine the cause.

NOTE:

- CD-R is not guaranteed to play because they can contain compressed audio (MP3, WMA, AAC, M4A) or could be incorrectly mastered by the customer on a computer.
- Check if the CDs carry the Compact Disc Logo. If not, the disc is not mastered to the “red book” Compact Disc Standard and may not play.

Symptom	Cause and Counter measure
Cannot play	Check if the CD was inserted correctly.
	Check if the CD is scratched or dirty.
	Check if there is condensation inside the player, and if there is, wait until the condensation is gone (about 1 hour) before using the player.
	If there is a temperature increase error, the player will play correctly after it returns to the normal temperature.
	If there is a mixture of music CD files (CD-DA data) and MP3/WMA/AAC/M4A files on a CD, only the music CD files (CD-DA data) will be played.
	Files with extensions other than “.MP3”, “.WMA”, “AAC”, “.M4A”, “.mp3”, “.wma”, “.aac” or “.m4a” cannot be played. In addition, the character codes and number of characters for folder names and file names should be in compliance with the specifications.
	Check if the disc or the file is generated in an irregular format, This may occur depending on the variation or the setting of MP3/WMA/AAC/M4A writing applications or other text editing applications.
	Check if the finalization process, such as session close and disc close, is done for the disc.
	Check if the CD is protected by copyright.
	Disks recorded in live file system format are not supported. (For Microsoft Windows Vista, check the settings.)
Poor sound quality	Check if the CD is scratched or dirty.
It takes a relatively long time before the music starts playing.	If there are many folder or file levels on the MP3/WMA/AAC/M4A CD, or if it is a multisession disc, some time may be required before the music starts playing.
Music cuts off or skips	The writing software and hardware combination might not match, or the writing speed, writing depth, writing width might not match the specifications. Try using the slowest writing speed.
Skipping with high bit rate files	Skipping may occur with large quantities if data such as for high bit rate data.
Move immediately to the next song when playing	When a non-MP3/WMA/AAC/M4A file has been given an extension of “.MP3”, “.WMA”, “AAC”, “.M4A” “.mp3”, “.wma”, “.aac” or “.m4a”, or when play is prohibited by copyright protection, the player will skip to the next song.
The songs do not play back in the desired order.	The playback order is the order in which the files were written by the software, so the files might not play in the desired order.
Poor reception only from a certain radio broadcast station.	Check incoming radio wave signal strength of applicable broadcast station.
Buzz/rattle sound from speaker	The majority of rattle sounds are not indicative of an issue with the speaker, usually something nearby the speaker is causing the rattle.

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

NOTE:

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

RELATED TO DVD

Symptom	Possible cause	Possible solution
Not working as operated	Some operations may be rejected or may not function as intended because of the manufacturer's intent, depending on DVD.	This is not a malfunction.
Operation not accepted	If a requested operation is prohibited, then a message is displayed on the screen. (Message display depends on DVD.)	This is not a malfunction.
DVD can not be played	Check that the DVD is inserted in the right place.	Upturn the DVD (facing the title upward).
	Check that there is no condensation inside the player.	Wait until the condensation evaporates (approximately one hour).
	DVD menu is displayed.	Select item to touch “ENTER”.
	Insertion of a DVD with a different region code.	DVDs with a different region code can not be played. Check DVD.
	Some DVD softwares may not be played because not all DVD softwares fully comply in the standard.	This is not a malfunction.
DVD-AUDIO can not be played	DVD-AUDIO may not be playable depending on the vehicle specifications.	This is not a malfunction.
Interruption during playback or flicker in the display	Check that the DVD has no scratches and dirt.	Errors may not be corrected depending on the size of scratches.
		Wipe and clean the dirt on the disc.
Subtitles not shown	Subtitle setting is OFF.	Set subtitle.
	Subtitle is not included in the software.	Check DVD.
Not played in set language	If a language is not included in the DVD, then the DVD is played in a recommended language.	Check DVD.
Not played with set subtitle	If a set subtitle is not included in the DVD, then the DVD is played with a recommended subtitle.	Check DVD.
Angle unchangeable	Plural angles are not recorded in the software.	Check if the DVD is multi–angle capable.
Unusual screen display	Display mode to the output aspect ratio for the DVD software is inappropriate.	Switch to the appropriate display mode.
Distortion in picture	In the process of fast–forward or fast–reverse.	This is not a malfunction.
Low sound quality	Check that the DVD has no scratches and dirt.	Wipe and clean the dirt on the disc.
Subtitle and language not selectable (not played with set subtitle or in set language)	The DVD is not multilanguage–capable.	The inclusion of the number of languages depends on DVD. Languages may be selectable on the Menu screen. Check DVD.
	The DVD has a priority language or setting.	If the DVD has a priority language or settings, then settings changed with this device are not reflected.
Playback time is indicated, but no sound comes out.	Playback of Mix mode Truck 1. (Mix mode: Format including Truck 1 with data other than music and Trucks from Truck 2 with music data.)	Play music data included in trucks from Truck 2.

RELATED TO VEHICLE ICON

Symptom	Possible cause	Possible solution
Names of roads differ between Plan View and Birdview®.	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 may be displayed multiple times, and the names appearing on the 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 pressed off, for example, by a ferry or car transporter.	Drive the vehicle for a while on a road where GPS signals can be received.
	The position and direction of the vehicle icon 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 traveling 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 data.
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 <Day/Night> when you turn 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 location of the 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 INFINITI dealer.
	The map data has a 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 data.

RELATED TO ROUTE CALCULATION AND VISUAL GUIDANCE

Symptom	Possible cause	Possible solution
Waypoints are not included in the auto reroute calculation.	Waypoints that you have already passed are not included in the auto reroute calculation.	If you want to go to that waypoint again, you need to edit the route.
Route information is not displayed.	Route calculation has not yet been performed.	Set the destination and perform route calculation.
	You are not driving 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 certain types of roads (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 calculations took priority conditions into consideration, but the same route was calculated.	This is not a malfunction.
A waypoint cannot be added.	Five waypoints are already set on the route, including ones that you have already passed.	A maximum of 5 waypoints can be set on the route. If you want to go to 6 or more waypoints, perform route calculations multiple times as necessary.

Symptom	Possible cause	Possible solution
The suggested route is not displayed.	Roads near the destination cannot be calculated.	Reset the destination to a main or ordinary road, and recalculate the route.
	The starting point and destination are too close.	Set a more distant destination.
	The starting point and destination are too far away.	Divide your trip by selecting one or two intermediate destinations, and perform route calculations multiple times.
	There are time restricted roads (by the day of the week, by time) near the current vehicle location or destination.	Set [Use Time Restricted Roads] to off.
The part of the route that you have 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.
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 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 map data.	Updated information will be included in the next version of the data.
The suggested route does not exactly connect to the starting point, waypoints, or destination.	There is no data for route calculation closes to these locations.	Set the starting point, waypoints and destination on a main road, and perform route calculation.

RELATED TO VOICE GUIDANCE

Symptom	Possible cause	Possible solution
Voice guidance is not available	Voice guidance is only available at certain intersections marked with? In some case, 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 guide is set to off.	Turn on voice guidance.
	Route guidance is set to off.	Turn on voice guidance.
The guidance contact does not correspond to the actual condition.	The contact of voice guidance may vary, depending on the types of intersections at which turn are made.	Follow all traffic rules and regulations.

RELATED TO TRAFFIC INFORMATION

Symptom	Possible cause	Possible solution
The traffic information is not displayed	The traffic information is not set to on.	Set the traffic information to on.
	You are in an area where traffic information is not available	Scroll to an area where traffic information is available
	You have not subscribed to XM NavTraffic or, your subscription to XM NavTraffic has expired.	Check your subscription status of XM NavTraffic.
	The map scale is set at a level where the display of icons is impossible.	Check that the map scale is set at a level in which the display of icons is possible.
With the automatic detour route search ON, no detour route is set to avoid congested areas.	There is no faster route compared to the current route, based on the road network and traffic information.	The automatic detour search is not intended for avoiding traffic jams. It searches for the fasted rote taking into consideration such things as traffic jams.

Symptom	Possible cause	Possible solution
The route does not avoid road section with traffic information stating it is closed due to road construction.	The navigation system is designed not to avoid this event because the actual period of closure may differ from the declared roadwork period.	Observe the actual road condition and follow the instructions on road for detour when necessary. If the road closure is for certain, use detour function and set the detour distance to avoid the closed road section.
Traffic information displayed differs from information from other media (e.g. radio).	Other media may use different information sources.	Observe the actual road conditions and regulations. Always observe safe driving practices and follow all traffic regulations.

RELATED TO HANDS-FREE PHONE (EXCEPT FOR MEXICO)

Symptom	Cause and Counter measure
Does not recognize cellular phone connection. (No connection is displayed on the display at the guide.)	Some Bluetooth® enabled cellular phones may not be recognized by the in-vehicle phone module. Refer to “RELATED TO HANDS-FREE PHONE (Check Compatibility)” of MULTI AV SYSTEM SYMPTOM.
Cannot use hands-free phone	Customer will not be able to use a hands-free phone under the following conditions. • The vehicle is outside of the telephone service area. • The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area. • The cellular phone is locked to prevent it from being dialed. **NOTE:** While a cellular phone is connected through the Bluetooth® wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth® Hands-Free Phone System cannot charge cellular phones.
The other party's voice cannot be heard by hands-free phone.	When the radio wave condition is not ideal or ambient sound is too loud, it may be difficult to hear the other person's voice during a call.
Poor sound quality	Do not place the cellular phone in an area surrounded by metal or far away from the in-vehicle phone module to prevent tone quality degradation and wireless connection disruption.

RELATED TO HANDS-FREE PHONE (FOR MEXICO)

Symptom	Cause and Counter measure
Cannot use hands-free phone	Customer will not be able to use a hands-free phone under the following conditions. • The vehicle is outside of the telephone service area. • The vehicle is in an area where it is difficult to receive radio waves; such as in a tunnel, in an underground parking garage, near a tall building or in a mountainous area. • The cellular phone is locked to prevent it from being dialed. **NOTE:** While a cellular phone is connected through the Bluetooth® wireless connection, the battery power of the cellular phone may discharge quicker than usual. The Bluetooth® Hands-Free Phone System cannot charge cellular phones.
The other party's voice cannot be heard by hands-free phone.	When the radio wave condition is not ideal or ambient sound is too loud, it may be difficult to hear the other person's voice during a call.
Poor sound quality	Do not place the cellular phone in an area surrounded by metal or far away from the in-vehicle phone module to prevent tone quality degradation and wireless connection disruption.

RELATED TO SONAR

Symptom	Possible cause
Unstable object detection	• The vehicle is on a rough surface, such as stone or gravel. • When used in poor weather conditions, such as heavy snow/rain or strong wind. • When subjected to an ultrasonic noise generated from exhaust muffler or brakes. • When left standing in the hot sun or in a cold climate. • When the surface of the sensor is frozen or covered with snow/dirt/moisture. • When a retrofitted xenon lamp, lighted license plate, or harness is close to the sensor body or sensor harness. • When subjected to loop coil noises generated from a vehicle detector placed at an intersection or coin parking area.
Object undetectable	• Air-containing objects, such as cloth, cotton, glass wool, dust, and snow. • Thin objects, such as rope, chain, and wire. • Smooth-faced objects placed in a slanting direction. • Fast-moving small animals. • A corner of an angular object. **NOTE:** If the sensor detection part is scratched, obstacles cannot be detected.

REMOVAL AND INSTALLATION

AV CONTROL UNIT

Removal and Installation

INFOID:0000000009010021

REMOVAL

CAUTION:

- **Before replacing AV control unit, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to AV-137, "ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT : Description".**
- **Remove battery terminal and AV control unit after a lapse of 30 seconds or more after turning the ignition switch OFF.**

NOTE:

After the ignition switch is turned OFF, the AV control unit continues operating for approximately 30 seconds. Therefore, data corruption may occur if battery voltage is cut off within 30 seconds.

1. Remove cluster lid C. Refer to IP-13, "Exploded View".
2. Remove AV control unit with a A/C auto amp. as a single unit from the body.
3. Remove bracket screws, and then remove AV control unit.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

- **Be sure to perform “Read/Write Configuration” when replacing AV control unit. For details, refer to AV-137, "CONFIGURATION (AV CONTROL UNIT) : Special Repair Requirement".**
- **Since AV control unit connector and unified meter and A/C amp. connector have the same form, be careful not to insert them wrongly.**

FRONT DISPLAY UNIT

Removal and Installation

INFOID:0000000009010022

REMOVAL

1. Remove cluster lid D. Refer to IP-13, "Exploded View".
2. Remove front display unit mounting screws.
3. Disconnect front display unit connector to remove front display unit.

INSTALLATION

Install in the reverse order of removal.

HEADREST DISPLAY UNIT

Exploded View

INFOID:0000000009010023

Refer to SE-106, "Exploded View".

Removal and Installation

INFOID:0000000009010024

REMOVAL
Refer to SE-113, "Removal and Installation".

INSTALLATION
Refer to SE-113, "Removal and Installation".

VIDEO DISTRIBUTOR

Removal and Installation

INFOID:0000000009010025

REMOVAL

1. Remove AV control unit. Refer to AV-282, "Removal and Installation".
2. Remove video distributor mounting screws.
3. Disconnect video distributor connector.
4. Remove video distributor and bracket from the vehicle as a single unit.
5. Remove bracket screws to remove video distributor.

INSTALLATION

Install in the reverse order of removal.

FRONT DOOR SPEAKER

Removal and Installation

INFOID:0000000009010026

REMOVAL

1. Remove front door finisher. Refer to INT-13, "Exploded View".
2. Remove front door speaker mounting bolts.
3. Disconnect connector and remove front door speaker from speaker bracket.

INSTALLATION

Install in the reverse order of removal.

REAR DOOR SPEAKER

Removal and Installation

INFOID:0000000009010027

REMOVAL

1. Remove rear door finisher. Refer to INT-16, "Exploded View".
2. Remove rear door speaker mounting bolts.
3. Disconnect connector to remove rear door speaker.

INSTALLATION

Install in the reverse order of removal.

SQUAWKER

Removal and Installation

INFOID:0000000009010028

REMOVAL

1. Remove speaker grille. Refer to IP-13, "Exploded View".
2. Remove squawker mounting screws.
3. Disconnect squawker connector to remove squawker.

INSTALLATION

Install in the reverse order of removal.

FRONT DOOR TWEETER

Removal and Installation

INFOID:0000000009010029

REMOVAL

1. Remove door mirror corner cover. Refer to INT-13, "Exploded View".
2. Remove front door tweeter mounting screws to remove front door tweeter.

INSTALLATION

Install in the reverse order of removal.

REAR DOOR TWEETER

Removal and Installation

INFOID:0000000009010030

REMOVAL

1. Remove rear door garnish. Refer to INT-16, "Exploded View".
2. Remove rear door tweeter mounting screws to remove rear door tweeter.

INSTALLATION

Install in the reverse order of removal.

ROOF SPEAKER

Removal and Installation

INFOID:0000000009010031

REMOVAL

1. Remove roof garnish. Refer to INT-28, "Exploded View".
2. Remove roof speaker mounting screws from bracket.
3. Disconnect roof speaker connector to remove roof speaker.

INSTALLATION

Install in the reverse order of removal.

CENTER SPEAKER

Removal and Installation

INFOID:0000000009010032

REMOVAL

1. Remove upper ventilator grille. Refer to IP-13, "Exploded View".
2. Remove center speaker mounting screws.
3. Disconnect center speaker connector to remove center speaker.

INSTALLATION

Install in the reverse order of removal.

WOOFER

Removal and Installation

INFOID:0000000009010033

REMOVAL

1. Remove luggage side lower finisher LH. Refer to INT-33, "Exploded View".
2. Disconnect woofer connector.
3. Remove woofer mounting bolts to remove woofer.

INSTALLATION

Install in the reverse order of removal.

BOSE AMP.

Removal and Installation

INFOID:0000000009010034

REMOVAL

1. Remove rear ventilator duct lower. Refer to HA-47, "Exploded View".
2. Remove shield bracket. Refer to SR-25, "Exploded View".
3. Remove rear drain hose clip. Obtain a service area. Refer to RF-40, "Exploded View".
4. Remove BOSE amp. mounting bolts.
5. Disconnect BOSE amp. connector to remove BOSE amp.

INSTALLATION

Install in the reverse order of removal.

ANTENNA AMP.

Removal and Installation

INFOID:0000000009010035

REMOVAL

1. Remove side curtain air bag module RH. Refer to SR-20, "Exploded View".
2. Remove antenna amp. mounting screw.
3. Disconnect antenna amp. connector to remove antenna amp.

INSTALLATION

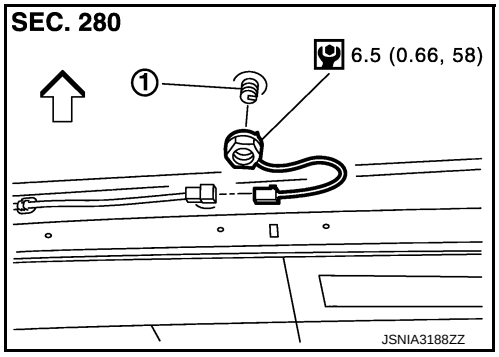
Install in the reverse order of removal.

SATELLITE RADIO ANTENNA

Exploded View

INFOID:0000000009010036

REMOVAL

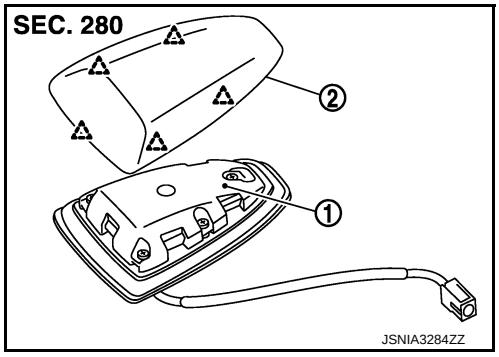


1. Satellite radio antenna

⇦: Vehicle front

Refer to GI-4, "Components" for symbols in the figure.

DISASSEMBLY



1. Satellite radio antenna
2. Cover

△: Pawl

Removal and Installation

INFOID:0000000009010037

REMOVAL

1. Pull headlining assembly (rear). Obtain a service area. Refer to INT-28, "Exploded View".
2. Disconnect antenna feeder connector.
3. Remove nut, and remove satellite radio antenna and the cover from the vehicle as a single unit.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

If the satellite radio antenna mounting nut is tightened looser than the specified torque, then this will lower the sensitivity of the antenna. On the other hand, if the nut is tightened tighter than the specified torque, then this will deform the roof panel.

Disassembly and Assembly

INFOID:0000000009010038

DISASSEMBLY

Insert cloth-covered driver into gaps between satellite radio antenna and the cover, and remove the cover from satellite radio antenna.

ASSEMBLY

Assemble in the reverse order of disassembly.

MULTIFUNCTION SWITCH

Removal and Installation

INFOID:0000000009010039

REMOVAL

1. Remove cluster lid C. Refer to IP-13, "Exploded View".
2. Disconnect multifunction switch connector.
3. Remove multifunction switch mounting screws to remove multifunction switch from cluster lid C.

INSTALLATION

Install in the reverse order of removal.

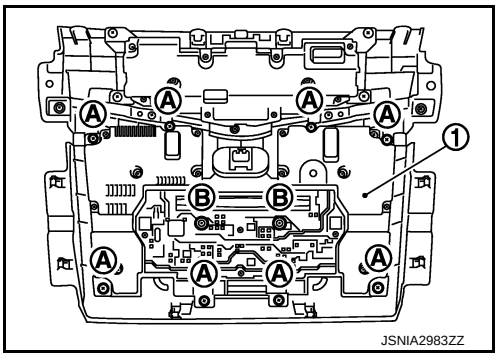
PRESET SWITCH

Removal and Installation

INFOID:0000000009010040

REMOVAL

1. Remove cluster lid C. Refer to IP-13, "Exploded View".
2. Disconnect preset switch (1) connector.
3. Remove preset switch mounting screws (A) and (B).
4. Remove preset switch from cluster lid C.



INSTALLATION

Install in the reverse order of removal.

FRONT AUXILIARY INPUT JACKS

Removal and Installation

INFOID:0000000009010041

REMOVAL

1. Remove center console assembly. Refer to IP-23, "Exploded View".
2. Remove front auxiliary input jacks mounting screws to remove front auxiliary input jacks.

INSTALLATION

Install in the reverse order of removal.

REAR AUXILIARY INPUT JACKS

Removal and Installation

INFOID:0000000009010042

REMOVAL

1. Remove console rear finisher. Refer to IP-23, "Exploded View".
2. Remove rear auxiliary input jacks mounting screws to remove rear auxiliary input jacks.

INSTALLATION

Install in the reverse order of removal.

USB CONNECTOR

Removal and Installation

INFOID:0000000009010043

REMOVAL

1. Remove console finisher assembly. Refer to IP-23, "Exploded View".
2. Press the pawl from the back of console finisher assembly to remove USB connector.

INSTALLATION

Install in the reverse order of removal.

MICROPHONE

Removal and Installation

INFOID:0000000009010044

REMOVAL

1. Remove map lamp assembly. Refer to INT-28, "Exploded View".
2. Remove microphone, stretching pawls of roof console assembly.

INSTALLATION

Install in the reverse order of removal.

GPS ANTENNA

Removal and Installation

INFOID:0000000009010045

REMOVAL

1. Remove instrument panel. Refer to IP-13, "Exploded View".
2. Remove GPS antenna feeder clips.
3. Remove GPS antenna mounting screws to remove GPS antenna.

INSTALLATION

Install in the reverse order of removal.

AROUND VIEW MONITOR CONTROL UNIT

Removal and Installation

INFOID:0000000009010046

REMOVAL

CAUTION:

Before replacing around view monitor control unit, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to AV-137, "ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT : Description".

1. Remove AV control unit. Refer to AV-282, "Removal and Installation".
2. Remove around view monitor control unit mounting screws.
3. Disconnect around view monitor control unit connector to remove around view monitor control unit.

INSTALLATION

1. Install in the reverse order of removal.
2. Perform camera image calibration. Refer to AV-142, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".
3. Perform predictive course line center position adjustment. Refer to AV-141, "PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT : Special Repair Requirement".

CAUTION:

- **Be sure to perform “Read/Write Configuration” when replacing around view monitor control unit. For details, refer to AV-139, "CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT) : Special Repair Requirement".**
- **Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.**

FRONT CAMERA

Removal and Installation

INFOID:0000000009010047

REMOVAL

1. Remove front grille. Refer to EXT-20, "Exploded View".
2. Remove front camera mounting screws to remove front camera.

INSTALLATION

1. Install in the reverse order of removal.
2. Perform camera image calibration. Refer to AV-142, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

REAR CAMERA

Removal and Installation

INFOID:0000000009010048

REMOVAL

1. Remove back door finisher center upper. Refer to EXT-45, "Exploded View".
2. Remove rear camera mounting screws to remove rear camera.

INSTALLATION

1. Install in the reverse order of removal.
2. Perform camera image calibration. Refer to AV-142, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

CAUTION:

Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

SIDE CAMERA

Removal and Installation

INFOID:0000000009010049

REMOVAL

1. Remove side camera finisher. Refer to MIR-32, "Exploded View".
2. Remove screws to remove side camera.

INSTALLATION

1. Install in the reverse order of removal.
2. Perform camera image calibration. Refer to AV-142, "CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR) : Special Repair Requirement".

CAUTION:

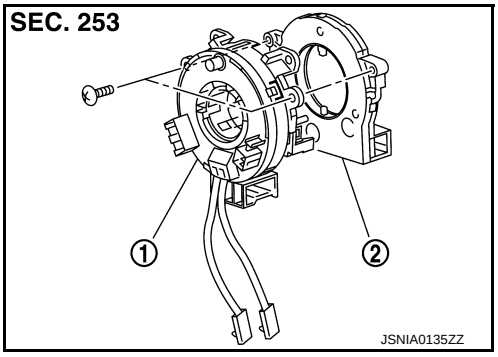
Perform the calibration and perform the writing to the around view monitor control unit when removing and replacing each camera, removing the camera mounting parts (front grille, door mirror, etc.) and replacing the around view monitor control unit.

STEERING ANGLE SENSOR

Exploded View

INFOID:0000000009010050

DISASSEMBLY



1. Spiral cable
2. Steering angle sensor

Removal and Installation

INFOID:0000000009010051

REMOVAL

1. Remove spiral cable. Refer to SR-14, "Exploded View".
2. Remove steering angle sensor from spiral cable.

INSTALLATION

1. Install in the reverse order of removal.
2. Perform steering angle sensor neutral position adjustment. Refer to AV-51, "CONSULT Function".

SONAR CONTROL UNIT

Removal and Installation

INFOID:0000000009010052

REMOVAL

CAUTION:

Before replacing sonar control unit, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to AV-137, "ADDITIONAL SERVICE WHEN REPLACING SONAR CONTROL UNIT : Description".

1. Remove instrument lower panel LH. Refer to IP-13, "Exploded View".
2. Remove sonar control unit mounting screws.
3. Disconnect sonar control unit connector to remove sonar control unit.

INSTALLATION

Install in the reverse order of removal.

CAUTION:

Be sure to perform “Read/Write Configuration” when replacing sonar control unit. For details, refer to AV-140, "CONFIGURATION (SONAR CONTROL UNIT) : Special Repair Requirement".

SONAR SENSOR

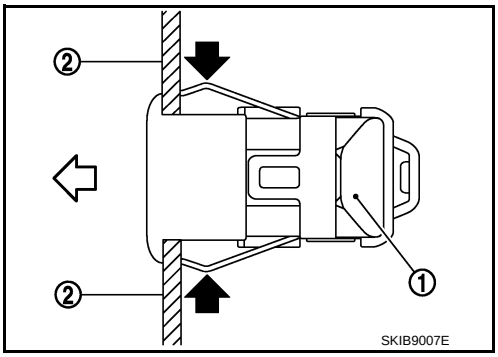
Removal and Installation

INFOID:0000000009010053

REMOVAL

1. Press the spring fixing the sonar sensor (1) (black arrows).
2. Remove the sonar sensor from front bumper or rear bumper to the white arrow direction.
3. Disconnect sonar sensor connector to remove sonar sensor.

(2) : Bumper



INSTALLATION

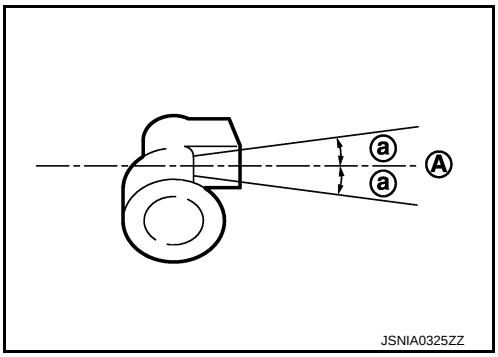
Install the bumper when the pawl engages.

CAUTION:

The connector direction is within ±10° from the horizontal position when assembling the bumper.

A : Horizontal position

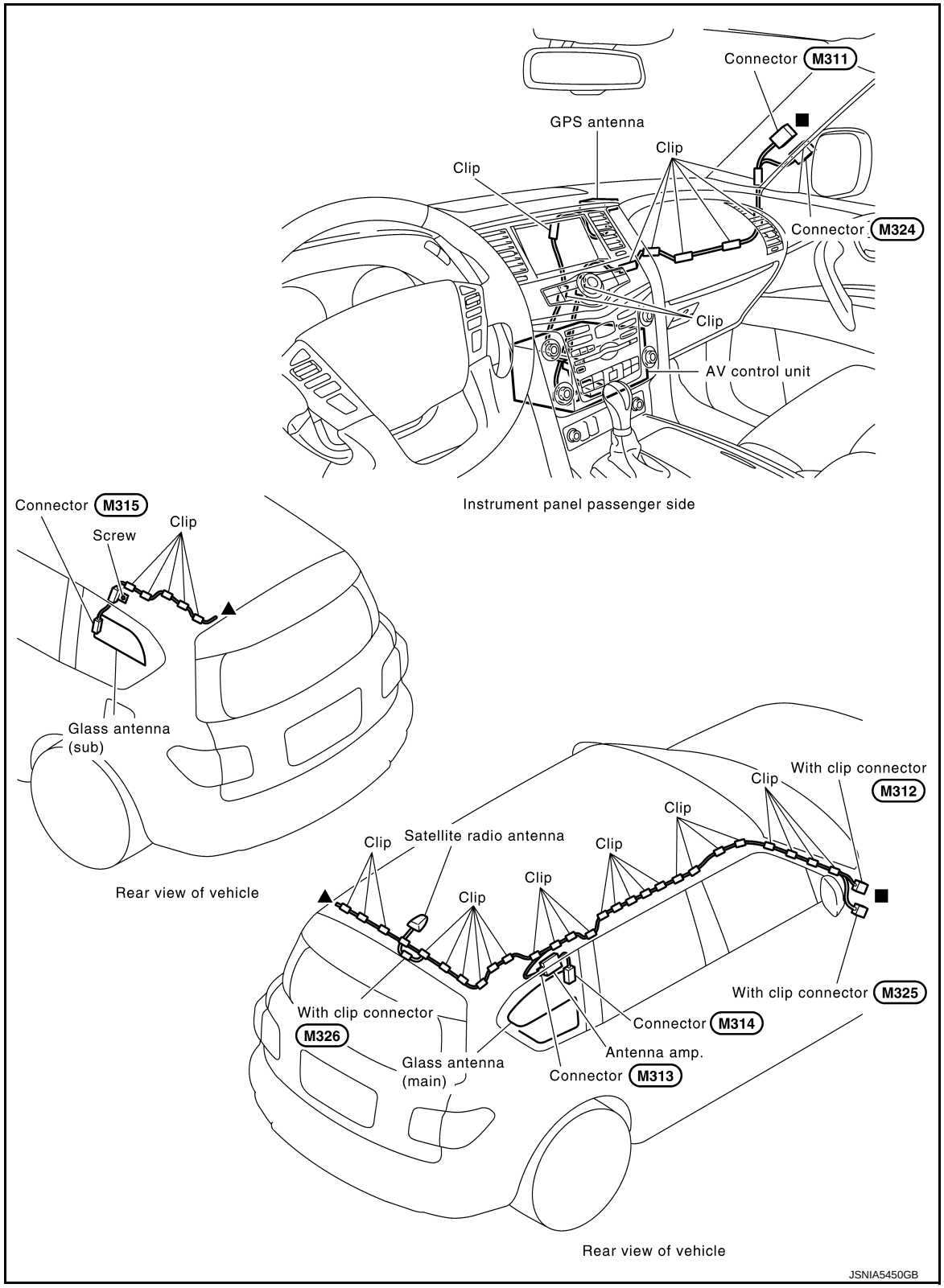
a : 10°



ANTENNA FEEDER

Feeder Layout

INFOID:0000000009010054



■, ▲: Indicates that the part is connected at points with same symbol in actual vehicle.

PRECAUTION

PRECAUTIONS

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

INFOID:0000000009314049

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 AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 “SRS AIR BAG”.**
- **Never 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.**

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

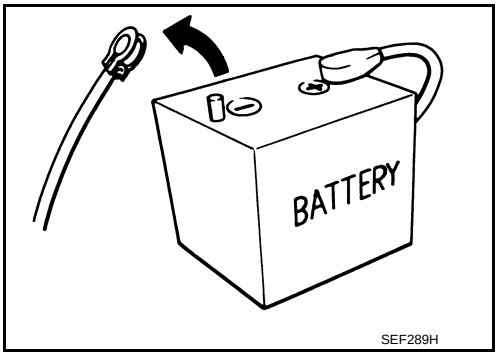
Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.**
- **When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.**

Precautions for Removing of Battery Terminal

INFOID:0000000009898525

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
  NOTE:
  ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.



SEF289H

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

Precaution for Trouble Diagnosis

INFOID:0000000009314050

AV COMMUNICATION SYSTEM

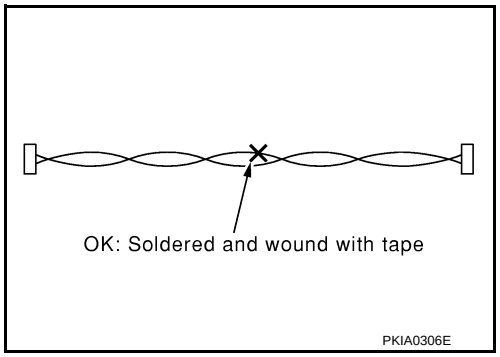
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

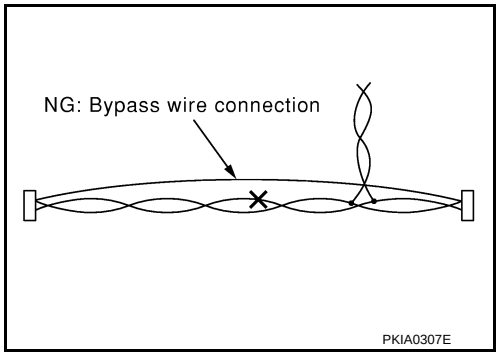
INFOID:0000000009314051

AV COMMUNICATION SYSTEM

- Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in).]



- Do not perform bypass wire connections for the repair parts. (The spliced wire will become separated and the characteristics of twisted line will be lost.)



SYSTEM DESCRIPTION

DESCRIPTION

Telematics system

INFOID:0000000009313995

The adoption of the Telematics system allows the provision of information and services in real time for safe and pleasant driving.

- TCU (Telematics Communication Unit) equipped with a radio communication terminal communicates with the information center (Infiniti Connection™ Data Center) via radio waves for receiving Infiniti Connection™ services.
- In addition to the services received while driving, various kinds of vehicle information can be obtained via Infiniti Connection™ Data Center by using cell phone or personal computer.

Infiniti Connection™ SERVICE

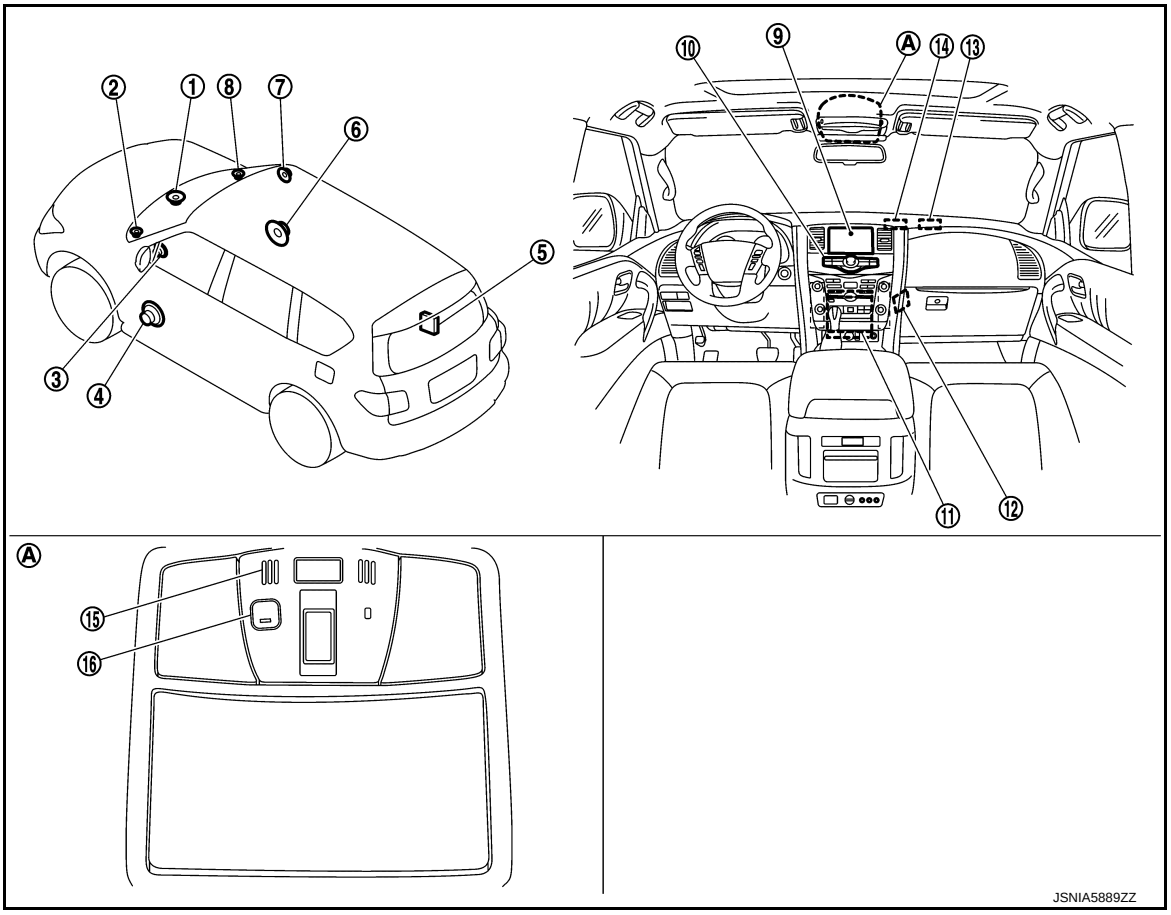
The user can transmit/receive various kinds of information via the information centers (Infiniti Connection™ Data Center).

- The available services are: Information service, Infiniti Connection™ Response service, shortest route search, safety & security service, etc.
- The user can access Infiniti Connection™ user's homepage and check eco drive information by using cell phone or personal computer.

COMPONENT PARTS

Component Parts Location

INFOID:0000000009313996



A. Map lamp assembly part

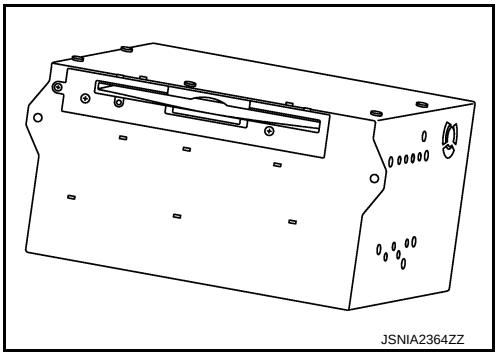
No.	Part name	Description
1.	Center speaker	Outputs sound signal.
2.	Tweeter LH	
3.	Front door squawker LH	
4.	Front door woofer LH	
5.	BOSE amp.	Inputs sound signal from AV control unit, and outputs sound signal to each speaker.
6.	Front door woofer RH	Outputs sound signal.
7.	Front door squawker RH	
8.	Tweeter RH	
9.	Display unit	• Display image is controlled by the serial communication from AV control unit. • The RGB digital image signal and composite image signal are input to display unit. • Touch panel function can be operated for each system by touching a display directly.
10.	Multifunction switch	• Operation panel is equipped with the centralized switch where navigation and CARWINGS, etc. operations are integrated. • Connected with preset switch via cable, and operation signal is transmitted to AV control unit via AV communication.
11.	AV control unit	Refer to AV-316, "AV CONTROL UNIT".

No.	Part name	Description
12.	TCU	Refer to AV-316, "TCU".
13.	Telematics antenna	Refer to AV-316, "Telematics Antenna".
14.	GPS antenna	Refer to AV-317, "GPS Antenna".
15.	Microphone	Refer to AV-317, "Microphone".
16.	Telematics switch	Refer to AV-319, "Telematics Switch".

AV CONTROL UNIT

INFOID:0000000009313997

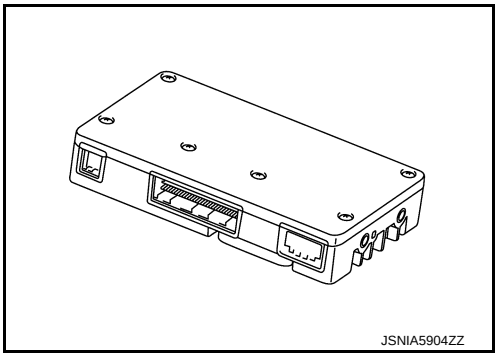
- AV control unit is installed at the center of the instrument panel.
- It is connected to TCU with the USB harness and signals necessary for Telematics function is sent and received.
- Switch operation signals used for the Telematics system are transmitted to TCU via USB communication from the AV control unit.


JSNIA2364ZZ

TCU

INFOID:0000000009313998

- TCU is abbreviation of Telematics Communication Unit.
- It is installed on the instrument lower cover.
- A radio communication terminal and SIM card are built into the unit and data is sent and received in SMS*1, DTMF tone signal and packet communication*2 with the Infiniti Connection™ Data Center through the TEL antenna.
  NOTE:
  *1: SMS stands for Short Message Service. It is also referred to as Text Messaging, Short Mail, etc. It is the service that performs text based message communication.
  *2: Packet communication means a communication method that data are broken down into smaller chunks for communication. The split data is called a packet and this method improves the efficiency of the communication circuit.


JSNIA5904ZZ

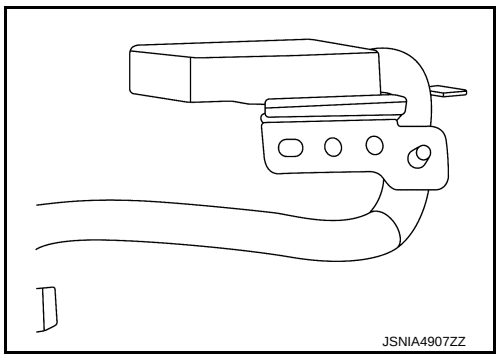
- It is connected to the AV control unit with the USB harness for sound signal input/output and USB communication.
- VIN information necessary for the Telematics service is memorized.
- It is connected to the air bag diagnosis sensor unit via CAN communication. TCU performs an emergency report when the air bag is inflated.
- Audio signals received during SOS/Infiniti Connection™ Response Specialists call are transmitted from TCU to each speaker via the AV control unit.
- During the communication with Infiniti Connection™ Data Center and Infiniti Connection™ Response Center, TCU prohibit the use of Bluetooth™ hands-free phone.

Telematics Antenna

INFOID:0000000009313999

- The telematics antenna consists of TEL antenna and GPS antenna.

- It is installed in the instrument panel.


JSNIA4907ZZ

TEL ANTENNA
- Data communications signals and voice signals are transmitted/received.
- Power is supplied with TCU activated.

GPS ANTENNA
- GPS signal is received and transmitted to TCU.

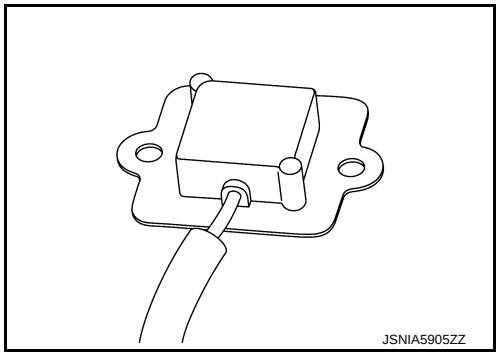
NOTE:
The placement of an object on the instrument panel may cause desensitization in the receiver sensitivity.

GPS Antenna

INFOID:0000000009314000

- GPS antenna is installed in the instrument panel.
- Power is supplied from the AV control unit.
- This antenna amplifies radio waves received from the GPS satellite and transmits the GPS signal to the AV control unit.

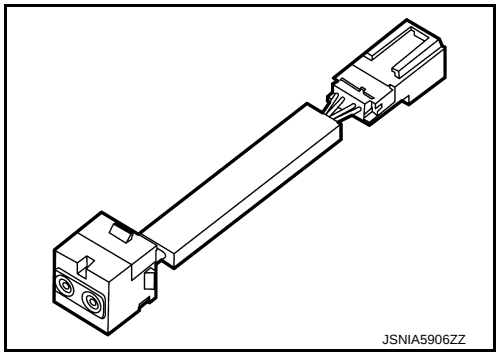
NOTE:
An object on the instrument panel may cause the reception sensitivity to be decreased.


JSNIA5905ZZ

Microphone

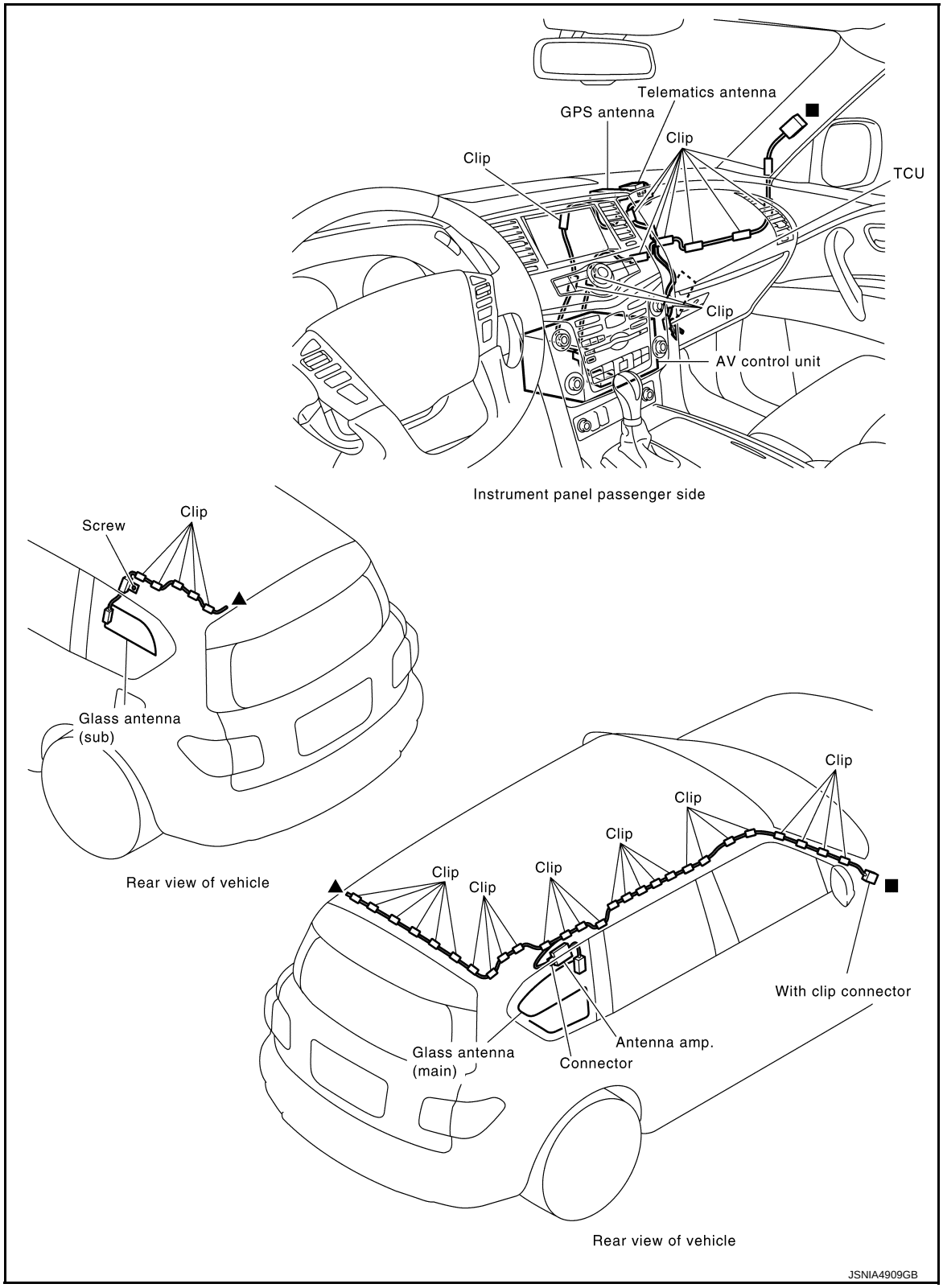
INFOID:0000000009314001

Microphone is installed on the map lamp assembly.
- The microphone is used for hands-free phone and voice recognition function in addition to the Infiniti Connection™ Response service of Infiniti Connection™.
- TCU supplies power to the microphone.
- An audio signal during speech is transmitted to TCU.


JSNIA5906ZZ

Antenna Feeder

INFOID:0000000009314002



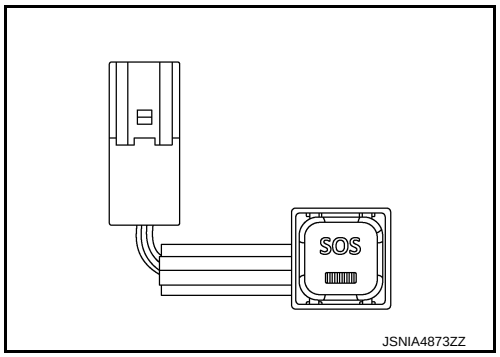
■, ▲: Indicates that the part is connected at points with same symbol in actual vehicle.

Telematics Switch

INFOID:0000000009314003

- The Telematics switch is located on the map lamp assembly.
- The Telematics switch is connected to TCU and transmits an operation signal.
- The state of LED (ON/Blink/OFF) shows the status of SOS call.

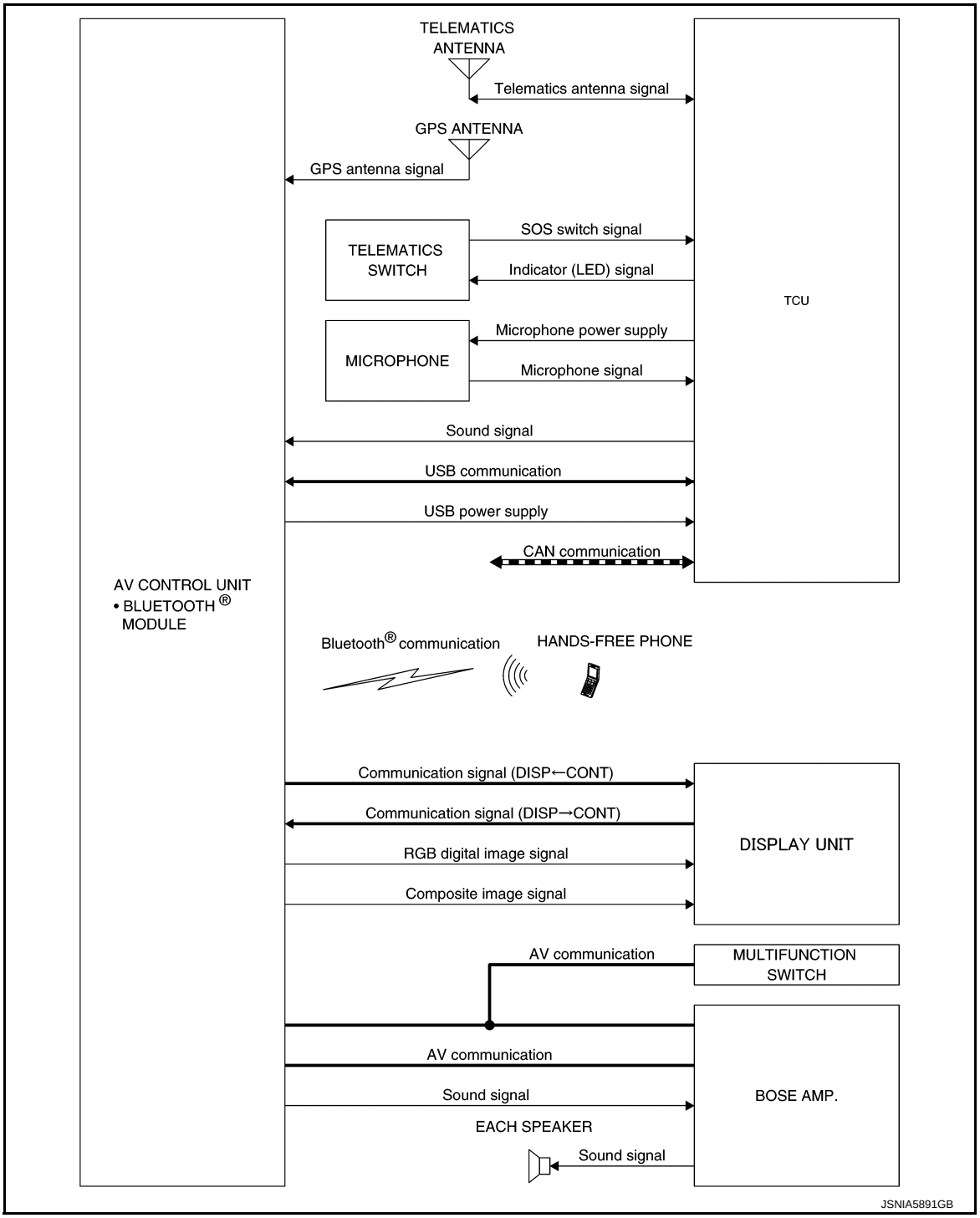
LED ON	:SOS Call available
LED Blink	:SOS Call in communication
LED OFF	:Out of service area or system error



SYSTEM
TELEMATICS SYSTEM
TELEMATICS SYSTEM : System Description

INFOID:0000000009314004

SYSTEM DIAGRAM



DESCRIPTION

The telematics system interacts with the INFINITI CONNECTION data center using GPS and GSM/GPRS technologies. The telematics control unit (TCU) can send messages to and receive commands from the INFINITI CONNECTION data center. This allows the INFINITI CONNECTION data center to monitor the vehicle and obtain actual position coordinates and automatically detected events, as well as initiate certain services from outside the vehicle. In addition, the vehicle operator can initiate services from inside the vehicle.

NOTE:

For additional information on the Telematics system, refer to the NAVIGATION SYSTEM OWNER′S MANUAL.

HANDLING PRECAUTION

Telematics

INFOID:0000000009314005

- In the following cases, no Infiniti Connection™ services are available.
- When the user has not subscribed to the service.
- When the vehicle moves out of the radio receiving zone
- When the radio wave reception environment is not suitable to data communication.
- When the vehicle is in a location that may block radio waves such as in an underground parking lot, behind a building, and in mountainous areas.
- Because the voice exchange with the Infiniti Connection™ data center uses the data communication mode, the service area may be narrower and the connection availability may be worse than the normal telephone system.
- Communication and calls to the Infiniti Connection™ data center require additional charges.
- If the vehicle is outside the communication area of TCU or the radio wave reception condition is poor, the connection to the Infiniti Connection™ data center may not be available or interrupted.
- If the communication is interrupted during a data download through any of the available services, the data must be downloaded again from the beginning.
- When transferring your vehicle, always resign from your membership. For details about the cancellation procedure, contact the Infiniti Connection™ customer center.

DIAGNOSIS SYSTEM (TCU)

CONSULT Function

INFOID:0000000009314006

APPLICABLE ITEM

CONSULT performs the following items by communication with TCU:

Diagnosis mode	Description
ECU identification information	Checks TCU part number and various ID numbers.
Self-diagnosis results	Performs the diagnosis of TCU and displays the current and past malfunctions collectively.
Data Monitor	The diagnosis of the vehicle signal that is input to TCU can be performed.
Work Support	Performs TCU activation setting and center connection setting.

ECU IDENTIFICATION INFORMATION

Displays TCU part number and various ID numbers.

Display items	Description
CONTROL UNIT NUMBER	Displays TCU part number.
UNIT ID	Displays AV control unit ID number.
TCU ID	Displays TCU ID number.
SIM ID	Displays ICC ID of SIM card.
TCU PHONE NUMBER	Displays the phone number of TCU.
VIN	Displays the vehicle identification number stored in TCU.

SELF-DIAGNOSIS RESULTS

Refer to AV-328, "DTC Index".

DATA MONITOR

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

All Items

- Displays the status of the following vehicle signals inputted into TCU.
- For each signal, the actual signal can be compared with the condition recognized on the system.

Display item	Dis-play	Condition	Note
ECHO CANCEL	type1	—	This item is displayed, but cannot be monitored.
	type2		
	type3		
	type4		
NOISE CANCEL	type1	—	This item is displayed, but cannot be monitored.
	type2		
	type3		
	type4		
TCU STANDBY TIME	14DAYS	Set at 14 days (default)	Set value for continued operation time to control battery consumption
	2DAYS	Set at 2 days	
	30DAYS	Set at 30 days	
	NON	No setting	

Display item	Display	Condition	Note
NAD OUTPUT STATUS	On	When TCU activation is ON	NAD: Abbreviation of Network Access Device. ON/OFF setting of radio wave
	Off	When TCU activation is OFF	
ACN COMM SEQUENCE LOG	—	—	—
SOS COMM SEQUENCE LOG	—	—	—

SELECTION FROM MENU
Allows the technician to select which vehicle signals should be displayed and displays the status of the selected vehicle signals.

Item to be selected	Description
ECHO CANCEL	"The same as when ALL SIGNALS" is selected
NOISE CANCEL	
TCU STANDBY TIME	
NAD OUTPUT STATUS	
ACN COMM SEQUENCE LOG	
SOS COMM SEQUENCE LOG	

Work Support
Performs TCU activation setting and center connection setting.

Item name	DESCRIPTION
SAVE VIN DATA	The VIN data saved in TCU is stored in CONSULT.
CHANGE TCU ACTIVATE SETTING	TCU ON/OFF setting is available.
CENTER CONNECTION SETTING	Connection of the Infiniti Connection™ Data Center can be set.
WRITE VIN DATA	Write VIN data stored by "SAVE VIN DATA" in work support mode to TCU.
WRITE VIN DATA (MANUAL)	Write VIN data in TCU.

ECU DIAGNOSIS INFORMATION

AV CONTROL UNIT

Reference Value

INFOID:0000000009314007

ECU	System	Reference
AV control unit	BOSE audio with navigation	AV-62, "Reference Value"
		AV-69, "Fail-Safe"
		AV-69, "DTC Index"

TCU

Reference Value

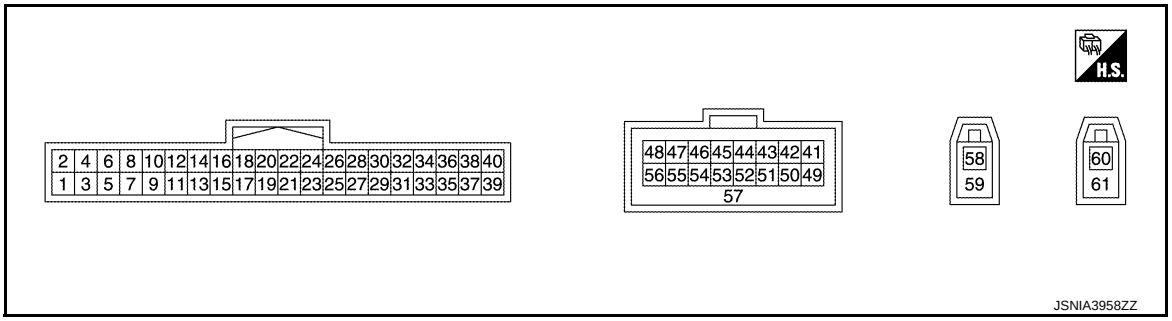
INFOID:0000000009314008

VALUES ON THE DIAGNOSIS TOOL

NOTE:
The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

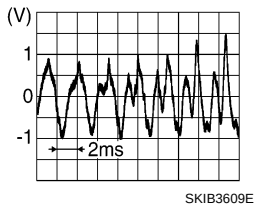
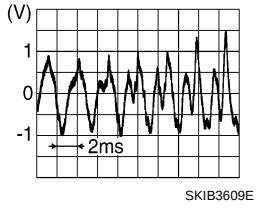
Monitor Item	Condition	Value/Status
ECHO CANCEL	This item is displayed, but cannot be monitored.	type1
		type2
		type3
		type4
NOISE CANCEL	This item is displayed, but cannot be monitored.	type1
		type2
		type3
		type4
TCU STANDBY TIME	Set at 14 days (default)	14DAYS
	Set at 2 days	2DAYS
	Set at 30 days	30DAYS
	No setting	NON
NAD OUTPUT STATUS	When TCU activation is ON	On
	When TCU activation is OFF	Off
ACN COMM SEQUENCE LOG	—	—
SOS COMM SEQUENCE LOG	—	—

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition		Threshold value	Reference value (Approx.)
+	–	Signal name	Input/ Output				
1 (Y/R)	2 (B)	Battery power supply	Input	Ignition switch OFF	—	9 - 16 V	Battery Voltage
2 (B)	—	Ground	—	Ignition switch ON	—	Less than 1 V	0 V

Terminal (Wire color)		Description		Condition		Threshold value	Reference value (Approx.)
+	–	Signal name	Input/ Output				
3 (BR)	2 (B)	ACC power supply	Input	Ignition switch ACC	—	9 - 16 V	12 V
4 (GR/L)	2 (B)	Ignition signal	Input	Ignition switch ON	—	9 - 16 V	12 V
5 (V)	2 (B)	ACC output	Output	Ignition switch ACC	—	9 - 16 V	12 V
6 (BR)	—	—	—	—	—	—	—
7 (B)	—	Ground	—	Ignition switch ON	—	Less than 1 V	0 V
9 (L)	—	CAN-H	Input/ Output	—	—	—	—
10 (P)	—	CAN-L	Input/ Output	—	—	—	—
18 (Y/G)	Ground	Microphone VCC	Output	Ignition switch ACC	—	4.0 - 5.3 V	5 V
19 (Y/L)	20	Microphone signal	Input	Ignition switch ACC	When inputting interior sound	—	 SKIB3609E
21 (Y)	23	Microphone VCC	Input	Ignition switch ACC	—	4.0 - 5.3 V	5 V
22 (BR)	23	Sound signal	Output	Ignition switch ACC	When inputting interior sound	—	 SKIB3609E
34 (G)	2 (B)	SOS call switch signal	Input	Ignition switch ACC	When pressing SOS switch	Less than 1 V	0 V
					Except for above	—	5 V

Terminal (Wire color)		Description		Condition		Threshold value	Reference value (Approx.)
+	–	Signal name	Input/ Output				
35 (O)	2 (B)	SOS switch LED signal	Input	Ignition switch ACC	When not illuminated LED lamp of SOS switch	—	12 V
					When illuminated LED lamp of SOS switch	Less than 1 V	0 V
41 (SB)	42 (GR)	U-VOICE signal	Input	Ignition switch ON	—	—	—
46 (R)	—	Manufacture specific signal	—	—	Not used.	—	—
47 (L)	55 (B)	USB V BUS signal	Input	Ignition switch ON	—	—	—
48 (Y)	55 (B)	USB D- signal	Input/ Output	Ignition switch ON	—	—	—
49 (O)	42 (GR)	D-VOICE signal	Output	Ignition switch ON	—	—	—
56 (LG)	55 (B)	USB D+ signal	Input/ Output	Ignition switch ON	—	—	—
57	—	Shield	—	—	—	—	—
58	Ground	TEL antenna signal	Input	—	Not connected TEL antenna connector.	—	2.8 V
59	—	Shield	—	—	—	—	—
60	Ground	GPS antenna signal	Input	—	Not connected GPS antenna connector.	—	2.8 V
61	—	Shield	—	—	—	—	—

DTC Index

INFOID:0000000009314009

DTC	Display contents of CONSULT	Refer to
U1000	CAN COMM CIRC [U1000]	AV-365, "Diagnosis Procedure"
U1010	CONTROL UNIT (CAN) [U1010]	AV-366, "DTC Logic"
U1A00	ACC NO CONN [U1A00]	AV-367, "Diagnosis Procedure"
U1A01	INTERNAL ERROR (TCU) [U1A01]	AV-368, "DTC Logic"
U1A02	TEL COMMUNICATION MODULE [U1A02]	AV-369, "DTC Logic"
U1A03	SIM CARD [U1A03]	AV-370, "DTC Logic"
U1A04	VIN UNFINISHED [U1A04]	AV-371, "DTC Logic"

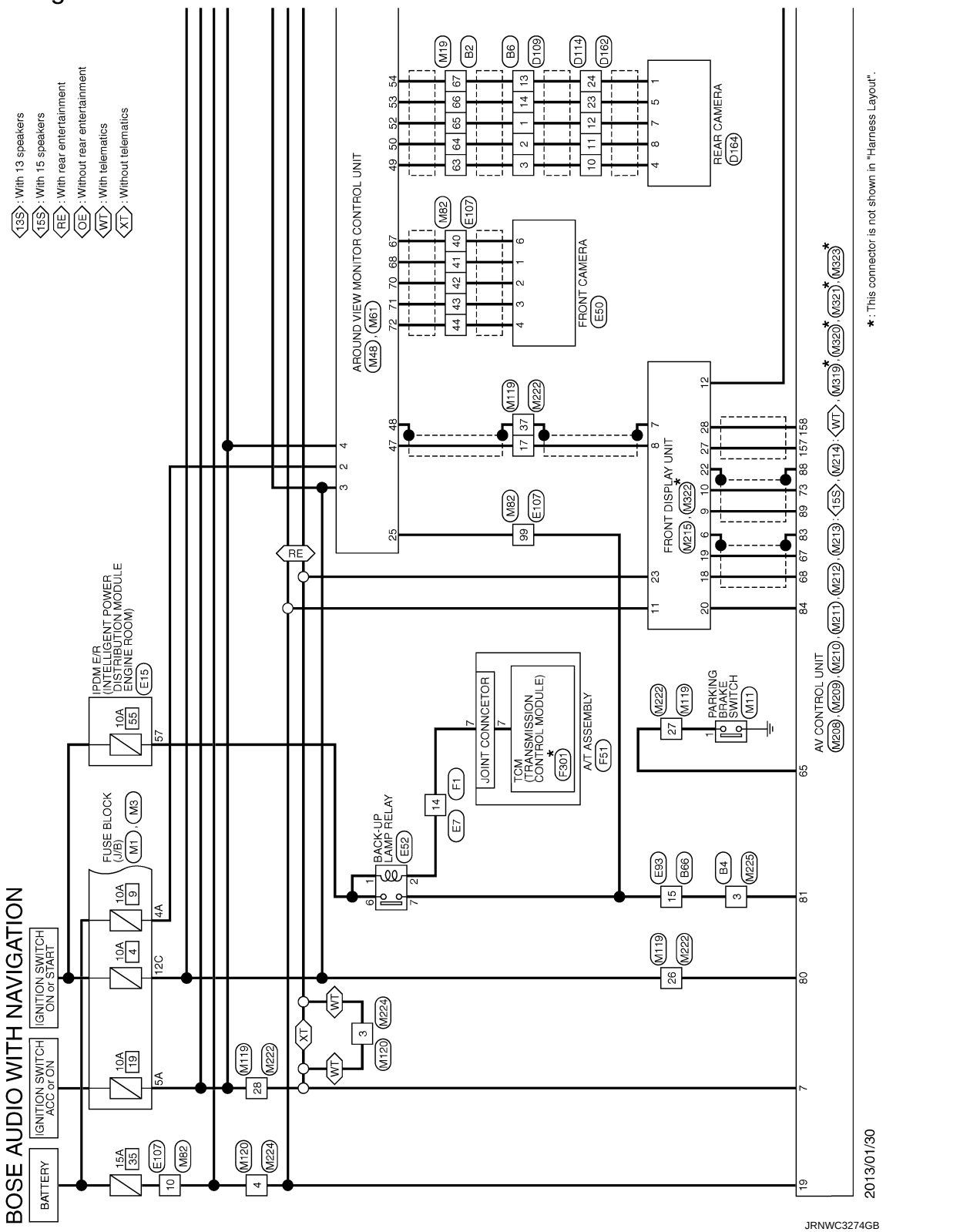
DTC	Display contents of CONSULT	Refer to
U1A05	USB COMM [U1A05]	AV-372, "Diagnosis Procedure"
U1A07	TEL ANTENNA SHORT [U1A07]	AV-373, "Diagnosis Procedure"
U1A08	TEL ANTENNA NO CONN [U1A08]	AV-374, "Diagnosis Procedure"
U1A0B	MIC IN CONN [U1A0B]	AV-375, "Diagnosis Procedure"
U1A0C	MIC OUT CONN [U1A0C]	AV-377, "Diagnosis Procedure"
U1A0E	SOS SWITCH ON STUCK [U1A0E]	AV-378, "Diagnosis Procedure"
U1A0F	SOS SWITCH NO CONN [U1A0F]	AV-379, "Diagnosis Procedure"

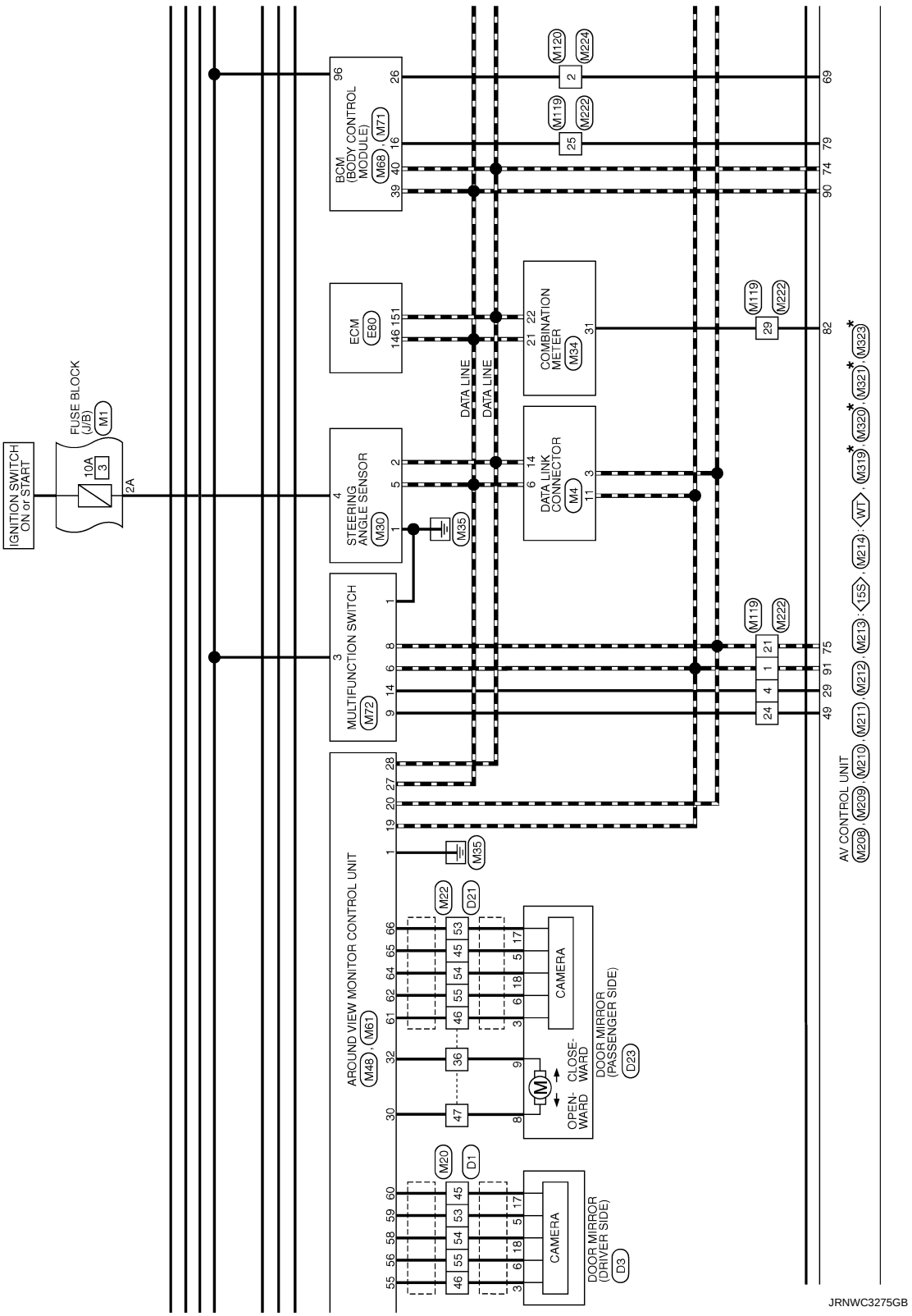
WIRING DIAGRAM

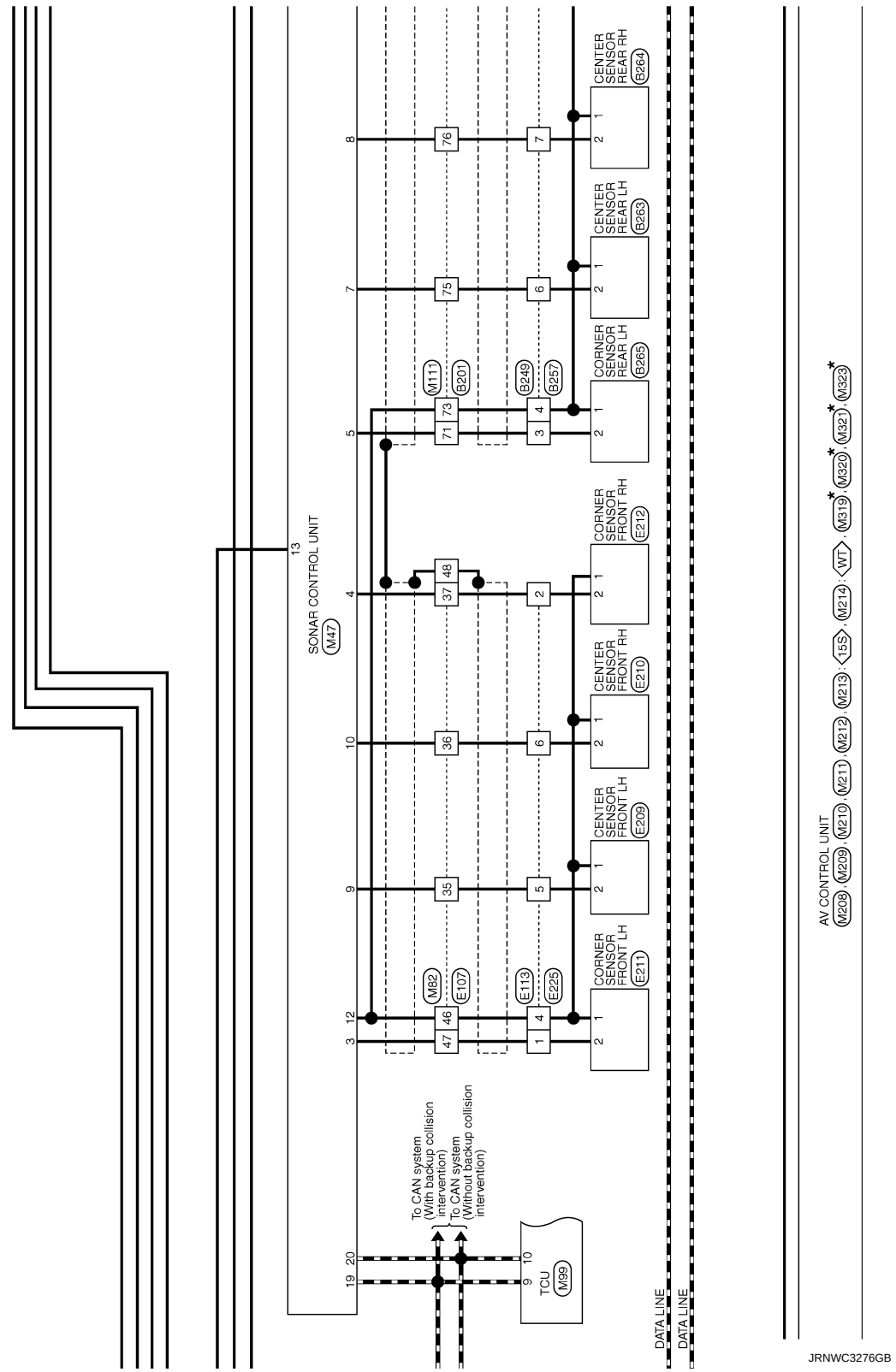
BOSE AUDIO WITH NAVIGATION

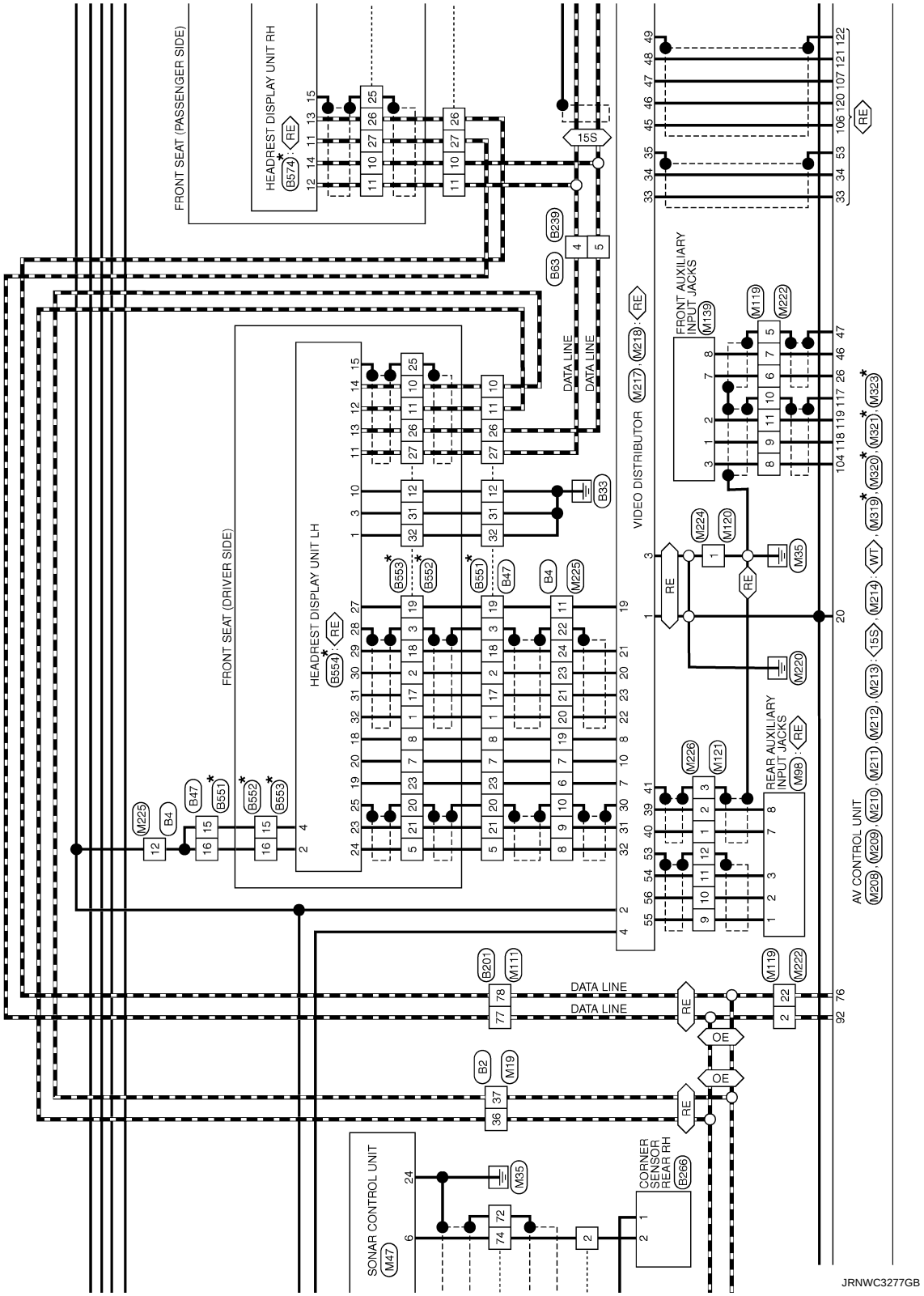
Wiring Diagram

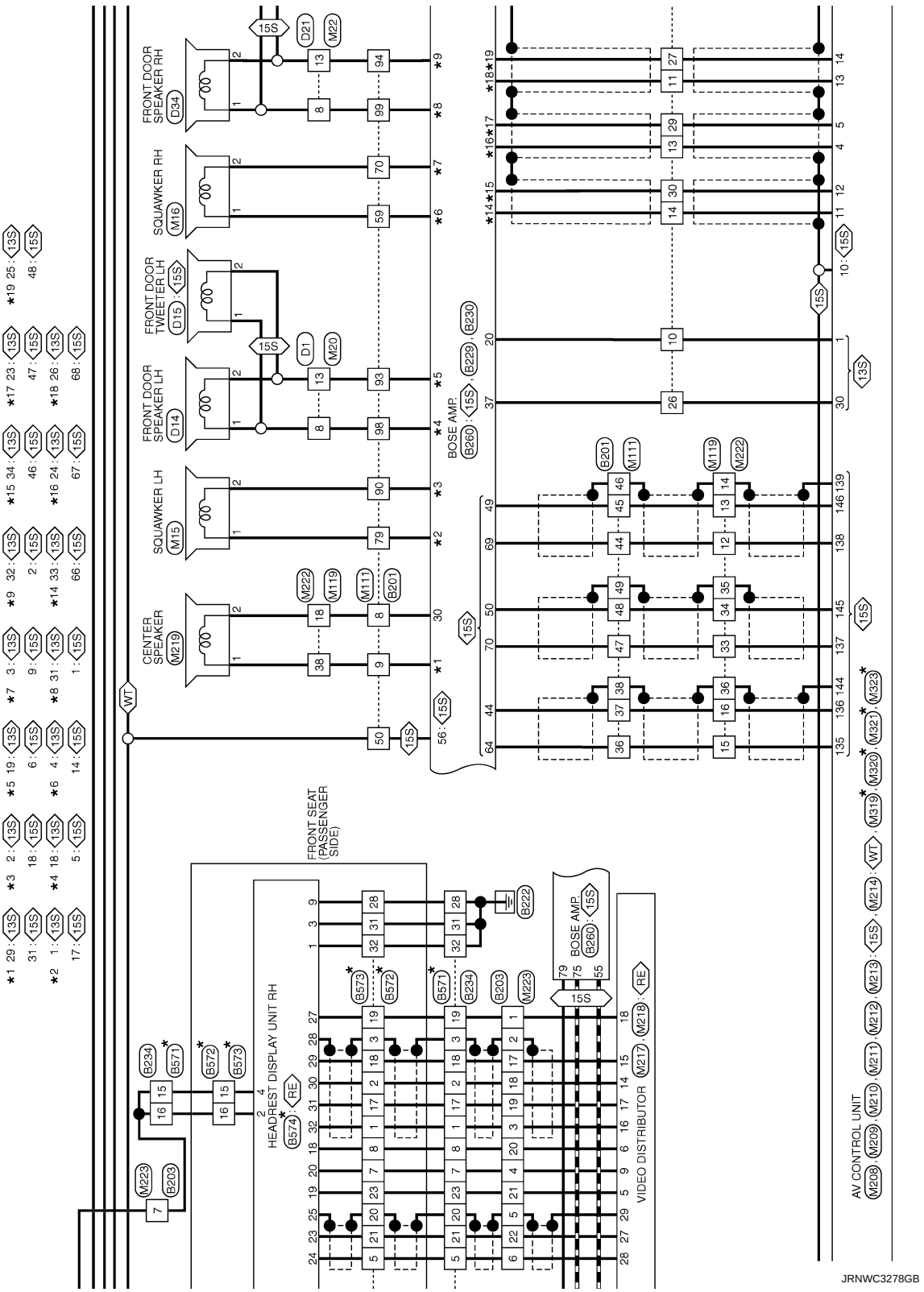
INFOID:0000000009314010

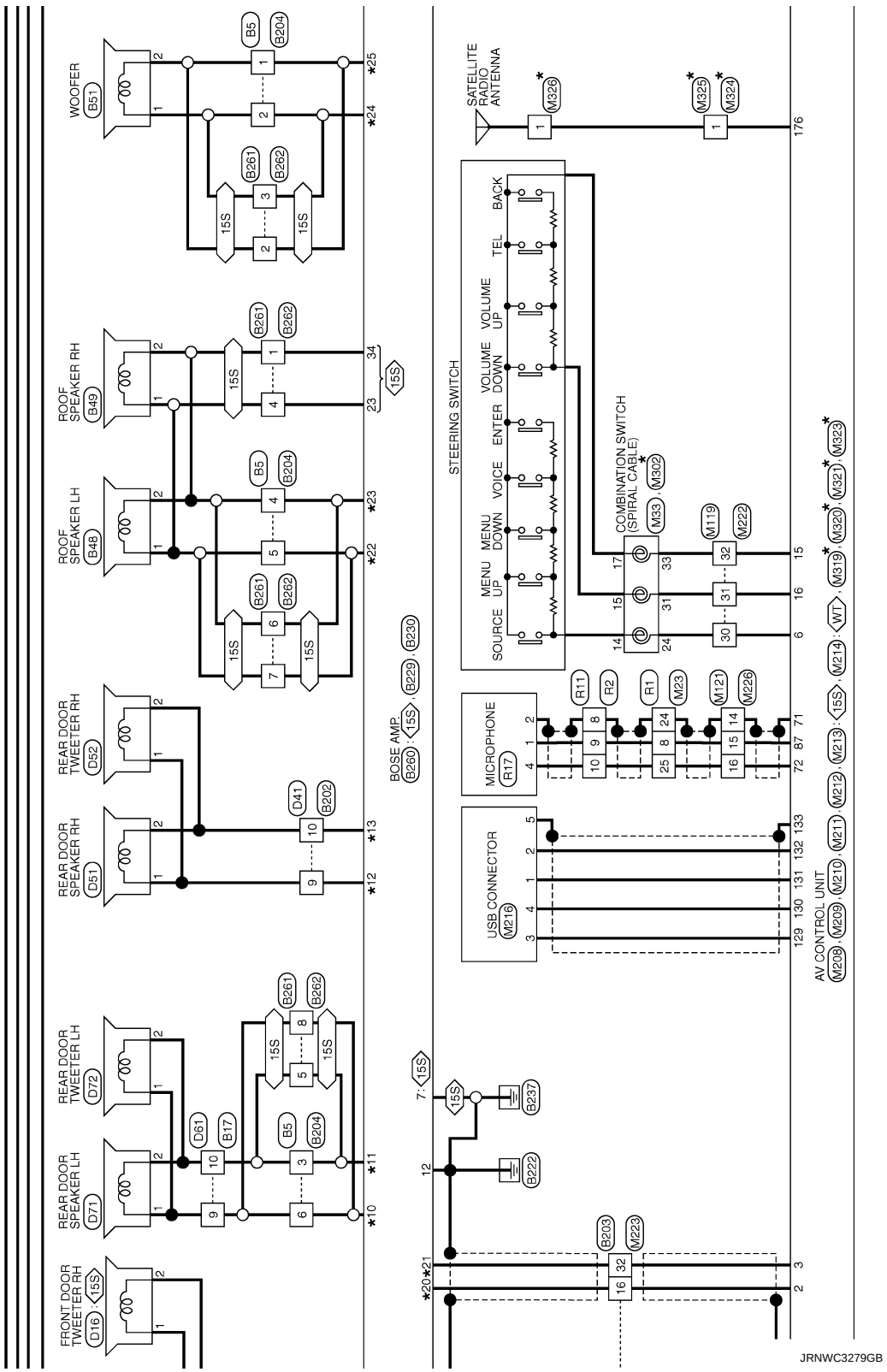


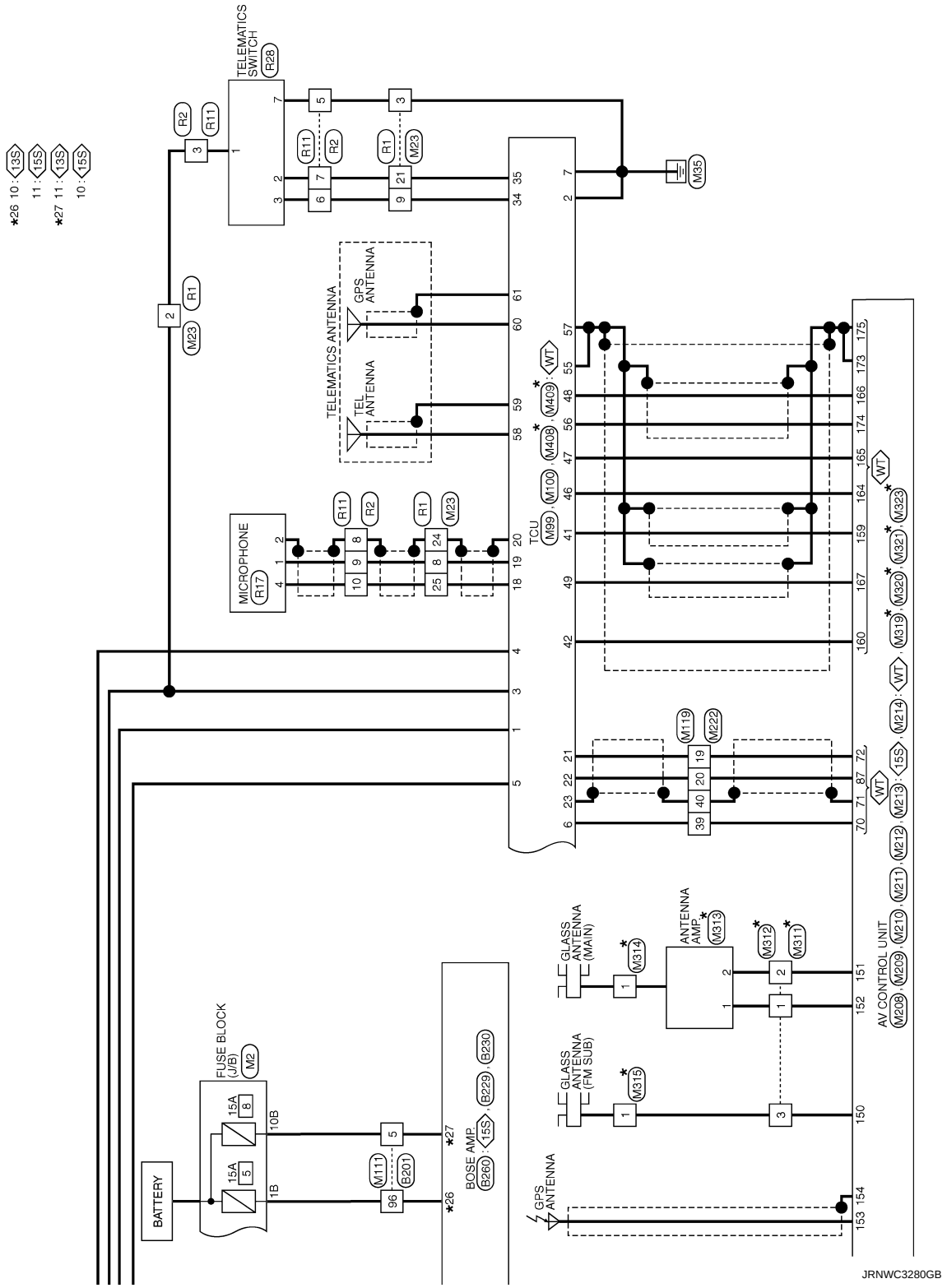

IGNITION SWITCH ON or START
FUSE BLOCK (J/B) M1
10A 3
2A
BCM (BODY CONTROL MODULE) M71 M68
ECM E80
STEERING ANGLE SENSOR M30
MULTIFUNCTION SWITCH M72
COMBINATION METER M34
DATA LINK CONNECTOR M4
DATA LINE
DATA LINE
M35
M120 M224
M119 M222
AROUND VIEW MONITOR CONTROL UNIT M48 M61
M22 D21
M20 D1
CAMERA
DOOR MIRROR (PASSENGER SIDE) D23
DOOR MIRROR (DRIVER SIDE) D3
CLOSE-WARD
OPEN-WARD
AV CONTROL UNIT M208 M209 M210 M211 M212 M213 <15S> M214 <WT> M319 M320 M321 M323
JRNWC3275GB


SONAR CONTROL UNIT
M47
13
CENTER SENSOR REAR RH
B264
CENTER SENSOR REAR LH
B263
CORNER SENSOR REAR LH
B265
CORNER SENSOR FRONT RH
E212
CENTER SENSOR FRONT RH
E210
CENTER SENSOR FRONT LH
E209
CORNER SENSOR FRONT LH
E211
M111
B201
B249
B257
M82
E107
E113
E225
To CAN system (With backup collision intervention)
To CAN system (Without backup collision intervention)
TCU
M99
DATA LINE
DATA LINE
AV CONTROL UNIT
M208 M209 M210 M211 M212 M213 15S M214 WT M319 M320 M321 M323
JRNWC3276GB


FRONT SEAT (PASSENGER SIDE)
HEADREST DISPLAY UNIT RH
B574
RE
15S
B239
B63
DATA LINE
DATA LINE
VIDEO DISTRIBUTOR
M217
M218
RE
FRONT AUXILIARY INPUT JACKS
M139
M119
M222
FRONT SEAT (DRIVER SIDE)
HEADREST DISPLAY UNIT LH
B554
B553
B552
B551
B47
B4
M225
B33
M224
M120
M35
M220
M226
M121
REAR AUXILIARY INPUT JACKS
M98
AV CONTROL UNIT
M208, M209, M210, M211, M212, M213, 15S, M214, WT, M319, M320, M321, M323
B201
M111
DATA LINE
DATA LINE
OE
B2
M19
SONAR CONTROL UNIT
M47
CORNER SENSOR REAR RH
B266
JRNWC3277GB


FRONT DOOR SPEAKER RH
D34
SQUAWKER RH
M16
FRONT DOOR TWEETER LH
D15
FRONT DOOR SPEAKER LH
D14
SQUAWKER LH
M15
CENTER SPEAKER
M219
BOSE AMP.
B260
FRONT SEAT (PASSENGER SIDE)
HEADREST DISPLAY UNIT RH
B574
RE
VIDEO DISTRIBUTOR
M217
M218
AV CONTROL UNIT
M208
M209
M210
M211
M212
M213
M214
WT
M319
M320
M321
M323
JRNWC3278GB


WOOFER B51
ROOF SPEAKER RH B49
ROOF SPEAKER LH B48
REAR DOOR TWEETER RH D52
REAR DOOR SPEAKER RH D51
REAR DOOR TWEETER LH D72
REAR DOOR SPEAKER LH D71
FRONT DOOR TWEETER RH D16
BOSE AMP B260
STEERING SWITCH
SOURCE
MENU UP
MENU DOWN
VOICE
ENTER
VOLUME DOWN
VOLUME UP
TEL
BACK
COMBINATION SWITCH (SPIRAL CABLE) M302
MICROPHONE R17
USB CONNECTOR M216
SATELLITE RADIO ANTENNA M326
AV CONTROL UNIT M208, M209, M210, M211, M212, M213, M214, M319, M320, M321, M323
JRNWC3279GB


TELEMATICS SWITCH
R28
TELEMATICS ANTENNA
GPS ANTENNA
TEL ANTENNA
MICROPHONE
R17
TCU
M99
M100
M409
M408
M319
M320
M321
M323
M214
M213
M212
M211
M210
M209
M208
AV CONTROL UNIT
GLASS ANTENNA (MAIN)
GLASS ANTENNA (FM SUB)
ANTENNA AMP.
M313
M312
M311
M314
M315
M119
M222
FUSE BLOCK (JB)
M2
BATTERY
BOSE AMP.
B260
B201
B229
B230
M111
GPS ANTENNA
JRNWC3280GB

BOSE AUDIO WITH NAVIGATION

Connector No.	B2
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	BR	-
5	R/W	-
6	L	-
7	V	-
9	G	-
11	W/B	-
12	BR	-
13	G/R	-
14	B/Y	-
15	W/R	-
16	GR/R	-
18	G/W	-
19	V	-
20	W/G	-
21	B/W	-
22	V	-
24	G	-
25	O	-
26	Y	-
27	L/O	-
28	Y/R	-
29	L	-
30	R	-
31	G/Y	-
32	B/SB	-
33	LG/R	-
34	BR/W	-
35	GR/R	-
36	SB	-
37	LG	-
38	L	-
39	P	-
40	W/G	-
41	O	-

42	G/R	-
43	V/W	-
44	LG/B	-
45	R/Y	-
46	B	-
47	BR	-
49	GR	-
50	R/B	-
51	W/R	-
52	BR/Y	-
53	O/B	-
54	G/O	-
55	R/B	-
56	LG/R	-
57	GR/R	-
58	Y/G	-
59	V/W	-
60	R	-
63	B	-
64	R	-
65	W	-
66	G	-
67	SHIELD	-
69	LG/B	-
70	P/L	-
71	L	-
72	R	-
77	Y/B	-
78	Y/L	-
79	Y	-
80	W/R	-
81	Y/L	-
84	L/O	-
86	O	-
87	W/R	-
88	O	-
89	W/L	-
90	GR/L	-
91	W	-
92	G	-
94	W/R	-
96	L/W	-
97	R	-
98	V	-
99	L/W	-
100	P/B	-

Connector No.	B4
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
3	R/Y	-
6	W/R	-
7	R/B	-
8	Y/G	-
9	Y/L	-
10	SHIELD	-
11	P	-
12	Y/R	-
19	GR/R	-
20	W	-
21	R	-
22	SHIELD	-
23	B	-
24	G	-

Connector No.	B5
Connector Name	WIRE TO WIRE
Connector Type	NS06FW-CS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	W	-
3	R/Y	-
4	W	-
5	R	-

6	L	-

Connector No.	B6
Connector Name	WIRE TO WIRE
Connector Type	TH24MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	R	-
3	B	-
5	LG	-
6	GR	-
7	L/O	-
8	Y	-
9	L	-
10	B/W	-
11	W/G	-
12	W/R	-
13	SHIELD	-
14	G	-
17	BR/Y	-
18	W/L	-
19	Y/L	-
20	G/Y	-
21	L/Y	-
22	L/W	-
23	G/W	-
24	L/R	-

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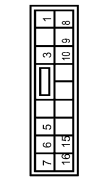
BOSE AUDIO WITH NAVIGATION

Connector No.	B17
Connector Name	WIRE TO WIRE
Connector Type	NS16FW-CS

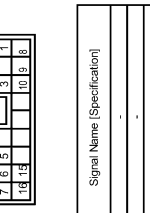
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W/R	-
3	G	-
5	R	-
6	L/O	-
7	O	-
8	B	-
9	L	-
10	R/Y	-
15	V	-
16	W	-

Connector No.	B47
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	B	-
3	SHIELD	-
5	Y/G	-
7	R/B	-
8	GR/R	-
10	LG	-
11	SB	-
12	B	-
15	Y/R	-
16	Y/R	-
17	R	-
18	G	-
19	P	-
20	SHIELD	-
21	Y/L	-
23	W/R	-
26	LG	-
27	SB	-
31	B	-
32	B	-

Connector No.	B48
Connector Name	ROOF SPEAKER LH
Connector Type	TK02FBR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	W	-

Connector No.	B49
Connector Name	ROOF SPEAKER RH
Connector Type	TK02FBR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	- [With 15-speakers]
	R	- [With 12-speakers]
2	R	- [With 15-speakers]
	G	- [With 12-speakers]
2	W	-

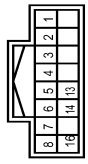
Connector No.	B51
Connector Name	WOOFER
Connector Type	NS02FBR-CS

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	SOUND SIGNAL WOOFER (+)
2	R	SOUND SIGNAL WOOFER (-)

Connector No.	B63
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH

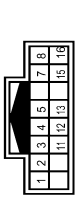
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
3	Y/R	-
4	SB	-
5	LG	-
6	Y	-
7	L/O	-
8	G	-
13	R/L	-
14	G	-
16	W	-

Connector No.	B66
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-NH

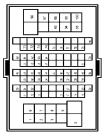
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	G	-
4	W	-
5	SHIELD	-
7	GR	-
8	R/W	-
11	R	-
12	V	-
13	P/L	-
15	R/Y	-
16	L/W	-

Connector No.	B201
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	G	-
3	W	-
5	W/B	-
6	L/Y	-
7	R	-
8	G/R	-
9	GR/R	-

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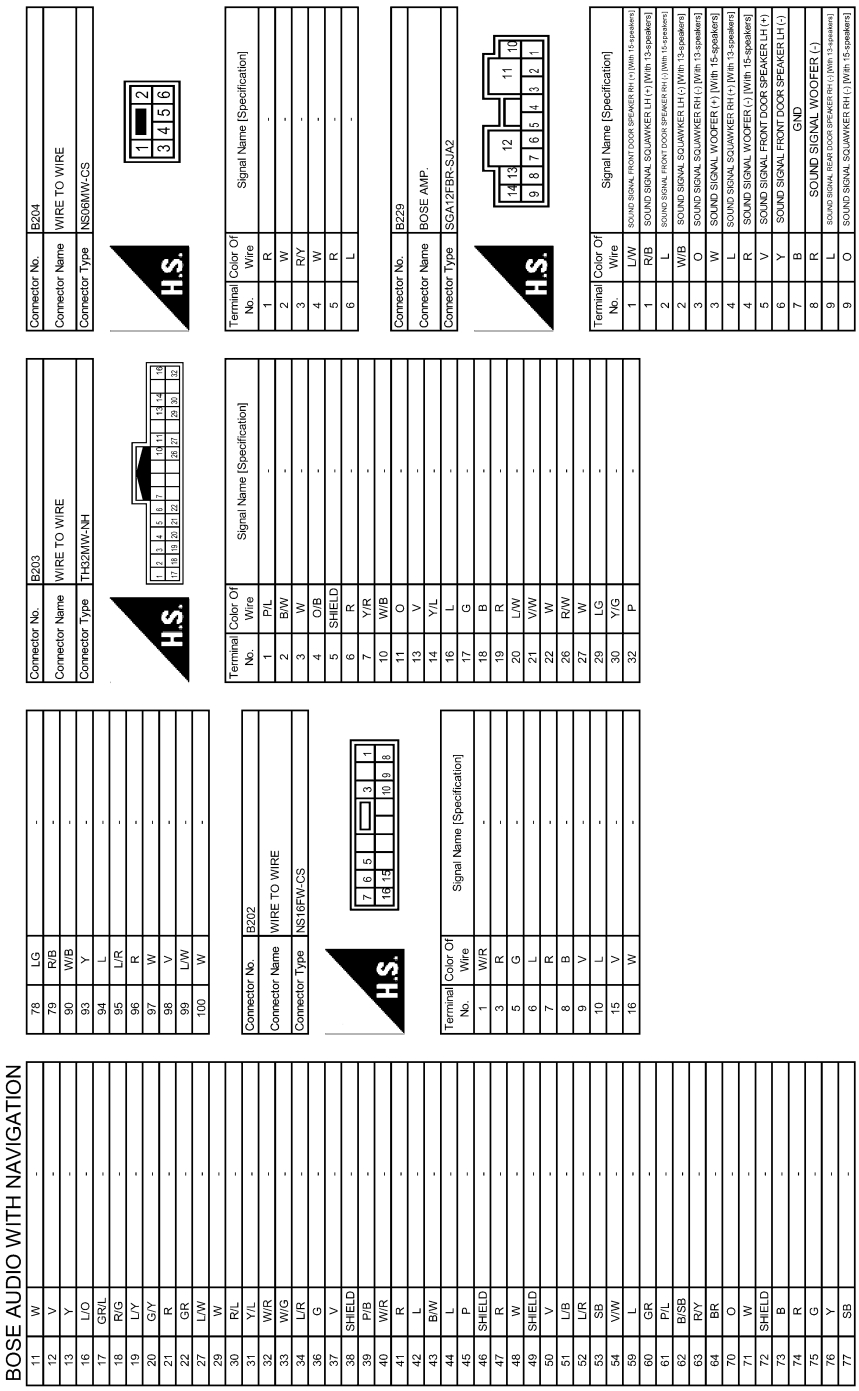

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BOSE AUDIO WITH NAVIGATION

10	R	BATTERY [With 13-speakers]
10	W/B	BATTERY [With 15-speakers]
11	R	BATTERY [With 15-speakers]
11	W/B	BATTERY [With 13-speakers]
12	B	GND
13	W	SOUND SIGNAL WOOFER (+)
14	L	SOUND SIGNAL SQUAWKER RH (+) [With 15-speakers]
14	V	SOUND SIGNAL REAR DOOR SPEAKER RH (+) [With 13-speakers]

Connector No.	B230
Connector Name	BOSE AMP.
Connector Type	SCA19FBR-SGA44

H.S.

34	Y/G	SOUND SIGNAL FRONT RH (-) [With 13-speakers]
35	L	SOUND SIGNAL FRONT LH (+) [With 13-speakers]
35	L	SOUND SIGNAL REAR DOOR SPEAKER RH (-) [With 15-speakers]
36	P	SOUND SIGNAL FRONT LH (-)
37	R/W	MODE CHANGE SIGNAL

Connector No.	B234
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	B	-
3	B/W	-
5	R	-
7	O/B	-
8	L/W	-
10	LG	-
11	SB	-
15	Y/R	-
16	Y/R	-
17	R	-
18	G	-
19	P/L	-
20	SHIELD	-
21	W	-
23	V/W	-
26	LG	-
27	SB	-
28	B	-
31	B	-
32	B	-

Terminal No.	Color Of Wire	Signal Name [Specification]
15	R/Y	SOUND SIGNAL REAR DOOR SPEAKER LH (-)
16	L	SOUND SIGNAL REAR DOOR SPEAKER LH (+) [With 15-speakers]
16	R	SOUND SIGNAL ROOF SPEAKER (+) [With 13-speakers]
17	R/B	SOUND SIGNAL SQUAWKER LH (+) [With 15-speakers]
17	W	SOUND SIGNAL ROOF SPEAKER (-) [With 13-speakers]
18	V	SOUND SIGNAL FRONT DOOR SPEAKER LH (+) [With 13-speakers]
18	W/B	SOUND SIGNAL SQUAWKER LH (-) [With 15-speakers]
19	Y	SOUND SIGNAL FRONT DOOR SPEAKER LH (-)
20	W/B	BOSE AMP. ON SIGNAL
22	R	SOUND SIGNAL ROOF SPEAKER LH (+)
23	LG	SOUND SIGNAL REAR LH (-) [With 13-speakers]
23	O	SOUND SIGNAL ROOF SPEAKER RH (+) [With 15-speakers]
24	V	SOUND SIGNAL REAR DOOR SPEAKER RH (+) [With 13-speakers]
24	V	SOUND SIGNAL REAR LH (+) [With 13-speakers]
25	W	SOUND SIGNAL REAR RH (-)
26	O	SOUND SIGNAL REAR RH (+)
28	L	SOUND SIGNAL REAR DOOR SPEAKER LH (+)
29	GR/R	SOUND SIGNAL CENTER SPEAKER (+) [With 15-speakers]
29	R/Y	SOUND SIGNAL REAR DOOR SPEAKER LH (-) [With 15-speakers]
30	G/R	SOUND SIGNAL CENTER SPEAKER (-)
31	GR/R	SOUND SIGNAL CENTER SPEAKER (+) [With 15-speakers]
31	L/W	SOUND SIGNAL FRONT DOOR SPEAKER RH (+) [With 13-speakers]
32	L	SOUND SIGNAL FRONT DOOR SPEAKER RH (+)
33	W	SOUND SIGNAL ROOF SPEAKER LH (-) [With 15-speakers]
33	Y/L	SOUND SIGNAL FRONT RH (+) [With 13-speakers]
34	G	SOUND SIGNAL ROOF SPEAKER RH (-) [With 15-speakers]

Connector No.	B239
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
3	Y	-
4	SB	-
5	LG	-
6	Y	-
7	L	-
8	G	-
13	R/L	-
14	G	-
16	W	-

Connector No.	B249
Connector Name	WIRE TO WIRE
Connector Type	RS08MGY-PR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	R	-
3	W	-
4	B	-
6	G	-
7	Y	-

Connector No.	B257
Connector Name	WIRE TO WIRE
Connector Type	RS08FGY-PR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	R	-
3	W	-
4	B	-
6	G	-
7	Y	-

Connector No.	B260
Connector Name	BOSE AMP.
Connector Type	TH40FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
44	V	VOICE GUIDANCE SIGNAL (-)
45	P	SOUND SIGNAL FRONT LH (-)
46	Y/G	SOUND SIGNAL FRONT RH (-)
47	LG	SOUND SIGNAL REAR LH (-)
48	W	SOUND SIGNAL REAR RH (-)
49	P	SOUND SIGNAL CENTER SPEAKER (-)
50	W	SOUND SIGNAL WOOFER (-)
55	Y	AV COMM (L)
56	V	ACC
64	G	VOICE GUIDANCE SIGNAL (+)
65	L	SOUND SIGNAL FRONT LH (+)
66	Y/L	SOUND SIGNAL FRONT RH (+)
67	V	SOUND SIGNAL REAR LH (+)
68	O	SOUND SIGNAL REAR RH (+)
69	L	SOUND SIGNAL CENTER SPEAKER (+)

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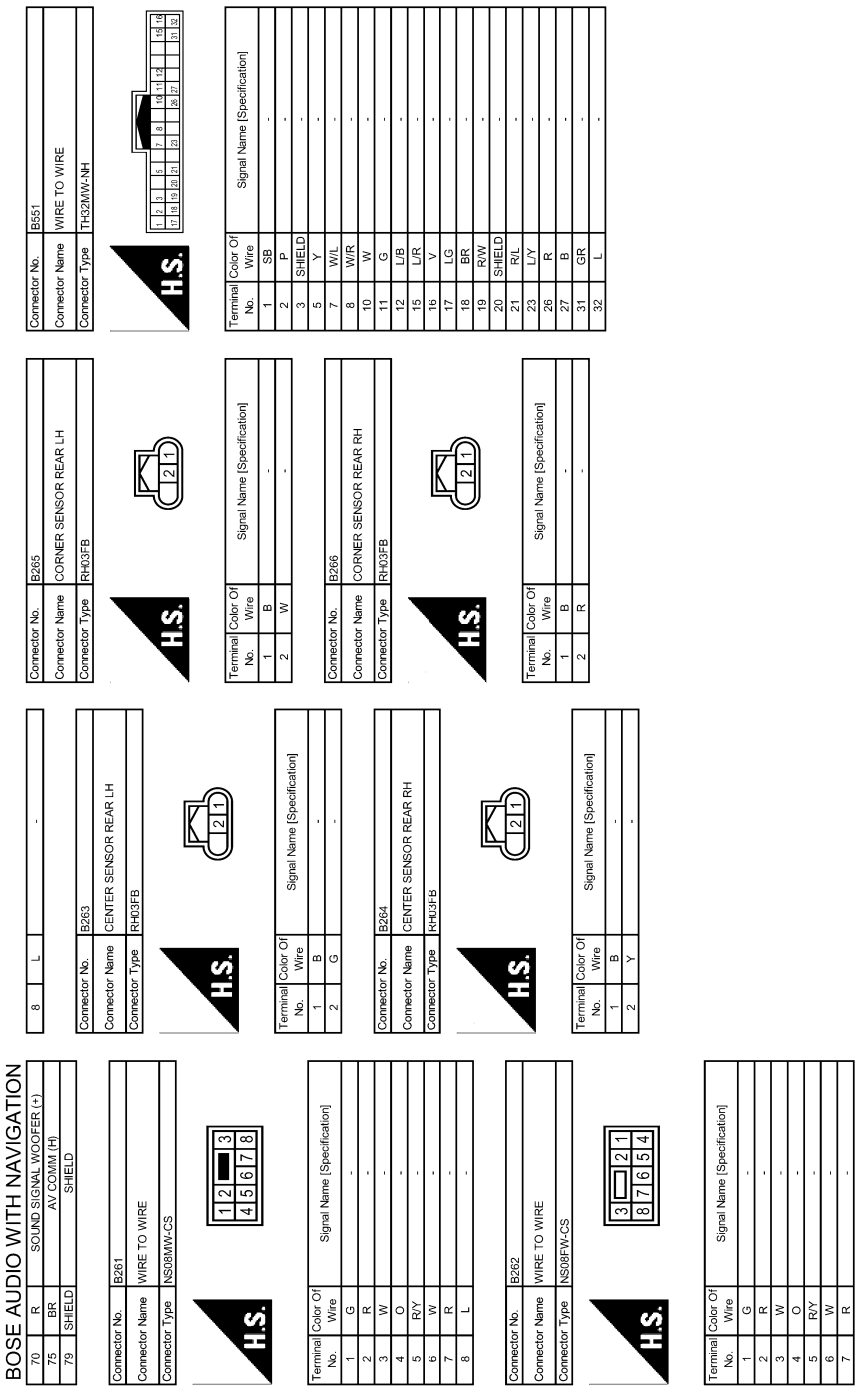

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BOSE AUDIO WITH NAVIGATION

Connector No.	B552
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	P	-
3	SHIELD	-
5	Y	-
7	W/L	-
8	W/R	-
10	W	-
11	G	-
12	L/B	-
15	L/R	-
16	V	-
17	LG	-
18	BR	-
19	R/W	-
20	SHIELD	-
21	R/L	-
23	L/Y	-
25	SHIELD	-
26	R	-
27	B	-
31	GR	-
32	L	-

Connector No.	B553
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	P	-
3	SHIELD	-
5	Y	-
7	W/L	-
8	W/R	-
10	W	-
11	G	-
12	L/B	-
15	L/R	-
16	V	-
17	LG	-
18	BR	-
19	R/W	-
20	SHIELD	-
21	R/L	-
23	L/Y	-
25	SHIELD	-
26	R	-
27	B	-
31	GR	-
32	L	-

Connector No.	B554
Connector Name	HEADREST DISPLAY UNIT LH
Connector Type	TH32FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	GND
2	V	BAT
3	GR	GND
4	L/R	BAT
10	L/B	LOCK/TAIN-RECOGNITION SIGNAL FOR HEADREST DISPLAY UNIT LH
11	B	AV COMM (H)
12	G	AV COMM (H)
13	R	AV COMM (L)
14	W	AV COMM (L)
15	SHIELD	SHIELD
18	W/R	ACC SIGNAL
19	L/Y	CONT. GND
20	W/L	IMAGE SWITCH SIGNAL
23	R/L	COMPOSITE IMAGE SIGNAL GND
24	Y	COMPOSITE IMAGE SIGNAL
25	SHIELD	SHIELD
27	R/W	AV GND
28	SHIELD	SHIELD
29	BR	HEADPHONE SOUND SIGNAL RH (-)
30	P	HEADPHONE SOUND SIGNAL RH (+)
31	LG	HEADPHONE SOUND SIGNAL LH (-)
32	SB	HEADPHONE SOUND SIGNAL LH (+)

Connector No.	B571
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	P	-
3	SHIELD	-
5	Y	-
7	W/L	-
8	W/R	-
10	W	-
11	G	-
15	L/R	-
16	V	-
17	LG	-
18	BR	-
19	R/W	-
20	SHIELD	-
21	R/L	-
23	L/Y	-
26	R	-
27	B	-
28	B/R	-
31	GR	-
32	L	-

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BOSE AUDIO WITH NAVIGATION

Connector No.	B572
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	P	-
3	SHIELD	-
5	Y	-
7	W/L	-
8	W/R	-
10	W	-
11	G	-
15	L/R	-
16	V	-
17	LG	-
18	BR	-
19	R/W	-
20	SHIELD	-
21	R/L	-
23	L/Y	-
25	SHIELD	-
26	R	-
27	B	-
28	B/R	-
31	GR	-
32	L	-

Connector No.	B573
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	P	-
3	SHIELD	-
5	Y	-
7	W/L	-
8	W/R	-
10	W	-
11	G	-
15	L/R	-
16	V	-
17	LG	-
18	BR	-
19	R/W	-
20	SHIELD	-
21	R/L	-
23	L/Y	-
25	SHIELD	-
26	R	-
27	B	-
28	B/R	-
31	GR	-
32	L	-

Connector No.	B574
Connector Name	HEADREST DISPLAY UNIT RH
Connector Type	TH32FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	GND
2	V	BAT
3	GR	GND
4	L/R	BAT
9	B/R	LOCATION RECOGNITION SIGNAL FOR HEADREST DISPLAY UNIT RH
11	B	AV COMM (H)
12	G	AV COMM (H)
13	R	AV COMM (L)
14	W	AV COMM (L)
15	SHIELD	SHIELD
18	W/R	ACC SIGNAL
19	L/Y	CONT. GND
20	W/L	IMAGE SWITCH SIGNAL
23	R/L	COMPOSITE IMAGE SIGNAL GND
24	Y	COMPOSITE IMAGE SIGNAL
25	SHIELD	SHIELD
27	R/W	AV GND
28	SHIELD	SHIELD
29	BR	HEADPHONE SOUND SIGNAL RH (-)
30	P	HEADPHONE SOUND SIGNAL RH (+)
31	LG	HEADPHONE SOUND SIGNAL LH (-)
32	SB	HEADPHONE SOUND SIGNAL LH (+)

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-CS15

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	V	-
4	Y	-
5	LG/R	-
6	BR/W	-
8	V	-
9	G	-
10	L	-
12	B/Y	-
13	Y	-
14	R	-
15	B	-
16	GR/R	-
17	R/W	-
18	B	-
19	R	-
20	P	-
22	V	-
23	P/B	-
24	L/O	-
25	BR/W	-
26	W/R	-
27	V	-
28	W/G	-
29	Y/G	-
30	O/L	-
31	GR/B	-
32	BR	-
33	V/W	-
36	G/O	-
37	BR/Y	-
38	SB	-
39	W/L	-
40	L/W	-
41	Y/G	-

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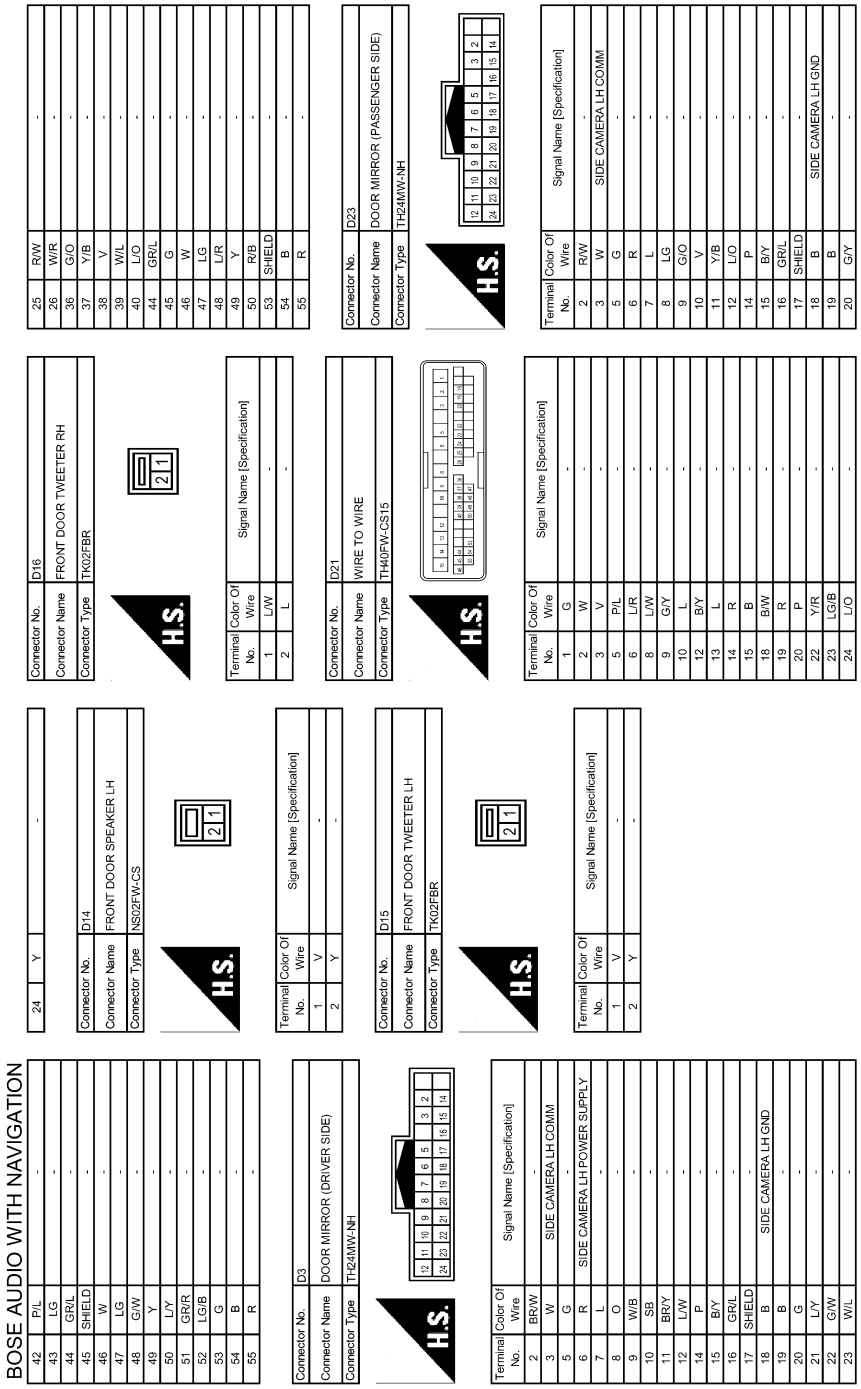

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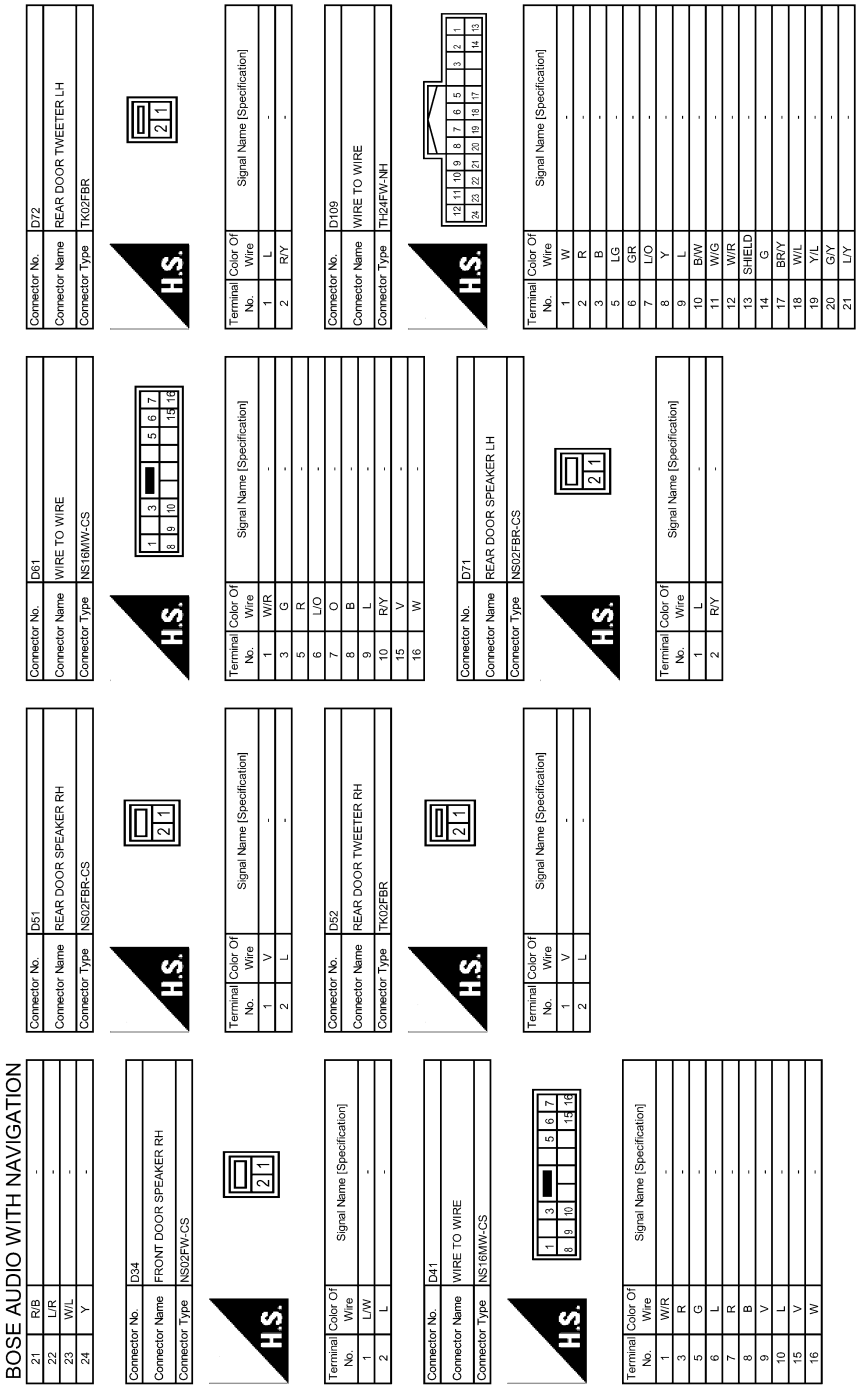

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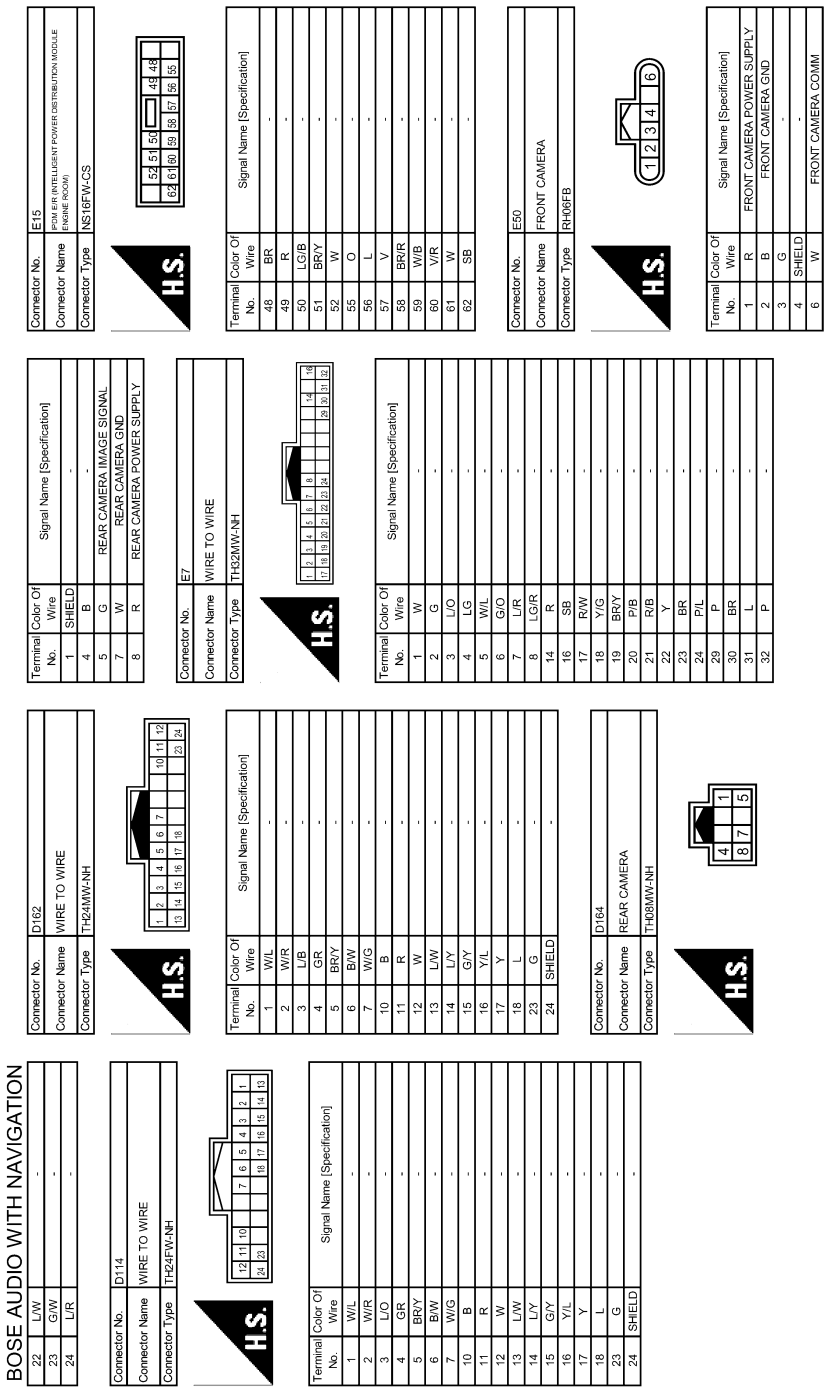

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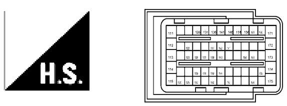
BOSE AUDIO WITH NAVIGATION

Connector No.	E52
Connector Name	BACK-UP LAMP RELAY
Connector Type	M06FBR-R-LC

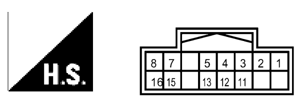
Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	R	-
3	W/B	-
5	Y/L	-
6	V	-
7	R/Y	-

Connector No.	E80
Connector Name	ECM
Connector Type	MAB55FB-MEB10-LH



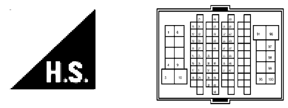
Terminal No.	Color Of Wire	Signal Name [Specification]
111	R	FUEL INJECTOR DRIVER POWER SUPPLY
112	SB	FUEL INJECTOR DRIVER POWER SUPPLY
113	G	-
114	B	ECM GROUND
115	B	ECM GROUND
120	Y	EVAP CANISTER VENT CONTROL VALVE
122	BR/W	VVEL ACTUATOR MOTOR RELAY ABORT SIGNAL (VVEL CONTROL MODULE)
123	V/R	THROTTLE CONTROL MOTOR RELAY
125	GR	FUEL PUMP CONTROL MODULE (FPCM)
126	O	ACCELERATOR PEDAL POSITION SENSOR 2
128	Y	ASCD/ICC STEERING SWITCH
129	P/L	SENSOR GROUND
130	R	SENSOR GROUND
131	L/W	SENSOR POWER SUPPLY
133	SB	SENSOR POWER SUPPLY
134	V/W	FUEL TEMPERATURE SENSOR
136	W/R	ACCELERATOR PEDAL POSITION SENSOR 1
137	W/G	SENSOR POWER SUPPLY
138	V	BATTERY CURRENT SENSOR
139	G	BATTERY TEMPERATURE SENSOR
140	R/Y	SENSOR GROUND
141	SB	IGNITION SWITCH
142	R/W	FUEL PUMP CONTROL MODULE (FPCM) CHECK
143	L/Y	EVAP CONTROL SYSTEM PRESSURE SENSOR
144	O/B	REFRIGERANT PRESSURE SENSOR
146	L	CAN COMMUNICATION LINE
147	G/Y	ASCD/ICC BRAKE SWITCH
150	R	SENSOR GROUND
151	P	CAN COMMUNICATION LINE
156	L	POWER SUPPLY FOR ECM (BACK-UP)
158	W/B	STOP LAMP SWITCH
161	R/W	ECM COMMUNICATION LINE
163	L/G	ECM RELAY (SELF SHUT-OFF)
165	GR/R	-
166	W	ECM COMMUNICATION LINE
169	G/B	ENGINE SPEED SIGNAL OUTPUT
171	W	POWER SUPPLY FOR ECM
172	W	POWER SUPPLY FOR ECM
173	O	THROTTLE CONTROL MOTOR POWER SUPPLY
174	B	ECM GROUND
175	B	ECM GROUND

Connector No.	E93
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	B	-
3	G	-
4	W	-
5	SHIELD	-
7	GR	-
8	R/W	-
11	R	-
12	V	-
13	P/L	-
15	R/Y	-
16	L/W	-

Connector No.	E107
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
4	V/W	-
5	G/R	-
6	P	-
9	GR/L	-
10	Y/R	-
11	L/R	-
12	W/G	-
13	BR/Y	-
14	LG	-
15	BR/W	-
16	B/Y	-
17	W/B	-
18	GR/R	-
20	W/R	-
21	B	-
22	R/L	-
23	G/R	-
24	R/W	-
25	W/L	-
26	R	-
27	L	-
28	G/B	-
35	G	-
36	Y	-
37	R	-
38	G/Y	-
39	O	-
40	W	-
41	R	-
42	B	-
43	G	-
44	SHIELD	-
46	B	-
47	W	-
48	SHIELD	-
49	W	-
50	SHIELD	-
51	Y/R	-
52	GR	-
53	LG/B	-
54	LG/R	-
55	R/G	-
56	B/R	-
57	SB	-
60	G	-
61	B	-
62	W	-
63	R	-
64	SHIELD	-
65	L/Y	-
66	V	-
67	B/W	-
91	G/R	-
95	SB	-
96	G/R	-
97	GR/L	-
98	G/W	-
99	R/Y	-
100	L	-

Connector No.	E113
Connector Name	WIRE TO WIRE
Connector Type	RS06MB

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	R	-
4	B	-

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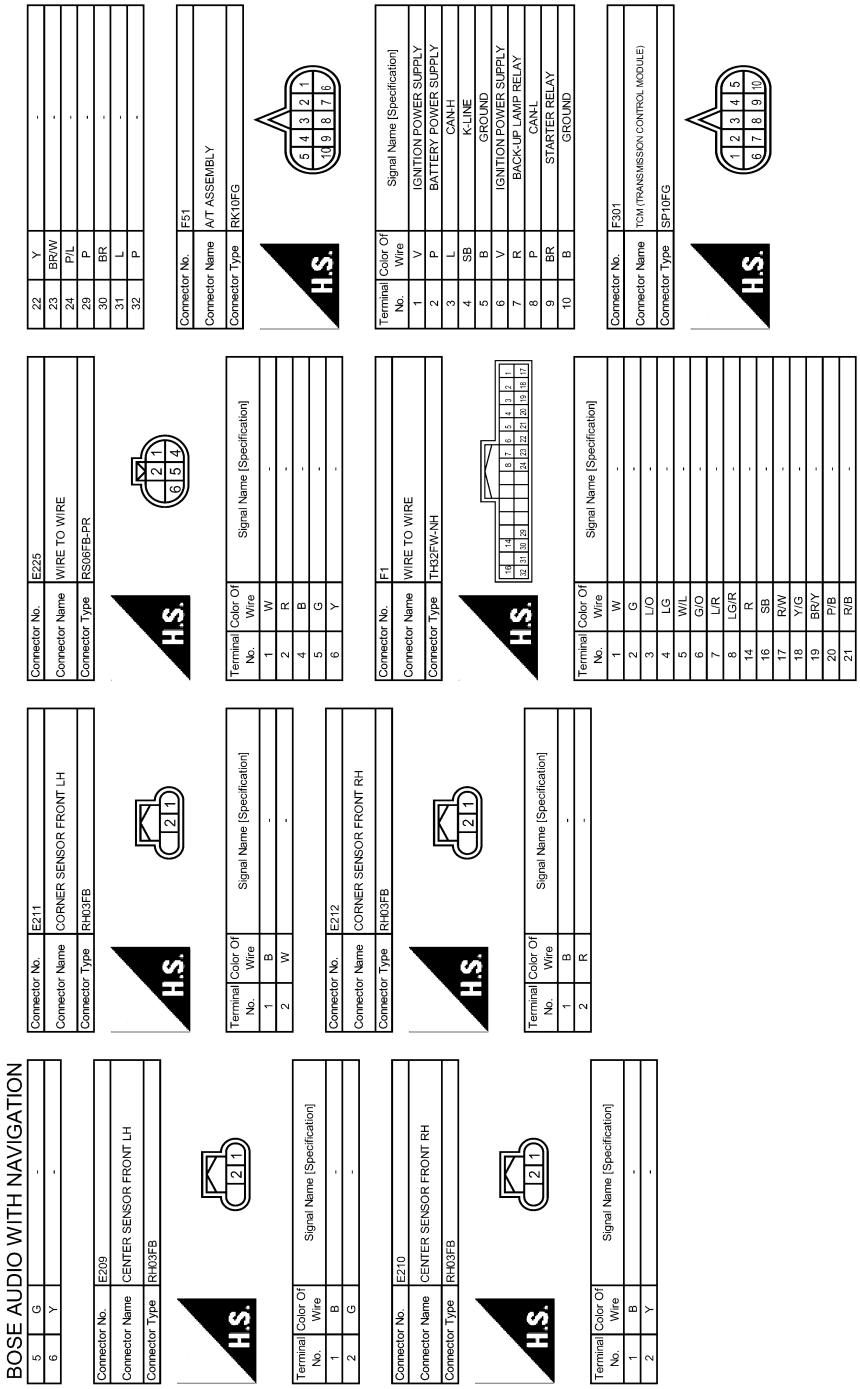

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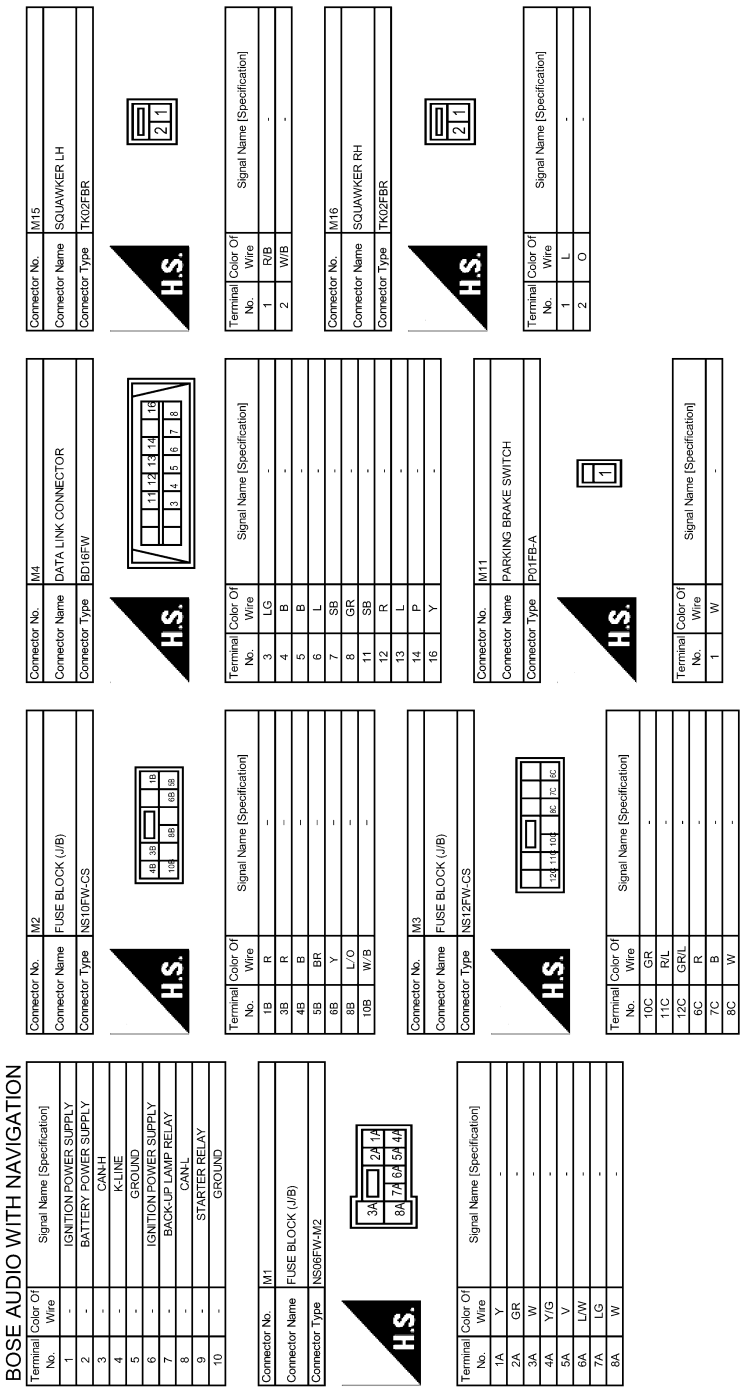

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Connector No.	M19
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
3	BR	-
5	R/W	-
6	L	-
7	V	-
9	G	-
11	W/B	-
12	BR	-
13	G/R	-
14	B/Y	-
15	W/R	-
16	GR/R	-
18	G/W	-
19	V	-
20	W/G	-
21	B/W	-
22	V	-
24	G	-
25	O	-
26	Y	-
27	L/O	-
28	Y/R	-
29	L	-
30	R	-
31	G/Y	-
32	B/SB	-
33	LG/R	-
34	BR/W	-
35	GR/R	-
36	SB	-
37	LG	-
38	L	-
39	P	-
40	W/G	-
41	O	-
42	G/R	-
43	V/W	-
44	LG/B	-
45	R/Y	-
46	B	-
47	BR/W	-
49	GR	-
50	R/B	-
51	W/R	-
52	BR/Y	-
53	O/B	-
54	G/O	-
55	R/B	-
56	LG/R	-
57	GR/R	-
58	Y/G	-
59	V/W	-
60	R	-
63	B	-
64	R	-
65	W	-
66	G	-
67	SHIELD	-
69	LG/B	-
70	P/L	-
71	L	-
72	R	-
77	Y/B	-
78	Y/L	-
79	Y	-
80	W/R	-
81	Y/L	-
84	L/O	-
86	O	-
87	W/R	-
88	O	-
89	W/L	-
90	GR/L	-
91	W	-
92	G	-
94	W/R	-
96	L/W	-
97	R	-
98	V	-
99	L/W	-
100	P/B	-

Connector No.	M20
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	V	-
2	W	-
3	V	-
4	Y	-
5	LG/R	-
6	BR/W	-
8	V	-
9	G	-
10	L	-
12	B/Y	-
13	Y	-
14	R	-
15	B	-
16	GR/R	-
17	V/W	-
18	B	-
19	R	-
20	P	-
22	V	-
23	P/B	-
24	L/O	-
25	BR/W	-
26	W/R	-
27	V	-
28	W/G	-
29	Y/G	-
30	O/L	-
31	GR/B	-
32	BR	-
33	V/W	-
36	G/O	-
37	BR/Y	-
38	SB	-
39	W/L	-
40	L/W	-
41	Y/G	-
42	P/L	-
43	LG	-
44	GR	-
45	SHIELD	-
46	W	-
47	LG	-
48	G/W	-
49	Y	-
50	L/Y	-
51	GR/R	-
52	LG/B	-
53	G	-
54	B	-
55	R	-

Connector No.	M22
Connector Name	WIRE TO WIRE
Connector Type	TH40MW-CS15

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	W	-
3	V	-
5	P/L	-
6	L/R	-
8	L/W	-
9	G/Y	-
10	L	-
12	B/Y	-
13	L	-
14	R	-
15	B	-
18	B/W	-
19	R	-
20	P	-
22	Y/R	-
23	LG/B	-
24	L/W	-
25	W/R	-
26	W/R	-

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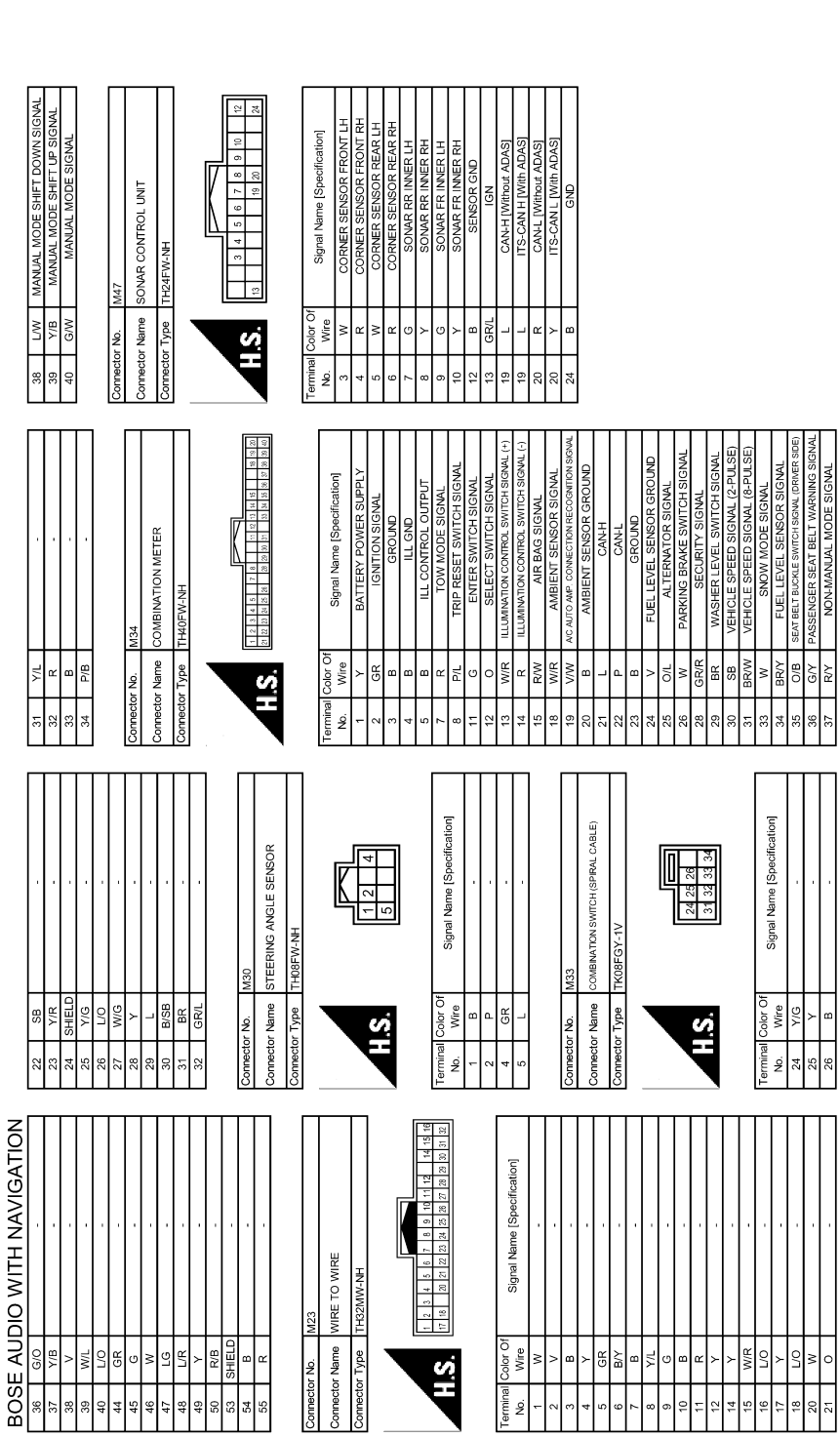

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BOSE AUDIO WITH NAVIGATION

Connector No.	M48
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
2	Y/G	BATTERY POWER SUPPLY
3	GR/L	IGNITION SIGNAL
4	V	ACC POWER SUPPLY
19	SB	AV COMM (H)
20	LG	AV COMM (L)
25	P	REV
27	L	CAN-H
28	R	CAN-L [Without ADAS]
28	Y	CAN-L [With ADAS]
30	LG	RETRACT MOTOR OPERATION SIGNAL (OPEN)
32	G/O	RETRACT MOTOR OPERATION SIGNAL (CLOSED)

Connector No.	M61
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH32FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
47	W	CAMERA IMAGE SIGNAL
48	SHIELD	CAMERA IMAGE SIGNAL GROUND
49	B	REAR CAMERA COMMUNICATION SIGANAL
50	R	REAR CAMERA POWER SUPPLY
52	W	REAR CAMERA GROUND
53	G	REAR CAMERA IMAGE SIGNAL (+)
54	SHIELD	REAR CAMERA IMAGE SIGNAL (-)
55	W	SIDE CAMERA DRIVER SIDE COMMUNICATION SIGNAL
56	R	SIDE CAMERA DRIVER SIDE POWER SUPPLY
58	B	SIDE CAMERA DRIVER SIDE GROUND
59	G	SIDE CAMERA DRIVER SIDE IMAGE SIGNAL (+)
60	SHIELD	SIDE CAMERA DRIVER SIDE IMAGE SIGNAL (-)
61	W	SIDE CAMERA PASSENGER SIDE COMMUNICATION SIGNAL
62	R	SIDE CAMERA PASSENGER SIDE POWER SUPPLY
64	B	SIDE CAMERA PASSENGER SIDE GROUND
65	G	SIDE CAMERA PASSENGER SIDE IMAGE SIGNAL (+)
66	SHIELD	SIDE CAMERA PASSENGER SIDE IMAGE SIGNAL (-)
67	W	FRONT CAMERA COMMUNICATION SIGNAL
68	R	FRONT CAMERA POWER SUPPLY
70	B	FRONT CAMERA GROUND
71	G	FRONT CAMERA IMAGE SIGNAL (+)
72	SHIELD	FRONT CAMERA IMAGE SIGNAL (-)

Connector No.	M68
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FB-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	BR/Y	COMBI SW INPUT 5
3	GR	COMBI SW INPUT 4
4	L	COMBI SW INPUT 3
5	G	COMBI SW INPUT 2
6	V	COMBI SW INPUT 1
8	V	POWER WINDOW SW COMM
9	R	STOP LAMP SW 1
11	R	RAIN SENSOR SERIAL LINK
14	P/B	OPTICAL SENSOR
16	L/O	DIMMER SIGNAL
17	Y/G	SENSOR PWR SPLY
18	B/Y	RECEIVER/SENSOR GND
19	BR	RECEIVER PWR SPLY
20	G/R	KYLS ENT RECEIVER COMM
21	P	NATS ANT AMP.
22	W/B	KYLS ENT RECEIVER RSSI
23	GR/R	SECURITY IND CONT
24	SB	DONGLE LINK
25	LG/R	NATS ANT AMP.
26	O	INTELLIGENT KEY IDENTIFICATION
29	W	HAZARD SW
30	W/L	BK DOOR OPNR SW
31	W/G	DR DOOR UNLOCK SENSOR
32	LG	COMBI SW OUTPUT 5
33	Y	COMBI SW OUTPUT 4
34	W	COMBI SW OUTPUT 3
35	R/W	COMBI SW OUTPUT 2
36	SB	COMBI SW OUTPUT 1
37	G/Y	SHIFT P
39	L	CAN-H
40	P	CAN-L

Connector No.	M71
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
72	P	PUDDLE LAMP CONT
73	W	ON IND
74	Y/B	TRAILER TURN SIG RH CONT
75	LG/R	DRIVER DOOR REQUEST SW
76	SB	PUSH SW
77	O/L	TRAILER TURN SIG LH CONT
78	P/B	DRIVER DOOR ANT+
79	V	DRIVER DOOR ANT-
80	LG/B	PASSENGER DOOR ANT+
81	Y/R	PASSENGER DOOR ANT-
82	W/G	BACK DOOR ANT+
83	B/W	BACK DOOR ANT-
84	BR	ROOM ANT1+
85	Y	ROOM ANT1-
86	W	ROOM ANT2+
87	B	ROOM ANT2-
88	V	LAGGAGE ROOM ANT+
89	G	LAGGAGE ROOM ANT-
90	Y	PUSH-BTN IGN SW ILL PWR
91	O	LOCK IND
92	L	LOW SIDE PUSH LED
93	GR/R	I-KEY WARN BUZZER
96	BR	ACC RELAY CONT
97	R/W	STARTER RELAY CONT
98	O	IGN RELAY (IPDM E/R) CONT
99	R	IGN RELAY (F/B) CONT
100	P/L	PASSENGER DOOR REQUEST SW
101	W/B	IGN PWR SPLY 2
102	BR	SHIFT N/P
104	R/B	A/T SHIFT SELECT PWR SPLY
105	O/L	STOP LAMP SW 2
106	Y/G	BLWR FAN MTR RELAY CONT
109	L/W	ACC IND

Connector No.	M72
Connector Name	MULTIFUNCTION SWITCH
Connector Type	TH16FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
3	V	ACC
4	L/W	ILL
5	B/O	ILL CONT
6	SB	AV COMM (H)
8	LG	AV COMM (L)
9	R/W	SW GND
14	W/B	DISK EJECT SIGNAL

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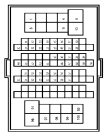
Connector No.	M82
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

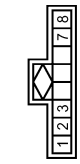
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
4	V/W	-
5	G/R	-
6	P	-
9	GR/L	-
10	Y/R	-
11	L/R	-
12	W/G	-
13	BR/Y	-
14	LG	-
15	BR/W	-
16	B/Y	-
17	W/B	-
18	GR/R	-
20	W/R	-
21	B	-
22	R/L	-
23	G/R	-
24	R/W	-
25	W/L	-
26	R	-
27	L	-
28	B/SB	-
35	G	-
36	Y	-
37	R	-
38	G/Y	-
39	O	-
40	W	-
41	R	-
42	B	-
43	G	-
44	SHIELD	-
46	B	-
47	W	-
48	SHIELD	-
49	W	-
50	SHIELD	-
51	Y/R	-
52	GR	-
53	LG/B	-
54	LG/R	-
55	R/G	-
56	B/O	-
57	SB	-
60	G	-
61	B	-
62	W	-
63	R	-
64	SHIELD	-
65	L/Y	-
66	V	-
67	B/W	-
91	G/R	-
95	SB	-
96	G/R	-
97	GR/L	-
98	G/W	-
99	P	-
100	L	-

Connector No.	M98
Connector Name	REAR AUXILIARY INPUT JACKS
Connector Type	A08FW

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	AUX SOUND SIGNAL RH (+)
2	R	AUX SOUND SIGNAL GND
3	B	AUX SOUND SIGNAL LH (+)
7	LG	AUX IMAGE SIGNAL
8	V	AUX IMAGE SIGNAL GND

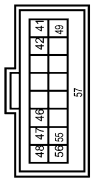
Connector No.	M99
Connector Name	TCU
Connector Type	TH40FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y/R	BAT
2	B	GND
3	BR	ACC
4	GR/L	IGN
5	V	ACC OUT
6	BR	AV-ACC
7	B	GND
9	L	V-CAN H
10	P	V-CAN L
18	Y/G	MIC VCC
19	Y/L	MIC SIG
20	SHIELD	MIC GND
21	Y	DCM MIC VCC
22	BR	DCM MIC SIG
23	SHIELD	DCM MIC GND
34	G	ECALL SW
35	O	LED A

Connector No.	M100
Connector Name	TCU
Connector Type	HAA16FGY

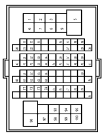
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
41	SB	U-VOICE
42	GR	VOICE GND
46	R	MANUFACTURE SPECIFIC
47	L	USB VBUS
48	Y	USB D-
49	O	D-VOICE
55	B	USB GND
56	LG	USB D+
57	SHIELD	CONN CHASSIS GND

Connector No.	M111
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R/B	-
2	G	-
3	W/R	-
5	W/B	-
6	L/Y	-
7	R	-
8	G/R	-
9	GR/R	-
11	W	-
12	V	-
13	Y	-
16	L/O	-
17	GR/L	-
18	R/G	-
19	L/Y	-
20	G/Y	-
21	R	-
22	GR	-
27	L/O	-
29	SB	-
30	R/L	-
31	Y/L	-
32	W/R	-
33	W/G	-
34	L/R	-
36	G	-
37	V	-
38	SHIELD	-

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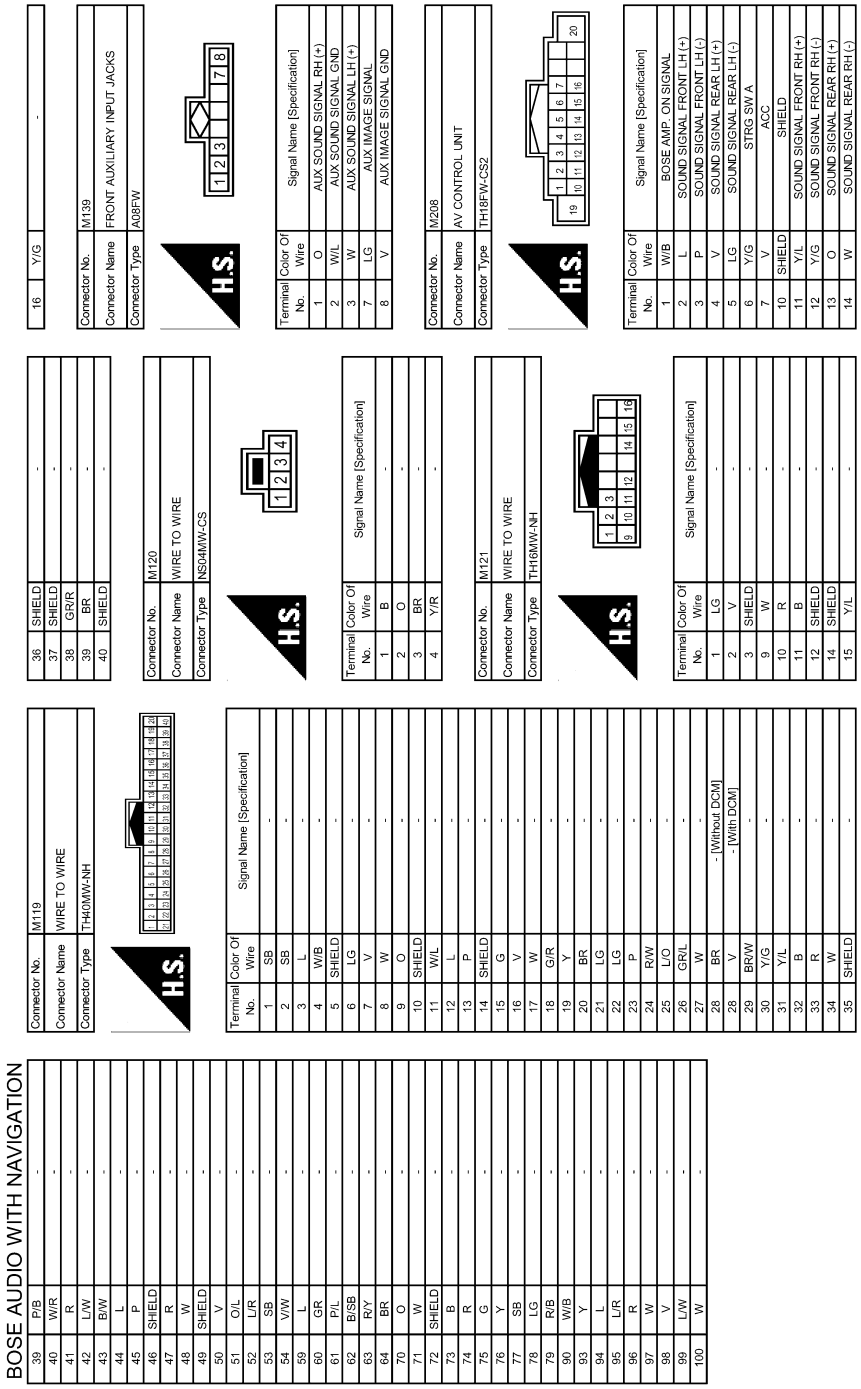

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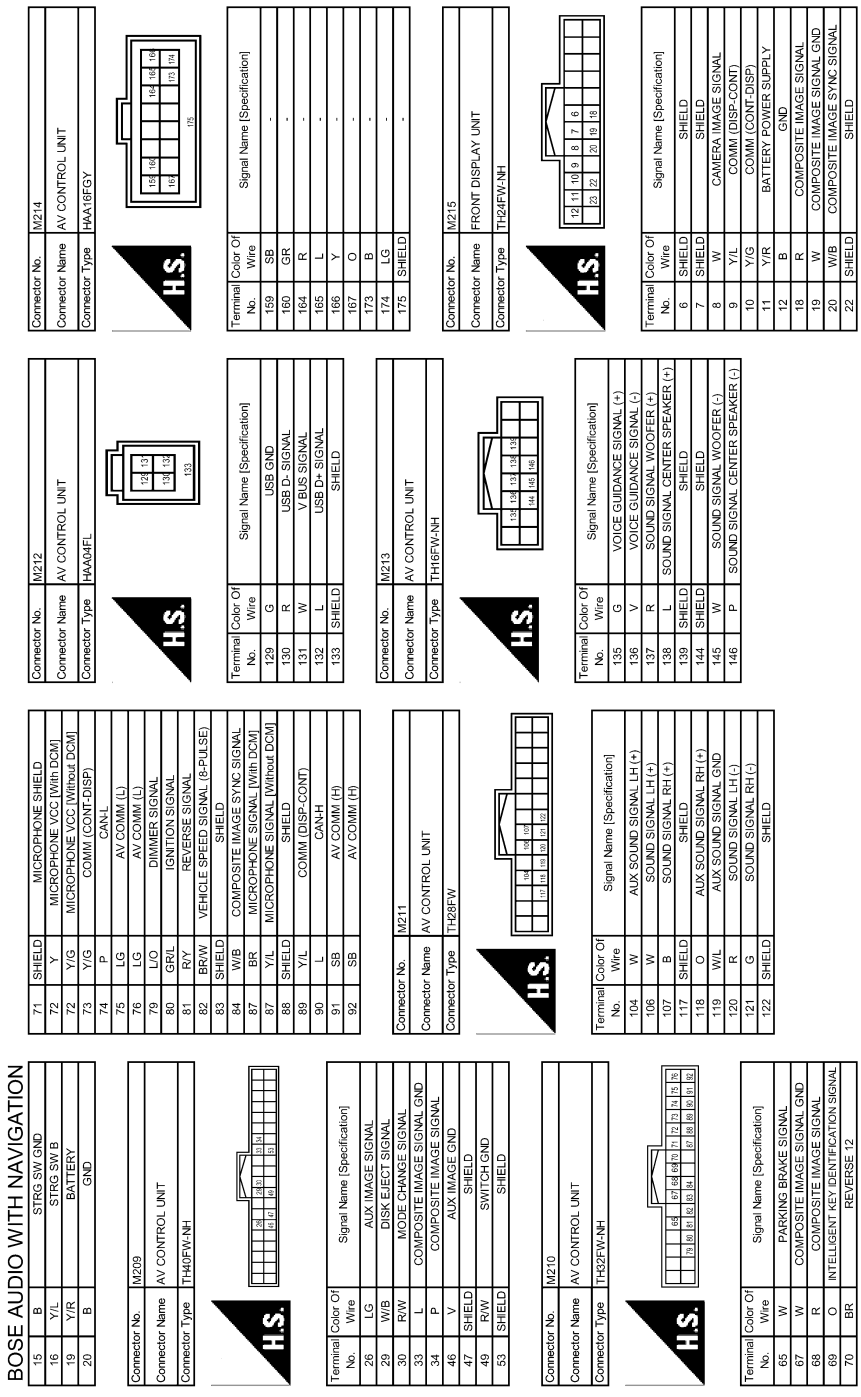

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BOSE AUDIO WITH NAVIGATION

23	V	ACC POWER SUPPLY

Connector No.	M216
Connector Name	USB CONNECTOR
Connector Type	HAA04FG

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	-
2	L	-
3	G	-
4	R	-
5	SHIELD	-

Connector No.	M217
Connector Name	VIDEO DISTRIBUTOR
Connector Type	TH32FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
2	Y/R	BAT
3	B	GND
4	V	ACC
5	V/W	CONT. GND FOR HEADREST DISPLAY UNIT RH
6	L/W	ACC SIGNAL FOR HEADREST DISPLAY UNIT RH
7	W/R	CONT. GND FOR HEADREST DISPLAY UNIT LH
8	GR/R	ACC SIGNAL FOR HEADREST DISPLAY UNIT LH
9	O/B	IMAGE SWITCH SIGNAL FOR HEADREST DISPLAY UNIT RH
10	R/B	IMAGE SWITCH SIGNAL FOR HEADREST DISPLAY UNIT LH
14	B	HEADPHONE SOUND SIGNAL RH (-) FOR HEADREST DISPLAY UNIT RH
15	G	HEADPHONE SOUND SIGNAL RH (+) FOR HEADREST DISPLAY UNIT RH
16	W	HEADPHONE SOUND SIGNAL LH (+) FOR HEADREST DISPLAY UNIT RH
17	R	HEADPHONE SOUND SIGNAL LH (-) FOR HEADREST DISPLAY UNIT RH
18	P/L	AV GND FOR HEADREST DISPLAY UNIT RH
19	P	AV GND FOR HEADREST DISPLAY UNIT LH
20	B	HEADPHONE SOUND SIGNAL RH (-) FOR HEADREST DISPLAY UNIT LH
21	G	HEADPHONE SOUND SIGNAL RH (+) FOR HEADREST DISPLAY UNIT LH
22	W	HEADPHONE SOUND SIGNAL LH (+) FOR HEADREST DISPLAY UNIT LH
23	R	HEADPHONE SOUND SIGNAL LH (-) FOR HEADREST DISPLAY UNIT LH
27	W	COMPOSITE IMAGE SIGNAL GND FOR HEADREST DISPLAY UNIT RH
28	R	COMPOSITE IMAGE SIGNAL FOR HEADREST DISPLAY UNIT RH
29	SHIELD	SHIELD
30	SHIELD	SHIELD
31	Y/L	COMPOSITE IMAGE SIGNAL GND FOR HEADREST DISPLAY UNIT LH
32	Y/G	COMPOSITE IMAGE SIGNAL FOR HEADREST DISPLAY UNIT LH

Connector No.	M218
Connector Name	VIDEO DISTRIBUTOR
Connector Type	TH24FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
33	L	COMPOSITE IMAGE SIGNAL GND
34	P	COMPOSITE IMAGE SIGNAL
35	SHIELD	SHIELD
39	V	AUX IMAGE SIGNAL GND
40	LG	AUX IMAGE SIGNAL
41	SHIELD	SHIELD
45	W	SOUND SIGNAL LH (+)
46	R	SOUND SIGNAL LH (-)
47	B	SOUND SIGNAL RH (+)
48	G	SOUND SIGNAL RH (-)
49	SHIELD	SHIELD
53	SHIELD	SHIELD
54	B	AUX SOUND SIGNAL LH (+)
55	W	AUX SOUND SIGNAL RH (+)
56	R	AUX SOUND SIGNAL GND

Connector No.	M219
Connector Name	CENTER SPEAKER
Connector Type	TK02FBR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	GR/R	-
2	G/R	-

Connector No.	M222
Connector Name	WIRE TO WIRE
Connector Type	TH40FW-NH

H.S.

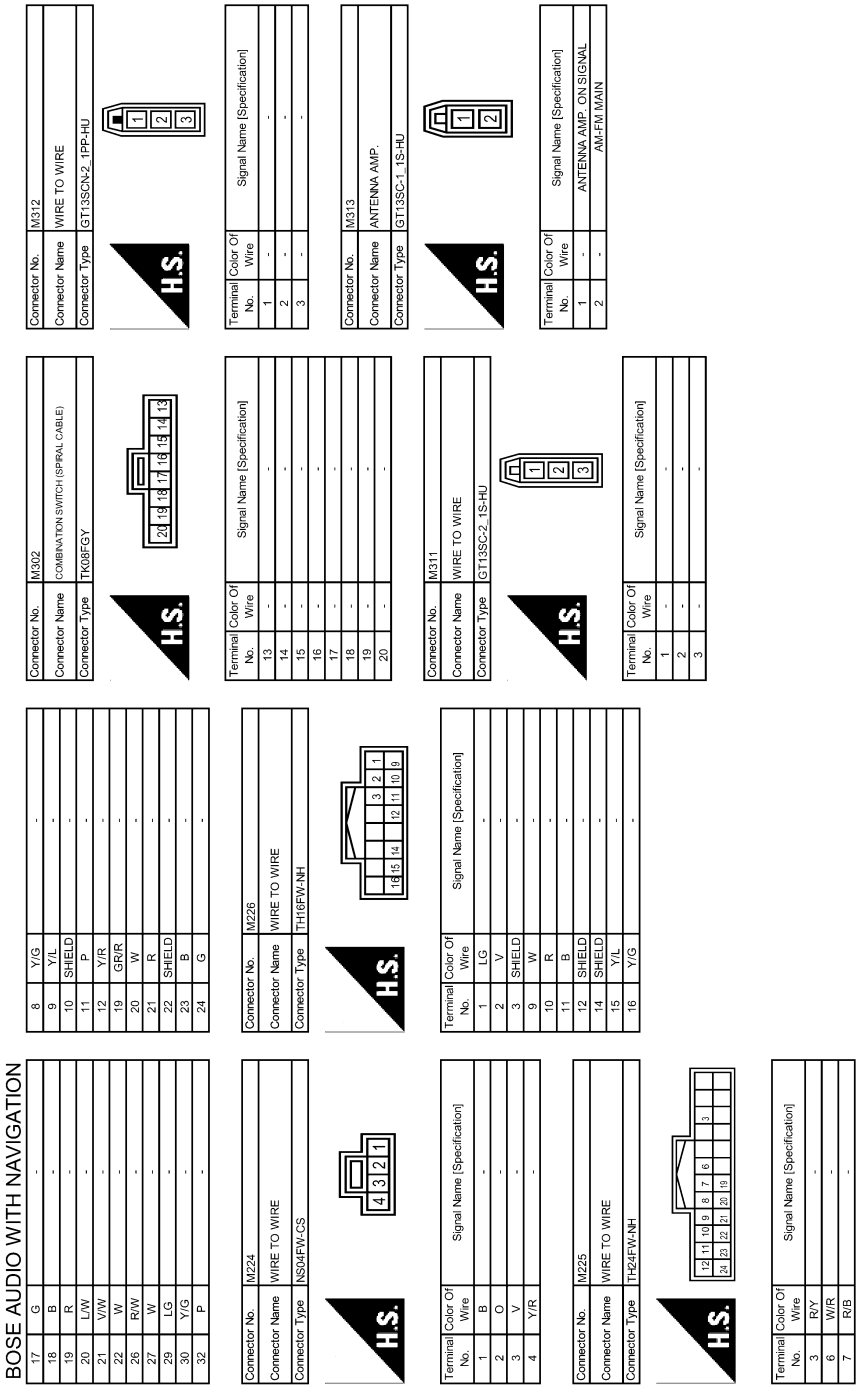
Terminal No.	Color Of Wire	Signal Name [Specification]
1	SB	-
2	SB	-
3	L	-
4	W/B	-
5	SHIELD	-
6	LG	-
7	V	-
8	W	-
9	O	-
10	SHIELD	-
11	W/L	-
12	L	-
13	P	-
14	SHIELD	-
15	G	-
16	V	-
17	W	-
18	G/R	-
19	Y	-
20	BR	-
21	LG	-
22	LG	-
23	P	-
24	R/W	-
25	L/O	-
26	GR/L	-
27	W	-
28	V	-
29	BR/W	-
30	Y/G	-
31	Y/L	-
32	B	-
33	R	-
34	W	-
35	SHIELD	-
36	SHIELD	-
37	SHIELD	-
38	GR/R	-
39	BR	-
40	SHIELD	-

Connector No.	M223
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH

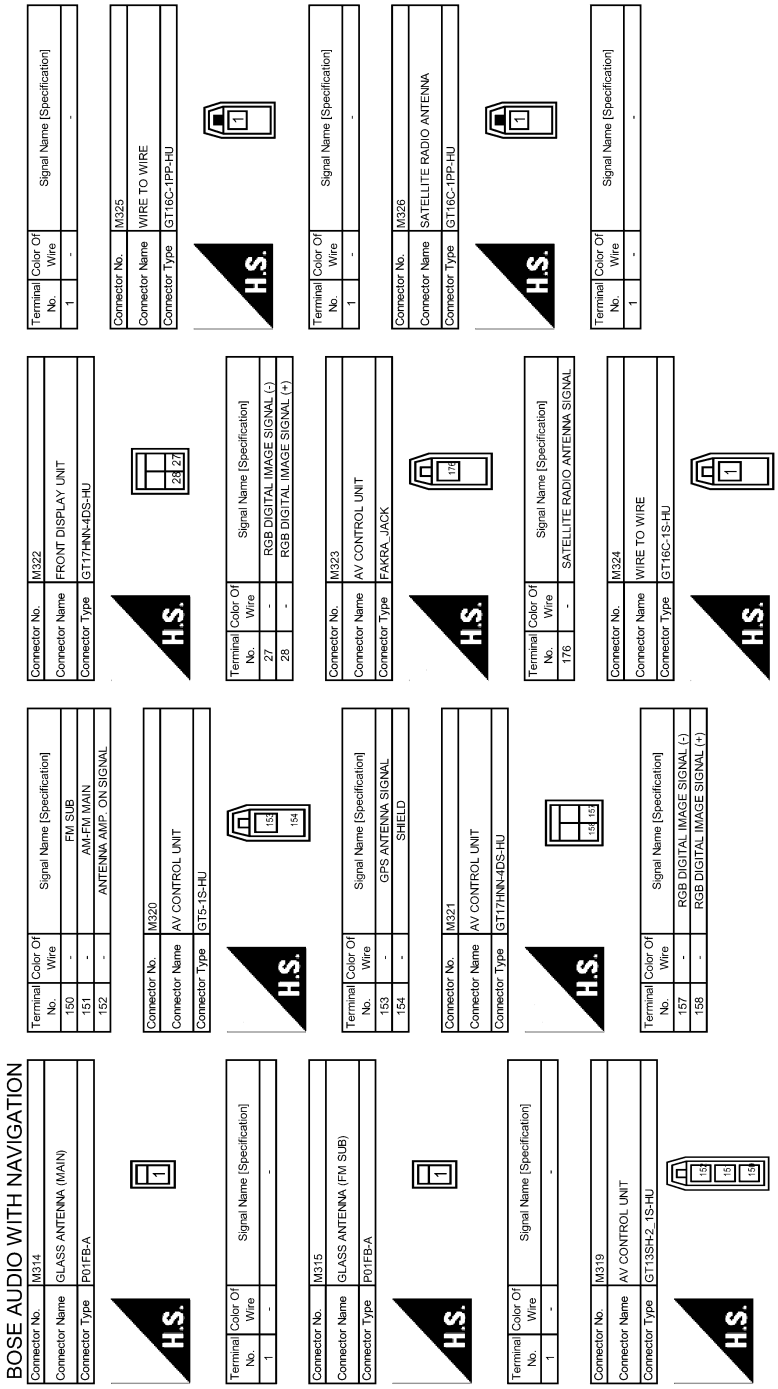
H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P/L	-
2	SHIELD	-
3	W	-
4	O/B	-
5	SHIELD	-
6	R	-
7	Y/R	-
10	W/B	-
11	O	-
13	V	-
14	Y/L	-
16	L	-

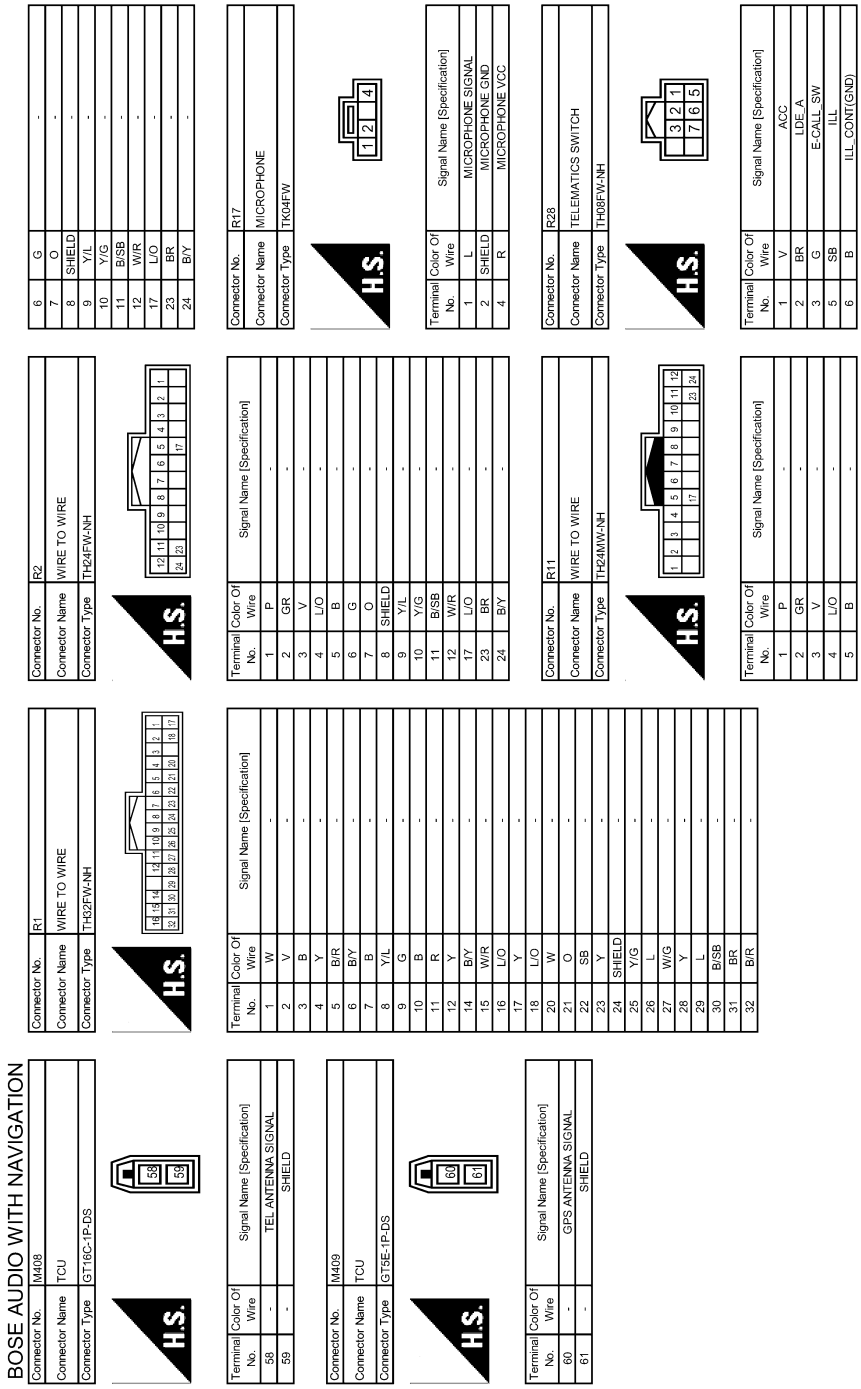
JRNWC5813GB



JRNWC5814GB



JRNWC5815GB



JRNWC5816GB

JRNWC5817GB

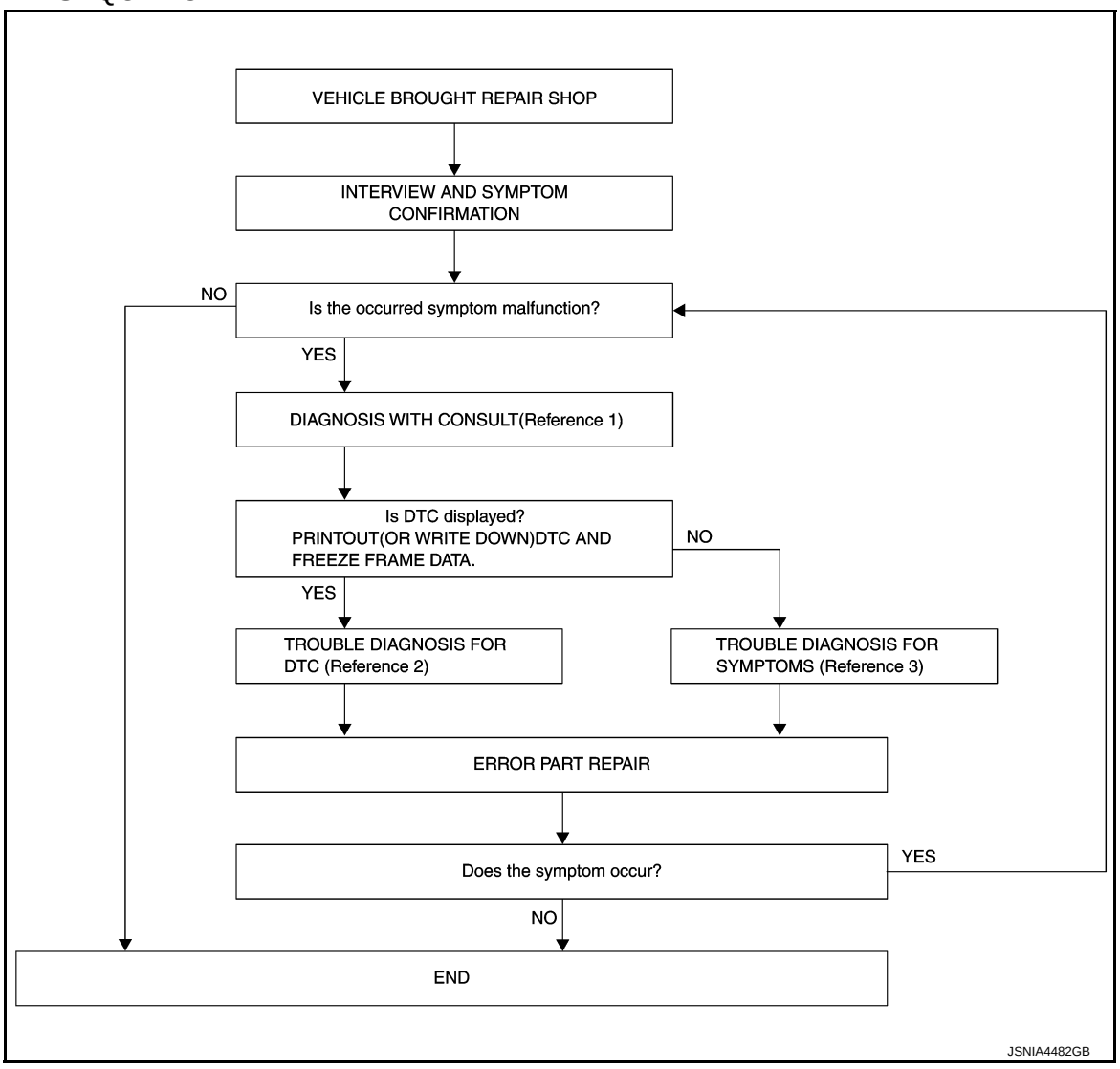
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000009314011

OVERALL SEQUENCE



- Reference 1··· Refer to AV-323, "CONSULT Function".
- Reference 2··· Refer to AV-328, "DTC Index".
- Reference 3··· Refer to AV-384, "SYMPTOM TABLE".

DETAILED FLOW

1. INTERVIEW AND SYMPTOM CONFIRMATION

Check the malfunction symptoms by performing the following items.
- Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred).
- Check the symptom.

Is the occurred symptom malfunction?

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

2. DIAGNOSIS WITH CONSULT

1. Connect CONSULT and perform a self-diagnosis for “TCU”. Refer to AV-323, "CONSULT Function".
2. When DTC is detected, follow the instructions below:

- Record DTC and Freeze Frame Data.

Is DTC displayed?

YES >> GO TO 3.
NO >> GO TO 4.

3. TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the self-diagnosis results.
2. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-328, "DTC Index".

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-384, "SYMPTOM TABLE".

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “TCU” with CONSULT.
3. Check that the symptom does not occur.

Does the symptom occur?

YES >> GO TO 1.
NO >> INSPECTION END

INSPECTION AND ADJUSTMENT
ADDITIONAL SERVICE WHEN REPLACING TCU

ADDITIONAL SERVICE WHEN REPLACING TCU : Description

INFOID:0000000009314012

When TCU is replaced, TCU activation operation is required.

Preparation before activation operation
- Subscribe to telematics service
- Preregister user ID and password (can be performed from owner homepage)

ADDITIONAL SERVICE WHEN REPLACING TCU : Work Procedure

INFOID:0000000009314013

1. READING OF VIN DATA

CONSULT work support
Select SAVE VIN DATA, then START on SAVE VIN DATA screen to save the VIN data stored in replaced TCU in CONSULT. If it cannot be saved, writing operation must be performed manually.

>> GO TO 2.

2. TCU REPLACEMENT

Replace TCU. Refer to AV-389, "Removal and Installation".

>> GO TO 3.

3. NOTICE TO CARRIER ATX HELP DESK

Contact ATX help desk to notice the termination of replaced TCU and connection of new TCU. (VIN is required)

Can ID data be saved to CONSULT at 1st step?

YES >> GO TO 4.
NO >> GO TO 5.

4. AUTOMATIC WRITING OF VIN DATA TO TCU

CONSULT work support
Select WRITE VIN DATA, then START at WRITE SAVED VIN DATA screen to write the VIN data saved in CONSULT into new TCU.

>> GO TO 6.

5. MANUAL WRITING OF VIN DATA TO TCU

CONSULT work support
Select VIN REGISTRATION, WRITE VIN DATA then START on changing screen to write the VIN data saved into new TCU.

>> GO TO 6.

6. TCU ACTIVATION

CONSULT work support
1. Wait for 5 seconds or more after turning the power switch ON.
2. Touch TELEMATICS on the CONSULT screen.
3. After performing System Call of CONSULT, touch the Work support tab.
4. On the work support screen of CONSULT, select TCU ACTIVATE SETTING and touch Start.
5. On the TCU ACTIVATE SETTING screen, touch Start to set to ON. Touch End.
6. Exit from CONSULT.
7. Turn the power switch OFF.
8. Wait (at least 10 seconds) until the power switch indicator turns OFF to shut down TCU.

>> WORK END.

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

DESCRIPTION

INFOID:0000000009314014

CAN (Controller Area Network) is a serial communication line for real time applications. It is an on-board multiplex communication line with high data communication speed and excellent error detection ability. A modern vehicle is equipped with many ECMs, and each control unit shares information and links with other control units during operation (not independent). --In CAN communication, 2 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-32, "CAN COMMUNICATION SYSTEM : CAN Communication Signal Chart" for details of the communication signal.

DTC Logic

INFOID:0000000009314015

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC Detection condition	Probable malfunction location
U1000	CAN COMM CIRC [U1000]	When TCU did not transmit and receive CAN communication signal continuously for 2 seconds or more	CAN communication system

Diagnosis Procedure

INFOID:0000000009314016

1.PERFORM SELF-DIAGNOSIS

1. Turn the power switch ON and hold it for 2 seconds or more.
2. “”Check the self-diagnosis result of “TCU”.

Is CAN communication system displayed?

YES >> Refer to LAN-22, "Trouble Diagnosis Flow Chart".
NO >> Refer to GI-43, "Intermittent Incident".

U1010 CONTROL UNIT (CAN)

DTC Logic

INFOID:0000000009314017

DTC DETECTION LOGIC

DTC	Display contents of CONSULT	DTC Detection condition	Action to take
U1010	CONTROL UNIT (CAN) [U1010]	A malfunction is detected in CAN controller initial diagnosis of TCU.	• Check the harness connection and erase DTC. • Replace TCU if malfunction constantly occurs. AV-389, "Removal and Installation".

U1A00 TCU

DTC Logic

INFOID:0000000009314018

DTC	Display contents of CONSULT	DTC Detection condition	Action to take
U1A00	ACC NO CONN [U1A00]	No input of ACC signal	• Check the ACC power circuit.AV-380, "TCU : Diagnosis Procedure". • If the ACC circuit is normal, replace TCU. Refer to AV-389, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009314019

1.CHECK ACC POWER CIRCUIT

1. Check the ACC power circuit. Refer to AV-380, "TCU : Diagnosis Procedure".

Is the check result normal?

YES >> Replace TCU. Refer to AV-389, "Removal and Installation".
NO >> Repair the harnesses or connectors.

U1A01 TCU

DTC Logic

INFOID:0000000009314020

DTC	Display contents of CONSULT	DTC Detection condition	Action to take
U1A01	INTERNAL ERROR (TCU) [U1A01]	Malfunction in TCU is detected.	• Check the connector wiring and erase DTC. • Replace TCU if malfunction constantly occurs. Refer to AV-389, "Removal and Installation".

U1A02 TCU

DTC Logic

INFOID:0000000009314021

DTC	Display contents of CONSULT	DTC Detection condition	Action to take
U1A02	TEL COMMUNICATION MODULE [U1A02]	Malfunction on the communication module in TCU is detected.	• Check the harness connection and erase DTC. • Replace TCU if malfunction constantly occurs. Refer to AV-389, "Removal and Installation".

U1A03 TCU

DTC Logic

INFOID:0000000009314022

DTC	Display contents of CONSULT	DTC Detection condition	Action to take
U1A03	SIM CARD [U1A03]	SIM card malfunction is detected.	• Check the harness connection and erase DTC. • Replace TCU if malfunction constantly occurs. Refer to AV-389, "Removal and Installation".

U1A04 TCU

DTC Logic

INFOID:0000000009314023

DTC	Display contents of CONSULT	DTC Detection condition	Action to take
U1A04	VIN UNFINISHED [U1A04]	No write of VIN number is detected.	• Write VIN number using CONSULT. • Replace TCU if malfunction is detected after VIN number is written and ignition switch turned OFF and ON. When ignition switch is turned OFF, ignition switch shall be turned ON after keep the off position more than 5 sec. Refer to AV-389, "Removal and Installation".

U1A05 TCU

DTC Logic

INFOID:0000000009314024

DTC	Display contents of CONSULT	DTC Detection condition	Action to take
U1A05	USB COMM [U1A05]	TCU It is detected for malfunction of the USB communication module (communication disabled) between TCU and AV control unit.	• Check the USB harness connection and erase DTC. • Replace TCU if malfunction constantly occurs. Refer to AV-389, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009314025

1.CHECK USB HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect TCU and AV control unit connectors.
3. Check the continuity between TCU harness connector and AV control unit harness connector.

TCU		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M100	47	M214	165	Existed
	48		166	
	56		174	

4. Check the continuity between TCU harness connector and ground.

TCU		Ground	Continuity
Connector	Terminal		
M100	47		Not existed
	48		
	56		

Is the check result normal?

YES >> Replace TCU. Refer to AV-389, "Removal and Installation".
NO >> Repair or replace the harnesses or connectors.

U1A07 TEL ANTENNA

DTC Logic

INFOID:0000000009314026

DTC	Display contents of CONSULT	DTC Detection condition	Action to take
U1A07	TEL ANTENNA SHORT [U1A07]	TEL antenna was short-circuited.	• Check the TEL antenna harness connection and the harness condition, and erase DTC. • If poor harness condition or malfunction constantly occurs, replace the TEL antenna. Refer to AV-391, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009314027

1.HARNESS INSPECTION

1. Turn the power switch OFF.
2. Disconnect the TEL antenna feeder connector of TCU.
3. Check the continuity between TCU harness connector.

TCU		TCU		Continuity
Connector	Terminal	Connector	Terminal	
M408	58	M408	59	Not existed

Is the check result normal?

YES >> Replace TCU. Refer to AV-389, "Removal and Installation".
NO >> Replace the TEL antenna. AV-391, "Removal and Installation".

U1A08 TEL ANTENNA

DTC Logic

INFOID:0000000009314028

DTC	Display contents of CONSULT	DTC Detection condition	Action to take
U1A08	TEL ANTENNA NO CONN [U1A08]	No input of TEL antenna signal.	• Check the harness connection and erase DTC. • Replace TCU if malfunction constantly occurs. Refer to AV-389, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000009314029

1.CHECK OF TEL ANTENNA

1. Turn the ignition switch OFF.
2. Disconnect the TEL antenna feeder connector.
3. Visually check TEL antenna and antenna feeder.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair malfunctioning parts.

2.CHECK TCU VOLTAGE

1. Disconnect TEL antenna connector.
2. Turn ignition switch ON.
3. Check voltage between TCU and ground.

(+)		(–)	Voltage (Approx.)
TCU		Ground	
Connector	Terminal		
M408	58		2.8 V

Is the inspection result normal?

YES >> Replace the TEL antenna. Refer to AV-391, "Removal and Installation".
NO >> Replace TCU. Refer to AV-389, "Removal and Installation".

U1A0B MICROPHONE

DTC Logic

INFOID:0000000009314030

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1A0B	MIC IN CONN [U1A0B]	When either one of the following items is detected: • sound signal circuits between TCU and microphone. • microphone VCC signal circuits between TCU and microphone.	• Sound signal circuits between TCU and microphone. • Microphone VCC signal circuits between TCU and microphone.

Diagnosis Procedure

INFOID:0000000009314031

1.CHECK CONTINUITY BETWEEN TCU AND MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCU connector and microphone connector.
3. Check continuity between TCU harness connector and microphone harness connector.

TCU		Microphone		Continuity
Connector	Terminals	Connector	Terminals	
M99	18	R17	4	Existed
	19		1	
	20		2	

4. Check continuity between TCU harness connector and ground.

TCU		Ground	Continuity
Connector	Terminals		
M99	18		Not existed
	19		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE MICROPHONE POWER SUPPLY

1. Connect TCU connector.
2. Turn ignition switch ON.
3. Check voltage between TCU harness connector.

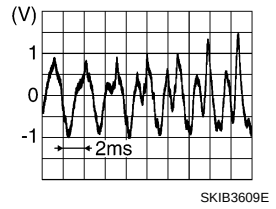
(+)		(–)	Voltage (Approx.)
TCU		Ground	
Connector	Terminal		
M99	18		5.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace TCU. Refer to AV-389, "Removal and Installation".

3.CHECK MICROPHONE SIGNAL

1. Connect microphone connector.
2. Check signal between TCU harness connector.

(+)		(–)		Condition	Reference value
TCU		TCU			
Connector	Terminal	Connector	Terminal		
M99	19	M99	20	When inputting interior sound.	

SKIB3609E

Is the inspection result normal?

YES >> Replace TCU. Refer to AV-389, "Removal and Installation".
NO >> Replace microphone. Refer to AV-388, "Removal and Installation".

U1A0C MICROPHONE

DTC Logic

INFOID:0000000009314032

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1A0C	MIC OUT CONN [U1A0C]	Malfunction is detected sound signal circuits between TCU and AV control unit.	Sound signal circuits between TCU and AV control unit.

Diagnosis Procedure

INFOID:0000000009314033

1.CHECK CONTINUITY BETWEEN TCU AND AV CONTROL UNIT CIRCUIT

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

TCU		AV control unit		Continuity
Connector	Terminals	Connector	Terminals	
M99	22	M210	87	Existed
	23		71	

4. Check continuity between TCU harness connector and ground.

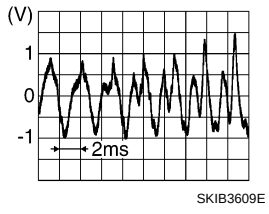
TCU		Ground	Continuity
Connector	Terminals		
M99	22		Not existed
	23		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK MICROPHONE SIGNAL

1. Connect TCU connector and AV control unit connector.
2. Check signal between TCU harness connector.

(+)		(–)		Condition	Reference value
TCU		TCU			
Connector	Terminal	Connector	Terminal		
M99	22	M99	23	When inputting interior sound.	

SKIB3609E

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-282, "Removal and Installation".
NO >> Replace TCU. Refer to AV-389, "Removal and Installation".

U1A0E TELEMATICS SWITCH

DTC Logic

INFOID:0000000009314034

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1A0E	SOS SWITCH ON STUCK [U1A0E]	SOS call switch is ON 10 second or more	SOS call switch signal circuits between TCU and telematics switch.

Diagnosis Procedure

INFOID:0000000009314035

1.CHECK TCU AND TELEMATICS SWITCH SIGNAL CIRCUIT

1. Disconnect TCU connector and telematics switch connector.
2. Check continuity between TCU harness connector and telematics switch harness connector.

TCU		Telematics switch		Continuity
Connector	Terminal	Connector	Terminal	
M99	34	R28	3	Existed

3. Check continuity between TCU harness connector and ground.

TCU		Ground	Continuity
Connector	Terminal		
M99	34		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK TCU VOLTAGE

1. Connect TCU switch connector.
2. Turn ignition switch ON.
3. Check voltage TCU harness connector.

(+)		(–)	Voltage (Approx.)
TCU			
Connector	Terminal		
M99	34	Ground	5.0 V

Is the inspection result normal?

YES >> Replace TCU. Refer to AV-389, "Removal and Installation".
NO >> Replace telematics switch. Refer to AV-392, "Removal and Installation".

U1A0F TELEMATICS SWITCH

DTC Logic

INFOID:0000000009314036

DTC	Display contents of CONSULT	DTC detection condition	Possible malfunction factor
U1A0F	SOS SWITCH NO CONN [U1A0F]	Malfunction detected is SOS call switch signal circuit between TCU and telematics switch.	SOS call switch signal circuits between TCU and telematics switch.

Diagnosis Procedure

INFOID:0000000009314037

1.CHECK TCU AND TELEMATICS SWITCH SIGNAL CIRCUIT

1. Disconnect TCU connector and telematics switch connector.
2. Check continuity between TCU harness connector and telematics switch harness connector.

TCU		Telematics switch		Continuity
Connector	Terminal	Connector	Terminal	
M99	34	R28	3	Existed

3. Check continuity between TCU harness connector and ground.

TCU		Ground	Continuity
Connector	Terminal		
M99	34		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK TCU VOLTAGE

1. Connect TCU connector.
2. Turn ignition switch ON.
3. Check voltage TCU harness connector.

(+)		(–)	Voltage (Approx.)
TCU			
Connector	Terminal		
M99	34	Ground	12.0 V

Is the inspection result normal?

YES >> Replace TCU. Refer to AV-389, "Removal and Installation".
NO >> Replace telematics switch. Refer to AV-392, "Removal and Installation".

POWER SUPPLY AND GROUND CIRCUIT
TCU

TCU : Diagnosis Procedure

INFOID:0000000009314038

1.CHECK FUSE

Check if the fuse is burned out.

Power source	Fuse No.
Battery	35
Power switch ACC or ON	19

Is the check result normal?

YES >> GO TO 2.
NO >> Replace the fuse after repairing the applicable circuit.

2.CHECK BATTERY VOLTAGE

Check the voltage between the TCU harness connector and ground.

Signal	TCU	Probe		Test condition	Standard	Reference value (Approx.)
		Terminal				
	Connector	(+)	(-)	Ignition switch		
Battery power supply	M99	1	2, 7	OFF	9 – 16 V	Battery Voltage
ACC power supply		3		ACC	9 – 16 V	12 V

Is the check result normal?

YES >> GO TO 3.
NO >> Repair harness between TCU and fuse.

3.GROUND CIRCUIT INSPECTION

1. Turn ignition switch OFF.
2. Disconnect TCU connector.
3. Check the continuity between TCU harness connector and ground.

Signal	Connector	Terminal	Continuity
Ground	M99	2, 7	Exists

Is the check result normal?

YES >> INSPECTION END
NO >> Repair the harnesses or connectors.

MICROPHONE SIGNAL CIRCUIT

Description

INFOID:0000000009314039

- TCU supplies power to the microphone when receiving a microphone ON signal from the AV control unit.
- The microphone transmits an audio signal to TCU.
- TCU transmits a received sound signal to the AV control unit.

Diagnosis Procedure

INFOID:0000000009314040

1.CHECK CONTINUITY BETWEEN AV CONTROL UNIT AND TCU CIRCUIT

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

AV control unit		TCU		Continuity
Connector	Terminals	Connector	Terminals	
M210	72	M99	21	Existed
	71		23	
	87		22	

4. Check continuity between AV control unit harness connector and ground.

AV control unit		Ground	Continuity
Connector	Terminals		
M210	72		Not existed
	87		

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair harness or connector.

2.CHECK VOLTAGE TEL ON SIGNAL

1. Connect AV control unit connector.
2. Turn ignition switch ON.
3. Check voltage between AV control unit harness connector.

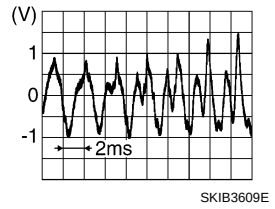
(+)		(–)	Voltage (Approx.)
AV control unit		Ground	
Connector	Terminal		
M210	72		5.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace AV control unit. AV-282, "Removal and Installation".

3.CHECK MICROPHONE SIGNAL (AV CONTROL UNIT TO TCU)

1. Turn ignition switch OFF.
2. Connect TCU connector.
3. Turn ignition switch ON.
4. Check signal between AV control unit harness connector.

(+)		(–)		Condition	Reference value
AV control unit		AV control unit			
Connector	Terminal	Connector	Terminal		
M210	87	M210	71	Give a voice.	

SKIB3609E

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-282, "Removal and Installation".
NO >> GO TO 4.

4. CHECK CONTINUITY BETWEEN TCU AND MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCU connector and microphone connector.
3. Check continuity between TCU harness connector and microphone harness connector.

TCU		Microphone		Continuity
Connector	Terminals	Connector	Terminals	
M99	18	R17	4	Existed
	19		1	
	20		2	

4. Check continuity between TCU harness connector and ground.

TCU		Ground	Continuity
Connector	Terminals		
M99	18		Not existed
	19		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair harness or connector.

5. CHECK VOLTAGE MICROPHONE POWER SUPPLY

1. Connect TCU connector.
2. Turn ignition switch ON.
3. Check voltage between TCU harness connector.

(+)		(–)	Voltage (Approx.)
TCU		Ground	
Connector	Terminal		
M99	18		5.0 V

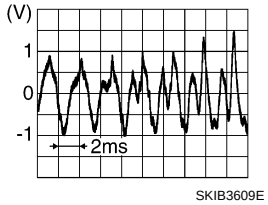
Is the inspection result normal?

YES >> GO TO 6.
NO >> Replace TCU. Refer to AV-389, "Removal and Installation".

6. CHECK MICROPHONE SIGNAL (TCU TO MICROPHONE)

1. Turn ignition switch OFF.
2. Connect microphone connector.
3. Turn ignition switch ON.

4. Check signal between TCU harness connector.

(+)		(–)		Condition	Reference value
TCU		TCU			
Connector	Terminal	Connector	Terminal		
M99	19	M99	20	When inputting interior sound.	

SKIB3609E

Is the inspection result normal?

YES >> Replace TCU. Refer to AV-389, "Removal and Installation".
NO >> Replace microphone. Refer to AV-388, "Removal and Installation".

SYMPTOM DIAGNOSIS

TELEMATICS SYSTEM

SYMPTOM TABLE

INFOID:0000000009314041

AV SYSTEM

Symptoms	Check items	Possible malfunction location/Action to take
AV control unit does not start (Display is not indicated).	—	Refer to AV-264, "Symptom Table".

TELEMATICS SYSTEM

Symptoms	Check items	Indicator on SOS switch	Pop-up message	Possible malfunction location/Action to take
Telematics operation is not available.	Check the display when Telematics is operated.	OFF	No service.	Check ON/OFF status of TCU using the data monitor of CONSULT. • Replace TCU if it is ON. Refer to AV-389, "Removal and Installation". • Turn it ON again if it is OFF. Replace TCU if ON is switched to OFF. Refer to AV-389, "Removal and Installation".
				Use other cellular phone to check radio wave condition. • If the service is available, replace TCU or TEL antenna. - For TCU replacement, refer to AV-389, "Removal and Installation". - For TEL antenna replacement, refer to AV-391, "Removal and Installation". • If the service is not available, move the vehicle to the position where service is available and perform the operation again. If guidance of “out of service area” appears when SOS switch is pressed even in the service area of cellular phone, confirm the SIM line contract status.
		ON	Telematics communication is currently busy. Please try again later.	Use other cellular phone to check radio wave condition. • If it is OK, there may be a cause at the Infiniti Connection™ Data Center. Check connection after certain time. If there is no problem at the Infiniti Connection™ Data Center, replace TCU or TEL antenna. - For TCU replacement, refer to AV-389, "Removal and Installation". - For TEL antenna replacement, refer to AV-391, "Removal and Installation". • If it is NG, check connection again after certain time.
			TCU line is using.	Check connection after certain time. Replace TCU if it is frequently displayed. Refer to AV-389, "Removal and Installation".
			The connection to the call center failed.	There may be a cause at the Infiniti Connection™ Data Center. Check connection after certain time. If there is no problem at the Infiniti Connection™ Data Center, replace TCU or TEL antenna. • For TCU replacement, refer to AV-389, "Removal and Installation". • For TEL antenna replacement, refer to AV-391, "Removal and Installation". • Perform CONSULT self-diagnosis. Refer to AV-323, "CONSULT Function".
			“Please ask for initiation of service at your dealer”	Check the infiniti connection™ data base.
	• No communication with Infiniti Connection™ Response service is available in Infiniti Connection™ service. • Other services are normal.			Check the microphone voice signal circuit. Refer to AV-381, "Diagnosis Procedure".

NORMAL OPERATING CONDITION

Description

INFOID:0000000009314042

NOTE:
For Telematics system operation detail information, refer to Navigation system Owner's Manual.

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The system in the video mode.	Press “” “AUX” to change the mode.
	The display is turned off.	Press “☀/☽” to turn on the display.
	The interior of the vehicle becomes the a little less than 80°C (176°F) or high temperature, and the protection of the display acts, and a display is turned off.	Wait until the interior of the vehicle has cooled down.
The screen is darker.	The cabin temperature is too low.	Wait until the interior of the vehicle temperature becomes moderate.
	The adjustment of display brightness is set to the maximum of darkness.	Adjust the brightness setting of the display.
The screen is brighter.	The adjustment of display brightness is set to the maximum of brightness.	
When looking at the screen from an angle, the screen lightens or darkens.	This is a typical phenomenon for liquid crystal displays.	
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is less than 50°F (0°C).	Wait until the interior of the vehicle temperature becomes within 50°F(0°C) to 122°F (50°C).
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.
No voice guidance is available. Or The volume is too high or too low.	The volume is not set correctly, or it is turned off.	Adjust the volume of voice guidance.
	Voice guidance is not provided for certain streets (roads displayed in gray).	This is not a malfunction.
No map is displayed on the screen.	A screen other than map screen is displayed.	Press “MAP”.
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.
A small black spot or a small bright spot appears on the screen.	This is a typical phenomenon for liquid crystal displays.	This is not a malfunction.
A dot or stripe pattern appears on the screen.	Electromagnetic wave that is generated from neon billboards, high voltage electric power cables, ham radios or other radio devices equipped to other vehicles may adversely affect the screen.	
Image lag appears on the screen.	This is a typical phenomenon for liquid crystal displays.	

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.

RELATED TO CARWINGS™

Symptom	Possible cause	Possible solution
The system cannot connect to the NISSAN CARWINGS center.	A subscription for the CARWINGS™ service has not been established.	Sign up for a subscription to the CARWINGS™ service. For details about subscriptions, contact a NISSAN dealer or visit the Nissan CARWINGS center website.
	The communication line is busy.	Try again after a short period of time.
	The vehicle is in a location where it is difficult to receive radio waves.	When the vehicle moves to an area where radio waves can be transmitted sufficiently, communication will be restored. When the icon on the display shows that the vehicle is inside the communication area, the system can be used.
	Radio wave reception for TCU is insufficient.	When the vehicle moves to an area where radio waves can be transmitted sufficiently, communication will be restored. When the icon on the display shows that the vehicle is inside the communication area, the system can be used.
Some of the items that are displayed on the menu screen cannot be selected.	The vehicle is being driven and some menu items are disabled.	The vehicle is being driven. Stop the vehicle in a safe location and apply the parking brake before operating the functions.
Some parts of the screen are not displayed	The vehicle is being driven and some menu items are disabled.	Operate the system after stopping the vehicle in a safe location and applying the parking brake.
The system does not announce information.	The volume level is set to the minimum.	Adjust the volume level by operating the VOL switches located on the control panel or on the steering wheel switch while the system is announcing information.

REMOVAL AND INSTALLATION

MICROPHONE

Removal and Installation

INFOID:0000000009315478

REMOVAL

1. Remove map lamp assembly. Refer to INL-69, "Removal and Installation".
2. Remove microphone, stretching pawls of map lamp assembly.

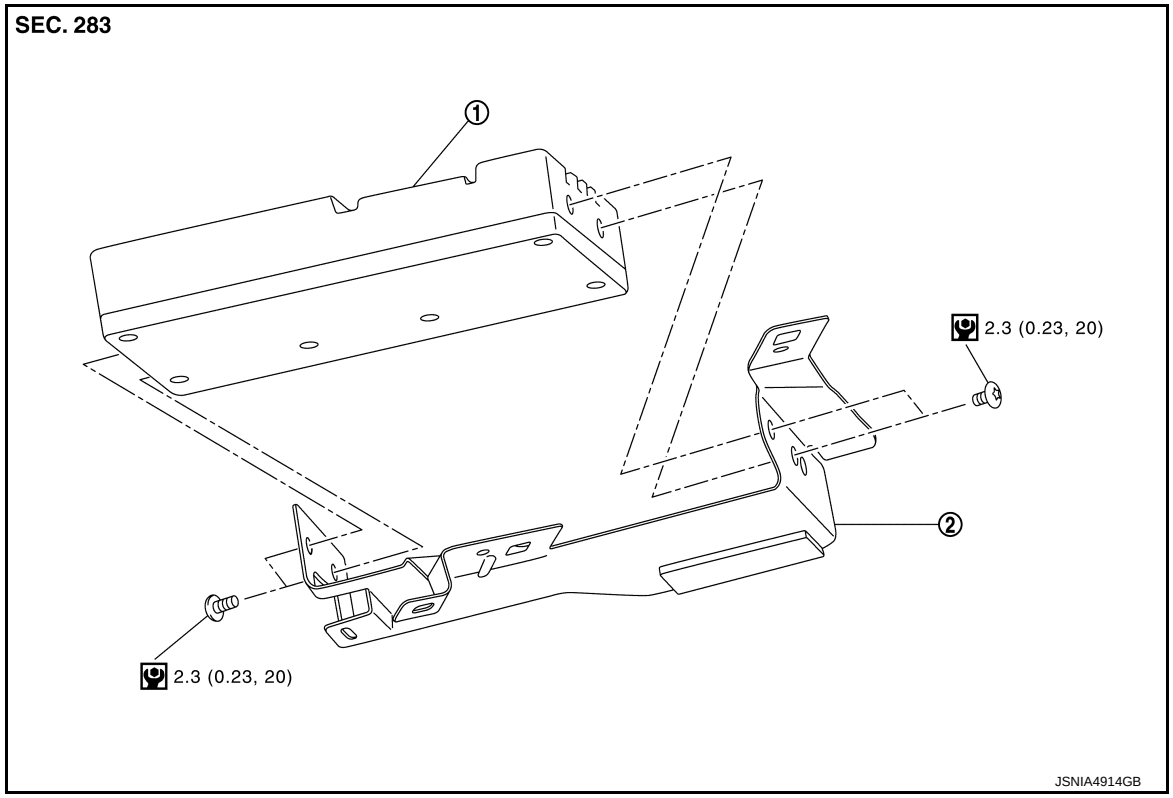
INSTALLATION

Installation is the reverse order of removal.

TCU

Exploded View

INFOID:0000000009315479



1. TCU
2. Bracket

: N·m (kg-m, in-lb)

Removal and Installation

INFOID:0000000009315480

REMOVAL

NOTE:

Before replacing TCU, perform “WRITE VIN DATA” to save current vehicle specification. For details, refer to AV-363, "ADDITIONAL SERVICE WHEN REPLACING TCU : Work Procedure".

1. Remove the glove box assembly. Refer to IP-13, "Exploded View".
2. Remove the vehicle mounting bolts and disconnect the connector, and then remove them together with the bracket.
3. Remove the bracket mounting screw and remove the bracket from TCU.

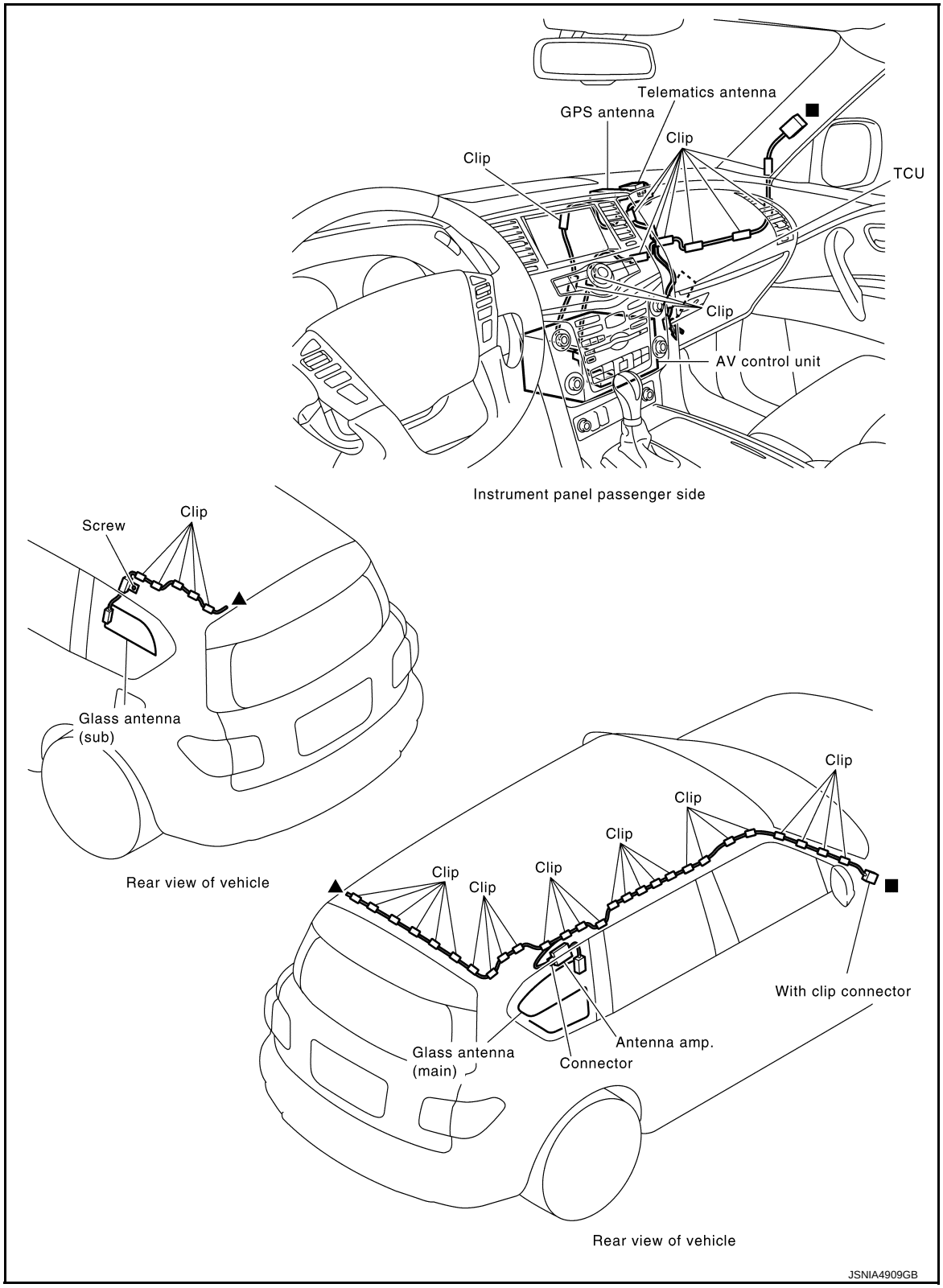
INSTALLATION

1. Install in the reverse order of removal.
2. After installation, perform activation. Refer to AV-363, "ADDITIONAL SERVICE WHEN REPLACING TCU : Work Procedure".

TELEMATICS ANTENNA

Feeder Layout

INFOID:0000000009315481



■, ▲: Indicates that the part is connected at points with same symbol in actual vehicle.

Removal and Installation

INFOID:0000000009315482

REMOVAL

1. Remove instrument panel assembly. Refer to IP-14, "Removal and Installation".
2. Remove telematics antenna from instrument panel assembly.

INSTALLATION

Install in the reverse order of removal.

TELEMATICS SWITCH

Removal and Installation

INFOID:0000000009315483

REMOVAL

1. Pull down headlining (front side) and obtain space for work between vehicle and headlining. Refer to INT-29, "Removal and Installation".
2. Disconnect connector, then remove telematics switch with the telematics switch finisher.
3. Remove the telematics switch, stretching pawls of telematics switch finisher.

INSTALLATION

Installation is the reverse order of removal.